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Public Preferences for Soil Erosion Control

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Soil conservation is an important part of agricultural policy. As environmental issues come to the forefront of agricultural policy concerns, federal and state agencies are increasingly becoming involved in activities designed to mitigate environmental damage. Greater governmental involvement in part reflects the changing attitude of the public toward environmental issues. As Havlicek (1986) pointed out, public participation in the environmental decision-making process is likely to increase in the future. Thus, understanding the nature of public support can be useful to the policymaking process.

Soil conservation programs in particular are receiving considerable attention from researchers and agricultural policymakers (Miranowski). This follows increasing evidence of the economic and social costs of soil erosion. One estimate puts the annual offsite damages from soil erosion at between \$4 and \$15 billion (Ribaud). This has led to increased government spending to enforce soil conservation measures. The policies have consisted of providing technical and monetary incentives to farmers to invest in soil conservation practices. Expenditures by the USDA for erosion control exceeded \$1.1 billion (1982 dollars) in 1987, up from \$379 million in 1986, due to costs associated with the Conservation Reserve Program (USDA). As in 1985, soil erosion programs will be a major part of the 1990 Farm bill. The recent conservation title of the farm bill introduced by Senator Wyche Fowler (D. Ga.) expands the Conservation Reserve Program to include a minimum of 40 million acres of highly erodible land to be taken out of agricultural production and used for conservation programs. Some of the other conservation measures in the farm bill will reduce crop output and government support costs. These include the sodbusting and swampbusting provisions. The TVA and other multipurpose entities also encourage soil conservation. Through various incentives they seek to prevent the collection of silt in dams and lakes.

This paper examines public attitudes toward soil erosion control and the role of agriculture in the soil erosion issue. The data are from a survey conducted in 1986 by the S-198 Regional Research Project. The nationwide survey sought to determine public views of the changes taking place in the structure of agriculture. Members of the S-198 technical committee wrote the questionnaire, "Farming in American Life," on a collaborative basis.

The survey contained over 150 questions, including standardized questions to get socioeconomic background data (Van Dusen and Zill). The items in the survey included questions to determine the level of knowledge of farming, and the support for farmers and farm issues. For this paper, seven questions about soil erosion were selected for analysis.

Data

The following discussion of the survey sample is from the S-198 technical document (Molnar). The data for this paper consists of answers from 3,212 respondents.

The sample was a stratified random sample of persons in the United States, bought from a national marketing firm (Donnelly Marketing, Nevada, Iowa). The population for the sample consisted of a computer-merged list of residential telephone subscribers and automobile owners. Thus, the population should include most households in the United States. Households which do not list a telephone number and in which no member registers an automobile are not included. Most households with unlisted telephone numbers were included.

We mailed the questionnaire three times with three reminder postcards to improve the return rate. Including the completed, refused and deceased questionnaires, and correcting for wrong addresses, the return rate was 46 percent. While this is below the desired 70 percent return rate, it is high by experience with comparable surveys on similar issues and populations.

To enhance the representativeness of the data we used a statistical weighting procedure. Post-stratification or statistical weighting restores proportional representation of subgroups or groups of respondents that are over- or under-represented due to disproportionate sampling in seven states. Such weighting also deals with the vagaries of nonresponse, sampling error, or other sources of bias (Frankel; Sonquist and Dunkelberg).¹

Survey Response

Although alerted to the costs of controlling soil erosion, when asked whether soil conservation programs are carried too far, given economic realities, 46 percent disagreed while only 25 percent agree with that state-

ment (Table 1). When classified by region, those in the plains states (Table 2) and the northeast (Table 3) have a stronger response to soil conservation programs. Over half of respondents in both regions disagree that such programs are carried too far. In the northeast, the fewest (16 percent) agree with the statement. When the question focused on farmers, 61 percent of the nationwide respondents said that most farmers take good care of the soil. However, when asked whether laws to regulate soil erosion are badly needed, 57 percent agreed and only 10 percent disagreed. Support for such laws was at its lowest in the west (Table 4). There, only 29 percent of the respondents believed new laws were badly needed. Thus, while there is a public perception that soil erosion is a problem, farmers are not being blamed for the situation.

While the issue of soil erosion is a public concern, there is a strong feeling that the responsibility for soil erosion lies with the individual land owner. Ninety-six percent of the respondents said the land owner has the responsibility to protect soil for the future. A similar response cut across regions. The governments role, particularly as it affects agriculture, was less certain. The respondents were split on the subject of government payments to farmers for soil conservation. Thirty-nine percent disagreed with such payments while 36 percent agreed. Opposition to government payments was strongest in the west, while only in the northeast did re-

Table 1.
Preferences for Soil Conservation Policies: U.S.

	Responses: percent* (n = 3212)				
	Agree	Undecided	Disagree		
Given the economic realities, soil conservation programs are carried too far.	25	30	46		
Most farmers take good care of the soil.	61	26	13		
Laws regulating excess soil erosion are badly needed.	57	33	10		
Land owners have responsibilities to protect soil for the future.	96	3	1		
The government should pay farmers to practice soil conservation.	36	26	39		
Farmers who do not adopt the needed soil conservation practices should be fined.	42	31	27		
	Increase	Same	Decrease	Eliminate	Don't Know
Partial payment to farmers for the cost of reducing erosion.	31	34	8	10	18

*Due to rounding, percents may not add to 100.

Table 2.
*Preferences for Soil Conservation Policies: Plains***

	Responses: percent* (n = 87)				
	Agree	Undecided		Disagree	
Given the economic realities, soil conservation programs are carried too far.	20	22		59	
Most farmers take good care of the soil.	69	18		13	
Laws regulating excess soil erosion are badly needed.	45	42		13	
Land owners have responsibilities to protect soil for the future.	99	1		—	
The government should pay farmers to practice soil conservation.	35	21		45	
Farmers who do not adopt the needed soil conservation practices should be fined.	38	29		33	
	Increase	Same	Decrease	Eliminate	Don't Know
Partial payment to farmers for the cost of reducing erosion.	33	34	9	8	16

*Due to rounding, percents may not add to 100.

**Plains Region consists of North Dakota, South Dakota, Nebraska, and Kansas.

Table 3.
*Preferences for Soil Conservation Policies: Northeast***

	Responses: percent* (n = 279)				
	Agree	Undecided		Disagree	
Given the economic realities, soil conservation programs are carried too far.	16	28		56	
Most farmers take good care of the soil.	62	24		14	
Laws regulating excess soil erosion are badly needed.	63	32		6	
Land owners have responsibilities to protect soil for the future.	96	2		2	
The government should pay farmers to practice soil conservation.	42	24		34	
Farmers who do not adopt the needed soil conservation practices should be fined.	48	33		20	
	Increase	Same	Decrease	Eliminate	Don't Know
Partial payment to farmers for the cost of reducing erosion.	37	32	6	7	19

*Due to rounding, percents may not add to 100.

**Northeast Region consists of Main, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and Delaware.

spondents favor such payments, though by a small percentage. However, when considering partial payments to farmers for the cost of reducing erosion, most of the respondents felt payments should be either increased or kept the same, 31 percent and 34 percent, respectively. Again, only in the northeast did respondents favor increasing spending, 37 percent, as opposed to keeping payments the same, 32 percent. In both the south (Table 5) and midwest (Table 6) 11 percent supported the elimination of such payments. In the west, 16 percent of respondents favored decreasing the payments. Tables 7 and 8 show responses from the Pacific region and Georgia.

The questionnaire asked about the governments' role in soil conservation through the regulatory system. While 42 percent thought farmers should be fined if they do not adopt soil conservation practices in the nationwide sample, 58 percent were undecided or disagreed.

The questionnaire included demographic characteristics to identify the responses of population groups. This paper used the demographic characteristics for race, sex, education, income, and place of residence². To further explore the responses to three key questions we used a contingency table estimation with the Chi-square statistic. The null hypothesis tests whether the probability of a joint occurrence between a demographic characteristic and a certain response is independent of the probability for the

Table 4.

*Preferences for Soil Conservation Policies: West***

	Responses: percent* (n = 20)				
	Agree	Undecided		Disagree	
Given the economic realities, soil conservation programs are carried too far.	23	42		23	
Most farmers take good care of the soil.	50	43		7	
Laws regulating excess soil erosion are badly needed.	29	54		18	
Land owners have responsibilities to protect soil for the future.	100	—		—	
The government should pay farmers to practice soil conservation.	29	21		50	
Farmers who do not adopt the needed soil conservation practices should be fined.	35	24		39	
	Increase	Same	Decrease	Eliminate	Don't Know
Partial payment to farmers for the cost of reducing erosion.	32	36	16	4	12

*Due to rounding, percents may not add to 100.

**West Region consists of Montana, Wyoming, Colorado, Idaho, New Mexico, Utah, Nevada, and Arizona.

Table 5.
*Preferences for Soil Conservation Policies: South***

	Responses: percent* (n = 1979)				
	Agree	Undecided		Disagree	
Given the economic realities, soil conservation programs are carried too far.	26	30		44	
Most farmers take good care of the soil.	60	26		14	
Laws regulating excess soil erosion are badly needed.	58	32		10	
Land owners have responsibilities to protect soil for the future.	95	4		1	
The government should pay farmers to practice soil conservation.	36	25		40	
Farmers who do not adopt the needed soil conservation practices should be fined.	43	30		28	
	Increase	Same	Decrease	Eliminate	Don't Know
Partial payment to farmers for the cost of reducing erosion.	31	34	8	11	17

*Due to rounding, percents may not add to 100.

**South Region consists of Alabama, Arkansas, Georgia, Louisiana, Kentucky, Maryland, Mississippi, North Carolina, Oklahoma, Tennessee, South Carolina, Virginia, Texas, West Virginia, District of Columbia, and Florida.

occurrence under an expected distribution. This hypothesis was tested only for the nationwide sample.

On the question of landowners responsibility, the majority nationwide (96 percent) agreed with the statement and thus, there was little difference among demographic groups. Also, on increasing or maintaining partial payments to farmers for the cost of reducing erosion, 65 percent supported such programs and there is little difference among groups.

For all other questions, a pattern concerning educational and income levels as well as place of residence emerged. As levels of education and income increase, and as a persons residence becomes more urban, there is a strong preference to strengthen conservation programs. The same pattern holds for the desire to impose fines on farmers that do not adopt soil conservation practices. However, when considering new laws to regulate soil erosion, this same group—higher in education, higher in income and more urbanized—felt less strongly about the need for new laws.

The views of this group concerning farmers is also worth noting. As education, income and urbanization increase, people are less certain farmers are good stewards of the land. Although a majority still believe farmers take good care of the land, it is less strong than the total sample. Yet this

Table 6.
*Preferences for Soil Conservation Policies: Midwest***

	Responses: percent* (n = 640)				
	Agree	Undecided	Disagree		
Given the economic realities, soil conservation programs are carried too far.	26	31	43		
Most farmers take good care of the soil.	68	23	12		
Laws regulating excess soil erosion are badly needed.	55	35	10		
Land owners have responsibilities to protect soil for the future.	96	2	2		
The government should pay farmers to practice soil conservation.	35	30	36		
Farmers who do not adopt the needed soil conservation practices should be fined.	38	33	29		
				Don't	
	Increase	Same	Decrease	Eliminate	Know
Partial payment to farmers for the cost of reducing erosion.	28	34	8	11	20

*Due to rounding, percents may not add to 100.

**Midwest Region consists of Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, and Missouri.

Table 7.
*Preferences for Soil Conservation Policies: Pacific***

	Responses: percent* (n = 198)				
	Agree	Undecided	Disagree		
Given the economic realities, soil conservation programs are carried too far.	20	30	50		
Most farmers take good care of the soil.	54	31	16		
Laws regulating excess soil erosion are badly needed.	58	34	8		
Land owners have responsibilities to protect soil for the future.	94	3	3		
The government should pay farmers to practice soil conservation.	31	30	39		
Farmers who do not adopt the needed soil conservation practices should be fined.	46	31	23		
				Don't	
	Increase	Same	Decrease	Eliminate	Know
Partial payment to farmers for the cost of reducing erosion.	31	39	6	9	15

*Due to rounding, percents may not add to 100.

**Pacific Region consists of California, Oregon, Washington, Hawaii, and Alaska.

Table 8.
Preferences for Soil Conservation Policies: Georgia

	Responses: percent* (n = 257)				
	Agree	Undecided		Disagree	
Given the economic realities, soil conservation programs are carried too far.	21	33		46	
Most farmers take good care of the soil.	53	30		17	
Laws regulating excess soil erosion are badly needed.	61	30		9	
Land owners have responsibilities to protect soil for the future.	95	4		2	
The government should pay farmers to practice soil conservation.	32	25		43	
Farmers who do not adopt the needed soil conservation practices should be fined.	45	28		27	
	Increase	Same	Decrease	Eliminate	Don't Know
Partial payment to farmers for the cost of reducing erosion.	26	37	9	8	20

*Due to rounding, percents may not add to 100.

group of higher incomes, education levels and urbanization are less likely to agree that payment to farmers to practice soil conservation is wise.

Conclusions

The conclusions from this survey include:

1. The effects of soil erosion concern people. They are supportive of programs to encourage soil conservation.
2. By wide majorities, people believe farmers are good caretakers of the land but they remain primarily responsible for protecting the soil.
3. Also by a large majority, the respondents supported more regulation of soil erosion. They support additional laws and fines against farmers who do not adopt the needed soil conservation practices.
4. Since individuals are primarily responsible for protecting the soil, most respondents do not support paying farmers to practice soil conservation.
5. On the other hand, when asked whether to increase or maintain partial payments to help reduce the cost of soil erosion most supported those programs.
6. In general, those with high levels of education and income, and those living farthest from the farm are stronger supporters of conservation

and government action to reduce soil erosion. This same group is less supportive of the role of farmers in protecting the land.

Notes

1. The first step in developing weights for the Farming in American Life data set corresponds to Babbie's discussion of disproportionate sampling and weighting. We disproportionately sampled in seven states to be sure of adequate numbers for state-level analysis. To restore the proportionate representation, weights were computed. The weight was equal to the percent a State represents in the U. S. population divided by the percentage in the sample. The next weighting step examined age-sex-race differentials. The distribution of the U.S. population in 12 groups of male-female, white-nonwhite, and age (18 to 35, 35 to 64, and 65 and over) were calculated (U.S. Bureau of Census). The percentages in the population were divided by the percentages in the sample (as weighted by the previous step) to derive weights for age-sex-race subgroups. New weights were calculated by multiplying the previous weights (1 except for the 7 states) by the age-sex-race weights. The next step adjusted for differences by income. Weights were computed by dividing population by sample proportions. The previous weights were multiplied by the new weights to further adjust the data. In the final stage, the data were weighted by education. Final weights were computed by dividing population percentages by sample percentages and multiplying by the previously established weight variable.
2. For the demographic variables used, the respondents were classified as:

Male:	67.4 percent	Education:	
Female:	32.6 percent	Less than high school	4.8 percent
White:	88.9 percent	Some high school	9.5 percent
Black:	11.1 percent	High school graduate	26.0 percent
Income:		Some college	27.1 percent
Under 5,000	2.7 percent	College graduate	21.6 percent
5,000-9,999	5.9 percent	Graduate degree	11.0 percent
10,000-14,999	10.9 percent	Presently living in:	
15,000-19,999	11.6 percent	Large city	18.8 percent
20,000-24,999	12.7 percent	Medium city	23.6 percent
25,000-29,999	13.5 percent	Small city	19.7 percent
30,000-39,999	17.4 percent	Town	16.4 percent
40,000-59,999	16.6 percent	Country	15.5 percent
Over 60,000	8.7 percent	Farm	6.0 percent

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