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### Recommended Citation

Gamon, Julia A.; Bounaga, Lahcen; and Miller, W. Wade (1992) "Identifying Informational Sources And Educational Methods For Soil Conservation Information Used By Landowners of Highly Erodible Fields," *Journal of Applied Communications*: Vol. 76: Iss. 1. <https://doi.org/10.4148/1051-0834.1458>

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## Identifying Informational Sources And Educational Methods For Soil Conservation Information Used By Landowners of Highly Erodible Fields

### Abstract

Inadequate adoption of soil conservation practices is a serious problem since 40 percent of the nation's farmers have some highly erodible land.

# Identifying Informational Sources And Educational Methods For Soil Conservation Information Used By Landowners Of Highly Erodible Fields

Julia A. Gamon  
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Inadequate adoption of soil conservation practices is a serious problem since 40 percent of the nation's farmers have some highly erodible land. This study identified preferred educational sources and methods of hard-to-reach groups such as those who are the last to put together a soil conservation plan. A mailed questionnaire asked about both past and future use. The most important sources of information about soil conservation for landowners with highly erodible land were neighbors and family. Those who had not started a conservation plan were significantly less interested in tours and demonstrations.

## Introduction

Soil erosion is a serious agricultural problem. Soil loss studies consistently report increasing depletion of topsoil and inadequate success in the adoption of soil conservation practices (USDA, 1984). It is important to find methods to encourage landowners to increase their adoption of soil conservation practices. Landowners of highly erodible fields are an especially important audience to reach because of the seriousness of the erosion problem

in such fields. Forty percent of the nation's farmers, about 800,000, are farming highly erodible land (Extension Service Update, 1988).

Information problems are part of a wider communication concern. Research on how farmers obtain and use conservation information suggests that many factors must be considered in planning information programs (Bultena and Holberg, 1986). It may be false to assume that farmers are an undifferentiated, homogeneous group and that they

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all possess similar needs, interests, attitudes, and goals. On the contrary, there may be substantial diversity in their preferred sources and methods of information delivery. To be effective, change agents must recognize and deal with this diversity.

### **Purpose**

The purpose of this study was to identify the informational sources and methods preferred by landowners of highly erodible fields in Franklin County, Iowa. Objectives were to identify characteristics of the population, their perceptions toward adoption of soil conservation practices, and their preferred informational sources and methods in the past and in the future.

### **Procedures**

The descriptive survey method was used in this study. The population of the study consisted of 594 landowners with highly erodible fields in Franklin County, Iowa. A random sample of 150 landowners was drawn from the population.

Input from university faculty was used to develop a questionnaire to assess the perceptions of landowners. The questionnaires covered three areas: perceptions of respondents toward soil conservation practices, educational methods and information sources preferred by respondents to learn about soil conservation, and occupational characteristics of the respondents. To establish validity, the instrument was reviewed by the Franklin County Extension Agriculturist, the District Conservationist, and eight Franklin County landowners not involved in the study. The Cronbach's Alpha reliability coefficient for the instrument was .893. Respondents were asked to rate their perceptions toward soil conservation practices and their preferences

for methods and sources on a 1 (low importance) to 5 (high importance) Likert-type scale.

A cover letter, questionnaire, and preaddressed, self-stamped envelope were mailed to the sample. A second copy of all materials was sent to nonrespondents two weeks later. The total response rate attained was 69 percent. Telephone interviews were conducted with a random sample of 10 nonrespondents on a random sample of six questions. To test for possible differences between respondents and nonrespondents, a t-test was done, and no significant differences ( $\alpha = .05$ ) were noted. It was concluded that the received questionnaires adequately represented the population.

### **Analyses of Data**

Means and standard deviations were calculated for attitudes toward adoption of soil conservation practices and past and future use of sources of information. Frequencies and percentages were calculated for demographic information, which included respondents' progress toward establishing a conservation plan. The Pearson product-moment correlation coefficient was used to detect if age and total land farmed were related to attitudes to adoption of soil conservation and responsibilities and rights of landowners with highly erodible fields. One-way analysis of variance and t-tests ( $\alpha = .05$ ) were used to determine if differences in preferred methods and attitudes occurred when participants were grouped by age, educational level, acres farmed, and progress in completing conservation plans.

### **Results**

The average age of the respondents was 57 years. More than 50

percent were farming full-time. Twenty-five percent were retired. Forty percent derived most of their income from the farm, and 50 percent farmed more than 360 acres. The educational level was high, with 84 percent having at least a high school education. Respondents of various ages, educational levels, land ownerships, and income levels had similar attitudes toward adoption of soil conservation practices.

More than four-fifths had met with the soil conservation district personnel and had either started or completed a conservation plan for their farm. The respondents who had not started a conservation plan rated newsletters, tours, and demonstrations significantly lower than those who had started a plan (Table 1).

The respondents were asked to rate the importance of nine sources of information about soil conservation practices in the last three years and in the future. As shown in Table 2, the sources of information rated as important were (1) neighbors, friends, family, and other farmers; (2) the Soil Conservation Service (SCS); (3) the Agriculture Stabilization and Conservation Service (ASCS); and (4) the Cooperative Extension Service (CES). Nowak (1982) also found friends and neighbors to be highly ranked as sources of information on conservation practices. Two significant differences were observed in this study when the respondents were grouped by age and by level of education. Respondents older than 45 rated neighbors,

**Table 1: A Comparison of the Ratings of Past and Future use of Educational Methods When Grouped by Progress in Completing a Conservation Plan.**

		<u>Progress in Completing Conservation Plan</u>					
		Group 1 <sup>a</sup>		Group 2 <sup>b</sup>		t-value	Prob.
		n=16	n=87				
	<b>Educational Methods</b>	Mean	Mean	SD	SD		
<b>Past</b>	Face-to-face discussion	3.25	3.72	1.29	.80	-1.89	.07
	Bulletins	2.93	3.40	.92	.97	-.87	.08
	Newsletters	3.00	3.59	.96	.93	-2.29*	.03
	Tours and demonstrations	2.37	3.32	1.08	1.01	-3.23**	.00
<b>Future</b>	Face-to-face discussion	3.43	3.80	1.09	.77	-1.15	.26
	Bulletins	3.37	3.43	.80	.99	-.27	.78
	Newsletters	3.31	3.67	.87	.88	-1.54	.13
	Tours and demonstrations	2.62	3.58	1.31	1.04	-2.78*	.01

<sup>a</sup>Group 1 = Unfamiliar and have not started a plan;

<sup>b</sup>Group 2 = Met with the SCS and have a plan completed.

\*Significant at .05 level.

\*\*Significant at .01 level.

**Table 2: Means\*, Standard Deviations and Ranking of Past and Future Use of Sources of Information.**

Rank	Items	Past Use		Future Use	
		Mean	SD	Mean	SD
		n = 104		n = 104	
1	Neighbors, friends, family other farmers	3.77	0.89	3.79	0.92
2	The SCS	3.76	0.75	3.76	0.82
3	The ASCS	3.65	1.00	3.76	0.92
4	The CES	3.22	1.02	3.43	0.94
5	Agribusinesses	3.13	1.20	3.12	1.30
6	Local school/vocational agriculture instructors	2.52	1.08	2.61	1.14
7	Lending agents	2.38	1.49	2.38	1.38
8	Community colleges	2.27	1.10	2.45	1.11
9	The FmHA	1.89	1.13	1.92	1.04

\*1 = Not Important, and 5 = Very Important.

**Table 3: Means\*, Standard Deviations and Rankings of Past and Future Use of Educational Methods.**

Rank	Items	Past Use		Future Use	
		Mean	SD	Mean	SD
		n=10		n=104	
1	Face-to-face discussion	3.69	0.85	3.85	0.80
2	Newspaper and magazine articles	3.66	0.91	3.79	0.84
3	Newsletters	3.48	0.98	3.59	0.91
4	Tours & Demonstrations	3.15	1.09	3.49	1.09
5	County/local meetings	3.27	1.03	3.41	1.15
6	Bulletins	3.30	0.99	3.40	0.99
7	Radio programs	2.96	1.13	3.12	1.11
8	On-farm consultations	2.84	1.22	3.11	1.23
9	Telephone conferences	1.96	1.03	2.24	1.18
10	Posters	2.04	1.11	2.24	1.14
11	Self-study (via correspondence course)	2.02	1.13	2.15	1.15
12	Formal classes	1.88	1.04	2.09	1.03
13	Satellite TV	1.64	0.95	1.91	1.11

1 = Not Important, and 5 = Very Important.

friends, and family significantly higher than did those under 45. Respondents with less than a high school education also rated neighbors, friends, and family significantly higher than those with higher education.

The respondents were asked to rate the importance of 13 selected educational methods for learning about soil conservation. They were asked the extent to which they had used these methods in the last three years and the importance of these methods to them in the future. The highest rated educational method (Table 3) was face-to-face discussion. Newspaper and magazine articles were rated as the next highest in importance, followed by newsletters. The top three rankings were the same for past use and future importance. No significant difference was observed in the ratings of the top three methods when respondents were grouped by age and level of education.

### Conclusions

The typical landowner of highly erodible land in Franklin County was a male in his fifties with a high school education. He lived on a single family farm, was a full-time farmer, and farmed more than 360 acres. Farmers preferred to receive conservation information in descending order from their neighbors, friends, and family, the SCS, the ASCS, and the CES. The educational methods most used in the past and preferred in the future, in descending order, were face-to-face discussion, newspaper and magazine articles, and newsletters.

### Recommendations

Based on the findings of this study, the following recommendations are offered to agricultural educators:

1. The use of newspaper and magazine articles and newsletters should be increased to reach landowners with conservation information.
2. Because face-to-face discussion is the most highly rated method in this study and others, agricultural educators should find ways to use the face-to-face method more efficiently.
3. Neighbors, friends, and family, preferred sources of information, should be used to reach hard to reach groups who want conservation information delivered face-to-face.

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