

**DAKOTA FARMERS AND RANCHERS EVALUATE  
CROP AND LIVESTOCK SURVEYS**

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## OVERVIEW

More than 500 times each year, the Crop Reporting Board of the United States Department of Agriculture issues official statistics covering such matters as crop yields and stocks, live-stock inventories, poultry and dairy output, farm prices, labor and other agricultural items. Additional local information about crop acreages and yields, production levels and weather is published by the Agency's forty-four field offices serving the fifty states. Together, these continuing series of reports help to maintain an orderly association among the output, supply and marketing elements in the agricultural economy.

The accuracy of agricultural statistics published by the Department of Agriculture depends, in large measure, upon the cooperation of farmers and ranchers in participating fully and factually in the Agency's sample survey activities. The producers' voluntary participation is conditioned in turn by their understanding of and attitudes toward the reports that are based on those surveys. Clearly, the Agency's ability to maximize survey participation rates will be influenced by its knowledge of the operators' attitudes and beliefs with respect to the surveys and reports.

The National Opinion Research Center was commissioned by the Department of Agriculture to conduct a study of farm operators' opinions toward statistical and economic information, including their principal concerns about crop and livestock reports and their reactions to their personal experiences with USDA surveys. To this end, NORC undertook a telephone interview survey of a sample of farmers and ranchers in North and South Dakota during March and April of 1978. The findings, which are briefly summarized below, will help the Agency to better serve producers and other segments of the nation's economy.

### USE AND EVALUATION OF CROP AND LIVESTOCK INFORMATION

Almost all Dakota farm and ranch operators named at least one source of crop or livestock information that they used to help them make production or marketing decisions. No one major information source predominated. For 35 percent, the main source is specialized farm magazines or newsletters, for 20 percent it is mass media, for 16 percent agricultural agents, for 13 percent various USDA publications, and for 6 percent personal conversations with either business contacts or friends.

Most operators said that the information they get from crop and livestock reports is "somewhat useful" to them in managing their operations, and about 10 percent felt that it was "very useful." However, about one operator in three considered the

information to be "not useful at all." Operators who primarily use USDA publications were most likely of all to report their information source as useful, followed by those who use agricultural agents or farm periodicals as their main source.

With respect to specific types of information in reports, data on anticipated crop demand and information on costs of production were most often cited as useful; fewer than half the operators reported any use for monthly forecasts of crops to be harvested. When operators deemed a particular type of information not useful, the most common reason given simply reflected the absence of need for it, rather than any specific criticism of the information itself. Crop farmers seldom found livestock reports to be of much use, and vice versa. On average, about 15 percent considered various types of information too inaccurate to be useful.

When asked about the incidence of benefits from crop and livestock reports, 78 percent of Dakota farmers and ranchers voiced the opinion that other groups benefited more than producers. Nonproducer groups most frequently named by operators as users of this information were grain and livestock buyers, food processors, and speculators. When operators were asked specifically about the effects of use of crop and livestock information by fourteen different groups, they tended to divide users into two distinct camps. Use of these data by groups who *supply* farmers with necessary materials, services, or capital was largely perceived as beneficial; use by groups on the *demand* side of the economy--various buyers, speculators, and consumers--was widely thought to work against producers' interests.

Crop and livestock reports published by the government received a mixed evaluation by Dakota operators. About half found them to be clear and easy to understand, about half did not. About half were satisfied with the depth of coverage provided, about one-fourth wanted more detailed information, and about one-fourth preferred less. Two operators in three felt that government reports were more useful to managers of large farms or ranches than to smaller-scale producers.

There is considerable skepticism about the accuracy of USDA information. Only about one-fourth felt that government reports could be trusted almost always or most of the time. About one in five said he could "hardly ever" trust government data. In addition, two-to-one majorities felt that private commercial services were more accurate than government reports, that most farmers and ranchers refuse to participate in government surveys, and that operators did not always give accurate information when they did participate.

Furthermore, most Dakota operators expressed the belief that publication of government reports depresses the prices they receive, that the reports are influenced by politics, that pro-

ducers' interest groups should have more to say about the kinds of information collected, and that individual survey responses are not necessarily kept confidential from private firms or other government agencies.

Some of these feelings and beliefs are simply unfounded. Others represent an inevitable price that must be paid if USDA is to serve its function of collecting and disseminating accurate data to all parties in the agricultural marketplace. Still others may represent legitimate criticisms of the Agency's work. Founded or not, USDA researchers cannot escape the necessity of taking these opinions into account as they pursue their survey activities in the Dakotas and elsewhere.

#### OPERATORS' EXPERIENCES WITH CROP AND LIVESTOCK SURVEYS

Almost all operators (91 percent) in the two states said they had been asked to participate in a crop or livestock survey at some time or other, and about three-fourths said they were asked during the previous twelve months. About one-fourth of the operators reported that their participation was sought five or more times in the year preceding the survey.

Two different measurement approaches were used (each with one-half of the operators in each state) to determine the participation rates of individual operators during the previous year, yielding two somewhat different portraits of operators' participation habits. In response to a "soft" measure, in which operators were asked to choose among subjectively worded categories, 65 percent said that they participated "only some of the time" or "hardly ever," while 35 percent claimed to participate "almost always" or "most of the time." Alternatively, a "hard" measure sought to establish the actual number of surveys each operator had agreed to answer during the preceding year, as well as the total number of survey requests received in that period. Individual participation rates were then computed as the ratio of surveys answered to survey requests received. By this measure, 45 percent said they had participated on more than half the occasions or "most of the time."

Nearly half the operators thought they were asked to participate in surveys too often, but this response was not necessarily related to the number of survey requests operators reported receiving: those who were asked to participate most often were least likely to register this complaint. Instead, feelings of being overburdened by survey requests were much more strongly related to beliefs that the survey reports cannot be trusted, serve no useful purpose, adversely affect farm profits, or mainly benefit market competitors.

When operators were asked to speculate about why other farmers and ranchers might refuse to participate in crop and livestock surveys, two major reasons stood out. One referred to

the issue of privacy: survey questions are perceived to ask for personal information, to delve into operators' decisions that are not the government's business, and to probe for information that might be used against operators personally. The second cluster of reasons referred to the effects of the government reports: they depress prices, they are exploited by interests opposed to the producers'.

Operators apparently found it more difficult to think of reasons why other farmers and ranchers might decide to participate in surveys. One-fifth of the sample could not think of any such reason. Most frequently offered were remarks about the value to the producer of the information provided in the survey reports and general comments about the importance of the surveys. A smaller group mentioned the operators' sense of duty to cooperate in a worthwhile endeavor.

Among operators who were asked to participate in a crop and livestock survey during the fall or winter of 1977-1978, 83 percent said that the purpose of that survey was at least "fairly well explained" to them, and 71 percent of those who actually participated felt that their time was at least "somewhat well spent."

Reasons given by operators who refused to participate in the fall or winter surveys were remarkably similar from one survey to another and were also similar to the general reasons offered for other producers' nonparticipation described above. This indicates that participation rates depend more on general attitudes than on the characteristics of a particular survey.

A wide variety of characteristics, attitudes, and beliefs were found to be related to operators' self-reported survey participation rates, including their preferences among information sources, their opinions about the practical usefulness of published data, their beliefs about the economic impact of widespread distribution of the collected data, their specific evaluations of government-issued reports, their concern about the quality of the data in reports, their willingness to reveal particular items of information about themselves or their operations, their perceptions about the degree of burden imposed upon them by survey requests, and the stands taken toward survey participation by any organizations or interest groups to which they belong.

The factors that relate to individual participation rates are themselves interrelated (for example, operators who find crop and livestock reports most useful are also likely to feel least burdened by the number of requests, and to perceive the economic impact of report circulation as benign). Consequently, a preliminary decision model, based on simple, plausible assumptions, was constructed for the purpose of assessing the relative importance of each factor as a predictor of participation decisions.

Findings suggest that relatively few factors can account for most of the variability in individual participation habits. Most important were such considerations as operators' beliefs about the usefulness of crop and livestock information for management purposes; their opinions about whether the entire data collection and distribution program was worthwhile; their views on the accuracy, quality, and economic impact of government reports; and their concerns about relinquishing their rights to privacy by revealing information in surveys that they would rather keep to themselves. Also of importance were operators' views about whether personal use of survey reports or conceptions of citizen duty obliged them to participate in surveys, their perceptions about the government's ability to protect the confidentiality of their responses, their interest in protecting themselves from exploitation by market competitors, and their participation in the non-farm/ranch economy.

#### ANALYSIS OF SUBPOPULATIONS

Although the main purpose of the study was to identify the characteristics of the entire population of Dakota farmers and ranchers, attention was also given to the detection of response differences between operators in North and South Dakota, among large- and small-scale producers of both crops and livestock, and among operators of different ages. State differences were generally infrequent and substantively insignificant. Differences among types of producers, defined in terms of commodity produced and scale of operation, were both more common and of greater magnitude, as were response differences among four age groups.

#### ANALYSIS OF ERRORS

In addition to a consideration of sampling error, the data were examined for the effects of two types of nonsampling error on the accuracy of the survey's results. Analysis of several experiments with the wording, format, and sequence of survey items revealed that the major findings were quite robust across alternative measurement approaches. Investigation of the differences in survey responses among reluctant respondents, difficult-to-reach respondents, and respondents who were easy to contact suggested that the bias in results due to nonresponse is likely to be insignificant for practical purposes.

## ACKNOWLEDGMENTS

Conducting a large and complex sample survey requires the collaboration of a great many individuals. We would like to give special thanks to all of the following.

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At NORC, Martin R. Frankel, Technical Director, provided valuable counsel on sample design and statistical analysis. Michael Minor, formerly Senior Study Director at NORC, played an important role in designing the methodological experimentation described in this report. Kenneth Prewitt, formerly Director of NORC, closely followed the progress of the survey and participated in all crucial decisions.

Patrick Ward, formerly of NORC's Operations Group, was largely responsible for the final questionnaire design and format and for preparation of the interviewers' manual and accompanying field materials. Shirley Knight, Survey Director, managed the hiring, training, and supervision of the telephone interviewers.

In the preparation of the final report, Susan Campbell, NORC's Editor, edited the manuscript and oversaw its production; Mary Okazaki, Chris Lonn, and Irene Edwards of NORC's Word Processing Department typed numerous drafts and prepared the final copy; and Richard Sessions designed the cover.

We want to extend special appreciation to the interviewers, who made thousands of phone calls for the survey, and to the 1,681 farm operators in North and South Dakota who provided the responses for this report. Without their cooperation, this survey could not have been accomplished.

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## CHAPTER 1

### THE STUDY

#### INTRODUCTION

In the Spring of 1977, representatives of the Statistics Unit of the Economics, Statistics, and Cooperatives Service (hereafter referred to as the Agency) of the U.S. Department of Agriculture visited the National Opinion Research Center (NORC) at its offices on the University of Chicago campus to discuss a proposed opinion survey of U.S. farmers and ranchers.

Among its other tasks, the Agency has for many decades been responsible for conducting continuous crop and livestock surveys among the farm and ranch population. These surveys provide urgently needed data on crop estimates, livestock and poultry production, milk and dairy operations, farm prices and costs, and other agricultural activities. The accuracy of these measurements depends upon the ability and willingness of farmers and ranchers to report, and these in turn depend upon the operators' understanding and attitudes with respect to the surveys and upon the Agency's understanding of the operators' needs and concerns. An exploratory survey conducted by the Iowa State University Statistical Laboratory among Iowa producers, along with informal evidence, had indicated areas of ignorance and misunderstanding about the purpose and uses of farm surveys, some dissatisfaction with survey methods and frequency, and feelings among some producers that these data collection activities were of little or no help to those who provided the information.

These reports led Agency officials to consider a more formal study, one that would help them understand the operators' attitudes about the role and value of statistical and economic information on agriculture, their information needs for formulating production and marketing decisions, their principal concerns about crop and livestock reports, and their views on how the Agency could be of greater use to them. These concerns were relevant to the activities of NORC, which, as one of the oldest and largest social research institutions in the United States, has a continuing interest in the improvement of survey research methodology. Each year, NORC, like USDA, conducts many thousands of interviews--mail, telephone, and face-to-face--with the general public and with special subgroups of the population. NORC thus faces in its surveys the same problems of persuading respondents to cooperate with the interviewer, of designing appropriate and efficient survey instruments, of training interviewers, and of transforming the data collected into useful information. Thus, what we at NORC would learn from a survey of operators' attitudes toward USDA surveys was expected not only to help the

Agency but also to sharpen our own understanding of respondent reactions so that we could improve NORC response rates and the accuracy of the data collected.

Two aspects of the proposed survey were of special interest to NORC. First, the survey offered the opportunity to conduct a number of methodological experiments based on a "split ballot," or two different forms of the questionnaire. We planned a core of items that would be identical on the two forms, and systematic variation in the wording and sequence of certain other items to test for effects. Second, the proposed survey seemed entirely suitable for telephone interviewing, a data collection technique that is being used more frequently as the costs of in-person interviews continue to rise. We were interested in this opportunity for another in our tests of the costs and effectiveness of telephone interviewing.

A cooperative agreement between NORC and USDA was signed in August 1977, and planning for the survey began the following month. Consideration of possible sample designs led to the selection of North Dakota and South Dakota as the survey sites. On the one hand, a national survey, covering all parts of the country and all kinds of agricultural crops and livestock, would have posed formidable sampling problems and required a vast number of interviews if the data were to be properly analyzed and understood. On the other hand, a survey conducted in a single state could hardly be called representative of farmers and ranchers in general. The selection of two contiguous and agriculturally diversified states offered a suitable compromise solution. The two Dakotas had the further advantage of being among those states in which response rates to crop and livestock surveys were declining and in which some organized opposition to the surveys was being manifested.

Two NORC representatives spent a week traveling around the Dakotas in November 1977, meeting and talking with operators and agricultural leaders to ascertain their interests and concerns. The NORC representatives explained the purposes and goals of the survey and solicited ideas for how the study could be made most useful to the farm and ranch population. Even among critics of the USDA surveys, the NORC representatives were graciously received and cooperation was offered. Questionnaire forms and other survey materials were developed in the fall of 1977, and two successive pretests of the interview schedules, involving a total of about fifty interviews, were conducted in the early months of 1978. Interviewing of the designated sample of operators in the two states was carried out during March and April of 1978 by approximately twenty interviewers making telephone calls from the NORC office in Chicago.

This report presents the major findings of the survey.

## SAMPLE DESIGN

The major features of the sample design for the Dakota survey of farmers and ranchers were determined by the Agency. In general, the design employed stratification similar to that used in sampling for crop and livestock surveys, and with similar justifications. Essentially, the strata were meant to partition the universe of operators into two groups, those who produce livestock versus those who produce only crops, and then to subdivide each of these types according to scale of operation, large versus small. In South Dakota only, small livestock producers were further subdivided into those producing only cattle, those producing only hogs, and those producing both. This resulted in ten final strata--four in North Dakota and six in South Dakota (Table 1.1). (See Chapter 4 for a discussion of stratum differences in survey responses.)

TABLE 1.1  
SAMPLING STRATA FOR DAKOTA FARMERS  
AND RANCHERS

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### North Dakota:

1. Large-scale cattle producers: operators with 500 or more head of cattle
2. Small-scale cattle producers: operators with from 1 to 499 head of cattle
3. Small-scale crop producers: operators with no (or unknown numbers of) cattle and fewer than 500 acres planted to crops
4. Large-scale crop producers: operators with no (or unknown numbers of) cattle and 500 or more acres planted to crops

### South Dakota:

1. Large-scale livestock producers: operators with either 1,000 or more head of cattle *or* 400 or more hogs
  2. Small-scale cattle producers: operators with no hogs and with fewer than 1,000 head of cattle
  3. Small-scale hog producers: operators with no cattle but with up to 399 hogs
  4. Small-scale producers of both cattle and hogs: operators with 1 to 999 head of cattle *and* 1 to 399 hogs
  5. Small-scale crop producers: operators with no livestock and fewer than 500 acres planted to crops
  6. Large-scale crop producers: operators with no livestock and 500 or more acres planted to crops
-

The small numbers of operators in strata containing larger, more specialized, and market-responsive farmers and ranchers dictated oversampling of these strata. Operators were randomly selected within strata from the Agency's list frame. Approximately 1,200 operators were initially selected in each state, with the aim of completing 1,000 interviews in each. About 200 of these cases were subsequently struck from the lists; some of these persons had left agriculture (85 percent), others had died (15 percent). Interviews were completed with 75 percent of the remaining cases in each state, for an overall raw sample size of 1,681. Completion rates were roughly equivalent across strata and questionnaire version. (See Appendix A for details.)

The use of appropriately varying selection probabilities provided us with sufficient numbers of cases to analyze each of the strata as domains or subpopulations of interest. In order to make inferences to the entire population of Dakota operators, however, it was necessary to introduce compensating case weights so that true stratum proportions would be reflected in the sample. In such cases, fractional weights are preferable to integer weights whenever the latter would result in gross inflation of the number of cases, and hence the degrees of freedom for significance testing whenever standard statistical analysis programs are used. Initial case weights were thus computed as transformations of the reciprocals of stratum selection probabilities such that the average per-element weight in the sample was 1. The result is a weighted sample with stratum proportions equal to those in the population, with the number of weighted cases equal to the number of actual interviews, or 1,681 cases.

Preliminary analysis of the data revealed, however, that the variability in survey responses *within* each sampling stratum did not greatly differ *across* the strata in each state (i.e., the within-stratum variances were roughly equal). Consequently, although the sample design provided us with sufficient cases for stratum analyses, it proved to be *less* efficient than other possible designs (such as a simple random sample, or a stratified design with selection probabilities proportional to stratum size) for the estimation of population parameters. Our calculations suggest that our achieved sample of 1,681 cases is slightly more than three-fourths as efficient as a simple random sample (the kind normally expected by statistical analysis programs) of the same size. Thus, by readjusting the initial case weights to produce a weighted sample of 1,287 cases, we were able to obtain both unbiased population estimates and excellent approximations of their standard errors without the costs and inconvenience of developing tailored analysis programs. (See Appendix B.)

#### SURVEY INSTRUMENTATION

The survey instruments used in the Dakota study were developed jointly by NORC and Agency personnel. Two versions of the questionnaire were employed. These incorporated various methodo-

logical experiments with question wording and sequence, as well as alternative measures of the operators' participation in USDA crop and livestock surveys. Roughly 60 percent of the survey items were included in both versions. The following is a brief, general description of the structure and content of the questionnaires. Complete copies of both versions are included as Appendix C.

Both questionnaires were divided into two major substantive sections. Part I dealt with the operators' information-gathering strategies and with their attitudes and beliefs about the quality of USDA crop and livestock information and its effects on their livelihood. Part II focused on the operators' perceptions about the extent of their own participation in crop and livestock surveys, about the reasons for their decisions to participate or not, and about their willingness and ability to provide accurate data when responding.

The questions in Part I of both questionnaires were designed to address the following broad issues:

- o What are the primary sources of crop and livestock information used in day-to-day management?
- o To what extent is USDA-supplied information used, both directly and indirectly?
- o How generally useful is the information in crop and livestock reports felt to be?
- o How useful are specific pieces of information in such reports judged to be? If not useful, why not?
- o For which geographical area (county, state, national, or international) is this information considered most useful?
- o Which groups other than farmers and ranchers are thought to use crop and livestock information?
- o Is the availability of this information to nonoperators perceived as serving or damaging the interests of farmers and ranchers?
- o How do operators evaluate government crop and livestock reports with respect to such matters as clarity, accuracy, freedom from political influence, confidentiality, and effect on market prices and stability?

In Part II of both questionnaires our aim was to investigate several aspects of the operators' experiences as participants (or nonparticipants) in USDA crop and livestock surveys, including:

- o How often have operators been asked to respond to USDA surveys?
- o How often have operators agreed to participate in surveys?
- o How do operators evaluate the frequency with which they are asked to respond to surveys--are there too many surveys, or too few?
- o What reasons can be identified for the operators' own decisions to participate in crop and livestock surveys?
- o What are the operators' perceptions about why most farmers and ranchers either refuse or agree to participate in surveys?
- o How willing are operators to give specific pieces of information in responding to USDA surveys (for example, crop acreage planted and harvested; kinds, numbers, and prices of livestock produced; costs of operation; farm/ranch income and off-farm/ranch income)?
- o How difficult do operators feel it is to give accurate survey responses about the topics listed above?
- o Do operators feel that the privacy of their individual survey responses is adequately guarded with respect to access by private companies and government agencies?
- o What suggestions do operators have for making crop and livestock surveys more useful?

The remainder of each questionnaire was devoted to a series of questions about the operator himself and the characteristics of his farm or ranch for classification and analysis purposes. These items included the operator's age and educational attainment; whether he belonged to any organizations that encouraged or discouraged survey participation; total cropland acreage, crops raised, types and numbers of livestock held; and whether the operator had derived any income from a non-farm/ranch job in the past year.

The use of two different versions of the questionnaire for the Dakota survey provided us with two principal benefits. The first resulted from the fact that each of the two versions was randomly assigned to half of the cases in each stratum. This gave us, in effect, two equivalent stratified samples of about 840 cases each, to which unique sets of questions could be posed. This split-ballot technique allowed us to expand the number of topics covered in the survey while avoiding increases in costs and duration of the interview. The slight losses in statistical power in the analysis of version-specific items proved to have little noticeable effect on our ability to interpret the responses.

The second benefit involved the now commonplace notion that responses to any survey question are "soft," owing chiefly to the inherent imperfections of the instrument of measurement. Indeed, one of the most valuable contributions made by the practitioners of survey research to those who consume or interpret survey data has been in their raising awareness of the extent to which the distribution of responses to a particular survey question may depend upon such things as question wording, the relative placement of the question within a series of items, and the substantive relationship of the item to preceding questions. The split sample afforded us the opportunity to conduct some simple experiments with the effects of question wording, order, and context. The principal issue was whether the effects of such methodological artifacts would be great enough to materially alter our conclusions about the attitudes and beliefs of farmers and ranchers on specific, policy-relevant points. A discussion of the specific differences between the two questionnaires is included as Appendix D.

#### DATA COLLECTION

Interviews with Dakota farmers and ranchers were conducted by telephone from NORC headquarters at the University of Chicago. During the first week of March, a staff of twenty interviewers received a total of four days' training on the survey. The first two days were devoted to basic telephone interviewing techniques and the second two days to study-specific training. The latter sessions were observed by Agency representatives from Washington who briefed the interviewers on the nature and scope of USDA survey activities and explained the general objectives of the Dakota survey. NORC supervisors then discussed the two versions of the questionnaire item by item, with reference to the written specifications for each question that were included in the interviewers' manual of instructions. The last day of training was largely given over to mock interviews in which NORC staff members played the part of respondents as the trainees took turns in administering the interview.

The North and South Dakota state agricultural offices, in accordance with USDA specifications, provided NORC with computer printouts of the names, addresses, and telephone numbers of the designated sample members, and letters were mailed to each of these operators about a week in advance of the date of the interviewer's phone call. The letter, on NORC stationery, explained the nature and purpose of the study, informed the operator that his name had been selected by probability sampling methods, and announced that an interviewer would soon be calling from Chicago to conduct an interview that would take about half an hour. Just under 80 percent of the respondents later reported that they had received this letter. Letters that were returned undelivered enabled NORC staff to begin early efforts to locate the operators to whom these were addressed.

During the early weeks of interviewing, eighteen telephone lines were in constant use by interviewers six days a week from 3 to 9 P.M. In addition, since appointments were made for morning, early afternoon, and late evening interviews, and since some respondents could not be reached from 3 to 9, some of the interviewers were scheduled for other hours. Three office supervisors unobtrusively monitored a sample of each interviewer's work, with the interviewer's knowledge that this would be done, and feedback was provided to the staff regularly on an individual basis.

While interviewers succeeded in completing the interview on their first call in 19 percent of the cases, the first call more often resulted in an appointment for interview at a later time or in a failure to find the designated respondent at home. In such cases, of course, interviewers called back. Intensive efforts were made to trace farm and ranch operators who had moved, were on extended vacation, or had changed phone numbers. Those with no phone or with unlisted numbers were sent a letter asking them to telephone NORC collect or to provide us with a phone number at which we could call them. Repeated calls were made to numbers where there was no answer. Two-thirds of the completed interviews required up to four calls, and a few were not completed until the tenth or eleventh attempt to reach the respondent. Refusals were not accepted as final until a different interviewer or an office supervisor had made an attempt to overcome the respondent's objections.

#### CONFIDENTIALITY

Confidentiality is important on any survey, and particularly so in cases of list samples drawn from a limited geographical area. Protection of confidentiality received special attention in all written and training materials developed for this survey. In addition, identifying information for all respondents was kept only on interview face sheets, which were separated from the interview protocols, stored under lock and key in NORC's offices during the period of data preparation, and subsequently destroyed.

Confidentiality can also be threatened by party lines in rural communities with limited telephone service. Calls for a given phone number may ring on several others, raising the possibility of eavesdropping. Anticipating this difficulty, any respondent concerned about privacy was asked to call NORC collect at a suitable time. However, of the three hundred and twenty-eight respondents with party lines, only thirteen either asked to be called at a different number or elected to place a collect call to NORC.

## CONTENTS OF THE REPORT

### SUBSTANTIVE ANALYSIS

Our analysis of the data from the survey of Dakota farmers and ranchers is divided into two major substantive chapters. The first deals with operators' use and evaluation of crop and livestock information, and the second with operators' experiences with USDA's information-gathering process, the surveys themselves. In both these sections, we are primarily concerned with analyzing the full sample, with the aim of making inferences to the entire population of Dakota farmers and ranchers. (We leave to the reader's judgment how far these results may be generalizable to the national population of farmers and ranchers.)

*Information acquisition, use, and evaluation.* The Agency has been handicapped by insufficient knowledge of farmers' and ranchers' uses of market and production information, and also by the operators' reactions to specific survey practices. In many cases, it appears that operators turn away from USDA information in favor of alternative sources either because they do not trust the information or because they believe its availability may harm their interests. In short, the operators' reactions to the information provided by the Agency is shaped by many ideas they have about what the market is like, what purpose the information serves, and how accurate and timely the information is. In Chapter 2 each of these issues is taken up in turn.

*Experience with surveys.* The second broad area of interest involves operators' attitudes about participation in USDA crop and livestock surveys. These reactions are crucial for two basic reasons: first, because they affect operators' decisions about whether and how to respond to future surveys when asked, and therefore have grave implications for the quality of the data collected by USDA; and, second, because of the effects that such experiences may be expected to have on operators' evaluations and use of the crop and livestock reports based on data from those surveys. Accordingly, in Chapter 3 we explore several aspects of the operators' experiences with USDA surveys.

*State and stratum differences.* In our analyses of information use and survey experience, presented in Chapters 2 and 3, our purpose is to describe the response patterns of the full sample, allowing us to make inferences to all operators throughout the Dakotas. In the course of this analysis we routinely compared the responses of North Dakota operators to those of South Dakota operators and only rarely could we detect any significant differences. Such differences are noted in the text and tables of Chapters 2 and 3. Where no differences were observed, the separate state figures are not presented and the reader may presume that responses were essentially the same in the two states.

Some care may be required, however, in the interpretation of state differences. In general, such differences could arise from two broad types of causes (or some combination of the two). On the one hand, in both physical and cultural terms, North and South Dakota provide farmers and ranchers with unique *environments*. Differences in topography and geology, economic development, political histories, and social and cultural traditions may act, singly or in combination, to produce divergent attitude structures among the farmers and ranchers in the two states. In the main, such differences may be expected to affect all operators in a state with about equal likelihood, and therefore provide a basis for true statewide differences in responses.

On the other hand, North and South Dakota differ substantially in the *composition* of their agricultural populations, defined in terms of primary agricultural products and scale of operations. Although such compositional differences may ultimately be due to environmental considerations, they may deserve attention in their own right, for if different types of operators have markedly different attitudes, then the distribution of attitudes in each state will depend upon the mix of various types of operators found within its borders. In this report, we cannot attempt anything like a full analysis of the reasons behind observed state differences in survey responses. In particular, any discussion of the broad environmental differences between North and South Dakota is beyond the scope of our study. However, with the use of Census data and several items of background information collected in our survey, we can point out some of the major differences in the agricultural populations of the two states which may lead to dissimilar response patterns.

In Figure 1.1 we display data from the 1974 Census of Agriculture on the percentage of operators in each state who derived their incomes principally from crop sales and from livestock and their products. About 78 percent of North Dakota operators received most of their income from crops, while only about 20 percent relied on livestock production. In South Dakota, 35 percent were found to be mainly crop producers, while some 62 percent derived most of their income from livestock and their products. In Figure 1.2 we present Census data on the 1974 distribution of farm sizes in the two states. At that time, 66 percent of North Dakota farms were 500 or more acres in size, and 35 percent were over 1,000 acres. In contrast, the majority of farms in South Dakota (52 percent) were smaller than 500 acres, and only 25 percent were larger than 1,000 acres.

Although we have no direct measure of an operator's primary source of income or of total farm size in our survey data, there are a number of indicators that the pattern evident in the Census data is replicated in our sample. For instance, Figure 1.3 presents state distributions for a rough measure of cropland acreage. Farms with more than 500 acres planted to crops are considerably more common in North Dakota than in South Dakota. In

fact, 41 percent of our sample of North Dakota farms had 1,000 or more acres of cropland, compared to only 23 percent of the South Dakota sample. Moreover, about half of the South Dakota operators reported having less than 500 acres in crops compared to only 27 percent in North Dakota. Conversely, Figure 1.4 illustrates that South Dakota operators in our sample were a good deal more likely to have larger holdings in livestock, with 46 percent reporting over 150 head of cattle or hogs, compared to only 24 percent of the North Dakota sample. About 40 percent of North Dakota operators had no cattle or hogs at all, while only 17 percent of South Dakota operators reported having neither type of stock.

Given such baseline compositional differences, we would expect state differences in responses to appear whenever survey items would draw different answers from crop growers than from livestock ranchers. Consequently, some caution must be exercised in comparing the two states lest the attitudes of a prevalent subpopulation in either state be mistakenly attributed to the state as a whole. We suspect that, to varying degrees, observed state differences may be "explained away" when the distributions of distinct subgroups--namely our sampling strata--within each state are taken into account. We note this possibility as it arises in our discussion of state differences. However, because of the importance of these differences, and because differences among the strata are somewhat more frequent than differences between the states, we felt that Chapters 2 and 3 would be overburdened by the inclusion of this material. We therefore present the major findings of the stratum-difference analysis separately in Chapter 4.

*Profile by age.* Again, the major purpose of this report is a description of the full sample of Dakota farmers and ranchers that can be generalized to all operators throughout the Dakotas. We found, however, that the responses to a number of our survey items were related to the operators' age, with the youngest farmers and ranchers usually showing distinctive response patterns. Because such differences may have important implications for the future relations of USDA and the agricultural community, we present an age-group profile of the respondent population in Chapter 5.

#### ANALYSIS OF SURVEY ERROR

It hardly needs to be said that the findings of any sample survey should be interpreted with caution. Survey responses are, after all, answers given during a controlled interview. The standardized questions we chose to ask were selected from an infinite number of possible questions; it may be that the answers to some other questions would have produced different findings. Moreover, possible response effects (such as the wish to give an "acceptable" answer) are inherent in any survey. And, of course, people's opinions and attitudes are never infallible predictors

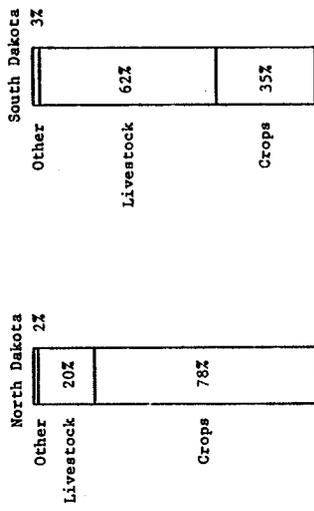


Fig. 1.1. Primary sources of income for operators in North and South Dakota  
SOURCE: 1974 Census of Agriculture.

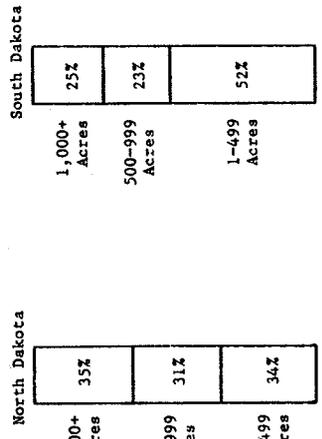


Fig. 1.2. Distributions of farm sizes in North and South Dakota  
SOURCE: 1974 Census of Agriculture.

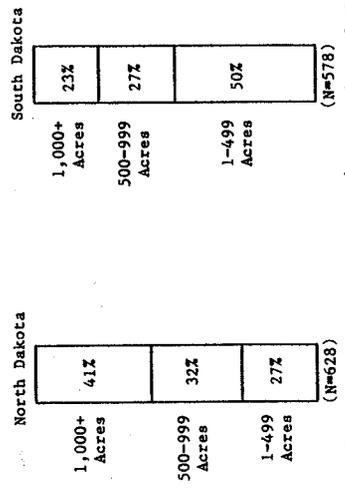


Fig. 1.3. Cropland acreage in North and South Dakota  
SOURCE: NORC Survey Data.

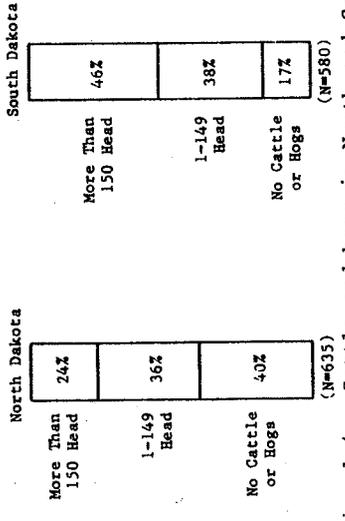


Fig. 1.4. Cattle and hogs in North and South Dakota  
SOURCE: NORC Survey Data.

of their future behavior. As professional researchers, we are aware of these dangers and we have used all of our experience and skill to minimize them. Many months of effort went into the final design of the questionnaire, and various drafts of the instrument were carefully pretested; interviewers received extensive training and daily supervision; and we have endeavored to exercise caution in our interpretation of the tabulated responses and the relationships among them.

In Chapter 6 we present an analysis of several potential sources of error in our data. First, we discuss the inherent limitations of making inferences from our sample to the population of interest, giving special attention to the ranges of error associated with the various statistics used in the analysis. Second, we examine two sources of non-sampling error in the data, question wording and question order, by describing the significant differences revealed by our experiments in the two questionnaire versions and evaluating the effects of such differences on our inferences and conclusions. Finally, we present a limited investigation of the errors of inference that might arise because of differences between more "cooperative" respondents and those who refused to be interviewed, which could contaminate our results (and, for the same reason, those of USDA in their crop and livestock surveys). Using our own records of the effort required to secure an interview with each operator, we compare cooperative and reluctant respondents on a range of survey measures and assess the likely effects of nonresponse on the quality of the data collected.

CHAPTER 2  
THE ACQUISITION, USE, AND EVALUATION OF CROP  
AND LIVESTOCK INFORMATION

The questions asked in the NORC survey of Dakota farmers and ranchers about the flow of statistical information on crop and livestock production can be broken down into four broad groups:

- o What sources do farmers and ranchers use for crop and livestock information?
- o How is the information evaluated by operators, especially with respect to its usefulness, accuracy, and timeliness?
- o How do operators think their own interests are affected by the general availability of such information to other parties in the agricultural economy?
- o How do operators evaluate *government* crop and livestock reports?

Answers to these kinds of questions can tell us a great deal about the role of crop and livestock information--especially government-sponsored information--in the day-to-day management of farms and ranches and in the shaping of operators' attitudes toward the government's activities in the agricultural market. In this section, we take up each of these topics in turn.

SOURCES OF CROP AND LIVESTOCK INFORMATION

Respondents to the NORC survey were asked to name all the sources they used for "information about things like livestock numbers, acres planted to various crops, and forecasts of yields." No specific sources were suggested in the question wording; all responses were volunteered. Table 2.1 presents the results.

Just under one-fifth of all respondents mentioned that they use USDA publications as a source of crop and livestock information and 12 percent specifically mentioned publications of the Crop and Livestock Reporting Service. Magazines, journals, and newsletters were by far the most frequently cited information sources; 59 percent of all operators reported use of one of these sources. Various types of agricultural agents (e.g., university extension agents, officers of the Agricultural Stabilization and Conservation Service, etc.) were also frequently named, with just under a third of all respondents reporting use of this source. Newspapers were named by 28 percent, radio reports by 20 percent,

TABLE 2.1  
 PERCENTAGES OF OPERATORS WHO REPORTED USING  
 VARIOUS INFORMATION SOURCES

Source	Percentage
USDA publications . . . . .	18%
Crop and Livestock Reporting Service . . . . .	12
Magazines, journals, and newsletters . . . . .	59
Newspaper . . . . .	28
Radio . . . . .	20
Television . . . . .	16
Extension agent, ASCS agent, or other persons in government or universities . . . . .	30
Consultation with persons in agriculture-related business . . . . .	7
Conversations with friends, relatives, neighbors, etc. . . . .	7
Other sources . . . . .	6
No source mentioned . . . . .	8
Total . . . . .	211% <sup>a</sup>
N . . . . .	1,287

<sup>a</sup>The percentages sum to more than 100 because 64 percent of the respondents reported using two or more sources.

and television by 16 percent of all operators. Personal contacts (other than the various agents) are a less common source of information, with business contacts and conversations with friends and neighbors each named by 7 percent. Finally, 6 percent of the operators mentioned other miscellaneous sources, while about 8 percent claimed to use no source.

Operators in North and South Dakota did not generally differ in their use of the various information sources. Only in the use of agricultural agents did we find significant differences between the states, with 39 percent of North Dakota operators and 21 percent of South Dakota operators using agents.

Operators who reported getting information from two or more sources were asked to name the single source that provided *most* of their crop and livestock information. By integrating these answers with those of operators who named only one source, and then combining similar source categories (e.g., all government publications, all media), we arrived at five general types of sources and were able to classify operators according to their *primary* information source among them. Table 2.2 displays the results.

The table reveals that the key medium for circulating crop and livestock information to farmers and ranchers is the specialized commodity journal, newsletter, or the general farm magazine, in which the mass of information is interpreted for the particular line of business of the operator. Although there is significant variation between the states in the percentage who name periodicals, they are by far the most commonly used source in both states: 31 percent of North Dakota operators and 39 percent of those in South Dakota said they got most of their crop and livestock information from this kind of source. About one operator in eight named a government publication as his main source of marketing and production information, with the percentages about equal in the two states. About one operator in five reported getting most of his information from one of the mass media, again with no variation between the states. Agricultural agents were cited as the major source by 16 percent overall, but by 21 percent in North Dakota and only 11 percent in South Dakota. About 6 percent in each state said they rely mostly on personal contacts for their information, and another 8 percent said they have no source at all.

In general, periodicals, other media, and agricultural agents are each more commonly named as primary sources than are government publications. This finding suggests that closer relations with such interpreters of statistics might be beneficial to the government. In this regard, it is interesting to note that farmers and ranchers commonly perceive that their primary non-government information sources (other than personal contacts) do not generate their own information, but instead rely on USDA for their information. All respondents who said they got most of

TABLE 2.2  
 PERCENTAGES OF OPERATORS WHO REPORTED OBTAINING  
 MOST CROP AND LIVESTOCK INFORMATION FROM  
 EACH INFORMATION SOURCE

Source	Overall	North Dakota	South Dakota
Government documents (USDA publications or CLRS reports) . . . . .	13%	14%	12%
Magazines, journals, or newsletters . . . . .	35	31	39
Mass media (newspapers, radio, or television) . . . . .	20	19	20
Agricultural agents (university, ASCS, extension, etc.) . . . . .	16	21	11
Personal contacts (business or friends) . . . . .	6	5	6
All other sources . . . . .	3	3	3
No information source . . . . .	8	7	9
Total . . . . .	101% <sup>a</sup>	100%	100%
N . . . . .	1,287	667	620

<sup>a</sup>The overall percentages do not sum to 100 because of rounding.

their information from sources *other than* government publications were asked where they thought their major source got *its* information about crop and livestock developments. The results are shown in Table 2.3.

The table reveals that about 40 percent of those who reported relying on periodicals or agricultural agents and over 50 percent of those who reported relying on mass media sources believe that

TABLE 2.3

OPERATORS' BELIEFS ABOUT WHERE NONGOVERNMENT INFORMATION SOURCES OBTAIN THEIR BASIC DATA (Percent)

Where Primary Source Gets its Information	Operator's Primary Source of Information				All Sources
	Magazines, Journals, Newsletters	Newspapers, Radio, or Television	Agricultural Agents	Personal Contacts	
USDA/CLRS surveys and reports . . . . .	42%	53%	39%	6%	42%
University, agricultural experiment station, ASCS . . . . .	12	13	20	7	14
Its own, independently sponsored research . . . . .	33	12	17	9	22
Research or reports from other commercial sources . . . . .	5	10	3	8	6
Day-to-day business dealings with farmers and ranchers . . . . .	7	5	10	14	8
Informal conversations with friends, relatives, other farmers . . . . .	3	2	2	33	5
Other sources . . . . .	9	7	12	9	9
Don't know . . . . .	19	20	13	23	18
N . . . . .	450	257	206	77	990

NOTE: Operators who reported using government documents as their primary information source are omitted. Entries are percentages of those who reported using the primary source in each column who said they believed that their information originated with the source named in each row. Column percentages sum to more than 100 because each operator was allowed to name as many "originating" sources as he wished.

the information they use originates with USDA or CLRS publications. The right-most column shows that about two-fifths (42 percent) of those who primarily use nongovernment information sources believe their data ultimately come from USDA, compared with only 22 percent who think their source produces its own data, and 14 percent who think the data originate with universities, agricultural experiment stations, or ASCS information.

When these operators are combined with the 13 percent who cited actual government publications as their major information source, it becomes clear that a majority (55 percent) of Dakota farmers and ranchers are aware of the flow of crop and livestock information from USDA and recognize that the information they use comes directly or indirectly from that source. However, the fact that about three-fourths of this group do *not* rely directly on government publications suggests the possibility that most Dakota operators find USDA information in its raw, statistical form too dense or unwieldy to be useful for day-to-day decision-making. The summaries, interpretations, and supplementary data provided by journals, the media, and agents appear to have considerable value for operators.

Obviously, the information contained in crop and livestock reports, regardless of source, will not always be perfectly clear or immediately usable by operators. In fact, 70 percent of the respondents (73 percent in North Dakota and 67 percent in South Dakota) reported that they discussed the contents of the reports with others whenever they were uncertain about the meaning of any information they contained. As shown in Table 2.4, about 43 percent overall consult with friends, neighbors, or other farmers, and another 16 percent speak with agricultural agents about the meaning of the reports. About 9 percent turn to their business contacts, while only 1 percent discuss the reports either in their farm or ranch organization or with resources other than those cited above. North Dakota operators are about 8 percentage points more likely than those in South Dakota to discuss crop and livestock reports with agricultural agents.

#### EVALUATIONS OF CROP AND LIVESTOCK INFORMATION

Dakota operators were asked for a general assessment of the usefulness of the information in the various published crop and livestock reports. While a substantial majority (67 percent) felt the reports were at least somewhat useful, about one-third of all operators claimed that crop and livestock reports were not useful at all for managing their operations (see Table 2.5). South Dakota operators of all types appeared to be significantly less satisfied with the reports than their North Dakota counterparts. While the differences among specific types of producers in each state are not statistically significant, there is some tendency for large grain producers in each state to be slightly more positive in their ratings. Since this type of operator

TABLE 2.4

OPERATORS' RESOURCES FOR DISCUSSION OF MEANING  
OF CROP AND LIVESTOCK REPORTS  
(Percent)

Resource	Overall	North Dakota	South Dakota
Extension agent, ASCS office, university, agricultural experiment station . . . . .	16%	20%	12%
Persons in agriculture-related business (bankers, buyers, suppliers) . . . . .	9	9	8
Friends, neighbors, relatives, other farmers . . . . .	43	42	44
Farm or ranch organization . . .	1	1	1
Others . . . . .	1	1	2
Do not discuss reports . . . . .	30	27	33
Total . . . . .	100%	100%	100%
N . . . . .	1,274	661	613

TABLE 2.5

GENERAL USEFULNESS RATINGS OF INFORMATION IN  
CROP AND LIVESTOCK REPORTS  
(Percent)

	Very Useful	Somewhat Useful	Not at All Useful	Total	N
Overall . . . . .	9%	58%	33%	100%	1,269
North Dakota . . .	11	61	28	100	656
South Dakota . . .	7	55	38	100	613

constitutes a larger proportion of all operators in North Dakota than in South Dakota, their evaluations may explain most of the differences between the states.

General satisfaction with crop and livestock information was found to be related to the operator's major information source. Table 2.6 shows that those whose main sources are government publications are most likely of all to report that the material is at least somewhat useful (77 percent). Those who get most of their information from agricultural agents and specialized periodicals are almost as satisfied: 74 and 72 percent, respectively. In contrast, operators who rely mainly on the mass media for this information are less likely to find the material useful (66 percent), while only a little more than half of those whose main source is personal contacts report that the information they get is useful. Finally, it comes as no surprise that 75 percent of those who say they have no major source feel that they receive no useful information.

TABLE 2.6  
GENERAL USEFULNESS RATINGS OF INFORMATION IN CROP  
AND LIVESTOCK REPORTS AMONG USERS OF VARIOUS  
MAJOR SOURCES OF INFORMATION  
(Percent)

Major Source	Useful	Not Useful	Total	N
Government documents: USDA publications or CLRS reports . . . . .	77%	23%	100%	168
Magazines, journals, or newsletters . . . . .	72	28	100	445
Mass Media: newspapers, radio, or television . . . . .	66	34	100	250
Agricultural agents: university, ASCS, extension, etc. . . . .	74	26	100	205
Personal contacts: business or friends . . . . .	53	47	100	71
All other sources . . . . .	69	31	100	38
No information source . . . . .	25	75	100	93
Overall . . . . .	67%	33%	100%	1,269

Operators were also asked a series of questions about the usefulness of specific kinds of information usually found in published reports. Table 2.7 presents the results. About three-fourths of all farmers and ranchers found information on costs of production and anticipated crop demand to be at least somewhat useful, with 30 percent judging the data on production costs to be "very useful." Information on prices received for either crops or livestock was rated as useful by roughly two-thirds of all operators, and about 60 percent gave similar ratings to information on amounts of crops in storage, the effects of weather on crops and forage conditions, and forecasts of livestock to be marketed. Slightly over half thought that information on planting intentions, end-of-season crop estimates, and numbers of livestock sold for slaughter was useful. Only 50 percent felt they had any use for information on the numbers of livestock on farms, and less than half judged monthly crop forecasts to be useful.

The perceived usefulness of the various types of crop and livestock information differs little between the two states. Information on anticipated crop demand is considered useful by more operators in North Dakota (82 percent) than in South Dakota (66 percent), largely because of the greater concentration of larger crop producers in the former state (see Table 2.8). Likewise, information on weather effects is more likely to be viewed as useful by North (64 percent) than by South (53 percent) Dakota operators (see Table 2.9), as is information on stocks of grains and oil seeds (66 percent to 56 percent for North and South Dakota operators respectively; see Table 2.10).

We asked Dakota operators who specified that any particular piece of information was not useful to explain why it was not and in Table 2.11 we display the percentage citing each of the major reasons in response. Operators basically use only two criteria for judging the usefulness of an item of information: (1) Is it germane to the management tasks faced in their particular type and scale of operation? and (2) Is it accurate enough to be relied on for important management decisions? Most of the operators who judged information on livestock (items 3, 7, 10, and 11) as not useful clearly saw no need for it because they are not in the business of producing and selling livestock. For example, among those who said that information on numbers of livestock on farms was not useful, fully 94 percent of those who explained that it was not needed were operators with fewer than 200 head of cattle. Thus, the judgment that a particular type of information is not useful does not always amount to a criticism. However, there remains a sizable minority (between 20 and 40 percent for each of these items) who presumably do have need for livestock information but who are not satisfied with the accuracy of such data in published reports.

On only four of the twelve information items did we find statistically significant differences between the two states in

TABLE 2.7

USEFULNESS RATINGS OF SPECIFIC INFORMATION  
IN CROP AND LIVESTOCK REPORTS  
(Percent)

Information Item	Very Useful	Somewhat Useful	Not at All Useful	Total	N
1. Costs of production . . . . .	30%	45%	25%	100%	1,266
2. Anticipated demand for crops . . . . .	22	52	26	100	637
3. Prices received for livestock . . . . .	25	43	32	100	633
4. Prices received for crops . . . . .	17	49	34	100	632
5. Stocks of wheat, other grains, and oil seeds in storage . . . . .	20	41	39	100	637
6. Weather influence on crop progress and forage conditions . . . . .	11	48	41	100	637
7. Forecasts of livestock to be marketed . . . . .	16	42	42	100	632
8. Farmers' planting intentions . . . . .	5	50	45	100	642
9. End-of-season estimates of total crop production . . . . .	8	47	45	100	636
10. Number of livestock sold for slaughter . . . . .	13	40	47	100	632
11. Number of livestock on farms . . . . .	14	36	50	100	1,275
12. Monthly forecasts of crops to be harvested . . . . .	7	37	56	100	639

NOTE: Items 1 and 11 were asked of all respondents. Items 2, 4, 7, 8, and 9 were asked in questionnaire Version I. Items 3, 5, 6, 10, and 12 were asked in Version II.

TABLE 2.8

OPERATORS' RATINGS OF USEFULNESS OF INFORMATION ON  
 ANTICIPATED DEMAND FOR CROPS BY STATE--  
 VERSION I RESPONDENTS ONLY  
 (Percent)

	Very Useful	Somewhat Useful	Not at All Useful	Total	N
Overall . . . . .	22%	52%	26%	100%	639
North Dakota . .	22	60	18	100	325
South Dakota . .	22	44	34	100	314

TABLE 2.9

OPERATORS' RATINGS OF USEFULNESS OF INFORMATION ABOUT  
 THE INFLUENCE OF WEATHER ON CROP PROGRESS  
 AND FORAGE CONDITIONS BY STATE--  
 VERSION II RESPONDENTS ONLY  
 (Percent)

	Very Useful	Somewhat Useful	Not at All Useful	Total	N
Overall . . . . .	11%	48%	41%	100%	640
North Dakota . .	13	51	36	100	338
South Dakota . .	9	44	47	100	302

TABLE 2.10  
 OPERATORS' RATINGS OF USEFULNESS OF INFORMATION ABOUT  
 STOCKS OF GRAIN AND OIL SEEDS IN STORAGE BY  
 STATE--VERSION II RESPONDENTS ONLY  
 (Percent)

	Very Useful	Somewhat Useful	Not at All Useful	Total	N
Overall . . . . .	20%	41%	39%	100%	639
North Dakota . . . . .	25	41	34	100	338
South Dakota . . . . .	14	42	44	100	301

the extent to which operators cited each of the two major reasons--need and accuracy--for judging an item not useful. These differences seem to stem from basic differences in the commodity orientations of the producers in each of the states: crop growers are more prevalent in North Dakota, livestock producers are more prevalent in South Dakota. For livestock information, such as numbers of livestock on farms or forecasts of livestock to be marketed (Tables 2.12 and 2.13), North Dakota operators are more likely to have no need, while South Dakota operators are more likely to cite accuracy problems. When crop information, such as grains and oil seeds in storage and monthly crop forecasts, is judged not useful, South Dakota operators are more likely to have no need for it, while those in North Dakota are more likely to impugn its accuracy (Tables 2.14 and 2.15).

Table 2.16 shows the proportion of operators who find specific types of crop and livestock information to be useful, who have no need for it, and who find it too inaccurate to be useful. Of the twelve items we asked about, costs of production and anticipated crop demand are the topics most often considered useful. Only 6 percent complain about the accuracy of information on production costs; still, nearly one operator in five says he has no need for this information. About 11 percent overall feel they do not need information on anticipated demand for crops, and about 12 percent feel that these projections are not accurate enough to be useful. Conversely, monthly crop forecasts are least likely to be judged useful (by only 44 percent), with some 23 percent of all farmers and ranchers professing not to need them and an additional 27 percent stating that their inaccuracy renders them useless.

TABLE 2.11

OPERATORS' REASONS FOR SAYING CROP AND LIVESTOCK  
INFORMATION IS NOT USEFUL  
(Percent)

Information Item	Not Needed	Not Accurate	Too Late	All Other Reasons	N
1. Costs of production . . . . .	73% <sup>a</sup>	23%	2%	4%	314
2. Anticipated demand for crops . . . . .	45	47	5	5	159
3. Prices received for livestock . . . . .	73	20	2	6	194
4. Prices received for crops . . . . .	53	41	4	5	207
5. Stocks of wheat, other grains, and oil seeds in storage . . . . .	55	37	1	9	244
6. Weather influence on crop progress and forage conditions . . . . .	44	49	4	4	258
7. Forecasts of livestock to be marketed . . . . .	62	36	1	4	265
8. Farmers' planting intentions . . . . .	62	31	3	6	291
9. End-of-season estimates of total crop production . . . . .	47	44	3	9	284
10. Number of livestock sold for slaughter . . . . .	75	21	2	4	292
11. Number of livestock on farms . . . . .	57	40	0	5	636
12. Monthly forecasts of crops to be harvested . . . . .	42	49	4	7	351

NOTE: Items 1 and 11 were asked of all respondents. Items 2, 4, 7, 8, and 9 were asked in questionnaire Version I. Items 3, 5, 6, 10, and 12 were asked in Version II.

<sup>a</sup>The percentages are based only on respondents who specified that each piece of information was *not useful*. Row percentages do not sum to 100 because respondents were allowed to give two or more reasons.

TABLE 2.12

OPERATORS' REASONS FOR SAYING INFORMATION ON NUMBERS  
OF LIVESTOCK ON FARMS IS NOT USEFUL BY STATE  
(Percent)

State	Not Needed	Inaccurate	N
North Dakota . . . . .	69%	30%	345
South Dakota . . . . .	42	53	290

TABLE 2.13

OPERATORS' REASONS FOR SAYING INFORMATION ON FORECASTS  
OF LIVESTOCK TO BE MARKETED IS NOT USEFUL BY  
STATE--VERSION I RESPONDENTS ONLY  
(Percent)

State	Not Needed	Inaccurate	N
North Dakota . . . . .	71%	27%	144
South Dakota . . . . .	50	47	121

TABLE 2.14

OPERATORS' REASONS FOR SAYING INFORMATION ON STOCKS OF  
GRAIN AND OIL SEEDS IN STORAGE IS NOT USEFUL BY  
STATE--VERSION II RESPONDENTS ONLY  
(Percent)

State	Not Needed	Inaccurate	N
North Dakota . . . . .	43%	43%	115
South Dakota . . . . .	65	32	129

TABLE 2.15

OPERATORS' REASONS FOR SAYING INFORMATION ON MONTHLY  
CROP FORECASTS IS NOT USEFUL BY STATE--  
VERSION II RESPONDENTS ONLY  
(Percent)

State	Not Needed	Inaccurate	N
North Dakota . . . . .	30%	59%	178
South Dakota . . . . .	55	40	173

Overall, 10 percent or more of our respondents cited accuracy problems with all but two of the information items we asked about--production costs and prices received for livestock. In addition, about 20 percent complained of poor accuracy in four of the twelve topics--total crop estimates, monthly crop forecasts, weather influence on crops and forage conditions, and numbers of livestock on farms.

In addition to an operator's practical need for specific information and his judgments about its accuracy, the usefulness of crop and livestock information to a farmer or rancher depends upon how well it reflects conditions in the particular geographical areas in which he operates. The information needs of a small crop producer whose business is done entirely within his home county will be quite different from those of a large livestock producer who operates in a national market, or a massive grain producer whose sales are greatly affected by conditions in the export market. To examine the differences among operators with interests at various geographical levels, we asked our respondents to indicate the area for which they found crop and livestock information most useful--their own county, their state, the United States as a whole, or other countries. In Table 2.17 we display the percentages naming each area, for the total population and separately by states.

As the table shows, about one half of all operators are most interested in national aggregates. Something like one quarter focus their attention on either the local county or their state, and only about one in 7 is most interested in international data. State differences were found only in the percentages citing national and international level data as most useful. South Dakota's concentration of livestock producers results in a

TABLE 2.16

OPERATORS' EVALUATIONS OF SPECIFIC PIECES OF  
INFORMATION IN CROP AND LIVESTOCK REPORTS  
(Percent)

Information Item	Very or Somewhat Useful	Not At All Useful			N
		Not Needed	Not Accurate	Too Late	
1. Costs of production . . . . .	75%	18%	6%	0%	1,266
2. Anticipated demand for crops . . . . .	74	11	12	1	637
3. Prices received for livestock . . . . .	68	22	6	1	633
4. Prices received for crops . . . . .	66	17	13	1	632
5. Stocks of wheat, other grains, and oil seeds in storage . . . . .	61	21	14	0	637
6. Weather influence on crop progress and forage conditions . . . . .	59	18	20	2	637
7. Forecasts of livestock to be marketed . . . . .	58	25	15	0	632
8. Farmers' planting intentions . . . . .	55	28	14	1	642
9. End-of-season estimates of total crop production . . . . .	55	21	19	1	636
10. Number of livestock sold for slaughter . . . . .	53	34	10	1	632
11. Number of livestock on farms . . . . .	50	28	20	0	1,275
12. Monthly forecasts of crops to be harvested . . . . .	44	23	27	2	639

NOTE: Items 1 and 11 were asked of all respondents. Items 2, 4, 7, 8, and 9 were asked in questionnaire Version I. Items 3, 5, 6, 10, and 12 were asked in Version II. Row percentages may not sum to 100 because respondents were allowed to indicate more than one reason why they considered any type of information not at all useful.

slightly larger audience for national statistics in that state than in North Dakota, and the greater proportion of large grain farmers in North Dakota results in a larger percentage stating an interest in other countries than is found in South Dakota.

As noted previously, operators' choices among information sources are to some extent related to their information needs, as determined by the commodities they produce and the scale of their operations (see Chapters 1 and 4). One might also surmise that these factors are related to operators' beliefs about the geographical area for which crop and livestock information is most useful to them. Information-source preferences should thus also be linked to these geographical interests.

TABLE 2.17  
 OPERATORS' EVALUATIONS OF GEOGRAPHIC AREAS FOR WHICH  
 CROP AND LIVESTOCK INFORMATION IS MOST USEFUL  
 (Percent)

Area	Overall	North Dakota	South Dakota
County . . . . .	23% <sup>a</sup>	23%	22%
State . . . . .	28	29	27
Whole U.S. . . . .	49	46	52
Other countries . . . . .	17	21	13
N . . . . .	1,282	664	618

<sup>a</sup>Column percentages do not sum to 100 because operators were allowed to name more than one area.

Table 2.18 shows that this is the case. Reading across the table, we find, for example, that operators whose main interests are at the local county level are more likely than others to get most of their information from agricultural agents and, in addition, are less likely to use government publications. Those with state-level interests are also more likely to turn to agents, but they choose other sources at about average rates. In contrast, those with national or international interests are less likely to use agents or to claim they have no information source at all. Periodicals are relied on by more of those focusing on national markets, while operators who are most interested in international data are much more likely than others to choose government documents.

TABLE 2.18  
 MAJOR INFORMATION SOURCE AMONG THOSE WHO ARE INTERESTED IN INFORMATION  
 ABOUT COUNTY, STATE, NATIONAL, AND INTERNATIONAL LEVELS  
 (Percent)

Area	Major Information Source							N	
	Government Documents	Magazines, Journals, or News-letters	News-papers, Radio, or Television	Agri-cultural Agents	Personal Contacts	Other Sources	No Source		Total
Overall . . . . .	13%	35%	20%	16%	6%	3%	8%	100%	1,208
Local county . . . . .	8	31	19	23	9	2	8	100	197
Home state . . . . .	12	36	19	20	3	2	8	100	297
Whole U.S. . . . .	14	40	19	13	6	3	5	100	499
Other countries . . . . .	21	32	23	13	7	3	1	100	215

THE EFFECTS OF CROP AND LIVESTOCK INFORMATION ON THE  
INTERESTS OF FARMERS AND RANCHERS

Over 90 percent of the Dakota operators we interviewed claimed to use one or more sources of production and marketing information about crops or livestock. Two-thirds of the respondents reported that such crop and livestock information was generally useful to them in managing their operations. Moreover, though many complained of problems with accuracy or timeliness, a majority also said that most of the specific items of information we asked about were useful to them.

However, the quality of the information and its usefulness to the operators themselves are not the only dimensions used by operators to evaluate crop and livestock data. Farmers and ranchers are acutely aware that this information is available to many other parties in the agricultural marketplace, and the vast majority of operators--in both states and among all types of producers--believe that this places them at a disadvantage.

Survey respondents were asked who they thought "benefits most from the crop and livestock reports--farmers and ranchers or other groups?" Table 2.19 displays the results. Nearly four-fifths of all operators--with no significant variation between states--believe that *other groups benefit more than farmers and ranchers themselves.*

TABLE 2.19

OPERATORS' VIEWS OF WHO BENEFITS MOST FROM  
CROP AND LIVESTOCK INFORMATION  
(Percent)

Farmers and ranchers . . . . .	17%
Other groups . . . . .	78
Don't know . . . . .	5
Total . . . . .	100%
N . . . . .	1,274

Of course, the perception that other groups benefit more than the operators themselves from crop and livestock reports does not necessarily entail the belief that farmers and ranchers are worse off as a result. To examine these beliefs, we asked operators a series of questions about groups who might use crop and livestock data. First, to avoid providing any suggestive cues in our question wording, we simply asked each respondent to name as many groups as he could think of that used crop and livestock reports. Following this, we asked each respondent whether or not each of fourteen specific groups used this information--if he had not already volunteered that they did. For each group named as a user (either spontaneously or in response to our direct question), we then asked the operator whether he thought the use of published crop and livestock information by that group was helpful or harmful to the interests of farmers and ranchers. The responses to this series of items are presented in Table 2.20.

The great majority of farmers and ranchers appear to believe that *all* of the groups we named are users of crop and livestock information. In fact, for nine of the fourteen groups, over 80 percent of the respondents agreed in describing them as users. We note, however, that far fewer of the respondents spontaneously named each of these groups when answering the initial open-ended question, even though only 17 percent failed to volunteer the name of any group. These operators who could not think of any other users of the information are, incidentally, almost entirely the same 17 percent who feel that farmers and ranchers benefit most from published crop and livestock data. Also noteworthy is the fact that the four groups spontaneously named by 20 percent or more of the sample--grain buyers, livestock buyers, food processors, and speculators--were all later described as groups whose use of crop and livestock information is *harmful* to farmers and ranchers.

In general, operators seemed to divide other users of crop and livestock information into two quite distinct camps. One is composed of groups who supply farmers with necessary materials, services, or capital, and whose use of crop and livestock information is more likely to be perceived as beneficial; the second consists of groups on the demand side of the agricultural economy--various types of buyers, speculators, and consumers--whose use of this information is widely thought to work against farmers' and ranchers' interests. In the category of "suppliers," we find such groups as farm supply dealers, elevator and storage operators, bankers, farm organizations and cooperatives, railroads and truckers, universities, and state and local governments. On the "demand" side are grain and livestock buyers, speculators, food processors, foreign buyers of food, consumer groups, and--interestingly--the federal government.

Farmers and ranchers thus find themselves in something of a dilemma on the issue of the circulation of crop and livestock

TABLE 2.20

OPERATORS' PERCEPTIONS OF USE OF CROP AND LIVESTOCK INFORMATION  
 BY OTHER GROUPS AND ITS EFFECTS ON FARMERS AND RANCHERS  
 (Percent)

Group	Does Group Use Reports? (Volun- teered group)			N	If Yes: Effect on Farmers and Ranchers			N	
	Yes	No	Don't Know		Help	Hurt	Neither Don't Know		
1. Farm organizations and cooperatives . . .	(5) 83%	10%	6%	642	73%	15%	8%	5%	533
2. Bankers . . . . .	(16) 88	7	6	1,287	66	15	11	8	1,133
3. Universities . . . . .	(1) 71	15	14	642	65	15	12	8	456
4. Elevator or storage operators . . .	(12) 84	10	6	642	62	28	6	4	539
5. Railroads and truckers . . . . .	(2) 63	26	11	645	60	19	13	8	406
6. Farm supply dealers . . .	(14) 72	19	9	645	55	28	9	8	464

7. Local or state government . . . . .	(3)	66	22	12	642	52	27	11	10	424
8. Foreign buyers of food . . . . .	(5)	88	5	8	645	33	52	7	8	568
9. Stock buyers, slaughterhouses . . . . .	(20)	84	7	9	1,287	21	61	8	10	1,081
10. Consumer groups . . . . .	(6)	71	18	12	645	24	55	8	13	458
11. Federal government . . . . .	(8)	91	4	5	645	24	58	5	12	587
12. Food processors . . . . .	(20)	84	7	9	1,287	21	61	8	10	1,081
13. Grain buyers . . . . .	(31)	94	3	3	1,287	21	63	7	9	1,210
14. Speculators . . . . .	(22)	92	4	4	642	15	74	5	7	591

NOTE: Percentages in the "effects" column are based on those operators who answered "yes" to the question on use. The questions about groups 2, 9, 12, and 13 were asked of the entire sample. Questions about groups 1, 3, 4, 7, and 14 were asked only in questionnaire Version I. Questions about groups 5, 6, 8, 10, and 11 were asked only in questionnaire Version II. Percentages in the "volunteered" column are based on the entire sample.

information. On the one hand, the information contained in the various reports is useful to most operators, and in some cases may be crucial to the successful management of a farm or ranch. On the other hand, operators clearly perceive themselves to be involved in intense competition with many other market participants--chiefly the buyers and consumers of their products--and feel that the free circulation of crop and livestock data gives an unfair and damaging advantage to their competitors. To a small minority (less than 20 percent) of Dakota farmers and ranchers, the existence of this information is a clear boon, a useful tool in their efforts to succeed in production and marketing. To the remainder, crop and livestock reports are at best a mixed blessing: their usefulness for management purposes *may* be outweighed by their reduction of uncertainties in the market that operators believe once worked to their advantage.

In general, there were very few state differences on this series of measures. Those that were found are presented in Table 2.21. These indicate that slight qualifications of our findings may be necessary when discussing operators' perceptions in each of the states, but they hardly overturn or invalidate the findings for the population as a whole.

South Dakota operators were about 6 points more likely than their North Dakota counterparts to volunteer that livestock buyers and speculators use crop and livestock information. This difference is probably accounted for by the differences in the proportions of crop and livestock producers in the two states. When the groups were specified by name in the survey questions, North Dakota operators were about 10 points more likely to say that consumer groups, farm supply dealers, railroads and truckers, and foreign buyers used the reports. Finally, South Dakota operators were 6 points more likely to say that use of the reports by grain buyers hurt farmers and ranchers, about 12 points more likely to say that livestock buyers' use harmed operators, about 11 points more likely to attribute the same effect to food processors' use, and 14 points more likely to claim that use by railroads and truckers was beneficial to farmers and ranchers.

#### FARMERS' AND RANCHERS' EVALUATIONS OF GOVERNMENT CROP AND LIVESTOCK REPORTS

Thus far, we have seen evidence that the flow of information on crop and livestock production is viewed with ambivalence by Dakota farmers and ranchers. Notwithstanding occasional criticisms of the accuracy and timeliness of the data, most operators find at least some aspects of the information to be useful in managing their operations. Yet the majority of the respondents feel that the various buyers, traders, and consumers of agricultural products use this same information to the detriment of producers' interests. Such feelings, if sufficiently intense, might lead many operators to conclude that they would be better

TABLE 2.21

OPERATOR'S PERCEPTIONS OF REPORT USE  
BY VARIOUS GROUPS BY STATE  
(Percent)

Groups Volunteered as Users of Reports in Open-Ended Questions					
	Volunteered Livestock Buyers	Volunteered Speculators		N	
North Dakota . .	24%	19%		654	
South Dakota . .	30	25		610	
Groups Said to Use Reports When Named in Question					
	Use Reports	Don't Use Reports	Don't Know	N	
Consumer Groups					
North Dakota . .	76%	14%	10%	338	
South Dakota . .	64	22	14	300	
Farm Supply Dealers					
North Dakota . .	77%	17%	6%	338	
South Dakota . .	67	21	12	300	
Railroads and Truckers					
North Dakota . .	67%	23%	10%	338	
South Dakota . .	57	30	13	300	
Foreign Buyers of Food					
North Dakota . .	92%	4%	5%	338	
South Dakota . .	83	6	10	300	
Whether Use of Reports by a Group Helps or Hurts Operators					
	Helps	Hurts	Neither	Don't know	N
Grain Buyers					
North Dakota . .	24%	60%	7%	8%	613
South Dakota . .	17	66	7	10	580
Livestock Buyers and Slaughterhouses					
North Dakota . .	29%	54%	6%	10%	603
South Dakota . .	20	66	7	7	542
Food Processors					
North Dakota . .	24%	56%	9%	11%	566
South Dakota . .	18	67	7	8	501
Railroads and Truckers					
North Dakota . .	54%	24%	13%	9%	226
South Dakota . .	68	13	14	6	166

off if the circulation of information were curtailed or eliminated, despite the loss of whatever direct benefits they now enjoy.

This possibility emphasizes the need to assess specifically the operators' evaluations of the government's role in collecting and distributing crop and livestock data, for, as we have indicated above, most operators either rely on government documents directly or believe that USDA provides the basic data for whatever information source they use. Among these operators, any organized efforts to restrict the flow of information from the farm would undoubtedly begin with refusals to provide USDA with the basic information it requests from them in its various production surveys. Consequently, in this section we examine responses to several questions focusing specifically on crop and livestock reports produced by the government.

First, we consider the evaluations of the government publications themselves. As for clarity and readability, only about half of our respondents agreed with the statement that "government crop and livestock reports are clear and easy to understand" (Table 2.22). Also, slightly less than half (45 percent) were satisfied with the amount of detail presented in government reports. An additional 25 percent expressed a desire for more detailed information, while the remaining quarter said they would prefer less (Table 2.23). We found that North Dakota operators were more likely to ask for more detailed information while South Dakota operators were more likely to ask for less. No differences associated with operators' educational levels were found in the evaluations of clarity and detail.

TABLE 2.22

CLARITY OF GOVERNMENT CROP AND LIVESTOCK REPORTS--  
VERSION I RESPONDENTS ONLY  
(Percent)

Respondents were asked whether they agreed or disagreed with the following statement: "Government crop and livestock reports are clear and easy to understand."				
Agree	Disagree	Don't know	Total	N
50%	47%	3%	100%	640

TABLE 2.23

AMOUNT OF DETAIL IN GOVERNMENT REPORTS--  
VERSION I RESPONDENTS ONLY  
(Percent)

"Do you think the government crop and livestock reports should contain more detailed information, less detailed information or about the same amount of detail as they have now?"						
	More Detail	Less Detail	Same As Now	Don't Know	Total	N
Overall . . . . .	25%	27%	45%	4%	100%	638
North Dakota . . .	30	23	43	3	100	325
South Dakota . . .	19	31	46	4	100	313

Government reports were generally perceived as more beneficial to large-scale producers. About two-thirds of the sample (63 percent in North Dakota and 72 percent in South Dakota) agreed with the statement that government reports are "more useful to large farm and ranch operations than to small ones" (Table 2.24).

TABLE 2.24

RELATIVE USEFULNESS OF GOVERNMENT REPORTS TO SMALL AND  
LARGE OPERATIONS--VERSION II RESPONDENTS ONLY  
(Percent)

Respondents were asked whether they agreed or disagreed with the following statement: "Government crop and livestock reports are more useful to large farm and ranch operations than to small ones."				
	Agree	Disagree	Don't Know	N
Overall . . . . .	67%	27%	6%	641
North Dakota . . .	63	31	6	339
South Dakota . . .	72	21	7	302

Respondents were also asked how often they thought they could trust the results of government crop and livestock surveys. Only 23 percent thought they could do so almost always or most of the time, almost 60 percent felt that results could be trusted only some of the time, and another 18 percent stated that survey results were hardly ever correct (Table 2.25).

TABLE 2.25

TRUST IN GOVERNMENT REPORTS--VERSION I RESPONDENTS ONLY  
(Percent)

"How often do you think you can trust the results of government crop and livestock surveys? Do you think they are almost always right, right most of the time, right only some of the time, or hardly ever right?"					
Right Almost Always or Most of the Time	Right Only Some of the Time	Hardly Ever Right	Total	N	
23%	59%	18%	100%	638	

The difficulties operators have in trusting government reports seem to stem from three distinct, if related, causes. First, the level of trust appears to be somewhat relative, and to depend in part upon the operator's comparison of government reports to other sources. For example, 65 percent of those who had an opinion said they believed that crop and livestock reports put out by private, commercial services were more accurate than government reports; only 35 percent believed the opposite was true. In Table 2.26, we see that only 17 percent of those who found commercial reports more accurate said they trusted government reports most of the time, while 20 percent said they can hardly ever trust them. By contrast, among operators who said that government reports are more accurate than those from commercial houses, 36 percent said they trust government reports most of the time, while only 13 percent are strongly distrustful.

A second reason for variation in trust of government reports involves farmers' and ranchers' beliefs about the quality of the information operators give in response to government survey questions. Only about one-third of the respondents believe that participants in government crop and livestock surveys almost always provide accurate information. The data in Table 2.27 show that those who hold this opinion are almost three times as likely to trust government reports most of the time as those who are less sanguine about the accuracy of operators' responses. The latter,

in turn, are three times more likely to say they hardly ever trust government reports.

A third factor that may affect trust in government publications concerns the respondents' views on the responsiveness of their fellow operators to government survey requests. Only about a third of the operators we interviewed (37 percent in North Dakota and 28 percent in South Dakota) thought that most farmers and ranchers agreed to participate in government crop and livestock surveys when asked. However, among this group, 36 percent felt they could trust government reports most of the time, as

TABLE 2.26

RELATIVE ACCURACY OF GOVERNMENT VERSUS PRIVATE REPORTS AND TRUST IN GOVERNMENT REPORTS--VERSION I RESPONDENTS ONLY (Percent)

"Crop and livestock reports published by private companies are generally more accurate than government reports."	Trust in Government Reports				N
	Most of the Time	Only Some of the Time	Hardly Ever	Total	
Agree . . . . .	17%	63%	20%	100%	376
Disagree . . . . .	36	51	13	100	202

TABLE 2.27

ACCURACY OF INFORMATION GIVEN TO GOVERNMENT SURVEYS AND TRUST IN GOVERNMENT REPORTS--VERSION I RESPONDENTS ONLY (Percent)

"Farmers and ranchers almost always give accurate information to government surveys."	Trust in Government Reports				N
	Most of the Time	Only Some of the Time	Hardly Ever	Total	
Agree . . . . .	39%	53%	8%	100%	219
Disagree . . . . .	14	63	23	100	399

opposed to only 17 percent of those who thought most operators refused to participate. Correspondingly, among respondents who believed participation rates were low, 22 percent hardly ever trust government reports, compared to only 9 percent for those who thought that survey response rates were high (Table 2.28).

TABLE 2.28

BELIEFS ABOUT RESPONSIVENESS TO GOVERNMENT SURVEYS  
AND TRUST IN GOVERNMENT REPORTS--VERSION I  
RESPONDENTS ONLY  
(Percent)

"Most farmers and ranchers refuse to participate in government crop and livestock surveys."	Trust in Government Reports				N
	Most of the Time	Only Some of the Time	Hardly Ever	Total	
Agree . . . . .	17%	61%	22%	100%	376
Disagree . . . . .	36	55	9	100	191

Trust in government reports is thus clearly linked to judgments about the quality of the data they contain, both its accuracy and its representativeness of the agricultural community as a whole. These judgments may be made in a variety of ways, but we surmise that those based on personal experience are strongest and most likely to exert influence on other attitudes, such as confidence in government publications. For example, we would expect that the feeling that most operators do not give accurate information in government surveys may be based in part on the respondents' own difficulty in giving accurate answers under those circumstances. Likewise, the opinion that most farmers and ranchers refuse to participate in government surveys may grow out of the respondents' personal feelings of reluctance to give information to government interviewers.

We can explore these possibilities using responses to two series of questions (each asked of one-half of the sample) about respondents' experiences with government crop and livestock surveys. In one series, operators were asked how difficult they found it to be *accurate* in giving information about several aspects of managing their farms or ranches; in the second they were asked how *willing* they were to provide information on the same topics.

In Table 2.29, we see that of the eight specific types of information we asked about, ranging from planting intentions to off-farm income, only the first--the acreage to be planted to certain crops--presented a substantial proportion of our respondents (41 percent) with any difficulty. For the remaining seven items, the great majority of operators (from 74 percent to 88 percent) claimed they would have no difficulty in supplying the

specified information. It is clear, however, that even though operators may find it easy to provide information they are not necessarily willing to do so. Although 72 percent of our respondents were willing to reveal the prices they pay for operating supplies (Table 2.29f), the proportions willing to provide the remaining items of information are considerably lower, ranging from 41 percent to 56 percent. Operators indicated special sensitivity about revealing the total income from their farms or ranches (59 percent reluctant or unwilling), their off-farm income (53 percent reluctant or unwilling) and their planting intentions (51 percent reluctant or unwilling).

Although some 66 percent of Version I respondents said they would have difficulty giving accurate answers about one or more of the eight information topics, the majority indicated that only one or two of the items would present any problems. Only 19 percent of the operators suggested that they would have difficulty with four or more of the items. However, 73 percent of the Version II respondents indicated they would be less than willing to provide information on one or more of the topics. Fully 50 percent of these operators claimed they would be reluctant or unwilling to give out information on four or more of the items.

Using responses to these items, we can test whether or not operators who themselves have difficulty giving accurate information are also more likely to believe that respondents to government surveys rarely give accurate information. Likewise, we can examine whether respondents who are less willing to give certain items of information are also more likely to think that most farmers and ranchers refuse to participate in government surveys. As Tables 2.30 and 2.31 show, we can confirm the second of these hypotheses, but not the first.

In Table 2.30 are displayed the percentages who think that farmers and ranchers almost always give accurate information in government crop and livestock surveys, separately for the 41 percent who would find it difficult to give accurate information on how much acreage they intend to plant to different crops and for the 59 percent who say they would not have difficulty supplying this information. The 2 point difference in the expected direction is not statistically significant, and in any case hardly leads us to the conclusion that an operator's personal difficulty in being accurate is a central element in his opinions concerning the accuracy of other farmers and ranchers. Similar tables using seven other measures of personal difficulty in giving accurate survey responses were examined, all with equally inconclusive findings.

Personal experiences thus cannot tell us why the preponderance of operators do not believe that government surveys almost always get accurate information. What, then, explains the prevalence of this negative judgment? One plausible alternative hypothesis is that two-thirds of our respondents may believe that it

TABLE 2.29  
 PERCENTAGES OF OPERATORS WHO FIND IT DIFFICULT OR ARE UNWILLING TO PROVIDE  
 EIGHT TYPES OF INFORMATION IN CROP AND LIVESTOCK SURVEYS<sup>a</sup>  
 (Percent)

Information Item	Version I		Version II		
	Diffi- cult	Not Diffi- cult	Willing	Reluc- tant	Un- willing
		N			N
a. Information about how much acreage you intend to plant of different crops. . . . .	41%	513	49%	29%	552
b. How much acreage you actually planted to each of your main crops. . . . .	22	523	56	23	553
c. The number of acres you harvested and your crop yields. . . . .	22	519	51	24	554
d. The kinds of livestock you have and the numbers of each kind. . . . .	12	494	52	21	525

e. The prices you received when you sold your livestock. . . . .	23	77	489	55	18	27	512
f. The prices you pay for things like seed, fertilizer, or feed. . .	21	79	521	72	14	14	552
g. The total income of your farm operation. . . . .	26	74	522	41	25	34	554
h. Your off-farm income. . . . .	21	79	484	47	19	34	516

<sup>a</sup> Operators who had never participated in a crop or livestock survey are eliminated from all percentage tables. Also excluded were the few respondents who gave "don't know" responses, who said they were never asked to give a particular type of information, or for whom a type of information was not applicable (e.g., items d and e for those without livestock).

TABLE 2.30

OPERATORS' BELIEFS ABOUT THE ACCURACY OF INFORMATION GIVEN  
TO GOVERNMENT SURVEYS AND THEIR PERSONAL DIFFICULTY IN  
GIVING ACCURATE INFORMATION ABOUT PLANTING  
INTENTIONS--VERSION I RESPONDENTS ONLY  
(Percent)

"How difficult is it for you to give accurate information on your planting intentions?"	"Farmers and ranchers almost always give accurate information in government crop and livestock surveys."			N
	Agree	Disagree	Total	
Difficult . . . . .	33%	67%	100%	212
Not difficult . . . . .	35	65	100	299

is fairly common for operators to give inaccurate information *intentionally* when responding to government surveys. Although we did not ask explicitly about this possibility, in responding to another survey item (discussed later) several of our respondents volunteered the opinion that one reason some operators might participate in crop and livestock surveys would be to supply false or misleading data in hopes of biasing the results in their favor--usually to create a false impression that some commodities were in shorter supply than was actually the case (see Chapter 3). Such suggestions were relatively infrequent, however, and so this explanation must be regarded as speculative.

Quite different results were obtained in Table 2.31, which displays the percentages who believed that most farmers and

TABLE 2.31

OPERATORS' BELIEFS ABOUT RESPONSIVENESS TO GOVERNMENT  
SURVEYS AND THEIR DEGREE OF WILLINGNESS TO GIVE  
INFORMATION IN GOVERNMENT SURVEYS--  
VERSION II RESPONDENTS ONLY  
(Percent)

"Are you willing or unwilling to give information on planting intentions in government surveys?"	"Most operators agree to participate in government surveys."			N
	Agree	Disagree	Total	
Willing . . . . .	52%	48%	100%	256
Reluctant or unwilling .	27	73	100	269

farmers and ranchers agree to participate in government surveys, separately for those willing and those less than willing to supply information on their own planting intentions. Respondents were themselves willing to divulge this information were much more likely than others to feel that most other operators agree to answer government surveys (52 percent compared to 27 percent), and those who were less than willing to reveal their planting intentions tended to disagree with the statement that most farmers and ranchers participate in government surveys (73 percent, compared to 48 percent for more willing respondents). Nearly identical results were found in our analysis of the remaining measures of personal willingness to provide information (tables not presented).

Farmers and ranchers were also rather negative in their views about the effects of government crop and livestock reports on the overall behavior of agricultural markets (Tables 2.32 and 2.33). For example, 65 percent of all operators felt that "government crop and livestock reports tend to make the market for

TABLE 2.32  
PERCEIVED EFFECTS OF GOVERNMENT REPORTS ON  
MARKET STABILITY  
(Percent)

More Stable	Less Stable	Don't Know	Total	N
31%	65%	4%	100%	1,277

NOTE: Table percentages were derived from combined responses to the following items, asked on only one questionnaire version:

Agree or Disagree

Version I: Government crop and livestock reports tend to make the market for agricultural products less stable.

Version II: Government crop and livestock reports tend to make the market for agricultural products more stable.

The category "more stable" includes respondents who disagreed with the Version I statement or who agreed with the Version II statement. The category "less stable" includes respondents who agreed with the Version I statement or who disagreed with the Version II statement. When ordered this way, response patterns are virtually identical for the two versions.

agricultural products less stable," compared to only 31 percent who thought the opposite. Similarly, 63 percent felt that it would be easier for them to make a profit if there were no government crop and livestock reports, while only 30 percent believed that it would be harder to do so. Furthermore, 68 percent of the respondents felt that commodity buyers would have less advantage if there were *no* government reports, while only 25 percent held the opposite view (Table 2.34).

Two question forms were used (each with one-half of the total sample) to gauge operators' opinions about the effects of government reports on farm prices (Table 2.35). In the first form of the question respondents were asked whether they thought the

TABLE 2.33

PERCEIVED EFFECTS OF ELIMINATING GOVERNMENT REPORTS ON OPERATORS' ABILITY TO MAKE A PROFIT  
(Percent)

Harder to Make a Profit	Easier to Make a Profit	Don't Know	Total	N
30%	63%	7%	100%	1,283

NOTE: Table percentages were derived from combined responses to the following items, asked only on one questionnaire version:

Agree or Disagree

Version I: If there were no government crop and livestock reports, it would be easier for farmers and ranchers to make a profit.

Version II: If there were no government crop and livestock reports, it would be harder for farmers and ranchers to make a profit.

The category "harder to make a profit" includes respondents who disagreed with the Version I statement or who agreed with the Version II statement. The category "easier to make a profit" includes respondents who agreed with the Version I statement or who disagreed with the Version II statement. When ordered this way, response patterns are virtually identical for the two versions.

TABLE 2.34

PERCEIVED EFFECTS OF ELIMINATING GOVERNMENT REPORTS ON  
ADVANTAGES ENJOYED BY COMMODITY BUYERS  
(Percent)

Greater Advantage	Less Advantage	Don't Know	Total	N
25%	68%	7%	100%	1,280

NOTE: Table percentages were derived from combined responses to the following items, asked on only one questionnaire version:

Agree or Disagree

Version I: Commodity buyers would have more of an advantage in the market if there were no government crop and livestock reports.

Version II: Commodity buyers would have less of an advantage in the market if there were no government crop and livestock reports.

The category "greater advantage" includes respondents who agreed with the Version I statement or who disagreed with the Version II statement. The category "less advantage" includes respondents who disagreed with the Version I statement or who agreed with the Version II statement. When ordered this way, response patterns are virtually identical for the two versions.

reports had any effect on the prices they receive for agricultural products; those who gave affirmative responses were then asked to describe what that effect was. Fully 49 percent claimed that the reports drive prices down. About 10 percent said that government reports have no effect on the prices they receive. An additional 2 percent thought that the reports lead to increases in the prices received, and another 29 percent claimed that the effect depends on the circumstances.

In the second form of the question, operators were asked whether they agreed or disagreed with the statement that "government crop and livestock reports are usually followed by a drop in the prices of agricultural products." Answers of "it depends" were not permitted; operators were asked for general agreement or disagreement. In this version, 60 percent agreed that the reports

TABLE 2.35

PERCEIVED EFFECTS OF GOVERNMENT REPORTS ON PRICES  
RECEIVED FOR AGRICULTURAL PRODUCTS  
(Percent)

Version I

"Do you think the government crop and livestock reports affect the prices you receive for your agricultural products, or don't they affect the prices you receive?"  
IF AFFECT: "What effect do you think the reports usually have on prices?"

No Effect	Decrease in Prices	Increase in Prices	Depends	Don't Know	Total	N
10%	49%	2%	29%	10%	100%	644

Version II

"Please tell me if you agree or disagree with the following statement: Government crop and livestock reports are usually followed by a drop in the prices of agricultural products."

	Agree	Disagree	Don't Know	Total	N
Overall . . . . .	60%	31%	9%	100%	637
North Dakota . .	66	25	9	100	337
South Dakota . .	53	37	10	100	300

NOTE: There were no significant state differences in the Version I responses.

resulted in lower prices, while only 31 percent disagreed. Also, in response to this version North Dakota operators were 13 percentage points more likely to agree than those in South Dakota (Table 2.35). While the percentaged results of the two versions of the question differ as one might expect, the essential finding is clear. The preponderance of farm and ranch opinion in the Dakotas holds that publication of government crop and livestock reports has a depressing effect on market prices; only a minority believe the effect is neutral or benign.

Dakota farmers and ranchers also seemed to have largely negative opinions about the influence that government crop and

livestock surveys are subject to. Over 70 percent of our sample felt that government reports are influenced by politics (Table 2.36). In addition, the majority of operators felt that organizations representing farmers' and ranchers' interests should have more to say about the kinds of information collected in government surveys, although the percentage expressing this opinion varies with the way the question was asked. In Table 2.37 we present the results from two versions of a question on the desired influence of farmers' organizations on government data collection. By either version, a majority of Dakota operators said that farm organizations should have more control over the surveys.

TABLE 2.36

PERCEIVED INFLUENCE OF POLITICS ON GOVERNMENT REPORTS  
(Percent)

Reports Are Influenced by Politics	Reports Are Not Influenced by Politics	Don't Know	N
72%	24%	4%	1,283

NOTE: Table percentages were derived from combined responses to the following items, asked on only one questionnaire version:

Agree or Disagree

Version I: Government crop and livestock reports are not influenced by politics.

Version II: Government crop and livestock reports are influenced by politics.

The category "reports are influenced by politics" includes respondents who disagreed with the Version I statement or who agreed with the Version II statement. The category "reports are not influenced by politics" includes respondents who agreed with the Version I statement or who disagreed with the Version II statement. When ordered this way, response patterns are virtually identical for the two versions.

TABLE 2.37

DESIRED INFLUENCE ON GOVERNMENT REPORTS BY ORGANIZATIONS  
REPRESENTING FARMERS AND RANCHERS  
(Percent)

Version I

"Do you think that organizations representing farmers and ranchers should have more to say about the kinds of information collected in government crop and livestock surveys, should they have less to say, or do they have about the right amount to say?"

More to Say	Less to Say	Right Amount	Don't Know	Total	N
54%	8%	32%	6%	100%	643

Version II

"Please tell me if you agree or disagree with the following statement: Organizations representing farmers and ranchers should have more to say about the kinds of information collected in government crop and livestock surveys."

Agree	Disagree	Don't Know	Total	N
76%	19%	5%	100%	638

We hypothesized that a serious consideration in an operator's views about government reports would be his belief about whether USDA would actually protect the confidentiality of his responses to crop and livestock surveys. Thus, respondents were asked whether they thought USDA would reveal a particular operator's survey responses to a private company or to a government agency who sought this information. The proportions who believed that USDA would not protect confidentiality were surprisingly high: 40 percent of all respondents believed that a private company could obtain this information from USDA, and 64 percent believed that such data would be turned over to another government department that asked for it (see Table 2.38). The Agency does inform respondents that their data are held in strict confidence, but, according to the survey results, that message or its meaning is not getting through to farmers and ranchers. No differences between states were found on these items.

TABLE 2.38

PERCEIVED CONFIDENTIALITY OF RESPONSES  
TO GOVERNMENT SURVEYS  
(Percent)

Would USDA reveal government survey responses of a particular operator to:	Yes	No	Don't Know	Total	N
A private company . . . . .	40%	46%	14%	100%	1,277
Another government agency . . . . .	64	26	10	100	1,277

Finally, just prior to the end of each interview, we asked respondents to tell us in their own words how government crop and livestock surveys could be made more useful to farmers and ranchers. Of course, responses to a question of this sort are never entirely free from methodological artifacts resulting from the question's inclusion in a full interview schedule. Issues raised during the interview may take on artificial importance for a respondent and influence answers even to open-ended questions. However, we suspect that, given the opportunity to choose their own evaluative dimensions, most respondents probably answered in a way that expressed their central attitudes and concerns toward government surveys. If so, then we can draw the guarded conclusion that many Dakota farmers and ranchers hold some hope that government surveys and reports can better serve their interests. In fact, 62 percent of all operators made at least one concrete suggestion for change in the administration of the surveys, the kind of information collected, or the presentation of data in reports. This figure includes 25 percent who wanted improvements in accuracy, as well as 6 percent who wanted to limit distribution of government reports to producers. On the negative side, 11 percent said they would like to eliminate the surveys and reports entirely, and 38 percent made no suggestions at all (Table 2.39).

SUMMARY AND CONCLUSIONS

Among the functions of the Economics, Statistics, and Co-operatives Service of USDA is the provision of crop and livestock information to all agricultural market participants with the aim of making the market work more efficiently. Farmers' and ranchers' perceptions about who is served by information from the Agency clearly show that they understand at least a part of this function, for the overwhelming majority of operators agree that

TABLE 2.39

OPERATORS' SUGGESTIONS FOR MAKING CROP AND LIVESTOCK  
SURVEYS MORE USEFUL TO FARMERS AND RANCHERS  
(Percent)

<u>Comments About Surveys and Procedures:</u>	
1. Eliminate surveys altogether . . . . .	11%
2. Reduce number of surveys; shorten, simplify questionnaires; eliminate certain questions . . . . .	2
3. Anti-government response; make surveys independent of government, politics . . . . .	2
4. Improve participation in surveys; get more operators to cooperate, to tell the truth . . . . .	3
5. Demonstrate purpose of surveys; justify to operators . . . . .	1
6. Improve sampling procedures; get better cross-section of operators . . . . .	1
7. Conduct surveys in person, by people at the farm or the telephone instead of by mail . . . . .	2
8. Improve confidentiality . . . . .	1
<u>Comments About Reports Based on Surveys:</u>	
9. Improve accuracy, credibility of reports . . . . .	25
10. Localize reports; break down results by area, region, state, or county . . . . .	3
11. Improve publicity for reports; increase operator awareness . . . . .	3
12. Lengthen reports, add detail; make reports more thorough . . . . .	2
13. Eliminate projections from reports . . . . .	1
14. Simplify reports; provide more interpretation of data; advise how operators can use information in reports . . . . .	3
15. Provide additional reports; expand topics covered . . . . .	3
16. Publish reports more often . . . . .	2
17. Release reports sooner . . . . .	2
18. Eliminate reports entirely; publish fewer reports . . . . .	1
19. Limit distribution of reports to operators . . . . .	6
All other suggestions . . . . .	11
No suggestion . . . . .	38
N . . . . .	1,279

NOTE: Percentages do not sum to 100 because operators were allowed to make more than one suggestion. For ease of presentation, suggestions made by less than 1 percent of respondents were combined into categories with related responses (e.g., item 2). There was a total of 1,059 suggestions made by 787 respondents.

participants in the market use crop and livestock reports. What is *not* perceived, however, is that the information works to the advantage of all market participants, including farmers and ranchers. Especially when evaluating the use of crop and livestock information by people who buy their products, the great majority of operators think that this information works against them--about four out of five believe that other groups benefit more than operators themselves. Briefly, these producers think that information in the reports has the general effect of reducing prices and is thus one of the factors driving them out of business. As one respondent put it when asked how government crop and livestock reports could be made more useful, "If there was any profit in farming, they might be useful."

To better understand why Dakota operators have come to hold these attitudes and beliefs, it may be helpful to examine a number of trends they have observed over the past several years. For example, one-third of our respondents claimed to earn some portion of their income from a non-farm/ranch job. For most, seeking additional income is a matter of necessity, rather than choice. Moreover, they have observed directly the increase in average farm size alongside the decrease in the number of operators. As another of our respondents told us, "I used to have neighbors a half-mile away; then they were a mile away; now my nearest neighbor is a mile-and-a-half away. . . . There's nobody to come after me. I didn't have a son, and the girls have all left home. I don't know if I had a son whether he'd want to go into farming."

About 7 percent of the sample initially selected by USDA for the NORC survey were found to be ineligible because they had left farming or ranching over a year prior to the interview date, and 3 percent of the eligible respondents had ceased working their operations within the twelve months preceding the survey. In both states (as in the nation as a whole) the total number of farms and ranches has been steadily declining over the years. From 1969 to 1974 in South Dakota, the number of farms of between 50 and 499 acres dropped by about 13 percentage points, and the number between 500 and 999 acres dropped by 6 percentage points. In North Dakota during the same period, the number of farms of 50 to 499 acres decreased by about 11 percentage points, and those between 500 and 999 acres decreased by some 16 percentage points. Only the number of farms over 1,000 acres showed an increase in both states during this period (1974 Census of Agriculture, Vol. I, Parts 34 and 41). Since something like three-fifths of our sample consisted of operators in the smaller size ranges, the bulk of our respondents have seen for themselves that many of their contemporaries who leave farming or ranching are not being replaced by younger men and women.

To some extent, this is to be expected. For decades, technical innovation in agriculture has been changing the productivity of agricultural labor at a higher rate than the growth in demand for farm products. Consequently, if farm incomes are to

remain stable, the farm labor force must decline over time to match greatly increased productivity with slightly increased demand.

At the level of the individual operator, these circumstances result in returns to labor low enough that people are moved to leave agriculture for other opportunities, and very few young workers are attracted to agriculture. This may be expected when product prices barely cover capital and production costs and do not quite provide a subsistence for the farmer. In fact, we find increasingly that small- and medium-sized operations, which may have capital and land values totaling hundreds of thousands of dollars, cannot be sustained or even passed intact from one generation to another when substantial unanticipated expenses (e.g., inheritance taxes) disrupt fragile cash-flow balances.

With the continuing decline in the number of farms, it is not surprising that operators feel that they are being driven out of agriculture. The respondents in our survey are overwhelmingly convinced that USDA information drives prices down rather than enhancing market efficiency for all participants. They believe that crop and livestock reports aid the demand side of the market more than themselves and thus feel that this information is partially to blame for the exodus from agriculture. Furthermore, many of them appear to feel that, whatever they do, the returns are not great enough to make it worthwhile to stay in farming and ranching; fluctuations around low equilibrium prices apparently do not impress them.

It should be noted that the general attitudes of farmers and ranchers toward the markets for factors of production and raw materials are quite different from those toward buyers and speculators. That is, their general suspicion that use of the reports by purchasers of their products works against them evidently does not carry over very much to their suppliers, even suppliers of capital (bankers), who are often classified along with other "middlemen" as exploiters of farmers in populist rhetoric. In most cases, it appears that operators believe that the prices they get are too low, not that the prices they have to pay are unfair, or that their suppliers are against them.

From its place in the scheme outlined above, it is clear that most farmers and ranchers identify the federal government (and USDA in particular) with the "demand" side of the market; they believe, largely, that government policy is working to depress prices, bringing them such low returns as to drive them out of business. Information circulated by the Agency is seen as a part of that policy, and many operators are especially hostile to it because its effects on commodity prices are so obvious to them.

It is not surprising that, faced with a market environment that they perceive is working against them, farmers and ranchers do not believe that information *per se* is likely to radically

alter their situation. Asked to describe the usefulness of various items of crop and livestock information, fewer than one out of three of our respondents found the item of information of most interest to them to be "very useful." Thus the overall perception of the utility of USDA reports has to be seen in the context of widespread beliefs that even the most valuable information to be found in the various sources is not especially useful. Information about the fact that prices are too low to give much return is, in fact, not very useful, although farmers and ranchers may pay a good deal of attention to it. It should be borne in mind that about a third of our respondents generally regard the information they get from various sources of crop and livestock data to be "not useful at all."

Within that general context, it seems that the closer information is to the point of transaction on the demand side, the more useful farmers and ranchers see it to be. Prices, for example, are thought to be more useful than stocks on hand, which are in turn more useful than projections of future production, which are more useful than intentions to produce.

Finally, although theoretically it is the balance between demand and supply that determines prices, survey results suggest that operators see information about demand as more valuable than information about supply. It seems that what the farmer or rancher would most like is the sort of information that he believes the crop and livestock reports provide for the people who buy from them--that is, *anticipations of the behavior of the other party in the transaction*. In light of the previous results, we speculate that the information that operators would find most valuable would be *the prices that buyers and other sources of demand will offer* for farm products of different kinds. We are not, however, in a position to speculate about whether this is a possible task for a government agency.

For most of the questions we asked about farmers' and ranchers' evaluations of government crop and livestock reports, the ratio of critical answers to supportive answers was about two to one. That is, roughly a third of our respondents seemed to believe that the surveys and reports are beneficial to them--regardless of the context--and about two-thirds that they are generally harmful. The overall evaluation is therefore negative, whether we ask about accuracy, service to farmers, impact on the market, or corruptibility of the reports by political considerations. The only dimension on which the reports get a clear majority of favorable evaluations is their clarity of presentation.

We do not yet know much about the chief characteristics that differentiate detractors from supporters of government reports. Relatively few of our opinion measures were much related to operators' characteristics such as his education, membership in farm organizations, and type and scale of operation. Perhaps more

important, however, is that we cannot say, based on the results of this single survey, whether an operator's judgments about government reports are in fact causally determined by his personal experiences with government surveys and market outcomes, or whether they are rationalizations of a hostile attitude toward the market and USDA, merely projected onto government reports because they happened to be the subject of our questions.

It is clear, however, that farmers and ranchers would like to have more control over the surveys and reports--both in the nature of the data collected and in the distribution (at least its timing) of the information--and that they are concerned about reducing the undue advantages they believe the reports give to buyers of their products.

## CHAPTER 3

### OPERATORS' EXPERIENCES WITH CROP AND LIVESTOCK SURVEYS

The flow of statistical information on crop and livestock developments depends in a fundamental way upon the cooperation of farmers and ranchers in responding to sample surveys. The quality of these data is clearly affected not only by survey participation rates, but also by the quality of the operators' responses once they have agreed to participate. To some extent, both the decision to respond to a survey and the kinds of answers given are conditioned by the operators' views about the net value to society and to themselves of making this information generally available. In the preceding chapter we examined in detail a number of such orientations and found considerable evidence that, although much of the information produced by surveys is indeed useful to operators for management purposes, a great many producers feel that such benefits are outweighed by the disadvantages they suffer in the marketplace because the information is accessible to commodity buyers and other groups whose economic interests are in competition with theirs.

Survey participation may also be affected by more immediate factors, however, such as the operators' experience with and reactions to the surveys themselves. In this chapter, we explore several aspects of that experience--the frequency of survey requests, the frequency of compliance with those requests, perceptions about the costs of compliance, and evaluations of the conduct and content of the surveys--and we discuss the data obtained through two different techniques for measuring these items. Again, our primary aim is to discuss findings for the population of Dakota farmers and ranchers as a whole, though, as in the preceding chapter, we discuss state differences where appropriate. (Stratum differences are treated in Chapter 4.)

Ultimately, we attempt to classify each of the respondents on a rough scale of "participatory cooperativeness," distinguishing reliable, frequent survey participants from occasional participants and from nonparticipants. We then examine the relationships between our participation index and other operator characteristics, identifying and discussing the major factors that seem to affect operators' decisions about responding to crop and livestock surveys.

#### MEASURING PARTICIPATION IN CROP AND LIVESTOCK SURVEYS

We used our two questionnaire versions to measure survey participation both in subjective or qualitative terms and in strictly quantitative ones. In Verson I, we took the subjective approach. To measure individual participation rates we asked:

"When you are asked to participate in a crop or livestock survey, do you almost always agree to participate, do you agree most of the time, only some of the time, or do you hardly ever agree to participate?" To measure the extent to which respondents perceived surveys as a burden we asked: "Did you feel that you were asked to participate in these surveys too often, about the right number of times, or not often enough during the past 12 months?" In Version II our approach was quantitative. The participation rate for an operator was obtained by getting a numerical report of the surveys he was asked to participate in during each of three seasons of the previous year, along with a second (immediately following) report on the number of these surveys he took part in. The measure of burden in this version is simply the number of survey requests reported.

Good arguments can be made for and against both methods. Some might feel that subjective reports correspond to the way people actually remember things, others that subjective reports are merely attitudes toward participation rather than recall of participation. Some might feel that numerical reports require that the respondent think in a rigorous quantitative way that is psychologically unnatural and thus encourages inaccurate responses, others that numerical reports measure memory of actual events rather than underlying attitudes. These considerations are discussed below.

Overall, better than 90 percent of our respondents said that they had been asked, at one time or another, to participate in some kind of crop or livestock survey. As Table 3.1 shows, Version II respondents (numerical approach) were more likely to

TABLE 3.1

PERCENTAGE OF OPERATORS WHO HAVE EVER BEEN ASKED  
TO PARTICIPATE IN CROP OR LIVESTOCK SURVEYS

	Percent	N
<u>Overall</u> . . . . .	91%	1,277
Version I . . . . .	87	639
Version II . . . . .	95	638
<u>North Dakota</u> . . . . .	89	663
Version I . . . . .	86	325
Version II . . . . .	93	338
<u>South Dakota</u> . . . . .	93	614
Version I . . . . .	89	314
Version II . . . . .	97	300

report being asked, but the percentage difference (8 points) is not very large, and this discrepancy is probably due to the questioning procedure. That is, Version I respondents were asked in a single question whether their participation had ever been sought for a crop or livestock survey. Version II respondents, in contrast, were first asked whether their participation had been sought for a series of specific surveys conducted in different seasons during the year preceding the NORC survey; then, those who claimed that they had not been asked to respond to those specific surveys were asked whether their cooperation had been sought for any other surveys during those seasons; and finally those who indicated no survey requests for the previous year were asked the general question used in Version I. Version II respondents were thus provided with many more opportunities to recall being solicited for a survey.

South Dakota operators were about 4 percentage points more likely than those in North Dakota to say they had been asked to participate in a survey. This figure applies equally to operators in the two states without regard to questionnaire version (Table 3.1).

In addition, respondents were asked about the number of survey requests they had received during the twelve months prior to the study. The following approach was used in Version I: "During the past 12 months--that is, between March 1977 and February 1978--how often were you asked to participate in crop or livestock surveys? Were you asked more than 10 times, from 5 to 10 times, 1 to 4 times, or were you not asked at all during the past 12 months." In Version II, respondents were asked for precise numerical estimates of the number of survey requests they had received during three separate time periods: the winter months just prior to the NORC interview (December of 1977 and January and February of 1978), the fall (September through November) of 1977, and the spring and summer (March through August) of 1977. After preliminary seasonal totals were computed, respondents were given an opportunity to revise their recollections, and then a final sum of survey requests was calculated.

Column one of Table 3.2 displays the percentages falling into each of the four levels of the Version I measure. For comparative purposes, column two displays the percentages of Version II respondents who fall into the same categories when their numerical reports are collapsed. Column three contains the percentages when the two versions are combined.

Of the Version I respondents, 31 percent claimed that they had not been solicited for any crop or livestock surveys in the year before the interview. About half (49 percent) told us that they had been asked to respond to as many as four surveys during that time. An additional 15 percent claimed to have been

approached between five and ten times, and a small number (4 percent) indicated they were asked to participate more than ten times.

TABLE 3.2  
SURVEY REQUESTS IN THE YEAR PRECEDING THE NORC SURVEY  
(Percent)

Number of Requests	Version I Respondents	Version II Respondents <sup>a</sup> (Collapsed)	Whole Population
None . . . . .	31%	26%	28%
1 through 4 . . . . .	49	46	48
5 through 10 . . . . .	15	23	19
More than 10 . . . . .	4	5	5
Total . . . . .	100%	100%	100%
N . . . . .	637	625	1,262

<sup>a</sup>For Version II respondents only, the mean number of survey requests equals 3.3, the median 2, and the standard deviation 4.2.

In general, the Version II respondents, who were asked for numerical reports, show a slight tendency to recall higher numbers of requests for surveys. Only about one-quarter (26 percent) said they were not approached at all during the previous year, and 46 percent recalled being asked between one and four times. In addition, 23 percent reported between five and ten requests, and about 5 percent said they were asked to participate more than ten times.

Version differences in reported numbers of requests are to be expected, of course, since, as we saw in Table 3.1, Version I respondents were slightly more likely to say they had *never* been asked to participate. Correspondingly, they are 5 percentage points more likely than Version II respondents to report no requests during the preceding year. However, about equal proportions answering each version reported receiving relatively few requests (one to four) or a great many requests (more than ten). The chief difference elicited by the alternative measures is in the proportion reporting moderate numbers of requests (five to ten), with Version II respondents 8 points more likely to report numbers in this range.

We also present two measures of central tendency for the numerical reports of Version II respondents (note to Table 3.2).

These operators claimed to have a mean of 3.3 survey requests during the year before the interview. The median, however, tells us that 50 percent of these respondents received two or fewer requests for participation.

State differences in numbers of survey requests were found among respondents to both versions. Table 3.3 summarizes these differences when the two versions are combined, using the same categories as shown in Table 3.2. North Dakota operators were 14 percentage points more likely to say they had not been asked to fill out a questionnaire during the past year (35 percent with zero requests, compared to 21 percent in South Dakota). Just about half of the operators in each state reported between one and four survey requests. South Dakota operators were about 9 points more likely to report between five and ten requests (24 percent for South Dakota, 15 percent for North Dakota), and 4 or 5 percent in both states claimed to have gotten more than ten requests. For Version II respondents, South Dakota operators reported an average of 3.9 survey requests during the year, while the average for North Dakota operators was 2.8 requests.

One of the primary goals of the survey was to identify the various factors that influence operators' decisions about whether or not to participate in crop and livestock surveys. To do this we first needed a measure for each operator that would tell us something about the likelihood that he would agree to respond

TABLE 3.3  
STATE DIFFERENCES IN NUMBERS OF SURVEY REQUESTS<sup>a</sup>  
(Percent)

Number of Requests <sup>b</sup>	North Dakota	South Dakota
None . . . . .	35%	21%
1 through 4 . . . . .	46	50
5 through 10 . . . . .	15	24
More than 10 . . . . .	4	5
Total . . . . .	100%	100%
N . . . . .	657	605

<sup>a</sup>For Version II respondents, the mean number of survey requests equals 2.8 for North Dakota and 3.9 for South Dakota.

<sup>b</sup>The requests reported by Version II respondents in numbers were collapsed to match categories used in Version I.

favorably to a survey request. Again using our split-ballot technique, we sought this information in two ways. In Version I, if a respondent said he had ever been asked to participate in a crop or livestock survey, we asked for a subjective estimate of how often he agreed to participate ("almost always, most of the time," etc.), using the question cited earlier. In Version II, after asking each operator for a numerical report of the survey requests he had received during the previous year, we asked for the actual number he had participated in; we then computed a participation rate for each operator by dividing the second figure by the first. The results are presented in Table 3.4.

TABLE 3.4  
TWO MEASURES OF SURVEY PARTICIPATION RATES  
(Percent)

	Version I Subjective Measure	Version II Collapsed Numerical Measure
Hardly ever . . . . .	38%	37%
Only some of the time . . . . .	27	18
Most of the time . . . . .	22	7
Almost always . . . . .	13	38
Total . . . . .	100%	100%
N . . . . .	552	447

Overall, only about 13 percent of our Version I respondents said that they almost always participated in surveys when asked. About 22 percent said they agreed most of the time, 27 percent said they participated only some of the time, and 38 percent claimed they hardly ever agreed to respond to surveys. For Version II respondents, we have collapsed the computed participation rates into four intuitively comparable categories: those who said they participated in 10 percent or less of the surveys they received requests for (i.e., hardly ever), those who said 11 to 50 percent (some of the time), those who said 51 to 89 percent (most of the time), and those who said 90 to 100 percent (almost always).

Comparing the percentages for the two versions forces us to consider the possibility that our two measures of survey participation rates are indicators of two somewhat different underlying dimensions. Only the category describing the lowest participation rates contains comparable percentages of operators for the

two versions. Otherwise, Version I respondents are more likely to describe their participation rates in relatively modest terms (some of the time or most of the time), while Version II respondents are more likely to indicate that they almost always participate. (The average individual participation rate for Version II respondents is 49 percent, and all of the Version II respondents who fell into the highest category on the collapsed scale had computed participation rates of 100 percent). No significant state differences were found on either measure of participation.

Our two participation measures are thus different, but, for various reasons, we hesitate to say that one of them is a more accurate or legitimate representation of the characteristic of farmers and ranchers that we are trying to analyze. If the subjective measure is, in fact, more reflective of an attitude toward the surveys than of the true frequency of participation, then our findings of generally negative attitudes toward crop and livestock reports would suggest that this measure may underestimate real participation rates. Yet, even if this is so, an attitude-based measure of this sort has considerable value as an indicator of future intentions about participation, and is therefore useful for identifying other attitudes that influence participation decisions.

Unfortunately, this survey does not provide sufficient data for an examination of the psychometric properties of our subjective participation measure. It is possible that many Version I respondents who said they participated most of the time have real participation rates in excess of 90 percent or that those who said only some of the time have better than 50 percent participation rates. Shifts of this sort could make the two distributions much more comparable. However, as we will show, the subjective measure is more closely related to operators' attitudes toward government surveys than is the numerical measure. On the one hand, this supports the notion that the subjective measure is more in line with the way that operators actually think about their participation histories. On the other hand, the fact that the three strongest predictors of subjective participation rates are all attitudinal measures indicates that when an operator says he almost always participates in surveys, he may be expressing another favorable attitude, this time toward surveys, rather than reporting his true compliance rate. At the same time, we would emphasize that the differences in the magnitudes of the relationships between each of the participation measures and various explanatory constructs are by no means vast, which suggests that our alternative measurement approaches resulted primarily in differences in the *scales* of response, and only secondarily in differences of a qualitative nature.

This interpretation is supported by the fact that our two approaches to measuring participation focused on two different time frames. In fact, the question wording for our subjective

measure completely ignored the time issue. We suspect that most operators understood the question to apply to an indefinite period, stretching back to the first time their participation was requested, and responded accordingly. Our numerical measure, in contrast, took into account only the survey requests and compliances during the preceding twelve months. By definition, then, our numerical measure describes a *short-term* tendency and the subjective measure, a *longer-term* habit (at least for operators who have been in business for more than one year). Limiting the numerical measure to the one-year period greatly increased the likelihood that an operator's participation history might be composed of a single survey request and a single compliance, and this is precisely the case for many of the Version II respondents who fell into the highest participation category in Table 3.4 (with participation rates of 100 percent). Along with those previously mentioned, this important difference between our two participation measures must be kept in mind in analyzing the factors that influence individual participation rates.

We turn now to the operators' reactions to the frequency with which they are asked to respond to surveys. If respondents to questionnaire Version I told us that they had been asked at least once to participate in a survey during the twelve months prior to our interview, we then asked: "Did you feel that you were asked to participate in these surveys too often, about the right number of times, or not often enough during the past 12 months?" Respondents who said too often were then asked: "Would you say that this was much too often or only a little too often?" Table 3.5 presents the distribution of responses to these questions, including a breakdown by state.

Of the 435 operators who answered this question (asked only on Version I), about 30 percent said they felt they were asked to participate much too often, and an additional 17 percent said a

TABLE 3.5  
PERCEIVED BURDEN OF SURVEY REQUESTS  
(Percent)

	Much Too Often	A Little Too Often	About Right	Too Few	Total	N
Overall . . . .	30%	17%	51%	2%	100%	435
North Dakota .	24	18	54	4	100	203
South Dakota .	34	17	48	1	100	232

NOTE: Data are only for Version I respondents who were asked to participate in at least one survey during the twelve months before the NORC interview.

little too often; 51 percent felt that the number of requests was about right for them, and only 2 percent expressed a desire for more frequent surveys. Operators in South Dakota were 10 percentage points more likely than those in North Dakota to say they were asked much too often.

These results indicate that nearly half of the respondents who were explicitly asked would prefer to be solicited for fewer surveys. Intuitively, we might expect that the more survey requests a farmer or rancher received, the more likely he would be to feel he was approached too often, but the data in Table 3.6 show that this is not exactly the case. Although operators who reported between five and ten survey requests were 29 percentage points more likely to feel oversurveyed than those who reported fewer requests, respondents who received the largest numbers of survey requests were least likely of all to say they had been solicited too often. This finding clearly raises the possibility that when operators said they were asked to participate in surveys too often they were reacting to something more than simply the number of requests they received.

TABLE 3.6  
NUMBER OF SURVEY REQUESTS AND PERCEIVED SURVEY BURDEN  
(Percent)

Number of Requests	Perceived Burden			Total	N
	Too Often	About Right	Too Few		
1 through 4 . . . . .	41%	56%	3%	100%	308
5 through 10 . . . . .	70	29	1	100	98
More than 10 . . . . .	32	68	0	100	27

NOTE: Data are only for Version I respondents who were asked to participate in at least one survey during the twelve months prior to the NORC interview.

This conclusion is strengthened by an examination of the relationships between the measure of perceived survey burden and the subjective measure of participation (Table 3.7). If perceived burden is a function of the actual work load placed upon operators, then we would expect that those who participate in surveys most frequently would be most likely to complain about their frequency. However, only about 20 percent of those in the two highest participation categories felt overburdened by the number of surveys. In contrast, those who said they participated only some of the time were much more likely to feel excessively burdened (42 percent), and among operators who hardly ever par-

anticipated this feeling was stronger still--almost four out of five (78 percent) said they were asked too often. (The relationships depicted in Tables 3.6 and 3.7 apply equally to both states.)

TABLE 3.7  
PARTICIPATION RATE AND PERCEIVED SURVEY BURDEN  
(Percent)

Participation Rate	Perceived Burden			Total	N
	Too Often	About Right	Too Few		
Almost always . . . .	19%	77%	4%	100%	60
Most of the time . .	21	76	3	100	98
Only some of the time	42	56	2	100	116
Hardly ever . . . . .	78	21	1	100	159

NOTE: Data are only for Version I respondents who were asked to participate in at least one survey during the twelve months prior to the NORC interview.

The burden imposed on operators by "too many" surveys is thus not merely a result of the numbers of requests received or surveys answered and may not be alleviated by a simple reduction in that number. Perhaps more important, as we now propose to show, Dakota operators feel burdened by surveys they feel are of little use, cannot be trusted to be accurate, hamper their ability to make a profit, or confer greater benefits on other groups than themselves.

Tables 3.8 through 3.11 present the evidence for this claim. First, we find that operators who felt that crop and livestock information was not useful to them were 30 percentage points more likely to feel that they were surveyed too often compared to operators who thought that such information was useful (Table 3.8). Also, those who believed that they could hardly ever trust the results of government surveys were 43 points more likely to say they were solicited too often, in comparison with operators who thought survey results could be trusted almost always or most of the time (Table 3.9). Moreover, respondents who agreed that profits would be easier to make if government survey reports were eliminated were some 36 percentage points more likely than those holding the opposite view to claim they were oversurveyed (Table 3.10). Finally, compared with those who believed that farmers and ranchers benefit most from the circulation of crop and livestock data, operators who thought that other groups benefit most were 30 percentage points more likely to say they were surveyed too often (Table 3.11).

These findings are only a small sample of those that illustrate the same general point: in their assessment of survey burden, farmers and ranchers are not so much influenced by the number or length or type of surveys as they are by their perceptions of the quality of the surveys and the effects of surveys on their lives. Operators who are convinced that surveys produce useful and accurate information that serves primarily their own economic interests tend not to feel burdened by even large numbers of surveys. Those who are not so convinced are likely to feel that even one survey request is too many.

TABLE 3.8  
USEFULNESS OF CROP AND LIVESTOCK INFORMATION AND  
PERCEIVED SURVEY BURDEN  
(Percent)

Usefulness Evaluation	Perceived Burden				N
	Too Often	About Right	Too Few	Total	
Very or somewhat useful . . . . .	36%	61%	3%	100%	275
Not at all useful . .	66	32	2	100	156

NOTE: Data are only for Version I respondents who were asked to participate in at least one survey during the twelve months prior to the NORC interview.

TABLE 3.9  
TRUST IN GOVERNMENT SURVEYS AND REPORTS AND  
PERCEIVED SURVEY BURDEN  
(Percent)

Trust Results of Surveys	Perceived Burden				N
	Too Often	About Right	Too Few	Total	
Almost always or most of the time .	25%	73%	3%	100%	114
Only some of the time	52	46	2	100	246
Hardly ever . . . . .	68	29	3	100	73

NOTE: Data are only for Version I respondents who were asked to participate in at least one survey during the twelve months prior to the NORC interview.

TABLE 3.10

OPERATORS' BELIEFS ABOUT THE EFFECTS OF GOVERNMENT REPORTS  
ON FARM PROFITS AND PERCEIVED SURVEY BURDEN  
(Percent)

Effect on Profits	Perceived Burden				N
	Too Often	About Right	Too Few	Total	
Profits easier . . .	24%	74%	2%	100%	156
Profits hampered . .	60	38	2	100	240

NOTE: Data are only for Version I respondents who were asked to participate in at least one survey during the twelve months prior to the NORC interview.

TABLE 3.11

OPERATORS' BELIEFS ABOUT WHO BENEFITS FROM CROP AND  
LIVESTOCK REPORTS AND PERCEIVED SURVEY BURDEN  
(Percent)

Who Benefits Most	Perceived Burden				N
	Too Often	About Right	Too Few	Total	
Farmers and ranchers	23%	74%	3%	100%	69
Other groups . . . .	53	45	2	100	351

NOTE: Data are only for Version I respondents who were asked to participate in at least one survey during the twelve months prior to the NORC interview.

Our conclusion that the actual number of survey requests is less important than other attitudes in determining an operator's perception of burden is rendered somewhat uncertain because of the small number of operators (27 cases) who reported ten or more survey requests and who were asked for their reactions to the number of survey requests (Table 3.6). We cannot replicate this table for the remainder of the sample because the item measuring perceived burden was not included in Version II of the questionnaire. However, we can bolster our conclusion somewhat by examining the relationship between the number of reported survey requests and another item asked on Version II, which, as we

attempt to show in our analysis of participation rates below, reflects attitudes similar to those tapped by the perceived-burden measure. This item is a simple cumulative scale based on operators' responses to questions about how willing they are to provide eight specific types of information about themselves and their operations when answering crop and livestock surveys. (These items were described in Chapter 2, with response patterns displayed in Table 2.29.) For each item of information, an operator was given a score of 1 if he was willing to provide it, a score of 2 if he was reluctant, a score of 3 if he was unwilling to reveal it. An index score was computed for each operator by summing his individual scores for the eight items. Thus the more items of information a respondent was willing to provide, the lower his scale score, and the more reluctant or unwilling he was, the higher his score.

Table 3.12 presents the average unwillingness scale scores for Version II respondents in each of four categories denoting numbers of survey requests. Unwillingness scores decline steadily with increases in the number of reported requests, supporting the notion that large numbers of requests need not provoke negative attitudes toward the surveys. This finding reinforces our belief that when an operator says he has been approached for surveys too often he is more likely to be expressing a subjective, negative reaction to the surveys than to be making a straightforward, objective judgment about the frequency of requests.

TABLE 3.12

AVERAGE UNWILLINGNESS SCALE SCORES BY NUMBER OF SURVEY REQUESTS--VERSION II RESPONDENTS ONLY

Number of Requests	Average Unwillingness Scale Score	N
None . . . . .	14.76	117
1 through 4 . . . . .	13.30	275
5 through 10 . . . . .	12.52	128
More than 10 . . . . .	11.76	30
Total . . . . .	13.35	550

NOTE: Pearson correlation equals  $-.13$ .

## EXPLAINING PARTICIPATION IN CROP AND LIVESTOCK SURVEYS

Having established two types of measures of the extent of participation in crop and livestock surveys, we now turn to the task of exploring the reasons that operators participate at widely different rates. Presumably, an understanding of the process by which farmers and ranchers decide to participate, and identification of the circumstances or factors that promote participation (or, conversely, inhibit it), will shed some light on the nature of the exchange between farm and ranch operators and USDA researchers. A high degree of cooperation between these two parties is necessary if complete and accurate agricultural information is to be made generally available, and, as we shall see, such cooperation depends greatly on perceptions among operators of the motives and outcomes associated with the collection of this data.

Thus, in this section, we investigate three broad types of hypotheses concerning the causes of participation in crop and livestock surveys. The first is based on the economic or "rational man" approach to explaining decisions at the level of the individual farmer or rancher. Basically it poses the question of the relative costs and benefits of participating in surveys, and it assumes that farmers will agree to be surveyed if they believe that benefits outweigh costs, however these may be perceived. Some of the factors relevant to this analysis are operators' views on the value of the survey results to the management of their own enterprises, on the effects such data may have on the sale of their products (prices, etc.), on the resources and effort required to fill out the survey forms, on the general worth to society of having the information available, and on the possible impact on their lives of the sacrifice of time and privacy that surveys entail.

The second approach is more akin to that of psychology or social psychology. To what extent, for example, does participation depend on the operator's sense of personal obligation to do as his government bids, or on the pleasure he takes in being interviewed and providing information, or on his beliefs about whether other operators are cooperating or resisting, or on his commitment to an organization that promotes or discourages participation?

Finally, in the third approach we focus on the impact of a number of sociological characteristics on the decision to participate in surveys. Here we examine the relationships between participation rates and several broad sociological classifiers, such as the operator's age or generation group, his educational attainment, his state of residence, the particular nature of the operator's farm or ranch, and whether or not the operator derives any income from an off-farm or off-ranch source.

We wish to emphasize that we do not in any sense see these three broad approaches as competing perspectives for analyzing survey participation rates. Rather, they serve in a heuristic capacity only, and are useful to the extent that they suggest questions that may have practical implications for researchers and policy makers. Our analysis largely ignores the distinctions among the disciplinary approaches, concentrating instead on the task of comparing all the potential determinants of participation our survey measured. In general, our goal is the straightforward one of identifying the factors most closely linked to the decision to participate, describing as best we can both the relative independent impact of each factor and the relationships among them.

Our analytical techniques are restricted to correlation and multiple regression, although percentage tabulations are used when appropriate to clarify the meaning of summary statistics. Of course, findings based on correlations do not allow absolute answers to questions of causal direction. Because our data were obtained from a nonexperimental, cross-sectional survey, we can never say with certainty that, for example, operators participate more often *because* they think the surveys are useful or because they use the resulting reports. It is quite possible that operators may participate for other reasons entirely (e.g., peer pressure or the pleasure of talking about themselves and their work), but then either rationalize their evaluations or begin to use the reports only *after* they have responded to a crop or livestock survey. In our examination of the correlates of participation, causal ambiguities of this sort are actually of little consequence, for, by definition, we are simply trying to establish which attitudes, beliefs, and behaviors are *related* to the participatory decision. When we proceed to build causal models, however, and to calculate regression equations to estimate the independent effects of various attitudinal and behavioral factors on participation rates, we are clearly changing our underlying view of the process. Briefly, our analysis assumes that causation operates in one direction only, from preexisting attitudes and beliefs to participation, and that the problems arising from various forms of rationalization are minimal. Our findings from multiple regression models must be interpreted in this light; we leave to the reader's judgment how far these findings must be qualified should our assumptions not comport with reality.

The majority of what we have to say about the determinants of participation relies on the correlation of other survey variables with the two self-reported participation measures. The main features of this analytical approach are: (1) that we use an operator's *own* responses about his motivations and behaviors to explain his personal decision process, and (2) that we conceptualize participation as a behavioral tendency that manifests itself *over a period of time* (an indefinite period for the subjective measure, one year for the numerical measure) rather

than in a one-time yes-or-no decision.

In order to widen our perspective somewhat, we also asked respondents to Version I of the questionnaire to tell us in their own words why they think *other* farmers and ranchers might agree or refuse to participate in surveys. We suspect that these responses reflect much of what goes on in an operator's *own* decision process; that is, that they are parts of the reasoning process that an operator might feel uncomfortable about attributing to himself but that he nonetheless knows to affect participation rates. Whatever the case, data from these questions will help to round out our understanding of the general experiences of farmers and ranchers with crop and livestock surveys. In addition, Version II respondents were asked a series of questions about their experiences with two particular surveys conducted during the fall and winter before our interview. Operators who declined to participate in these surveys were asked to explain in their own words the reason for their decision. Although these responses apply to specific, one-time decisions rather than to long-term tendencies, it is clear that they can assist us in identifying the most prevalent factors inhibiting participation. Before proceeding with the correlational analysis of participation rates, we briefly review the responses to these two additional sets of questions.

#### REASONS FOR PARTICIPATION OR REFUSAL

Version I respondents were asked the following two questions:

We are interested in finding out your opinions on why farmers and ranchers might refuse to participate in crop and livestock surveys. What do you think are the main reasons some farmers and ranchers refuse?

We are also interested in finding out your opinions on why farmers and ranchers might agree to participate in crop and livestock surveys. What do you think are the main reasons some farmers and ranchers agree?

Up to three verbatim responses to each of these questions were recorded for each operator. In Tables 3.13 and 3.14 we present the results.

The most frequently cited reasons for refusal concern the issue of privacy: 43 percent of the respondents suggested that some farmers and ranchers refuse because crop and livestock questionnaires ask for personal or private information, because their operations are no one else's business, or because the government is trying to find out too much about farmers and ranchers. In addition, 5 percent indicated that operators might refuse because they doubted government pledges to safeguard the confidentiality of their answers (Table 3.13). Nearly half of the

operators who answered this question made at least one response linking refusals to privacy concerns. Yet the subjective participation rates of respondents who mentioned this issue were not significantly different from those of respondents who did not mention it. This suggests that we may not be justified in treating these speculative responses as if they were descriptions of the personal motives of the respondents themselves. Hypothetical reasons for refusal were equally likely to be offered by those who considered themselves regular participators as by those who usually refused to participate.

TABLE 3.13

REASONS WHY SOME FARMERS AND RANCHERS REFUSE TO PARTICIPATE IN CROP AND LIVESTOCK SURVEYS--  
VERSION I RESPONDENTS ONLY  
(Percent)

Reason	Percentage
Invasion of privacy . . . . .	43%
Confidentiality problems . . . . .	5
Reports used against farmers and ranchers . . . . .	28
Reports depress prices . . . . .	25
Reports not accurate . . . . .	18
Reports not useful . . . . .	8
Difficulty in providing accurate information . . . . .	2
Scheduling problems--lack of time . . . . .	8
No interest in surveys or reports . . . . .	6
"Anti-government" responses . . . . .	9
Other reasons . . . . .	7
Don't know--no idea . . . . .	4
Total . . . . .	163%
N . . . . .	639

NOTE: Percentages sum to more than 100 because operators were allowed to suggest up to three reasons for refusal. The total number of reasons mentioned for refusal was 1,040; 96 percent of the respondents suggested at least one reason for refusal.

TABLE 3.14  
 REASONS WHY SOME FARMERS AND RANCHERS AGREE TO  
 PARTICIPATE IN CROP AND LIVESTOCK SURVEYS--  
 VERSION I RESPONDENTS ONLY  
 (Percent)

Reason	Percentage
Direct benefits (nature of benefit specified in response) . . . . .	38%
Indirect benefits from action by government or other parties . . . . .	4
General positive evaluation of reports--useful, helpful, worthwhile (no specific benefits mentioned) . . . . .	20
Sense of personal obligation, duty, general cooperativeness (participation not linked to expected benefits) . . . . .	15
Other reasons . . . . .	12
Don't know--no idea . . . . .	21
Total . . . . .	110%
N . . . . .	636

NOTE: Percentages sum to more than 100 because operators were allowed to suggest up to three reasons for participation. The total number of reasons mentioned for participation was 699; 79 percent of the respondents suggested at least one reason for participation.

A little over one-fourth of the respondents (28 percent) suggested that some farmers and ranchers might refuse because they felt that the surveys and reports were ultimately used against them. Furthermore, 25 percent linked refusals to feelings that the surveys and reports were responsible for depressing markets and prices received for products.

A substantial number of respondents connected refusals to the quality of the end product of the surveys. For example, 18 percent raised the possibility that some farmers and ranchers refuse because the resulting reports are inaccurate. Also, 8 percent suggested that the survey reports were useless for management purposes. It is not surprising that operators would refuse to devote time and effort to a survey process that they believed would end in a useless or inaccurate result.

It is surprising, however, that only 2 percent of the respondents suggested that operators might refuse participation because they found it difficult to answer surveys accurately. Although this is only speculation, it seems to us that if the inaccuracy of survey reports *is* considered a likely reason for survey refusals, but difficulty in providing accurate information *is not*, then the accuracy issue must revolve around operators' perceptions of basic flaws in the survey process itself. Operators may feel that survey questions--even if answered accurately--do not fully cover the topics they seem to address, leading to "accurate" but incomplete reports. Or they may feel that the surveys are filled out by too few farmers and ranchers, leading to inaccuracies in aggregate figures such as projections. A third explanation concerns the possibility that some survey participants intentionally respond with false or misleading data, compromising the accuracy of the reports. Unfortunately, because we did not take up with respondents the precise meaning of their complaints about the accuracy of reports, we are unable to offer a clear explanation of the link between accuracy and survey participation.

Only about 8 percent of the respondents mentioned lack of time as a likely reason for survey refusal. Most of these respondents suggested that interview requests often come at "a bad time," when farm or ranch demands make it very difficult for operators to participate. Also, 6 percent of the respondents suggested that farmers and ranchers might refuse because they simply have no interest either in surveys or in the resulting reports. Finally, 9 percent thought that some farmers and ranchers might refuse to participate because of their generally hostile attitudes toward "government," especially government agricultural policies that could be construed as "interference" in farm matters.

In Table 3.14 we see that respondents made far fewer suggestions about why farmers and ranchers might agree to participate (total of 699) than about why they might refuse (total of 1,040). Almost four respondents in ten thought that operators might participate in order to obtain direct benefits from the resulting crop and livestock reports. Note that this category was restricted to comments that made specific mention of the nature of the expected benefit (e.g., assists decision-making about type and quantity of crops to plant, timing of sales, getting better prices). About 20 percent of the respondents linked participation to more general favorable evaluations of the reports, calling them helpful, useful, generally worthwhile, and the like. Such comments differed from those in the direct-benefits category in that no indication was given of the specific kind of benefit provided by the reports. An additional 4 percent mentioned possible indirect benefits from participation. The great majority of these comments involved expectations about beneficial government policies (e.g., price supports) that might be instituted on the basis of survey results.

Some 15 percent of the respondents suggested that participation was not so much a matter of anticipated benefits as a reflection of a sense of personal obligation or duty, or a more general attitude of cooperativeness. Many of these remarks implied that some farmers and ranchers felt favorably disposed toward government activity in agriculture, although the majority were cast in terms of fulfilling civic responsibilities. At any rate, comments of this type omitted any reference to expected benefits.

Fully 21 percent of the operators who were asked this question could not think of any reason why some farmers and ranchers participated in crop and livestock surveys. The remaining responses were not classifiable into any of the above categories. A number of these speculated that some operators filled out surveys with bogus information with the aim of sabotaging the accuracy of the resulting reports, usually in a way designed to serve their own interests. Several others thought that operators participated just to guarantee their access to the final reports, whether or not they were of any use. A very few remarks contained the suggestion that some operators were harrassed or "hounded" into participating.

In Table 3.15 we present the state breakdowns for the two tables just described. Some state differences exist, but on the whole there is little variation. Operators in South Dakota were somewhat more likely (10 percentage points) to suggest that refusal to participate results from a belief that reports are used against farmers and ranchers. By a somewhat larger margin, North Dakota operators were more likely to think that refusals resulted from the opinion that reports drove product prices down. South Dakota respondents were also 8 percentage points more likely to connect refusals with concern about invasion of privacy by the surveys.

The distributions of responses concerning why some operators agree to participate were similar in the two states. The only difference of note is the greater tendency (8 points) of South Dakota operators to mention direct benefits as a possible reason for survey participation. This difference may result from South Dakota's larger proportion of livestock producers, whose greater ability to manipulate production rates may lead to greater use of livestock reports in production and marketing decisions.

#### EXPERIENCES WITH PARTICULAR SURVEYS

As mentioned earlier, Version II respondents were asked about participation in fall and winter surveys conducted by USDA during the preceding year. Some 368 operators said they were asked to participate in the fall survey. About four out of five were referring to the Acreage and Production of Crops Survey in North Dakota or the Acreage and Production of Small Grains Crops Survey in South Dakota. The remainder were divided equally among

TABLE 3.15

STATE DIFFERENCES IN REASONS WHY OPERATORS REFUSE OR AGREE  
TO PARTICIPATE IN SURVEYS--VERSION I RESPONDENTS ONLY  
(Percent)

	North Dakota	South Dakota
<u>Reasons for refusal:</u>		
Invasion of privacy . . . . .	39%	47%
Confidentiality problems . . . . .	7	3
Reports used against operators . . . . .	23	33
Reports depress prices . . . . .	32	18
Reports not accurate . . . . .	20	16
Reports not useful . . . . .	9	7
Difficulty in providing accurate information . . . . .	2	2
Scheduling problems--no time . . . . .	8	9
No interest in surveys or reports . . . . .	6	6
"Anti-government" responses . . . . .	9	8
Other reasons . . . . .	5	10
Don't know--no idea . . . . .	4	3
Total . . . . .	164%	162%
N . . . . .	327	312
<u>Reasons for participation:</u>		
Direct benefits (specified) . . . . .	34%	42%
Indirect benefits (government policy, etc.) . . . . .	7	2
General positive evaluation of reports (non-specific) . . . . .	23	18
Personal obligation, duty . . . . .	16	14
Other reasons . . . . .	10	13
Don't know--no idea . . . . .	23	20
Total . . . . .	112%	108%
N . . . . .	325	310

NOTE: Percentages sum to more than 100 because operators were allowed to suggest up to three reasons for refusal and participation.

those who referred to some other survey that they said was conducted by the Crop and Livestock Reporting Service during the fall, those who referred to surveys conducted by various other sources, and those who could not remember who had conducted the fall survey for which they were solicited.

Some 335 operators said that they were asked to participate in a survey during the winter months of 1977-78. Of these, 45 percent mentioned that they were solicited for the January Cattle and Calf Inquiry conducted by the Crop and Livestock Reporting Service. Of the remainder, about three in ten claimed to have been solicited for other surveys conducted by USDA or CLRS; about four in ten referred to surveys conducted by other government agencies, universities, or private organizations; and the others could not recall.

Those respondents who indicated that they had been asked to take part in crop and livestock surveys during the fall or winter preceding the interview were asked a series of three questions about their experiences. Two of these questions were meant to elicit operators' evaluations of the survey procedures used: "How well was the purpose of this survey explained? Would you say very well, fairly well, not very well, or not well at all?" and "Overall, do you feel the time and effort you put into answering the questions in this survey was very well spent, somewhat well spent, or not very well spent?" The third question, which was open-ended, sought operators' reasons for deciding not to participate in these surveys: "What were your reasons for deciding not to participate in this survey?"

In Table 3.16, we present the results for the first of these questions. Of the 337 Version II respondents who answered the question about the fall 1977 survey, the overwhelming majority (about 83 percent) thought the survey purpose was at least fairly well explained, and nearly one-third said that the purpose was very well explained. Of the remainder, about 10 percent were dissatisfied with the explanation they were given, and 7 percent could not recall. Findings for the winter survey are quite comparable, although there is evidence of a slight tendency toward greater dissatisfaction with the survey explanation.

Table 3.17 presents the results for the question on the operators' investment of time and effort. Of the 205 operators who said they responded to the fall survey (56 percent of those asked), about one in four (24 percent) felt that their time had been very well spent and just under one-half (47 percent) thought their time was somewhat well spent. Of the remainder, about one-quarter (26 percent) said their time was not well spent, and 3 percent could not recall. Of those who were asked to participate in the winter survey, 52 percent (171 operators) said they had in fact participated. As Table 3.17 shows, opinions of participants about the worth of participation in this survey were distributed almost identically with those of respondents to the fall survey.

TABLE 3.16

OPERATORS' EVALUATIONS OF EXPLANATIONS OF  
FALL 1977 AND WINTER 1977-78 SURVEYS  
(Percent)

Evaluation	Fall 1977 Survey	Winter 1977-78 Survey
Very well explained . . . . .	32%	31%
Fairly well explained . . . . .	51	46
Less well explained . . . . .	5	7
Not well explained . . . . .	5	7
Don't know . . . . .	7	9
Total . . . . .	100%	100%
N . . . . .	337	305

NOTE: Data are only for Version II respondents who were asked to participate in surveys during the fall of 1977 and/or the winter of 1977-78.

TABLE 3.17

PARTICIPANTS' EVALUATIONS OF EXPERIENCES IN  
FALL 1977 AND WINTER 1977-78 SURVEYS  
(Percent)

Evaluation	Fall 1977 Survey	Winter 1977-78 Survey
Time was very well spent . . .	24%	24%
Time was somewhat well spent .	47	46
Time was not well spent . . . .	26	29
Don't know . . . . .	3	1
Total . . . . .	100%	100%
N . . . . .	203	171

NOTE: Data are only for Version II respondents who agreed to participate in surveys during the fall of 1977 and/or the winter of 1977-78.

In general, then, we find that the great majority of operators appear to have had reasonably satisfactory experiences with the surveys themselves. Most of those who were asked felt that the purposes for various surveys were made reasonably clear to them, and, among those who participated, the majority considered their investment of time and energy to be at least somewhat worthwhile. Yet it is by no means trivial that 15 to 20 percent of those who were asked to participate in a survey either claimed that its purpose was not well explained to them or could not remember the explanation at all. Data presented in Table 3.18 show that perceptions of the quality of the explanation of the survey are quite strongly related to participation. In the fall, 71 percent of the respondents who were unsatisfied with or could not recall the explanation declined to participate in the survey, compared to roughly 30 percent refusal rates among the more satisfied. The results were much the same for the winter survey.

TABLE 3.18

EVALUATIONS OF SURVEY EXPLANATIONS AND PARTICIPATION  
IN FALL AND WINTER SURVEYS  
(Percent)

Participation	Purpose for Survey		
	Very Well Explained	Fairly Well Explained	Not Well Explained or Don't Know
<u>Response to</u>			
<u>Fall Survey:</u>			
Participated . . . . .	69%	66%	29%
Refused . . . . .	31	34	71
Total . . . . .	100%	100%	100%
N . . . . .	108	171	57
<u>Response to</u>			
<u>Winter Survey:</u>			
Participated . . . . .	67%	62%	31%
Refused . . . . .	33	39	69
Total . . . . .	100%	100%	100%
N . . . . .	95	138	72

NOTE: Data are only for Version II respondents who were asked to participate in surveys during the fall of 1977 and/or the winter of 1977-78.

Although plagued by ambiguities about the direction of causality in these data (i.e., we cannot say for sure whether poor explanations led to refusals or refusals led to rationalizations that the purpose was inadequately explained), it is plain enough that there is an association between an operator's perception that the purpose of a survey has been adequately explained and his decision to participate in it. Given the apparent strength of the relationship, it seems quite possible to us that placing greater emphasis on explaining the purpose of any given survey to an operator, in a cover letter or other introductory documentation, might be a relatively low cost way to increase participation rates.

We also explored the reasons that some farmers and ranchers decided against filling out the fall and winter surveys. In Table 3.19 we display the percentages for various reasons given by those who refused to participate, grouped into categories similar to those used for Table 3.13. The reader should keep in mind that, in contrast to the data in Table 3.13, the data in Table 3.19 apply to the respondents' own reasons for refusal, rather than to speculations about why "some farmers and ranchers" might refuse. Perhaps the first thing to note about the two columns of percentages is how similar they are: reasons for refusal on the two different surveys are almost identically distributed across the categories. In both fall and winter, the most commonly cited reason for nonparticipation was a belief that the report resulting from the survey would be of no use to the respondent in managing his operation (24 percent and 27 percent). However, the expectation that the reports would be used against operators' interests, and objections to invasion of privacy, were mentioned only slightly less often (about 20 percent). About 8 percent of the respondents mentioned unwillingness to cooperate in an enterprise that operators believed would ultimately depress farm prices. In addition, although about 16 percent of the operators refused because they believed the final report would be inaccurate, only about 2 percent cited any personal difficulty in providing accurate information. Finally, about 10 percent claimed no interest in the surveys or reports and roughly 4 percent mentioned scheduling or time problems.

Minor differences notwithstanding, the distributions of these Version II responses bear a remarkable resemblance to those obtained for the Version I questions in which entirely different operators were asked to speculate about the refusal reasons of other farmers and ranchers. The main differences involve the comparatively greater role of privacy and confidentiality considerations in the speculative responses, and the greater weight placed on the more instrumental aspects of the survey process (usefulness and quality of the report, use of reports against farmers and ranchers) in the personal responses. These variations in the distributions should not, however, obscure their essential similarity. By far the most commonly cited reasons for nonparticipation in both groups are protection of privacy, the

TABLE 3.19

REASONS GIVEN FOR REFUSALS TO PARTICIPATE  
IN FALL AND WINTER SURVEYS  
(Percent)

Reason	Fall Survey	Winter Survey
Invasion of privacy . . . . .	21%	19%
Confidentiality problems . . . . .	--	--
Reports used against farmers and ranchers .	21	21
Reports depress prices . . . . .	9	7
Reports not accurate . . . . .	18	15
Reports not useful . . . . .	24	27
Difficulty in providing accurate information . . . . .	2	3
Scheduling problems--lack of time . . . . .	4	5
No interest in surveys or reports . . . . .	10	9
"Anti-government" responses . . . . .	1	1
All other reasons . . . . .	12	10
Total . . . . .	122%	117%
N . . . . .	125	127

NOTE: Percentages sum to more than 100 because operators were allowed to mention up to three reasons for refusing to participate. There were 152 responses about the fall survey and 149 responses about the winter survey.

anticipated low quality or uselessness to the operator of the reports of survey results, and the expectation that the survey data collected will eventually be used against those who supply it.

Although there is much to be gained from an analysis of operators' spontaneous, open-ended explanations of why they agree or refuse to participate, there are some significant limitations on what we can learn from responses of this type. As indicated above, the hypothetical questions used in Version I of the questionnaire encouraged respondents to speculate freely about reasons for participation or refusal. As a consequence, we have no basis for determining how important any particular factor might have been to the farmer or rancher who mentioned it. Conversely, asking operators for their personal reasons for non-

participation, as we did in Version II, left open the possibility that respondents would feel inhibited about revealing motivations that might be considered "socially unacceptable," again biasing the results. Furthermore, the analysis of open-ended material necessarily depends on the grouping of responses into categories based on subjectively determined criteria. However carefully this is done, a survey's findings may be affected by how the basic categories are defined and how classification criteria are applied. Thus, while the results presented thus far are quite useful for suggesting the major concerns affecting survey participation, a different approach is required if we are to learn something about the relative importance of the various factors that affect long-run participation rates.

#### EXPLAINING PARTICIPATION RATES: BIVARIATE ANALYSIS

In both versions of the questionnaire, we obtained a great deal of information about the opinions and characteristics of farm and ranch operators that might conceivably affect their tendencies to participate or refuse. Much of this data has already been described in the discussion of information use and evaluation (Chapter 2) and in the preceding sections of this chapter; the remainder will be reviewed below as we turn to examining the possible effects of these characteristics on participation rates.

Our method is a simple one, well suited to a study of this kind. First, survey items identified as potential determinants of participation rates were recoded as necessary so that responses that we expected to be associated with lower participation rates had low values or scores, and responses thought to be related to higher participation rates had high scores. We then computed a series of measures of association (correlation coefficients) between each of the hypothesized predictors and each of the participation rate measures. (In most cases, correlations were available with both the subjective and the numerical measures of participation. Occasionally, however, a predictor was measured in only one of the two questionnaire versions, so that its relationship could be tested with only one of the participation measures.)

Theoretically, the choice among measures of association depends on the conformity of the variables being analyzed to the logical and mathematical assumptions (level of measurement, scale properties, the nature of the hypothesized relationship, etc.) on which the statistic is based. In practice, however, it is often the case that the character of ordinal relationships can be described equally well by a variety of coefficients, regardless of the underlying measurement assumptions. In fact, in our analysis of the strength of the relationships between ordinal measures, such as degree of trust in government reports and

subjective participation rates, we obtained virtually identical results with ordinal measures of association (such as Kendall's Tau-beta) and interval-based measures (such as Pearson's product-moment coefficient). The discrepancies between these two statistics are so slight in our data that, for the sake of parsimony, we have elected to report only the Pearson correlation coefficients for all relationships between predictor variables and participation rates. (The use of these coefficients also enables us to avoid presenting upwards of 75 percentage tables to describe those relationships. The bivariate coefficients presented in the following table are the ones used in the correlation matrix for the multiple regression analysis that follows.)

In Table 3.20 we display the Pearson correlation coefficients for all hypothesized predictors found to have statistically significant relationships with either or both of our participation measures. The first column reports the coefficients for the subjective measure of participation (designated  $Y_1$ ) and the second column contains correlations with the numerical measure ( $Y_2$ ). A brief review of these findings will allow us to clarify the derivation of each of the predictor variables. For ease of presentation of subsequent analyses, each of the predictors has been labeled with an X plus a subscript.

First, operators who reported using publications of the Crop and Livestock Reporting Service ( $X_1$ ) also indicated that they participated in surveys slightly more often than those who did not (Pearson  $r = .13$  with both participation measures). The same was true for those who use agricultural agents for crop and livestock information ( $X_2$ ), although the relationship is weaker (.07 with subjective participation rates, .09 with numerical). Operators who rely on friends, relatives, and neighbors for agricultural information ( $X_3$ ) appear to participate slightly less frequently than others, although this effect is evident only in the correlation with numerical participation ( $r = -.10$ ). Similarly, operators who said they had no source for crop and livestock information ( $X_4$ ) also appear to be less frequent participators, although the relationship was detected only in the correlation with the subjective measure of participation (-.16).

The perceived usefulness of crop and livestock data for managing a farm or ranch shows substantially greater predictive power with respect to both participation measures. Operators' opinions about the utility of the information were measured in two ways. The first made use of the direct question about how generally useful operators considered the information to be ( $X_5$ ), described in Chapter 2. As expected, the more useful the information was deemed to be, the higher the operator's participation probability ( $r = .30$  with the subjective measure, .34 with the numerical measure). Second, using a series of questions about the usefulness of specific types of information usually found in crop and livestock reports ( $X_6$ ), we constructed for each operator a

simple sum of the number of items he considered very or somewhat useful. Again quite predictably, the more pieces of information an operator rated as useful, the higher his reported participation rate ( $r = .38$  with subjective rates,  $.25$  with numerical rates). The two usefulness measures are, of course, closely related, but, as the variation in their respective correlations with the two participation measures shows, they are by no means identical (the Pearson correlation between them is  $.51$ ).

Some clarification of the magnitudes of the correlations that we have discussed so far may be useful at this point. Tables 3.21 and 3.22 display the average numerical participation rates broken down first by whether or not an operator reported using CLRS publications, and second by the operator's evaluation of the usefulness of crop and livestock information. In a similar fashion, in Tables 3.23 and 3.24 we present the percentage distributions for the subjective participation measure for each category of these same two predictor variables. The Pearson coefficient of  $.13$  in Table 3.21 reflects an underlying difference of about 16 percentage points in self-reported participation rates between those who use CLRS reports and those who do not, with users claiming to participate more frequently. In contrast, Table 3.22 reveals that a correlation of  $.34$  reflects a percentage difference of some 46 points between the participation rates of those who think the data is very useful and those who feel it is not useful at all, while those who think it is somewhat useful fall about halfway between.

Roughly parallel results obtain for the subjective participation measure (to simplify presentation, we have combined the two categories of most frequent participators). Of the operators who claimed to use CLRS reports, 53 percent said that they participate almost always or most of the time, compared to only 32 percent for nonusers, a difference of 21 percentage points (Table 3.23). Even more impressive is the fact that 58 percent of those who believe crop and livestock data is very useful are found in the highest participation categories, compared to only 18 percent of those who believe the information is not useful at all--a 40 point difference (Table 3.24). Again, operators who think the information is somewhat useful have an intermediate percentage in the highest participation category.

Returning to the table of correlations, the two predictors following the usefulness measures are a pair of indices built from the responses to questions about which groups other than farmers and ranchers use crop and livestock reports and whether their use helps or hurts operators' interests. The first represents an operator's perceptions about the extent of damage done to farmers' and ranchers' interests by the use of reports by other groups ( $X_7$ ). We constructed it by simply summing the number of groups an operator described as harmful users of crop and livestock information. The second index represents the opposite sentiment, namely the degree to which operators believe benefits accrue to

TABLE 3.20  
CORRELATIONS BETWEEN PARTICIPATION MEASURES AND PREDICTOR VARIABLES

	Predictor Variable ( $X_i$ )	Subjective Participation Rate ( $Y_1$ )	Numerical Participation Rate ( $Y_2$ )
$X_1$	R uses CLRS reports for information . . . . .	.13	.13
$X_2$	R uses agricultural agent(s) for information . . . . .	.07	.09
$X_3$	R gets information from friends, neighbors, etc. . . . .	N.S. <sup>a</sup>	-.10
$X_4$	R has no source for crop and livestock information . . . . .	-.16	N.S.
$X_5$	R considers crop and livestock information to be generally useful . . . . .	.30	.34
$X_6$	Number of items of information in crop and livestock reports R considers to be useful . . . . .	.38	.25
$X_7$	Number of groups R believes use crop and livestock reports against operators' interests . . . . .	-.29	-.11
$X_8$	Number of groups R believes use crop and livestock reports in ways that are helpful to operators . . . . .	.40	.21
$X_9$	R believes that farmers and ranchers benefit more than other groups from crop and livestock reports . . . . .	.26	.23

X <sub>10</sub>	Index of general evaluations of the quality of government crop and livestock reports and their impact on agricultural economics . . . . .	.49	.38
X <sub>11</sub>	How often R trusts government reports to be right . . . . .	.44	-- <sup>b</sup>
X <sub>12</sub> -X <sub>18</sub>	Importance of various reasons for participating in surveys:		
X <sub>12</sub>	R finds it hard to refuse when asked . . . . .	.20	.21
X <sub>13</sub>	R uses crop and livestock reports . . . . .	.50	.38
X <sub>14</sub>	R enjoys being interviewed . . . . .	.26	.12
X <sub>15</sub>	R wants to insure accuracy of crop and livestock information . . . . .	.44	.27
X <sub>16</sub>	R feels "hooked" when asked . . . . .	.14	.15
X <sub>17</sub>	R belongs to an organization that encourages participation . . . . .	.22	.13
X <sub>18</sub>	R considers government surveys to be usually worthwhile . . . . .	.46	.29
X <sub>19</sub>	R finds it difficult to give accurate information about the number of acres he intends to plant to different crops . . . . .	-.16	--

TABLE 3.20--Continued

	Predictor Variable ( $X_1$ )	Subjective Participation Rate ( $Y_1$ )	Numerical Participation Rate ( $Y_2$ )
$X_{20}$ - $X_{27}$	R's degree of willingness to provide various kinds of information in crop and livestock surveys:		
$X_{20}$	Number of acres R plans to plant to different crops . . .	-- <sup>c</sup>	-.41
$X_{21}$	Acreage actually planted to different crops . . . . .	--	-.41
$X_{22}$	Acres harvested, crop yields . . . . .	--	-.39
$X_{23}$	Kinds and numbers of livestock held . . . . .	--	-.38
$X_{24}$	Prices received for livestock sold . . . . .	--	-.31
$X_{25}$	Prices paid out for seed, fertilizer, feed, etc. . . . .	--	-.26
$X_{26}$	Total income from farm/ranch operation . . . . .	--	-.26
$X_{27}$	Total off-farm/ranch income . . . . .	--	-.29
$X_{28}$	Overall index of unwillingness to provide information . . . . .	--	-.42
$X_{29}$	Negative reaction to the number of survey requests received (perceived burden) . . . . .	-.48	--

X30	R believes USDA would reveal confidential survey responses to private parties . . . . .	-.16	-.11
X31	R believes USDA would reveal confidential survey responses to other government agencies . . . . .	-.17	-.18
X32	Attitude of R's agricultural organization toward participation in surveys (discourage versus promote) . . . . .	.22	.20
X33	R's age . . . . .	.07	.10
X34	Number of cropland acres . . . . .	N.S.	-.09
X35	R raises cattle . . . . .	N.S.	-.08
X36	R raises hogs . . . . .	-.09	N.S.
X37	R grows corn . . . . .	-.13	-.13
X38	R receives income from an off-farm/ranch job . . . . .	.11	N.S.

<sup>a</sup>Not significant at the .05 level.

<sup>b</sup>Not asked in Version II.

<sup>c</sup>Not asked in Version I.

TABLE 3.21

MEAN NUMERICAL PARTICIPATION RATES FOR SELF-REPORTED  
USERS AND NON-USERS OF CROP AND LIVESTOCK  
REPORTING SERVICE INFORMATION  
(Percent)

	R Uses CLRS Reports	R Does Not Use CLRS Reports	Total
Mean participation rate . . . . .	63%	47%	49%
N . . . . .	64	383	447

TABLE 3.22

MEAN NUMERICAL PARTICIPATION RATES BY  
OVERALL USEFULNESS EVALUATIONS  
(Percent)

	Evaluation of Information			Total
	Very Useful	Somewhat Useful	Not At All Useful	
Mean participation rate . . . . .	73%	56%	27%	49%
N . . . . .	52	266	124	442

TABLE 3.23

SUBJECTIVE PARTICIPATION RATES AND USE OF CROP AND  
LIVESTOCK REPORTING SERVICE INFORMATION  
(Percent)

Use of Data	Frequency of Participation			Total	N
	Almost Always or Most of the Time	Only Some of the Time	Hardly Ever		
R uses CLRS data . . .	53%	26%	21%	100%	66
R does not use CLRS data . . .	32	28	40	100	485

TABLE 3.24

SUBJECTIVE PARTICIPATION RATES AND EVALUATIONS  
OF THE OVERALL USEFULNESS OF CROP AND  
LIVESTOCK INFORMATION  
(Percent)

Usefulness Evaluation	Frequency of Participation			Total	N
	Almost Always or Most of the Time	Only Some of the Time	Hardly Ever		
Very useful .	58%	20%	22%	100%	30
Somewhat useful . .	42	30	28	100	312
Not at all useful . .	18	26	56	100	203

farmers and ranchers because crop and livestock data is used by other groups ( $X_9$ ). This, too, is simply a sum, in this case of the total number of groups the respondent considered helpful users of the reports. For each operator, the range of possible scores on these two indices ran from 0 (no groups considered helpful/harmful users) through 9 (nine groups named as helpful/harmful users).

The correlation coefficients for these indices are quite substantial with the subjective participation measure, though somewhat lower with the numerical. The index of other groups' helpfulness appears to have a stronger relationship with both participation measures (.40 and .21) than does the index of perceived harm (-.29 and -.11), indicating an asymmetry in operators' motivational structures. Although the frequency of participation declines as the number of groups believed to use reports against operators increases, participation increases at an even faster rate as the number of groups believed to use crop and livestock information in a way that benefits operators increases.

Another measure of the incidence of benefits from crop and livestock reports was found to be a moderately strong predictor of participation rates. Respondents who believed that farmers and ranchers benefited more than other groups from crop and livestock reports ( $X_9$ ) were a good deal more likely to be frequent participants than those who felt that other groups benefited more (Pearson  $r = .26$  with the subjective measure, .23 with the numerical measure).

Among the strongest correlates of participation rates is a summary index of operators' evaluations of *government* crop and livestock reports ( $X_{10}$ ). This scale is based on a number of questions about the quality of government reports and their impact on the agricultural economy. (Distributions of responses to these questions were discussed in Chapter 2. See Qs. 16 and 17 of Version II, and 16 to 18 of Version I.) It is a simple additive index, computed as a net count of the number of favorable evaluations of government reports made by the operator minus the number of unfavorable evaluations. Built in this way, the summary measure is a more powerful predictor of participation rates than any one of the individual component items (coefficients of .49 with the subjective participation measure and .38 with the numerical measure).

Almost as potent a predictor as the evaluation index is our measure (used in Version I only) of the extent to which a farmer or rancher feels he can trust the results of government crop and livestock surveys to be accurate ( $X_{11}$ ). The correlation with the subjective participation rate is .44.

The next group of predictor variables was derived from a set of questions designed to explore the importance to operators of seven hypothetical reasons for agreeing to participate in surveys. After each reason was read to the respondent, he was asked to indicate whether or not it was usually an important factor affecting his participation decisions. In Table 3.25, we display the response patterns for this series of items. We found considerable variation in the proportions citing each of the reasons as important. The only reason endorsed by a majority of operators was the one citing concern about the accuracy of resulting crop and livestock reports (Table 3.25.d); 57 percent of the respondents considered this an important factor when deciding whether or not to participate. Two other reasons were deemed important by more than 40 percent of the operators: one referred to a general feeling that it was difficult to refuse a direct request for cooperation (Table 3.25.a), which 45 percent cited as important; and other second described a sense of obligation to participate because the operator personally used crop and livestock reports (Table 3.25.b), cited by 42 percent. (Note that the percentage who attributed importance to the obligation imposed by personal use of reports is much larger than the percentage who claimed to use reports from the Crop and Livestock Reporting Service in response to our question about information sources--12 percent; Table 2.1. The substantial proportion of operators who feel that report use obliges them to participate apparently have in mind types of reports other than those from the Crop and Livestock Reporting Service.) Operators were least likely to attach importance to personal enjoyment in being interviewed and giving information (27 percent, Table 3.25c), and to encouragement from organizations to which they belong (28 percent, Table 3.25f).

TABLE 3.25

IMPORTANCE TO OPERATORS OF SEVEN HYPOTHETICAL REASONS FOR PARTICIPATING IN CROP AND LIVESTOCK SURVEYS (Percent)

	Important	Not Important	Not Applicable	Total	N
"People agree to participate in surveys for many different reasons. For each of the following, please tell me whether it is important or not important for you when you decide to participate in crop and livestock surveys."					
a. When someone asks me to do something, I find it hard to say no. . . . .	45%	54%	1%	100%	1,084
b. I use the crop and livestock reports, so I feel I ought to participate in the surveys. . . . .	42	56	2	100	1,083
c. I like being interviewed and having a chance to give information. . . . .	27	72	1	100	1,082
d. If farmers and ranchers don't participate, the crop and livestock reports won't be accurate. . . . .	57	42	1	100	1,078
e. Once the survey contacts you or gets you on the phone, you're already hooked, so you might as well go ahead. . . . .	30	69	1	100	1,072
f. An organization I belong to encourages its members to participate. . . . .	28	66	6	100	1,075
g. When the government sponsors a survey, it's usually worthwhile. . . . .	39	60	1	100	1,069

95

NOTE: This series of questions was omitted for respondents who had never participated in a crop or livestock survey. "Don't know" responses were eliminated from table percentages.

In general, operators who mentioned any of the seven reasons as important are likely to be more frequent participators than those who did not. Clearly, those with the lowest participation rates are not likely to consider *any* reason very important. However, comparing the magnitudes of the coefficients for the various reasons, we find that three of the reasons appear to be exceptionally strong predictors for both types of participation measure: the link between participation and personal use of crop and livestock reports ( $X_{13}$ ,  $r = .50$ ), followed by the force of the belief that government-sponsored surveys are usually worthwhile ( $X_{18}$ ,  $r = .46$ ), and by the notion that participation is essential if the resulting reports are to be accurate ( $X_{15}$ ,  $r = .44$ ). Although the remainder of these predictors ( $X_{12}$ ,  $X_{14}$ ,  $X_{16}$ ,  $X_{17}$ ) all have significant relationships with the participation measures, their coefficients suggest that operators who attached importance to such factors as personal enjoyment of being interviewed and participation pressures from organizational membership tend to have lower average participation rates than those who cited personal use of reports or concern about accuracy as their motivation.

The conceptual differences between the two predictors that bear on the relationship of participation rates to the use of crop and livestock reports is important. The first of these ( $X_1$ ) deals with the effect on participation of the *use* of reports from the Crop and Livestock Reporting Service. The second ( $X_{13}$ ), though related to the first, is quite distinct in that it asks specifically whether use of these reports is felt to be an *important reason for participating*. Since the latter appears to have a much stronger relationship to participation rates than the former, we can probably assume that some operators who make use of CLRS data do not feel any obligation to assist in the collection of information for those reports.

The next predictor in Table 3.20 is an indicator of whether the respondent finds it difficult to answer accurately survey questions about the number of acres he intends to plant to particular crops ( $X_{19}$ ). It has a mild, inverse relationship to participation ( $-.16$ ). This was the only one of eight items (asked on Version I only) concerning the difficulty of providing accurate information that showed any significant relationship to participation rates. Based on this finding, we conclude that the difficulty of actually answering survey questionnaires has little or no effect on participation rates.

This finding contrasts sharply with the next set of predictors ( $X_{20}$  to  $X_{27}$ ), which score operators according to how unwilling they are to reveal the same eight items of information for which we asked the difficulty-of-being-accurate questions in Version I (see Table 2.29 for a review of these items). All eight of these items (Version II only) show moderate to strong negative correlations with participation rates, the strongest being

unwillingness to reveal planting intentions (.41), acreage planted to various crops (-.41), harvest acreage and crop yields (-.39), and the kind and number of livestock held (-.38). A general index of unwillingness to provide information in surveys ( $X_{28}$ ) was computed by summing the eight individual measures. Its strong correlation with the dependent variable  $Y_2$  (-.42) makes it the most powerful predictor of numerically measured participation rates.

An equally strong relationship was found between subjective participation and our measure of perceived burden of survey requests ( $X_{29}$ ), discussed earlier. Recalling that perceived survey burden reflects considerably more than just the actual numbers of survey requests received, we feel justified in treating our perceived-burden variable as an alternative measure of the operators' unwillingness to reveal information about their operations. With a Pearson correlation of -.48, it is, along with overall evaluations of government surveys ( $X_{10}$ ), one of the two strongest predictors of subjective participation rates.

The next two predictors concern operators' beliefs about how well the confidentiality of their survey responses is protected. Those who thought that USDA would reveal an operator's answers to a private firm ( $X_{30}$ ) or to another government agency ( $X_{31}$ ) have lower average participation rates than those who were convinced that confidentiality is guaranteed, although the differences are probably rather small (the coefficients are .18 or lower).

We also find that participation is affected by the position on surveys taken by the various agricultural organizations or interest groups to which the respondents belonged ( $X_{32}$ ). Although the relationships with both measures of participation are moderate (.22 with the subjective measure, .20 with the numerical measure), members of organizations that encourage participation tended to report participating at higher rates, while members of groups that advise against participation tended to report at lower rates. (Simply being a member of an agricultural organization has no predictable effect on participation rates, a finding that runs contrary to some frequently offered notions about the positive effects of organizational affiliations on various types of social participation behavior.)

We collected a small amount of background information on the characteristics of each respondent and the nature of his agricultural enterprise, but very few of these items have statistically significant relationships with participation. For example, the respondent's age ( $X_{33}$ ) shows only modest correlation with the two dependent variables (.07 and .10), indicating that older operators tend to participate at slightly higher rates. The relationship of respondents' educational attainment to participation was not statistically significant.

There are few significant correlations between participation rates and various measures of the type and scale of operation managed by a respondent. Number of cropland acres ( $X_{34}$ ) correlates only with numerical participation ( $r = -.09$ ), suggesting that larger crop producers are slightly less frequent participators. Likewise, operators who raise cattle ( $X_{35}$ ) appear to have lower numerical participation rates ( $r = -.08$ ), but this finding is not replicated for subjective participation. In contrast, those who raise hogs ( $X_{36}$ ) show a tendency toward lower subjective participation rates ( $r = -.09$ ), but no predictable pattern on the numerical measure. Operators who grow corn ( $X_{37}$ ) are less likely to participate, regardless of the participation measure used ( $r = -.13$  with both participation variables).

Finally, we found a modest association between subjectively measured participation and an indicator of whether a respondent receives any income from an off-farm/ranch job ( $X_{38}$ ). That is, operators who supplemented their farm or ranch income were more likely to be frequent participators according to the subjective measure ( $r = .11$ ).

#### EXPLAINING PARTICIPATION RATES: MULTIVARIATE ANALYSIS

If we allow the eight separate measures of unwillingness to supply information to be represented by the single unwillingness index, we are left with a total of about twenty-five significant predictor variables for each of the dependent participation measures. Yet, although we now have a general idea about the *total* relationship between participation and any of the individual predictors, we are as yet unable to assess how much of that total might be due to the *direct, independent influence* of a given predictor on the dependent participation measure. That is, the bivariate correlation coefficients presented in Table 3.20 are summary statistics, representing not only the direct effects of a predictor, but also any indirect or spurious covariation. Thus, the appearance of a strong correlation between a presumed predictor variable and participation must be interpreted carefully. It might be that it resulted from a causal process in which some third variable (one of the remaining predictors) influenced both participation rates and the first predictor, giving rise to a substantial but spurious correlation. Or it may be that an apparently powerful predictor of participation had little direct effect on the dependent variable, but actually transmitted its influence through a third intervening factor, which in turn affected participation. The fact that some of our predictor variables are themselves interrelated indicates that many such processes may have occurred among the independent variables. To rank the presumed causes of survey participation in order of their direct influence on operators' behavior we must turn to a multivariate analytical technique.

Briefly, multivariate procedures such as multiple regression

allow us to take account of the intercorrelations among the predictor variables (regressors), which may arise from mutual causal processes or from the fact that some predictors are actually indicators of the same underlying factor. The object of regression methodology is the calculation of a set of *partial regression coefficients* for our predictor variables, which, given certain assumptions, express the degree of direct, independent influence each predictor exerts on its respective participation measure. If all variables in the analysis are first standardized to have a mean of zero and unit variance, then the resulting standardized regression coefficients (also referred to as *beta weights* or *path coefficients*) can be compared with one another and the relative importance of the predictors can be assessed. Furthermore, with the use of an iterative algorithm known as *stepwise inclusion* to aid the selection and testing of regressors for the prediction equation, we can efficiently obtain a solution that identifies the best linear combination of independent variables, in terms of the amount of variation accounted for in the participation measures.

Of course, the results of any analytical procedure such as multiple regression depend heavily upon the specification of the conceptual model to be analyzed and upon how well the observed data meets the statistical assumptions of the analytical technique used. Model specification--the process of stating the general nature of the relationships among variables of interest--will rarely be approached in exactly the same way by different researchers, each of whom may have unique interpretations of the meanings of survey variables or the causal processes connecting them. We do not offer our model as an authoritative representation of reality. Rather, in keeping with the exploratory nature of our survey, we have specified the simplest possible model that meets the criterion of plausibility. In particular, our model assumes that the participation measures are true "dependent" variables that are causally determined by some or all of the predictor variables we have discussed above (except for the disturbances due to various sources of error--random individual differences among operators, other variables that were not measured in our survey). It assumes that participation tendencies *do not* causally affect these predictor variables in return. In other words, attitudes and beliefs are presumed to have been formed through independent experiences and only then to exert influence over participation decisions, rather than merely arising as post hoc rationalizations of participation habits that may have evolved for entirely different reasons.

Our model also assumes that, even though each of our predictor variables may be related to one or more of the remaining predictors, the magnitude of its direct influence on participation rates does not depend upon the corresponding values of any other independent variable. In statistical terms, our model is *linear-additive* rather than *interactive*.

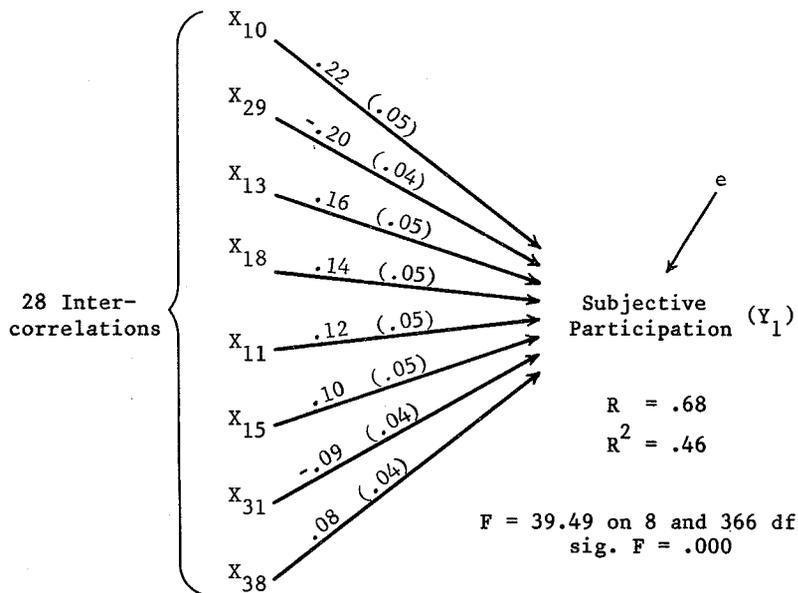
Finally, the values of the coefficients computed for this model, with which we will attempt to compare the direct effects of predictor variables, hinge on the assumption that we have not omitted from the model any important causes of participation that are substantially correlated with specified predictors. If such variables were omitted, the computed coefficients might be biased in either direction, depending upon the nature of the omitted effect. We assume that all such factors have been included in the model.

Not all readers will agree with every one of these assumptions. Many alternative specifications are possible; other statistical techniques might shed additional light on the processes underlying participation decisions. Our assumptions are not likely to be drastically wrong, however, and the regression technique was chosen in part because of its relative flexibility with respect to minor violations of mathematical assumptions. Thus, we feel confident that the findings presented below provide a sound starting point from which to understand the dynamics of participation in crop and livestock surveys.

Following the above procedures, we have computed regression equations for each of the participation measures, including in the matrix of regressors all of the variables that have significant zero-order correlations with participation rates (i.e., those listed in Table 3.20). As mentioned above, the summary index of unwillingness to supply information was substituted for the eight individual unwillingness measures in the matrix for numerical participation.

Of the twenty-six predictors of subjective participation rates, only eight proved to have partial regression coefficients that differed significantly from zero. In Figure 3.1 we present the path diagram for this equation and report the beta weights (with their standard errors in parentheses) for each of the predictors. Table 3.26 presents several statistics and tests for each inclusion step in building the equation. Roughly speaking, these statistics describe the increases in explanatory power associated with the inclusion in the equation of each additional variable. Altogether, these eight variables explain 46 percent of the variance in subjective participation. Once they are in the equation, the remaining eighteen predictors cannot significantly improve our ability to predict subjective participation rates.

The variables exhibiting the strongest direct effects upon subjectively measured participation are operators' evaluations of the quality and economic impact of government crop and livestock reports ( $X_{10}$ ; beta = .22) and the degree to which operators believe they are being burdened with "too many" surveys ( $X_{29}$ ; beta = -.20). As we have pointed out, in this context *too many* does not refer so much to the actual number of survey requests as it does to the feeling of some operators that surveys are an unwelcome intrusion into their private lives. This



X<sub>10</sub> = Index of evaluations of the quality and economic impact of government crop and livestock reports

X<sub>29</sub> = Negative reaction to number of survey requests received (perceived burden)

X<sub>13</sub> = Perceived obligation to participate in surveys because of personal use of crop and livestock reports

X<sub>18</sub> = Belief that government surveys are usually worthwhile

X<sub>11</sub> = How often R trusts government crop and livestock reports to be right

X<sub>15</sub> = Perceived obligation to participate in surveys in order to promote the accuracy of the reports

X<sub>31</sub> = R believes USDA would reveal confidential survey responses to another government agency

X<sub>38</sub> = R receives income from an off-farm/ranch job

Fig. 3.1. Path diagram for subjective participation equation.

TABLE 3.26  
GOODNESS OF FIT STATISTICS FOR THE SUBJECTIVE PARTICIPATION REGRESSION EQUATION

Step	Variable Included	R <sup>2</sup> for Equation <sup>a</sup>	Analysis of Variance <sup>b</sup>		Change Statistics <sup>c</sup>	
			F for Equation	Significance Probability	Change in R <sup>2</sup>	F for Change
1	X <sub>13</sub>	.24	117.34	.000	--	--
2	X <sub>10</sub>	.35	97.92	.000	.106	59.95 .000
3	X <sub>29</sub>	.40	82.42	.000	.055	34.02 .000
4	X <sub>11</sub>	.43	68.62	.000	.026	16.75 .000
5	X <sub>18</sub>	.44	58.49	.000	.016	10.73 .001
6	X <sub>15</sub>	.45	50.20	.000	.008	5.33 .022
7	X <sub>31</sub>	.46	44.14	.000	.007	4.74 .030
8	X <sub>38</sub>	.46	39.49	.000	.006	4.22 .041

<sup>a</sup>These statistics can be interpreted as the proportion of variance in the subjective participation measure explained by predictor variables in the equation at each step.

<sup>b</sup>These statistics indicate that the eight-variable equation significantly improves our ability to predict individual participation rates.

<sup>c</sup>These statistics describe the improvements in explanatory power gained by the inclusion of each subsequent variable. All of these variables added significant increments to the preceding R<sup>2</sup> values (p < .05). Since none of the remaining predictors could increase explanatory power (R<sup>2</sup>) by statistically significant amounts, they were excluded from the equation.

interpretation of perceived survey burden is very much in line with our finding that reaction against invasion of privacy was the reason most frequently mentioned when operators speculated about others' reasons for nonparticipation in crop and livestock surveys (Table 3.13).

The next largest coefficient attaches to the sense of obligation felt by some operators to participate in crop and livestock surveys because they use the resulting reports ( $X_{13}$ ; beta = .16). We reiterate here the crucial point that it is not merely the use of crop and livestock reports that leads to higher participation rates, but rather the feeling that one ought to cooperate in filling out survey questionnaires in exchange for the benefit of receiving the reports.

The belief that government surveys are usually worthwhile also exerts independent influence on participation rates subjectively measured ( $X_{18}$ ; beta = .14). The basis for this opinion may vary somewhat from operator to operator. For some it may be the experience of responding to the survey itself; for others the pattern of correlations shows that *worthwhile* may be roughly equivalent to *useful*, *trustworthy*, or *accurate*. This variable is also related to our index of evaluation of government reports ( $X_{10}$ ), itself an important predictor of participation.

The more often an operator feels he can trust government crop and livestock reports to be right, the higher his participation rate, regardless of his status on other variables ( $X_{11}$ ; beta = .12). About equally strong (beta = .10) is the belief that participation in surveys is necessary to promote the accuracy of the reports ( $X_{12}$ ). The fact that both the trust and accuracy items have independent effects on participation rates, along with the substantial effects of evaluations of the reports, leads us to conclude that participation in crop and livestock surveys is strongly governed by the view an operator takes of the reports produced from the survey data.

Two additional factors have direct influence on subjective participation: regardless of other factors, participation rates are lower among farmers and ranchers who believe that USDA would reveal the survey responses of a particular operator to another government agency that asked for them ( $X_{31}$ ; beta = -.09); and, independent of all other attitudes and beliefs included in the regression equations, operators who earn some income from employment outside their farm or ranch are likely to participate at slightly higher rates than those whose livelihood is derived exclusively from their agricultural enterprise ( $X_{38}$ ; beta = .08). Other things being equal, operators with greater experience in the nonfarm economy seem to have less objection to surveys and reports.

Despite basic differences between our two participation

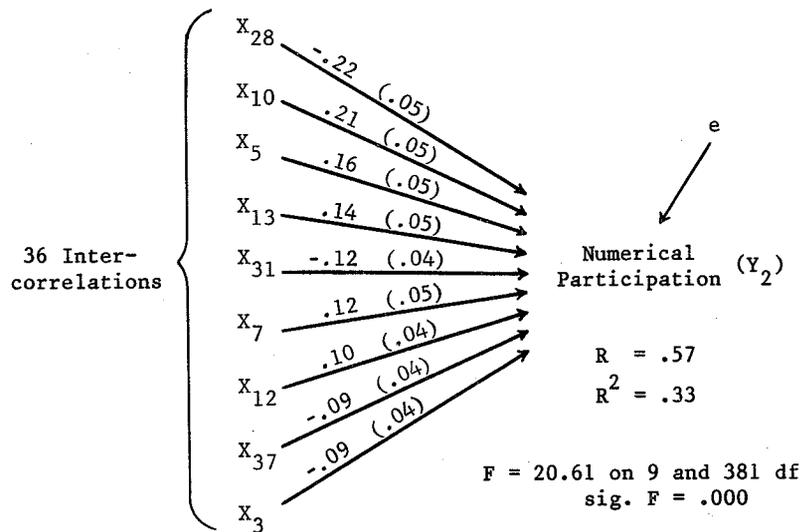
measures, remarkably similar results were obtained in the regression of numerical participation rates on twenty-four predictor variables. Nine of the regressors were found to have statistically significant coefficients; together they account for 33 percent of the variance in numerically measured participation. Figure 3.2 displays the path diagram with beta weights and standard errors for this equation. Step-by-step inclusion statistics for these variables are displayed in Table 3.27.

Especially striking is the fact that the four most important predictors of numerical participation parallel those for the subjective measure. The index of unwillingness to provide information ( $X_{28}$ ; beta = -.22) appears to serve the same function in this equation as the measure of perceived survey burden ( $X_{29}$ ) in the preceding equation. Controlling for other factors, the more jealously an operator guards his privacy, the lower his participation rate. No matter what kinds of benefits an operator anticipates from the production and circulation of crop and livestock data, his perceptions about the costs of breaking through the privacy barrier carry considerable independent weight in his participation decisions.

Evaluations of government reports ( $X_{10}$ ) are again important, exhibiting major influence on numerical participation rates (beta = .21). In addition, the more generally useful an operator finds crop and livestock information, the more frequently he agrees to participate in surveys that produce it ( $X_5$ ; beta = .16). Although we can only speculate, it is quite conceivable that the role of usefulness evaluations in this equation is much the same as that of beliefs that government surveys are worthwhile ( $X_{18}$ ) in the subjective participation equation. Both appear to represent a rather diffuse, global view about the collection and dissemination of production and marketing data as a prudent and useful activity that should be supported by cooperation in surveys.

The next most potent independent variable is the same measure of obligation to participate because one uses government reports that was found to be a major cause of subjective participation ( $X_{13}$ ; beta = .14). As was the case for the first three predictors, the magnitude of this coefficient closely parallels that found in the preceding equation, bolstering our confidence that our two dependent variables are equally valid indicators of the "true" underlying participation tendencies of farmers and ranchers.

There is one more significant predictor in the numerical participation equation that duplicates an effect found in the equation for subjectively measured participation. Other things being equal, respondents who believe that USDA would reveal the survey responses of a particular operator to another government agency are less likely to participate ( $X_{31}$ ; beta = -.12).



- X<sub>28</sub> = Index of unwillingness to provide selected information in surveys
- X<sub>10</sub> = Index of evaluations of the quality and economic impact of government crop and livestock reports
- X<sub>5</sub> = R considers crop and livestock information to be generally useful
- X<sub>13</sub> = Perceived obligation to participate in surveys because of personal use of crop and livestock reports
- X<sub>31</sub> = R believes USDA would reveal confidential survey responses to another government agency
- X<sub>7</sub> = Number of groups R believes use crop and livestock reports against operators' interest
- X<sub>12</sub> = R finds it hard to refuse when asked to participate in surveys
- X<sub>37</sub> = R grows corn
- X<sub>3</sub> = R gets crop and livestock information from friends, relatives, or neighbors

Fig. 3.2. Path diagram for numerical participation equation

TABLE 3.27  
GOODNESS OF FIT STATISTICS FOR THE NUMERICAL PARTICIPATION REGRESSION EQUATION

Step	Variable Included	R <sup>2</sup> for Equation <sup>a</sup>	Analysis of Variance <sup>b</sup>		Change Statistics <sup>c</sup>		
			F for Equation	Significance Probability	Change in R <sup>2</sup>	F for Change	Significance Probability
1	X <sub>28</sub>	.174	81.88	.000	--	--	--
2	X <sub>13</sub>	.229	57.38	.000	.054	27.33	.000
3	X <sub>10</sub>	.256	44.30	.000	.027	14.21	.000
4	X <sub>5</sub>	.281	37.74	.000	.026	13.71	.000
5	X <sub>31</sub>	.293	31.89	.000	.012	6.36	.012
6	X <sub>7</sub>	.303	27.85	.000	.010	5.69	.018
7	X <sub>12</sub>	.312	24.80	.000	.009	4.85	.028
8	X <sub>37</sub>	.320	22.44	.000	.008	4.40	.037
9	X <sub>3</sub>	.328	20.61	.000	.008	4.36	.038

<sup>a</sup>These statistics can be interpreted as the proportion of variance in the subjective participation measure explained by predictor variables in the equation at each step.

<sup>b</sup>These statistics indicate that the eight-variable equation significantly improves our ability to predict individual participation rates.

<sup>c</sup>These statistics describe the improvements in explanatory power gained by the inclusion of each subsequent variable. All of these variables added significant increments to the preceding R<sup>2</sup> values (p < .05). Since none of the remaining predictors could increase explanatory power (R<sup>2</sup>) by statistically significant amounts, they were excluded from the equation.

We have also identified four factors with significant regression coefficients that are unique to the numerical participation equation. Controlling for all other variables, participation is higher among farmers and ranchers who find it personally difficult to refuse whenever their cooperation is requested ( $X_{12}$ ; beta = .10). That is, regardless of their opinions about the various costs or advantages associated with participation, some operators agree to participate simply because they would feel too uncomfortable about declining.

In addition, when other factors are held constant, participation rates are lower for operators who obtain their crop and livestock information from personal contacts with friends, relatives, neighbors, or other farmers ( $X_3$ ; beta = -.09). Similarly, operators who grow corn (about 41 percent of our sample) are less frequent participators ( $X_{27}$ ; beta = -.09). Just why, apart from all other attitudes and beliefs, what an operator produces should have any independent influence on participation rates is not clear to us. It may be that operators who grow corn share characteristics that weigh against participation but were not measured on a specific version of the questionnaire or perhaps even on our survey. For example, we collected no data from our respondents about their economic fortunes during the previous year. It is conceivable that these producers experienced economic setbacks from especially low product prices and that they blamed the information in crop and livestock reports for their difficulties.

The final significant predictor of numerical participation provides us with something of a puzzle. In our analysis of zero-order correlations in Table 3.20, we pointed out a modest negative relationship ( $r = -.11$ ) between numerical participation rates and the number of groups a respondent saw as users of crop and livestock reports against operators' interests ( $X_7$ ). In Figure 3.2, we see that this variable has significant independent influence on participation, but that the sign of the path coefficient is reversed (beta = +.12). At first, this finding appears to contradict reasonable expectations. It is difficult to imagine why participation rates would be higher among operators who believed that more groups were using their data against them.

The mystery begins to fade, however, if two important points are recalled to mind. First, the beta weight for our measure of perceived report use by market competitors is a partial regression coefficient, and must be interpreted in that light. In other words, the unexpected positive effect of this variable on participation rates is the direct, independent influence of this predictor after the separate and joint effects of all other evaluations, beliefs, and characteristics have explained all they can of the participation measure. It is the remaining shared variation between these perceptions and participation rates that is captured by this coefficient. Second, we have noted in our

analysis of open-ended speculations about reasons for participation that some operators believe that other farmers and ranchers participate for the purpose of providing false or misleading information about their operations in an attempt to sabotage reports they think are designed to serve their market competitors. Furthermore, operators told us repeatedly that accuracy is one of the chief problems with government crop and livestock reports. Yet, as we demonstrated in Chapter 2 (Table 2.29), operators do not appear to experience much personal difficulty in providing accurate information of various kinds when responding to surveys. Nor, for that matter, do operators suggest that the difficulty of providing accurate data is a common reason for refusing to participate in surveys (Table 3.15). Considered in this light, it is possible that the more damage an operator thinks is caused by the reports, the greater would be his motivation to participate for the purpose of supplying erroneous information. Of course, high survey participation rates are of value only if participants can be depended upon to provide honest, accurate information. And, though we do not contend here that intentional falsification of survey responses is a major problem for current surveys (we simply do not have the data to address this issue), we do say that there is evidence of a *motive* to falsify responses, and we suggest that this potential problem be recognized and confronted.

#### CONCLUSION

In addition to problems associated with quality of response, USDA researchers and data compilers face the much simpler problem that nonparticipants provide no information at all. Thus it may be useful to summarize here the characteristics that the NORC survey has found to be associated with low participation rates, however participation is measured. In general, we find that operators with lower participation probabilities:

- o Do not use Crop and Livestock Reporting Service reports for production and marketing information--or
- o If they do use CLRS reports, they do not feel that this obligates them to respond to surveys
- o Tend not to use agricultural agents for crop and livestock information
- o Prefer to get crop and livestock information from personal contacts with friends, relatives, neighbors, or other farmers--or
- o Tend to feel no need to gather crop or livestock information from any source
- o Consider crop and livestock information to be generally useless for managing their operations

- o Find few if any specific kinds of information in crop and livestock reports to be useful
- o Believe that many other groups are using crop and livestock reports to the disadvantage of farmers and ranchers
- o Believe that few groups if any use reports in a way that benefits operators
- o Believe that other groups benefit more than farmers and ranchers from the availability of crop and livestock information
- o Have generally unfavorable evaluations of the quality and economic impacts of government reports
- o Think that reports from private companies are more accurate than government reports
- o Believe that government reports are subject to the effects of politics
- o Feel that profits would be easier to make if government crop and livestock reports were eliminated
- o Think that government reports make the markets for agricultural products more unstable
- o Believe that most of their fellow operators also refuse to participate in government surveys
- o Think that operators who do participate in surveys hardly ever give accurate information
- o Do not think that government reports are sufficiently clear or easy to understand
- o Think that organizations representing farmers' and ranchers' interests should have more control over the kinds of information collected in government surveys
- o Think that commodity buyers would have less of an advantage if there were no government reports
- o Believe that government reports usually lead to a drop in commodity prices
- o Feel that surveys are an invasion of privacy
- o Think that they can hardly ever trust government reports to be right

- o Feel no compunction about refusing when they are asked to participate
- o Do not enjoy being interviewed and giving out information about themselves
- o Are not concerned about promoting the accuracy of crop and livestock reports
- o Tend to belong to organizations that discourage participation
- o Do not consider government surveys to be worthwhile
- o Find it difficult to give accurate information about their crop-planting intentions
- o Are generally unwilling to reveal specific pieces of information about their operations--including planting intentions, acreage planted to certain crops, crop yields, kinds and numbers of livestock held, prices received for livestock sold, prices paid for supplies, and income from their operations or from off-farm/ranch sources
- o Believe that USDA would reveal an operator's confidential survey responses to a private firm or government agency that asked for them
- o Are younger on average than frequent participators
- o Have greater average numbers of cropland acres
- o Tend to produce cattle or hogs, and/or to grow corn
- o Do not receive income from an off-farm/ranch job

Our multivariate analysis suggested that comparatively few of these factors have direct, independent effects on participation, and these may be the ones that deserve attention if participation rates are to be sustained or improved. Above all, less frequent participants were found to have generally unfavorable attitudes toward the quality of government reports and the effects of reports on their ability to earn profits or, in some cases, simply to stay in business. Changing these perceptions is a possibility, but clearly not a simple task. Reluctant operators also tend to be very resistant to relinquishing their rights to privacy by providing survey responses they would rather keep to themselves. For operators who hold this view, even one survey may be "too many." Furthermore, even if these operators do use government reports, they appear never to have been convinced they are under any obligation to contribute to the data base they describe.

At the same time, operators who participate least frequently tend to feel that crop and livestock information is of little use to them in managing their farms or ranches, and they are very unlikely to feel that government-sponsored surveys are worthwhile. Also of importance is the fact that infrequent participants put very little trust in the results of government surveys. Moreover, they tend to feel themselves under no obligation to upgrade the accuracy of the reports by contributing information themselves. Here again it seems plausible that such operators have largely given up hope of deriving any personal benefits from crop and livestock reports, and have become convinced that their best strategy is to avoid any activity that would result in making them more useful to market competitors such as buyers and speculators.

Another crucial factor is the belief that the confidentiality of survey responses would not be safeguarded from prying eyes--especially from the eyes of other government agencies. Perceptions of this sort may arise from a great many sources, and it may well be that participation would be enhanced if the Agency further increased its efforts to satisfy farmers and ranchers that their information is held in the strictest confidence.

It is unrealistic, of course, to believe that the Agency can quickly, if ever, convince all farm operators that it is in their own best interest to provide complete and accurate information about their activities to USDA interviewers. Survey researchers of all kinds--public opinion polltakers, market research agencies, the U.S. Bureau of the Census--are well aware of nonresponse problems. The participation of more than 80 percent of any probability sample of individuals is quite rare, and on some types of surveys response rates are even lower, despite high expenditures of effort to improve them.

The key to improvement in farm and ranch operator participation rates surely does not lie in one-shot information campaigns or in superficial changes in survey procedures. It will require continuing and deliberate educational effort to show farmers that most of the mistrust and hostility they direct toward surveys is not warranted. Our study has revealed many such areas--for example, the belief that publication of survey data depresses prices, that financial information provided by the farmer may be turned over to IRS. The most suitable vehicles for accomplishing this educational effort are probably not mass mailings, but the good offices of agricultural agents, farm leaders, and organizations whom the operator trusts, and above all the personal and telephone interviewers who solicit the farmer's cooperation.

## CHAPTER 4

### STRATUM DIFFERENCES

In its day-to-day administrative and sampling processes, the Agency deals with farmers and ranchers having specific types of operations. Whether the various operators responded differently to the questions we asked is therefore of interest. In this chapter we focus on variation in responses associated with differences in size and type of operation.

For obvious reasons, the accuracy of USDA crop and livestock reports is influenced more by the survey participation of larger farmers and ranchers than by the participation of smaller operators. Because they are so few in number and their production is so great, when even modest numbers of the larger operators decline to participate in USDA surveys the accuracy of the data may be significantly affected. In addition, because of fundamental differences in the production and marketing factors affecting livestock producers on the one hand and crop growers on the other, response variation related to the broad type of commodity produced is also likely.

Differences in size and type of operation serve as the basis for sample stratification in crop and livestock surveys conducted by the Agency. Similar considerations were employed in the sample design for this survey, resulting in the specification of ten strata (four in North Dakota and six in South Dakota), as described in Chapter 1. Thus, a clear and direct means of studying the differences among various types of operators would be to use these sampling strata as the basis for the analysis. However, before proceeding in this fashion, we wanted to insure that the information originally used to stratify the universe of operators was accurate enough to allow confidence in the results. We therefore compared the numbers of cattle and hogs and acres of cropland reported by respondents with the original stratum definitions. On the whole, we believe that this analysis (see Appendix F) justifies the use of the sampling strata to denote scale and type of operations.

In this chapter, we discuss all stratum differences in survey response patterns found to be statistically significant at the .05 level by chi-square tests. We made no attempt to repeat the analyses in Chapters 2 and 3 for each of the subdomains; such an effort would obviously require many more cases in each group than are available to us in this survey. Our intention is merely to provide a convenient summary of observed differences to aid the reader's interpretation of the more general findings and to highlight those with potential policy relevance.

The first series of questions analyzed for stratum differences concerned sources of crop and livestock information. Table 4.1 shows that in South Dakota the largest livestock producers were more likely to be users of USDA publications than other types of operators, with 31 percent naming this source. Small crop producers in South Dakota, in contrast, were less likely to use USDA publications, with only 10 percent citing use. No significant differences in use of USDA publications were found in North Dakota.

TABLE 4.1  
 OPERATORS' USE OF USDA PUBLICATIONS AS A SOURCE FOR  
 CROP AND LIVESTOCK INFORMATION BY STRATUM--  
 SOUTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
 (Percent Who Reported Use)

Stratum	Percent	N
Large livestock producers . . . . .	31%	134
Small cattle producers . . . . .	19	278
Small hog producers . . . . .	18	73
Small producers of hogs <i>and</i> cattle .	13	160
Small crop producers . . . . .	10	78
Large crop producers . . . . .	21	128

NOTE: In this and subsequent tables, stratum percentages and tests for statistical significance of stratum effects were computed using *unweighted* data. Stratum percentages are unbiased and the power of our statistical tests is modestly increased.

<sup>a</sup>No significant differences were found among the four North Dakota strata.

Use of various non-government sources also differed by stratum. Magazines, journals, and newsletters were mentioned by 73 percent of large cattle producers in North Dakota, but by only 51 percent of the state's smaller crop farmers (Table 4.2). The use of radio reports appears to be most common among smaller producers of both cattle and hogs in South Dakota (29 percent, Table 4.3). Similarly, both small crop growers and small hog and cattle raisers are more likely than others to use television as an information source (22 and 20 percent respectively, Table 4.4).

TABLE 4.2

OPERATORS' USE OF MAGAZINES, JOURNALS, OR NEWSLETTERS  
AS SOURCES FOR CROP AND LIVESTOCK INFORMATION BY  
STRATUM--NORTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
(Percent Who Reported Use)

Stratum	Percent	N
Large cattle producers . . . . .	73%	138
Small cattle producers . . . . .	61	372
Small crop producers . . . . .	51	125
Large crop producers . . . . .	58	194

<sup>a</sup>No significant differences were found among the six South Dakota strata.

TABLE 4.3

OPERATORS' USE OF RADIO REPORTS AS A SOURCE FOR  
CROP AND LIVESTOCK INFORMATION BY STRATUM--  
SOUTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
(Percent Who Reported Use)

Stratum	Percent	N
Large livestock producers . . . . .	18%	134
Small cattle producers . . . . .	17	278
Small hog producers . . . . .	18	73
Small producers of hogs <i>and</i> cattle . . . . .	29	160
Small crop producers . . . . .	18	78
Large crop producers . . . . .	15	128

<sup>a</sup>No significant differences were found among the four North Dakota strata.

TABLE 4.4  
 OPERATORS' USE OF TELEVISION REPORTS AS A SOURCE FOR  
 CROP AND LIVESTOCK INFORMATION BY STRATUM--  
 SOUTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
 (Percent Who Reported Use)

Stratum	Percent	N
Large livestock producers . . . . .	8%	134
Small cattle producers . . . . .	13	278
Small hog producers . . . . .	15	73
Small producers of hogs <i>and</i> cattle .	20	160
Small crop producers . . . . .	22	78
Large crop producers . . . . .	16	128

<sup>a</sup>No significant differences were found among the four North Dakota strata.

Finally, significant stratum differences were found in both states in the use of various types of agricultural agents (Table 4.5). We noted in Chapter 2 that use of agents is more prevalent in North Dakota than in South Dakota. In both states, however, the smaller crop growers are more likely than others to rely on agents for crop and livestock data (47 percent in North Dakota, 35 percent in South Dakota). The larger livestock producers, as we have seen, tend to obtain information from commodity magazines and specialized journals, and are consequently less likely than others to use any type of agent (23 percent in North Dakota and only 11 percent in South Dakota).

Table 4.6 displays the distribution of operators' main information sources for the strata within each state. In North Dakota, large-scale livestock producers are more likely than others to get most of their information from magazines, journals, or newsletters, and less likely to use agricultural agents. Larger crop producers are slightly more likely to use periodicals for most of their information and less likely to rely on other media sources or the various types of agents. Although smaller producers of either crop or livestock are most likely to obtain most of their information from periodicals, they are more likely than larger operators to rely on mass media and agricultural agents.

In South Dakota, the larger stock producers showed a greater tendency than others to name government publications or to say

they use no source at all, but they were considerably less likely to report relying on agents. Smaller cattle producers were also more likely to name government documents, but otherwise showed no distinctive preferences among sources. A higher-than-average percentage of small-scale hog producers cited farm periodicals as their main source and a slightly lower proportion cited the media. We found that smaller producers of both hogs and cattle were less likely to claim government documents as their main source in favor of magazines and media reports. Among South Dakota crop growers, those operating on a smaller scale tend to rely on agricultural agents, media sources, and personal contacts more than others. They were also less likely to report use of government documents or various periodicals. Larger crop producers are more likely than livestock producers to use agents, and they are more likely to be users of government publications than the average for the state. They are also a good deal less likely to obtain most of their information from any of the media.

In the next series of tables (4.7 through 4.17) we display stratum differences in operators' evaluations of several specific types of information often found in crop and livestock reports. Two types of evaluation are analyzed: first, operators' ratings

TABLE 4.5

OPERATORS' USE OF AGRICULTURAL AGENTS AS A SOURCE FOR CROP  
AND LIVESTOCK INFORMATION BY STATE AND STRATUM  
(Percent Who Reported Use)

State and Stratum	Percent	N
<u>North Dakota:</u>		
Large cattle producers . . . . .	23%	138
Small cattle producers . . . . .	36	372
Small crop producers . . . . .	47	125
Large crop producers . . . . .	37	194
<u>South Dakota:</u>		
Large livestock producers . . . . .	11	134
Small cattle producers . . . . .	19	278
Small hog producers . . . . .	21	73
Small producers of hogs <i>and</i> cattle . . . . .	16	160
Small crop producers . . . . .	35	78
Large crop producers . . . . .	22	128

TABLE 4.6  
 OPERATORS WHO OBTAIN MOST CROP AND LIVESTOCK INFORMATION FROM  
 VARIOUS INFORMATION SOURCES BY STATE AND STRATUM  
 (Percent)

State and Stratum	Government Documents	Maga-zines, Journals, or News-letters	News-papers, Radio, or Tele-vision	Agri-cultural Agents	Personal Contacts	Other Sources	No Source	Total	N
<u>North Dakota:</u>									
Large cattle producers . . . . .	17%	42%	17%	10%	6%	3%	5%	100%	138
Small cattle producers . . . . .	15	31	19	22	3	2	8	100	372
Small crop producers . . . . .	10	29	23	24	8	2	4	100	125
Large crop producers . . . . .	14	34	16	17	8	4	7	100	194
<u>South Dakota:</u>									
Large livestock producers . . . . .	19	39	10	6	6	7	13	100	134
Small cattle producers . . . . .	16	38	19	9	5	4	9	100	278
Small hog producers . . . . .	12	42	16	8	6	6	10	100	73
Small producers of hogs and cattle . . . . .	8	48	21	9	5	3	8	100	160
Small crop producers . . . . .	9	24	27	21	10	3	6	100	78
Large crop producers . . . . .	17	38	10	16	5	6	10	100	128

of the usefulness of a particular item of information; second, the reasons given by operators who considered any type of information "not useful." (Note that the number of cases for some of these items is greatly reduced because they were asked on only one version of the questionnaire. Furthermore, explanations for usefulness evaluations were sought only from operators who specified that a particular kind of information was not at all useful.)

Within each of the states, the utility of particular kinds of information clearly varied predictably with the operator's line of business. Operators who produce primarily livestock saw greater usefulness in such topics as numbers of livestock on farms, marketing forecasts for livestock, and livestock prices received. Those who produce mainly crops were more interested in planting intentions and projected crop demand.

Table 4.7 contains the stratum distributions for operators' usefulness ratings of information on farmers' planting intentions. As might be expected, large livestock producers in both states were most likely to claim that this information is not at all useful (56 percent in North Dakota, 64 percent in South Dakota). Compared with other strata more of the large crop producers in North Dakota considered this data to be very useful. In South Dakota, both of the crop-growing strata and the smaller hog producers were more likely than others to find data on planting intentions very or somewhat useful (over 60 percent in each of these three strata).

Table 4.8 presents stratum differences in usefulness ratings for information on the number of livestock on farms. Again, larger crop growers in both states were most likely to feel that such data is of no use, while the livestock-producing strata offered higher evaluations. Stratum differences in the reasons for "not useful" judgments are presented in Table 4.9. In both states the majority of operators in the crop-growing strata claimed that they had no need for this data, whereas livestock producers who were dissatisfied tended to claim that inaccuracy renders the data useless. (Smaller cattle ranchers in North Dakota are an exception: absence of need was cited more often than accuracy as the reason livestock inventories are judged not useful.)

The findings are similar for another item of livestock information--forecasts of livestock to be marketed (Tables 4.10 and 4.11). In North Dakota, small livestock producers are especially likely to find this data useful (63 percent very or somewhat useful), and larger crop growers to express opposite views (63 percent not at all useful). Among operators who considered this information useless, most of those producing crops reported no need for it, while livestock producers who faulted the data did so on the basis of its low accuracy. Again, exceptions are smaller cattle ranchers in North Dakota and smaller producers of both cattle and hogs in South Dakota.

Much in the same vein, members of the crop-producing strata in both states were more likely to consider information about anticipated crop demand at least somewhat useful, while livestock producers were generally less likely to do so (Table 4.12). In Table 4.13 we see that, with the exception of the smaller hog producers, crop growers were a good deal more likely than stock raisers to cite inaccuracy of crop-demand data as the reason for its uselessness. (It should be noted that the case base for Table 4.13 is extremely small.)

TABLE 4.7  
 PERCEIVED USEFULNESS OF INFORMATION ON FARMERS'  
 PLANTING INTENTIONS BY STATE AND STRATUM  
 (Percent)

State and Stratum	Very Useful	Somewhat Useful	Not at All Useful	Total	N
<b>North Dakota:</b>					
Large cattle producers . . .	3%	41%	56%	100%	66
Small cattle producers . . .	4	54	42	100	179
Small crop producers . . .	6	55	39	100	64
Large crop producers . . .	14	46	40	100	95
<b>South Dakota:</b>					
Large livestock producers . . .	2	34	64	100	67
Small cattle producers . . .	3	45	52	100	137
Small hog producers . . .	9	56	35	100	34
Small producers of hogs and cattle . . .	4	38	58	100	81
Small crop producers . . .	2	59	39	100	44
Large crop producers . . .	8	59	33	100	66

Evaluations of reports on the number of livestock sold for slaughter also fell into the expected pattern, although stratum differences are statistically significant only in North Dakota. The larger stock producers found this data more useful; larger crop producers tended to find it not useful. Among those who saw this information as of no use, crop growers most often said they do not need it, and stock producers complained that it is too inaccurate (see Tables 4.14 and 4.15).

TABLE 4.8

PERCEIVED USEFULNESS OF INFORMATION ON NUMBER OF  
LIVESTOCK ON FARMS BY STATE AND STRATUM  
(Percent)

State and Stratum	Very Useful	Somewhat Useful	Not at All Useful	Total	N
<u>North Dakota:</u>					
Large cattle producers . . .	16%	38%	46%	100%	138
Small cattle producers . . .	16	38	46	100	367
Small crop producers . . .	12	29	59	100	124
Large crop producers . . .	12	21	67	100	192
<u>South Dakota:</u>					
Large livestock producers . . .	14	37	49	100	134
Small cattle producers . . .	18	37	45	100	276
Small hog producers . . .	18	33	49	100	72
Small producers of hogs <i>and</i> cattle . . . .	8	42	50	100	159
Small crop producers . . .	10	37	53	100	78
Large crop producers . . .	11	26	63	100	128

TABLE 4.9  
REASONS WHY INFORMATION ON NUMBER OF LIVESTOCK  
ON FARMS IS NOT USEFUL BY STATE AND STRATUM  
(Percent)

State and Stratum	Not Needed	Not Accurate	N
<b>North Dakota:</b>			
Large cattle producers . . . . .	24%	75%	63
Small cattle producers . . . . .	55	43	165
Small crop producers . . . . .	81	16	73
Large crop producers . . . . .	87	15	130
<b>South Dakota:</b>			
Large livestock producers . . . . .	38	64	64
Small cattle producers . . . . .	36	60	122
Small hog producers . . . . .	34	63	35
Small producers of hogs <i>and</i> cattle . . . . .	37	56	77
Small crop producers . . . . .	64	31	39
Large crop producers . . . . .	59	38	80

TABLE 4.10  
PERCEIVED USEFULNESS OF INFORMATION ON FORECASTS OF  
LIVESTOCK TO BE MARKETED BY STRATUM--NORTH  
DAKOTA RESPONDENTS ONLY<sup>a</sup>  
(Percent)

Stratum	Very Useful	Somewhat Useful	Not at All Useful	Total	N
Large cattle producers . . . . .	20%	32%	48%	100%	66
Small cattle producers . . . . .	17	46	37	100	176
Small crop producers . . . . .	19	32	49	100	63
Large crop producers . . . . .	11	26	63	100	93

<sup>a</sup>No significant differences were found among the six South Dakota strata.

TABLE 4.11

REASONS WHY INFORMATION ON FORECASTS OF  
LIVESTOCK TO BE MARKETED IS NOT USEFUL  
BY STATE AND STRATUM  
(Percent)

State and Stratum	Not Needed	Not Accurate	N
<u>North Dakota:</u>			
Large cattle producers . . . . .	41%	63%	32
Small cattle producers . . . . .	60	37	65
Small crop producers . . . . .	77	19	31
Large crop producers . . . . .	86	14	59
<u>South Dakota:</u>			
Large livestock producers . . . . .	20	70	30
Small cattle producers . . . . .	41	50	46
Small hog producers . . . . .	27	60	15
Small producers of hogs and cattle . . . . .	57	43	37
Small crop producers . . . . .	63	44	16
Large crop producers . . . . .	63	33	30

Finally, Tables 4.16 and 4.17 reveal another instance of this pattern of responses across strata. In both states, information on prices received for livestock was of greater utility to livestock producers than to crop producers. The latter were not as likely to have need for information on stock prices; the former were more likely to criticize the accuracy of that data.

The preceding analysis clearly confirms the commonsense notion that a farmer or rancher will find crop and livestock reports useful to the extent that he considers them accurate and that they provide specific information that bears directly on the production and marketing problems he faces, given the nature of his enterprise. The usefulness of this information may also

TABLE 4.12  
 PERCEIVED USEFULNESS OF INFORMATION ON ANTICIPATED  
 MARKET DEMAND FOR CROPS BY STATE AND STRATUM  
 (Percent)

State and Stratum	Very Useful	Somewhat Useful	Not at All Useful	Total	N
<b>North Dakota:</b>					
Large cattle producers . . .	17%	49%	34%	100%	65
Small cattle producers . . .	19	61	20	100	178
Small crop producers . . .	23	66	11	100	64
Large crop producers . . .	28	50	22	100	93
<b>South Dakota:</b>					
Large livestock producers . . .	8	58	34	100	67
Small cattle producers . . .	22	43	35	100	138
Small hog producers . . .	27	27	46	100	34
Small producers of hogs <i>and</i> cattle . . . .	17	46	37	100	78
Small crop producers . . .	30	43	27	100	44
Large crop producers . . .	25	52	23	100	65

TABLE 4.13  
 REASONS WHY INFORMATION ON ANTICIPATED MARKET DEMAND  
 FOR CROPS IS NOT USEFUL BY STRATUM--SOUTH DAKOTA  
 RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Not Accurate	N
Large livestock producers . . . . .	50%	22
Small cattle producers . . . . .	44	45
Small hog producers . . . . .	88	16
Small producers of hogs <i>and</i> cattle . . . . .	39	28
Small crop producers . . . . .	64	11
Large crop producers . . . . .	64	14

<sup>a</sup>No significant differences were found among the four North Dakota strata.

TABLE 4.14  
 PERCEIVED USEFULNESS OF INFORMATION ON THE NUMBER OF  
 LIVESTOCK SOLD FOR SLAUGHTER BY STRATUM--  
 NORTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Very Useful	Somewhat Useful	Not at All Useful	Total	N
Large cattle producers . . .	25%	42%	33%	100%	72
Small cattle producers . . .	14	40	46	100	188
Small crop producers . . .	9	36	55	100	58
Large crop producers . . .	7	28	65	100	98

<sup>a</sup>No significant differences were found among the six South Dakota strata.

TABLE 4.15  
 REASONS WHY INFORMATION ON NUMBER OF LIVESTOCK  
 SOLD FOR SLAUGHTER IS NOT USEFUL BY STRATUM--  
 NORTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Not Needed	Not Accurate	N
Large cattle producers . . . . .	54%	33%	24
Small cattle producers . . . . .	70	24	84
Small crop producers . . . . .	84	13	31
Large crop producers . . . . .	88	11	64

<sup>a</sup>No significant differences were found among the six South Dakota strata.

depend upon how well it reflects conditions in the particular geographical areas important to an operator. An analysis of geographical interests is presented in Table 4.18. In North Dakota, statistically significant stratum differences were found only in the percentages citing interest in international-level data. In contrast, stratum differences were observed in South Dakota in the percentages interested in data pertaining to all four geographical areas.

TABLE 4.16  
 PERCEIVED USEFULNESS OF INFORMATION ON PRICES  
 RECEIVED BY FARMERS AND RANCHERS FOR THEIR  
 LIVESTOCK BY STATE AND STRATUM  
 (Percent)

State and Stratum	Very Useful	Somewhat Useful	Not at All Useful	Total	N
<b>North Dakota:</b>					
Large cattle producers . . .	32%	42%	26%	100%	72
Small cattle producers . . .	30	41	29	100	189
Small crop producers . . .	24	44	32	100	59
Large crop producers . . .	17	34	49	100	98
<b>South Dakota:</b>					
Large livestock producers . . .	11	46	43	100	66
Small cattle producers . . .	28	46	26	100	137
Small hog producers . . .	8	53	39	100	39
Small producers of hogs and cattle . . . .	25	47	28	100	79
Small crop producers . . .	15	41	44	100	34
Large crop producers . . .	21	37	42	100	62

TABLE 4.17  
 REASONS WHY INFORMATION ON LIVESTOCK PRICES RECEIVED  
 BY FARMERS AND RANCHERS IS NOT USEFUL BY  
 STRATUM--NORTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Not Needed	Not Accurate	N
Large cattle producers . . . . .	37%	58%	19
Small cattle producers . . . . .	71	25	52
Small crop producers . . . . .	83	11	18
Large crop producers . . . . .	90	10	48

<sup>a</sup>No significant differences were found among the six South Dakota strata.

TABLE 4.18

GEOGRAPHICAL AREAS FOR WHICH OPERATORS FIND CROP  
AND LIVESTOCK INFORMATION MOST USEFUL  
BY STATE AND STRATUM  
(Percent)<sup>a</sup>

State and Stratum	County	State	United States	Other Countries	N
<b>North Dakota:</b>					
Large cattle producers . . . .	-- <sup>b</sup>	-- <sup>b</sup>	-- <sup>b</sup>	16%	136
Small cattle producers . . . .	--	--	--	19	370
Small crop producers . . . .	--	--	--	18	125
Large crop producers . . . .	--	--	--	30	193
<b>South Dakota:</b>					
Large livestock producers . . . .	11	17	72	14	133
Small cattle producers . . . .	21	28	53	13	277
Small hog producers . . . .	22	27	53	18	73
Small producers of hogs and cattle .	21	22	54	10	160
Small crop producers . . . .	31	36	41	14	78
Large crop producers . . . .	16	20	51	27	128

<sup>a</sup>Row percentages do not sum to 100 because operators could specify more than one geographical area of interest.

<sup>b</sup>No significant stratum differences were found for these items.

Because so much of their production is destined for export, the large crop producers in North Dakota were much more likely than others to be interested in information about other countries. Fully 30 percent of them expressed interest in international data, compared to less than 20 percent for other strata.

Our commonsense expectations are even more evident in the figures for South Dakota strata. Large livestock and large crop producers were less likely to be interested in county- or state-level information. Small crop growers, in contrast, were more likely to find data at this level to be most useful. Large livestock producers were far more likely to show greatest

interest in national aggregates, and large crop growers were more likely than others to focus on information about conditions in other countries.

The next series of tables (4.19 through 4.23) concerns farmers and ranchers' beliefs about the use of crop and livestock information by other groups. In Table 4.19 are stratum breakdowns for volunteered response naming other groups that use the reports. In North Dakota, larger crop farmers were most likely to spontaneously mention that grain buyers use reports, while larger cattle ranchers were most likely to mention food processing companies as users. The crop-producing strata in North Dakota were also more likely to mention that foreign buyers of food use crop and livestock reports. In South Dakota, the larger operators (especially livestock producers) were more likely than others to volunteer that speculators use the reports.

TABLE 4.19  
GROUPS (BESIDES FARMERS AND RANCHERS) VOLUNTEERED BY  
OPERATORS AS USERS OF CROP AND LIVESTOCK  
REPORTS BY STATE AND STRATUM  
(Percent)

State and Stratum	Grain Buyers	Food Processors	Foreign Buyers	N
<b>North Dakota:</b>				
Large cattle producers . . . . .	35%	29%	2%	133
Small cattle producers . . . . .	30	16	5	367
Small crop producers . . . . .	28	23	8	120
Large crop producers . . . . .	41	21	9	192
	Speculators			N
<b>South Dakota:</b>				
Large livestock producers . . . . .	44%			132
Small cattle producers . . . . .	23			275
Small hog producers . . . . .	26			72
Small producers of hogs and cattle . .	27			156
Small crop producers . . . . .	26			78
Large crop producers . . . . .	33			126

Table 4.20 contains somewhat similar data, but in this case the stratum breakdowns pertain to groups who were specifically named in the wording of our questions. In North Dakota, smaller cattle ranchers were slightly less likely to feel that speculators use crop and livestock reports. In South Dakota, both larger ranchers and larger farmers were least likely to believe that state and local governments use the reports, while the smaller hog producers were especially likely to believe that they do.

TABLE 4.20

GROUPS (BESIDES FARMERS AND RANCHERS) RECOGNIZED BY  
OPERATORS AS USERS OF CROP AND LIVESTOCK  
REPORTS BY STATE AND STRATUM--  
VERSION I RESPONDENTS ONLY  
(Percent)

State and Stratum	Speculators	N
<u>North Dakota:</u>		
Large cattle producers . . . . .	92%	64
Small cattle producers . . . . .	86	180
Small crop producers . . . . .	98	63
Large crop producers . . . . .	95	96
	<u>Local or State Government</u>	<u>N</u>
<u>South Dakota:</u>		
Large livestock producers . . . . .	55%	67
Small cattle producers . . . . .	66	137
Small hog producers . . . . .	88	34
Small producers of hogs <i>and</i> cattle .	67	81
Small crop producers . . . . .	73	44
Large crop producers . . . . .	55	66

Tables 4.21 and 4.22 present data on the beliefs of North Dakota operators about whether the use of reports by particular groups helps or hurts farmers' and ranchers' interests. In contrast with large-scale producers, smaller operators (both livestock and crop producers) were more likely to feel that report use by farm organizations is beneficial to them (Table 4.21). Larger cattle ranchers were in fact a good deal more likely than

TABLE 4.21

PERCEIVED EFFECTS ON OPERATORS' INTERESTS OF USE OF CROP AND  
LIVESTOCK REPORTS BY FARM ORGANIZATIONS BY STRATUM--  
NORTH DAKOTA VERSION I RESPONDENTS ONLY<sup>a</sup>  
(Percent)

Stratum	Helps	Hurts	Neither	Total	N
Large cattle producers . . . . .	56%	28%	16%	100%	54
Small cattle producers . . . . .	75	12	13	100	152
Small crop producers .	84	11	5	100	55
Large crop producers .	63	15	22	100	79

<sup>a</sup>No significant differences were found among the six South Dakota strata.

TABLE 4.22

PERCEIVED EFFECTS ON OPERATORS' INTERESTS OF USE OF  
CROP AND LIVESTOCK REPORTS BY STORAGE OPERATORS  
BY STRATUM--NORTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
(Percent)

Stratum	Helps	Hurts	Neither	Total	N
Large cattle producers . . . . .	59%	23%	18%	100	53
Small cattle producers . . . . .	66	24	10	100	149
Small crop producers .	82	15	3	100	54
Large crop producers .	56	33	11	100	81

<sup>a</sup>No significant differences were found among the six South Dakota strata.

others to think that report use by farm organizations is harmful to farmers and ranchers. A somewhat similar pattern emerged for opinions on the effects of report use by storage operators (Table 4.22). Smaller farmers and ranchers tended to see storage operators' use as helpful, but the larger crop farmers were more likely than others to consider it harmful to their interests.

Significant differences were found among South Dakota strata on the wider question of whether farmers and ranchers or other groups benefit more from the distribution of crop and livestock data. Although the respondents in each stratum overwhelmingly named others as the primary beneficiaries of the reports, smaller crop growers were slightly more likely than others to claim that farmers and ranchers benefit more (Table 4.23). The largest operators were most likely to consider other groups to be the primary beneficiaries.

TABLE 4.23  
 PERCEIVED BENEFITS FROM CROP AND LIVESTOCK REPORTS--  
 FARMERS AND RANCHERS VERSUS OTHERS BY STRATUM--  
 SOUTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Farmers and Ranchers	Others	Total	N
Large livestock producers . . . . .	11%	89%	100%	125
Small cattle producers . .	19	81	100	263
Small hog producers . . .	16	84	100	70
Small producers of hogs and cattle . . . .	12	88	100	150
Small crop producers . .	24	76	100	76
Large crop producers . .	11	89	100	123

<sup>a</sup>No significant differences were found among the four North Dakota strata.

There were very few statistically significant differences among types of operators in their evaluations of the quality and effects of government crop and livestock reports. In Table 4.24 we display data from the North Dakota strata on whether government-sponsored reports or private reports are more accurate. Smaller operators were more likely than larger ones to claim that government reports are more accurate. Larger operators, especially the larger cattle ranchers, tended to favor privately sponsored reports.

The data in Table 4.25 summarize operators' beliefs about whether publication of government reports tends to be followed by decreases in prices for farm products. In North Dakota, larger ranchers were least likely to agree that they are. In South Dakota, larger ranchers were joined by smaller crop growers in expressing this opinion.

We now turn to the experiences of operators in different strata with the crop and livestock survey process. Substantial

TABLE 4.24  
 PERCEIVED ACCURACY OF GOVERNMENT VERSUS PRIVATE  
 CROP AND LIVESTOCK REPORTS BY STRATUM--  
 NORTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Private	Government	Don't Know	Total	N
Large cattle producers . . . . .	74%	15%	11%	100%	138
Small cattle producers . . . . .	58	32	10	100	371
Small crop producers . . . . .	55	33	12	100	125
Large crop producers . . . . .	65	26	9	100	194

<sup>a</sup>No significant differences were found among the six South Dakota strata.

TABLE 4.25  
 OPERATORS' ASSESSMENTS OF WHETHER GOVERNMENT CROP AND LIVESTOCK  
 REPORTS ARE USUALLY FOLLOWED BY A DROP IN PRODUCT PRICES BY  
 STATE AND STRATUM--VERSION II RESPONDENTS ONLY  
 (Percent)

Stratum	Agree	Disagree	Don't Know	Total	N
<b>North Dakota:</b>					
Large cattle producers . . . . .	45%	48%	7%	100%	71
Small cattle producers . . . . .	68	26	6	100	191
Small crop producers . . . . .	68	22	10	100	60
Large crop producers . . . . .	62	28	10	100	98
<b>South Dakota:</b>					
Large livestock producers . . . . .	37	41	22	100	67
Small cattle producers . . . . .	56	33	11	100	138
Small hog producers . . . . .	61	32	7	100	38
Small producers of hogs and cattle . . . . .	56	35	9	100	79
Small crop producers . . . . .	38	56	6	100	34
Large crop producers . . . . .	57	34	9	100	62

differences were found in the numbers of survey requests received during the preceding year by operators in various strata (see Table 4.26). In North Dakota, 9 percent of the large cattle producers said they had received more than ten survey requests, while only 2 percent of the large crop growers fell into this category. Large cattle producers were also much more likely to report between five and ten requests; 24 percent of them appear in this cell, compared to only 14 percent of small cattle raisers, 10 percent of large crop producers, and 6 percent of small crop growers. Only 15 percent of the large cattle producers said they were not approached at all during the previous year, while over 40 percent of the small crop growers said they had not been asked to participate in this period. The breakdown of mean numbers of survey requests for Version II respondents in North Dakota shows that the large cattle producers reported almost four survey requests on average (3.9), and that the other strata averaged fewer than three requests (2.9 for small cattle raisers, 2.7 for large crop producers, and 2.6 for small crop growers).

In South Dakota, there were no statistically significant differences in the distributions of reported survey requests. However, there was a tendency among Version I respondents (similar to that found among North Dakota Version I respondents) for large livestock producers to report larger numbers of survey requests than others, and to be especially unlikely to have been bypassed entirely during the year (see Table 4.26). About 36 percent of this group reported five or more requests, compared to an average of about 23 percent for the remaining strata. With the additional exception of small-scale hog producers, who were more likely to claim *fewer* requests, the remaining South Dakota strata were more or less uniform in their reports. We arrive at roughly similar conclusions by observing the breakdown of mean numbers of survey requests reported by Version II respondents across South Dakota strata. Again, large livestock producers reported the highest numbers of requests (an average of 4.5), with small cattle raisers and large grain producers close behind (4.2 and 4.1). Small producers of both cattle and hogs and small crop growers reported fewer than four requests during the year (3.8 and 3.6), and small hog producers reported fewer than three requests (2.8).

Stratum differences in survey participation rates were apparent in South Dakota only. Tables 4.27 and 4.28 present stratum breakdowns for the subjective and numerical measures of participation rates respectively. In both cases, smaller crop growers tended more than others to describe themselves as frequent participants in government surveys. According to the subjective measure, smaller producers of hogs and cattle are least likely to participate, while the lowest numerical estimate belongs to smaller cattle ranchers.

In general, the various strata differed little in the percentages of operators who identified each of seven hypothetical

TABLE 4.26

NUMBERS OF SURVEY REQUESTS RECEIVED DURING THE PRECEDING YEAR BY STATE AND STRATUM

State and Stratum	Version I				N	Version II Mean	N
	None	1 to 4	5 to 10	More than 10			
<u>North Dakota:</u>							
Large cattle producers . . . . .	15%	52%	24%	9%	66	3.9	70
Small cattle producers . . . . .	35	46	14	5	177	2.9	189
Small crop producers . . . . .	42	47	6	5	64	2.6	60
Large crop producers . . . . .	33	55	10	2	94	2.7	96
<u>South Dakota:</u>							
Large livestock producers . . . . .	9	55	28	8	67	4.5	67
Small cattle producers . . . . .	26	50	19	4	135	4.2	135
Small hog producers . . . . .	27	58	12	3	33	2.8	39
Small producers of hogs and cattle . . . . .	26	51	21	3	81	3.8	75
Small crop producers . . . . .	25	50	18	7	44	3.6	34
Large crop producers . . . . .	26	52	15	8	66	4.1	58

TABLE 4.27

PARTICIPATION IN CROP AND LIVESTOCK  
SURVEYS BY STRATUM--SOUTH DAKOTA  
VERSION I RESPONDENTS ONLY<sup>a</sup>  
(Percent)

Stratum	All or Most of the Time	Sometimes or Hardly Ever	Total	N
Large livestock producers . . . .	38%	62%	100%	65
Small cattle producers . . . .	33	67	100	121
Small hog producers . . . .	27	73	100	30
Small producers of hogs <i>and</i> cattle .	22	78	100	73
Small crop producers . . . .	53	47	100	36
Large crop producers . . . .	41	59	100	58

<sup>a</sup>No significant differences were found among the four North Dakota strata.

TABLE 4.28

PERCENTAGE OF CROP AND LIVESTOCK SURVEYS OPERATORS  
AGREED TO PARTICIPATE IN BY STRATUM--SOUTH  
DAKOTA VERSION II RESPONDENTS ONLY

Stratum	Mean	N
Large livestock producers . . . . .	52%	58
Small cattle producers . . . . .	45	104
Small hog producers . . . . .	50	34
Small producers of hogs <i>and</i> cattle . . . .	48	67
Small crop producers . . . . .	62	23
Large crop producers . . . . .	57	45

<sup>a</sup>No significant differences were found among the four North Dakota strata.

reasons as important to their survey participation decisions. In Table 4.29 we see that larger cattle ranchers in North Dakota, were substantially less likely than others to cite the belief that government surveys are worthwhile as an important factor governing participation. No significant stratum differences were found for the remaining six reasons.

TABLE 4.29

OPERATORS' BELIEFS THAT GOVERNMENT SURVEYS ARE WORTHWHILE  
AS AN IMPORTANT REASON FOR PARTICIPATION BY  
STRATUM--NORTH DAKOTA RESPONDENTS ONLY<sup>a</sup>  
(Percent)

Stratum	Percent	N
Large cattle producers . . . . .	28%	129
Small cattle producers . . . . .	43	302
Small crop producers . . . . .	39	97
Large crop producers . . . . .	40	164

<sup>a</sup>No significant differences were found among the six South Dakota strata.

Tables 4.30 through 4.32 display the South Dakota stratum breakdowns for three items describing operators' willingness to provide certain kinds of information when responding to crop and livestock surveys. We see that smaller crop growers were most likely to be unwilling to divulge the number of acres planted to main crops (4.30), that large ranchers and smaller hog producers were especially unwilling to report kinds and numbers of livestock held (4.31), and that larger ranchers, smaller hog raisers, and smaller crop producers were least willing to reveal prices received for livestock sold (4.32).

TABLE 4.30

OPERATORS' WILLINGNESS TO GIVE INFORMATION ABOUT ACREAGE  
PLANTED TO EACH MAIN CROP BY STRATUM--SOUTH DAKOTA  
VERSION II RESPONDENTS ONLY<sup>a</sup>  
(Percent)

Stratum	Willing	Reluc- tant	Un- willing	Total	N
Large livestock producers . . . . .	48%	29%	23%	100%	62
Small cattle producers . . . . .	64	24	12	100	121
Small hog producers . . . . .	40	31	29	100	35
Small producers of hogs and cattle . . . . .	53	16	31	100	68
Small crop producers . . . . .	50	14	36	100	28
Large crop producers . . . . .	57	21	22	100	56

<sup>a</sup>No significant differences were found among the four North Dakota strata.

TABLE 4.31  
 OPERATORS' WILLINGNESS TO GIVE INFORMATION ABOUT KINDS AND  
 NUMBERS OF LIVESTOCK HELD BY STRATUM--SOUTH DAKOTA  
 VERSION II RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Willing	Reluc- tant	Un- willing	Total	N
Large livestock producers . . . .	34%	27%	39%	100	62
Small cattle producers . . . .	55	23	22	100	122
Small hog producers . . . .	26	37	37	100	35
Small producers of hogs <i>and</i> cattle .	45	22	33	100	67
Small crop producers . . . .	50	14	36	100	28
Large crop producers . . . .	55	25	20	100	49

<sup>a</sup>No significant differences were found among the four North Dakota strata.

TABLE 4.32  
 OPERATORS' WILLINGNESS TO GIVE INFORMATION ABOUT PRICES  
 RECEIVED FOR LIVESTOCK SOLD BY STRATUM--SOUTH DAKOTA  
 VERSION II RESPONDENTS ONLY<sup>a</sup>  
 (Percent)

Stratum	Willing	Reluc- tant	Un- willing	Total	N
Large livestock producers . . . .	62%	16%	22%	100%	61
Small cattle producers . . . .	78	10	12	100	123
Small hog producers . . . .	60	23	17	100	35
Small producers of hogs <i>and</i> cattle .	73	12	15	100	68
Small crop producers . . . .	47	32	21	100	28
Large crop producers . . . .	79	8	13	100	55

<sup>a</sup>No significant differences were found among the four North Dakota strata.

Significant though modest stratum differences were also found in operators' beliefs about how well USDA would protect the confidentiality of a particular operator's survey responses from prying by another government agency. We see that larger ranchers and smaller crop farmers in North Dakota were more likely than others to believe that USDA would reveal an individual operator's answers to another government agency (Table 4.33).

Table 4.34 shows significant stratum variation in the proportion of operators who are members of various types of farm organizations or commodity associations. In both states, larger operators have the highest rates of participation in voluntary organizations; small crop producers in both states have the lowest rates.

Distributions across educational attainment levels within strata are shown in Table 4.35. While stratum differences are by no means vast, larger ranchers in both states tend to have higher levels of education than others. In North Dakota, the stratum containing small-scale livestock producers has the highest proportion of persons who did not complete high school. In South Dakota, both smaller crop producers and smaller cattle ranchers are more likely to have lower educational attainment levels.

Finally, in Table 4.36, we see that the smaller crop farmers in both states are most likely to have earned some income from a non-farm job during the year before the survey, with fully 50 percent of the small crop farmers in North Dakota involved in off-farm employment.

Of the nearly 190 survey items that were examined for stratum effects, only the 36 variables discussed above (about 19 percent of the total) were found to have significantly different response patterns among various types of operators. Many of these findings simply confirm our intuitive expectations. For example, demand for specific types of production and marketing information depends upon the principal commodities produced by an operator. Others, however, represent genuine additions to our understanding of the variation in attitudes and experiences of different kinds of operators. The data reveal stratum differences in choices among information sources, in certain perceptions about the effects of crop and livestock reports on producers' interests, and in operators' experiences with and evaluations of crop and livestock surveys. But the number of statistically significant stratum effects should not obscure the fact that the several types of operators we have focused on did not greatly differ in their responses to our survey questions. In general, attitudes and beliefs concerning crop and livestock surveys and reports appear to be spread quite evenly throughout the agricultural populations of the Dakotas.

TABLE 4.33

OPERATORS' BELIEFS ABOUT WHETHER USDA WOULD REVEAL AN  
 OPERATOR'S CONFIDENTIAL SURVEY ANSWERS TO ANOTHER  
 GOVERNMENT AGENCY BY STRATUM--NORTH DAKOTA  
 RESPONDENTS ONLY<sup>a</sup>  
 (Percent Who Believe USDA Would Reveal Responses)

Stratum	Percent	N
Large cattle producers . . . . .	65%	127
Small cattle producers . . . . .	75	329
Small crop producers . . . . .	67	114
Large crop producers . . . . .	77	171

<sup>a</sup>No significant differences were found among the six South Dakota strata.

TABLE 4.34

OPERATORS' MEMBERSHIP IN A FARM ORGANIZATION OR COMMODITY  
 ASSOCIATION REPRESENTING THE INTERESTS OF  
 FARMERS BY STATE AND STRATUM  
 (Percent Who Reported Membership)

State and Stratum	Percent	N
<u>North Dakota:</u>		
Large cattle producers . . . . .	75%	136
Small cattle producers . . . . .	67	370
Small crop producers . . . . .	56	125
Large crop producers . . . . .	71	194
<u>South Dakota:</u>		
Large livestock producers . . . . .	63	134
Small cattle producers . . . . .	48	276
Small hog producers . . . . .	61	72
Small producers of hogs <i>and</i> cattle . . . . .	46	159
Small crop producers . . . . .	40	76
Large crop producers . . . . .	64	128

TABLE 4.35  
 OPERATORS' EDUCATIONAL ATTAINMENT BY STATE AND STRATUM  
 (Percent)

State and Stratum	Less than High School	High School	Beyond High School	Total	N
<b>North Dakota:</b>					
Large cattle producers . . . . .	32%	37%	31%	100	136
Small cattle producers . . . . .	48	30	22	100	367
Small crop producers . . . . .	42	26	32	100	125
Large crop producers . . . . .	39	35	26	100	192
<b>South Dakota:</b>					
Large livestock producers . . . . .	27	35	38	100	130
Small cattle producers . . . . .	37	41	22	100	273
Small hog producers . . . . .	31	42	27	100	71
Small producers of hogs and cattle . . . . .	35	42	23	100	158
Small crop producers . . . . .	39	34	27	100	75
Large crop producers . . . . .	27	48	25	100	127

TABLE 4.36  
 OPERATORS' RECEIPT OF ANY OFF-FARM/RANCH INCOME DURING  
 THE YEAR PRIOR TO SURVEY BY STATE AND STRATUM  
 (Percent Who Reported Income)

State and Stratum	Percent	N
<b>North Dakota:</b>		
Large cattle producers . . . . .	25%	133
Small cattle producers . . . . .	30	368
Small crop producers . . . . .	50	124
Large crop producers . . . . .	36	190
<b>South Dakota:</b>		
Large livestock producers . . . . .	20	133
Small cattle producers . . . . .	29	272
Small hog producers . . . . .	34	71
Small producers of hogs and cattle . . . . .	27	155
Small crop producers . . . . .	40	75
Large crop producers . . . . .	30	127

## CHAPTER 5

### PROFILE OF DAKOTA OPERATORS BY AGE

Thus far, our report has confined itself to exploring the attitudes and behavior of Dakota farmers and ranchers as they were in the spring of 1978. We have attempted to describe the characteristics of the entire agricultural population of the Dakotas, occasionally discussing significant differences between North and South Dakota operators. In the preceding chapter, we also reported response differences among operators of various sizes and types of farms and ranches (as defined by sampling strata). In this chapter, we present breakdowns for a number of survey items among operators in four age groups: under forty years, from forty to forty-nine, from fifty to fifty-nine, and sixty years or older.

The chief importance of age-related differences lies in what they may suggest about future distributions of population characteristics. If, for example, younger and older operators differ markedly in their attitudes and survey participation habits, this finding might help us to project future participation rates, as the agricultural labor force turns over. Policy actions aimed at maintaining or improving cooperation with USDA's data collection efforts might be guided by such projections.

We wish to emphasize, however, that extrapolation to future population characteristics from the present data faces considerable hazards. Strictly speaking, our analysis of the attitudes and beliefs of Dakota farmers and ranchers is limited by the nature of the data on which it is based--a single measurement on a series of related variables during a reasonably compact time period. Without time-series data (observations of the *same* operators on these *same* variables at multiple time points), little can be done to uncover the dynamic processes behind attitude formation or participation in crop and livestock surveys. A variety of change processes may be at work, each with its own implications for future trends. But with a single "snapshot" of attitudinal data and behavioral self-reports, we are simply unable to distinguish among them. A brief example will demonstrate why this is so.

In general, we discovered that younger farmers and ranchers as a group generally had less positive opinions of USDA's crop and livestock survey program than did older operators--a finding with potential importance for data collection and dissemination policy. A *generation-* or *cohort-based* explanation would lead us to expect that as the older generations of operators are replaced in the agricultural labor force by younger cohorts, the aggregate levels of support for and participation in crop and livestock surveys would decline, with possibly serious consequences for the

accuracy of national production statistics. If such an interpretation is justified, the desirability of policy actions that might affect the perceptions and beliefs of younger operators are obvious. Yet, with the data at hand we cannot state with confidence that such age-related differences are truly differences among generations of operators--differences we can expect to persist as cohort replaces cohort in the agricultural population. Two other plausible explanations for observed differences can be made, neither of which would necessarily lead to the same outcome. For convenience, we will refer to these as *life-cycle* explanations and *period* explanations.

Briefly, life-cycle hypotheses predict that as people grow older their attitudes and beliefs can be expected to shift for a variety of reasons (their environments change, they accumulate knowledge and experience, etc.). On the basis of such a theory, one might argue that the observed differences among operators of different ages do not stem from the fixed characteristics of individuals, which will persist as time progresses, but instead result from the differences between younger, less experienced operators and older, more mature farmers and ranchers. This hypothesis implies that as younger operators advance in years, their opinions and beliefs are likely to change in the direction of those now held by older operators.

The possibility of period effects introduces further complexity. Hypotheses of this type differ from the other two in that attitudes and beliefs are seen to be primarily the products of the unique circumstances that mark a particular historical period. These conditions may well have different effects on the attitudes of different age groups in the population, but there is no reason to expect that a given generation will continue to manifest a constant set of opinions as circumstances change. Furthermore, since older members of the population are themselves subject to period effects, there is no compelling reason to anticipate that younger generations will be subject to predictable life-cycle shifts, leading them to assume the opinions once held by their elders. What is more, we are unable to foretell the specific conditions under which future operators (i.e., the sons and daughters of present operators who may assume control of farms and ranches in the coming years) will form their attitudes toward crop and livestock surveys.

For these reasons, we can make no firm predictions about future trends in operators' opinions or survey participation. We feel, however, that age-related response differences are worth noting for their potential importance. The more one becomes convinced that participation attitudes and behavior are generational phenomena, subject to neither life-cycle shifts nor periodic disturbances, the more confidence one can place in extrapolations of future habits on the basis of those now shown by younger operators. Accordingly, we have divided our Dakota sample into four age categories (see Table 5.1). As in previous

TABLE 5.1  
AGE-GROUP COMPOSITION OF  
SAMPLED OPERATORS  
(Percent)

Age Group	Percent	N
Under 40 . . . . .	27%	338
40 to 49 . . . . .	22	279
50 to 59 . . . . .	29	362
60 and over . . . . .	22	270
Total . . . . .	100%	1,249

chapters, we limit our presentation to those survey items for which age differences were found to be statistically significant at the .05 level by chi-square tests; special attention is given to variables found to be significantly related to our participation measures.

#### INFORMATION USE

Distinct differences were found in the information sources used by operators in the four age categories; Tables 5.2 through 5.6 display the percentage breakdowns. Reported use of periodical literature for crop and livestock information (magazines, journals, and newsletters) declines monotonically with age (Table 5.2): two-thirds (67 percent) of the operators under 40 years of age cited this source compared to less than half (48 percent) of those 60 or older. Mass media use is generally not differentiated by age, except that the youngest operators were most likely (20 percent) to mention using televised reports, while the oldest operators were least likely (12 percent) to do so (Table 5.3). Table 5.4 shows that the oldest operators were most likely to claim that various agricultural agents provide them with needed crop and livestock information, with 37 percent of those 60 and over reporting this source. In contrast, only about 25 percent of the operators in the 40-to-49 age range cited use of agents. Farmers and ranchers under 40 and those in the 50-to-59 year category fall in between these extremes, with roughly 30 percent obtaining information through agents.

Only about 7 percent of the sample listed personal contacts with friends, relatives, or neighbors as a source of crop and livestock information. We found, however, that operators under 40 were more likely to obtain at least some of their information in this way, with 12 percent naming some type of personal, informal contact. This contrasts with operators in the 50-to-59

TABLE 5.2

USE OF MAGAZINES, JOURNALS, OR NEWSLETTER FOR  
CROP AND LIVESTOCK INFORMATION BY AGE  
(Percent Who Reported Use)

Age Group	Percent	N
Under 40 . . . . .	67%	338
40 to 49 . . . . .	62	279
50 to 59 . . . . .	59	362
60 and over . . . . .	48	270

TABLE 5.3

USE OF TELEVISED REPORTS FOR CROP AND  
LIVESTOCK INFORMATION BY AGE  
(Percent Who Reported Use)

Age Group	Percent	N
Under 40 . . . . .	20%	338
40 to 49 . . . . .	14	279
50 to 59 . . . . .	19	362
60 and over . . . . .	12	270

TABLE 5.4

USE OF AGRICULTURAL AGENTS FOR CROP AND  
LIVESTOCK INFORMATION BY AGE  
(Percent Who Reported Use)

Age Group	Percent	N
Under 40 . . . . .	30%	338
40 to 49 . . . . .	25	279
50 to 59 . . . . .	31	362
60 and over . . . . .	37	270

age group, only 4 percent of whom named this source (Table 5.5).

Finally, in Table 5.6 are displayed the percentages by age of those who use each of six sources for most of their crop and livestock information. Although agricultural periodicals are the primary source most often cited by each age group, we find sizable differences in the extent of this preference. Some 43 percent of the operators under 40 rely mainly on magazines and journals, compared to about 34 percent of those in the 40-through-59 age range, and to only 29 percent of those 60 and over. The degree of reliance on some type of agricultural agent is, as we have seen above, much greater among operators over 60 (23 percent) than among all other age categories (12 to 16 percent). In general, the preferences for all other major information sources, including government crop and livestock reports and other USDA publications, are roughly equivalent across the four age groups.

Choices among information sources may depend in part upon the resources an operator commands, especially those that affect his ability to process or interpret the various kinds of data presented in the different sources. The only such resource measured in our survey is formal education, and we found substantial differences in the educational levels of the operators in the four age groups, as shown in Table 5.7. Nearly three-fourths (72 percent) of the operators 60 and over reported that they had not received high school diplomas or their equivalent. This proportion drops steadily with age; only 11 percent of those under 40 reported that they had not completed high school. At the opposite extreme, only 12 percent of the oldest farmers and ranchers claimed to have had formal training beyond high school and this percentage grows in each succeeding younger cohort, with 44 percent of the youngest operators reporting some higher education.

TABLE 5.5

USE OF PERSONAL CONTACTS WITH FRIENDS, RELATIVES, AND  
NEIGHBORS FOR CROP AND LIVESTOCK INFORMATION BY AGE  
(Percent Who Reported Use)

Age Group	Percent	N
Under 40 . . . . .	12%	338
40 to 49 . . . . .	7	279
50 to 59 . . . . .	4	362
60 and over . . . . .	7	270

TABLE 5.6  
 PERCENTAGE OF OPERATORS IN EACH AGE GROUP WHO OBTAIN MOST OF THEIR  
 CROP AND LIVESTOCK INFORMATION FROM EACH SOURCE

Age Group	Government Documents	Magazines, Journals, etc.	Mass Media	Agri-cultural Agents	Personal Contacts	All Other Sources	No Information Source	N
Under 40 . . . .	13%	43%	17%	15%	6%	2%	5%	337
40 to 49 . . . .	14	34	21	12	7	4	9	279
50 to 59 . . . .	14	33	22	16	3	4	8	362
60 and over . . . .	11	29	19	23	6	3	9	270

TABLE 5.7  
 OPERATORS' EDUCATIONAL ATTAINMENT BY AGE  
 (Percent)

Age Group	Less than High School	Completed High School or GED	Formal Education Beyond High School	Total	N
Under 40 . . . . .	11%	45%	44%	100%	337
40 to 49 . . . . .	32	43	25	100	279
50 to 59 . . . . .	51	34	15	100	361
60 and over . . . . .	72	16	12	100	269

By themselves, however, educational differences cannot fully explain age-related disparities in information source preferences. In Table 5.8 we display the percentages in each age group who reported using agricultural periodicals separately for each of the three educational attainment categories defined above. Formal education clearly has an impact on use of this source; the overall percentages show that periodical use increases in each higher category of educational attainment. Furthermore, we see that within the two lower education categories, the differences among age groups in use of magazines and journals are quite small. Among those with less than high school education, operators of all ages reported using periodicals at similar rates, differing only 3 or 4 percentage points around the overall average of 51 percent. For those with high school education or the equivalent, only the oldest cohort appears to differ in periodical use (9 percentage points below the average), although the observed difference is not statistically significant. However, among operators who have had formal training beyond high school, age-group differences in periodical use are substantial. Respondents from 50 to 59 years old are some 10 percentage points less likely to use magazines or journals compared to those under 40, and operators who are 60 or older are fully 30 points below the youngest group in use of this source.

In the same fashion, Table 5.9 displays the percentages who reported use of agricultural agents by age group within education categories. Modest age differences in use of agents were found in Table 5.4, with those from 40 to 49 years least likely and those 60 or older most likely to have reported obtaining crop and livestock information from some type of agent. The overall percentages in Table 5.9 indicate that use of this information source is not significantly related to educational attainment, despite the slightly higher tendency of the least educated operators to indicate use of agents. Within education categories, the patterns of agent use among age groups is quite similar to that found in Table 5.4. Respondents between 40 and 49 years of age were least likely to report using agents regardless of educational level, with about 25 percent of this cohort naming agents in each case. Among the least educated, the youngest operators appeared most likely to use agents (39 percent), but because the number of operators under 40 with less than a high school education is so small, percentage differences involving this cohort are not statistically significant. Likewise, the observed age differences in agent use within the highest educational attainment category are not statistically significant because of the relatively small numbers of older operators in our sample who received formal training beyond high school. Among operators in the middle education category, however, there are significant differences in the proportions who obtain information from agents. In this instance, use of agents by the oldest cohort of respondents (45 percent) stands in contrast to the pattern shown for all other age groups, especially those between 40 and 49 years of age (23 percent), again confirming that educational achieve-

TABLE 5.8

USE OF MAGAZINES AND JOURNALS BY AGE  
AND EDUCATIONAL ATTAINMENT  
(Percent)

Age Group	Less than High School	Completed High School or GED	Formal Education Beyond High School
Under 40 . . . . .	47%	65%	73%
40 to 49 . . . . .	52	65	68
50 to 59 . . . . .	55	64	63
60 and over . . . . .	48	55	43
Overall . . . . .	51%	64%	67%
N . . . . .	502	438	305

NOTE: Entries are the percent in each age group within each education category who reported using magazines, journals, or newsletters for crop and livestock information.

TABLE 5.9

USE OF AGRICULTURAL AGENTS BY AGE AND  
EDUCATIONAL ATTAINMENT  
(Percent)

Age Group	Less than High School	Completed High School or GED	Formal Education Beyond High School
Under 40 . . . . .	39%	28%	31%
40 to 49 . . . . .	25	23	26
50 to 59 . . . . .	32	27	36
60 and over . . . . .	36	45	33
Overall . . . . .	33%	28%	31%
N . . . . .	502	438	305

NOTE: Entries are the percent in each age group within each education category who reported using agricultural agents for crop and livestock information.

ment cannot explain away age-related choices among information sources. Other factors are apparently at work, perhaps having to do with variation among age groups in perceptions of either the expertise of the various agents or the social aspects of contacts with agents.

These possibilities illustrate the difficulties of projecting future information source preferences from cross-sectional data. On the one hand, educational levels are rather fixed characteristics of age groups (generations) that can be expected to persist through time. Thus, normal turnover in the agricultural population will lead to higher educational levels, which could bring predictable shifts in the use of particular information sources such as specialized journals. On the other hand, perceptions about the expertise of agents may well vary from period to period, depending upon the staffing and performance characteristics of agencies. Shifts of this kind are not predictable from observed age-related differences. Finally, it is conceivable that as operators grow older the incidental values of social contacts with flesh-and-blood agents come to outweigh the benefits inherent in published literature, so that projections about information source choices based on replacement of less educated by more educated cohorts may be offset by either periodic or life-cycle shifts in the evaluations of alternative sources. Only additional information can tell us which of these hypotheses is more nearly correct.

#### INFORMATION EVALUATION

There are small but statistically significant age differences in the operators' general evaluations of the usefulness of information usually found in crop and livestock reports (see Table 5.10). In a departure from the pattern found for the information source items, the attitudes of the oldest and

TABLE 5.10

#### EVALUATIONS OF THE GENERAL USEFULNESS OF THE INFORMATION IN CROP AND LIVESTOCK REPORTS BY AGE (Percent)

Age Group	Very or Somewhat Useful	Not at All Useful	Total	N
Under 40 . . . . .	71%	29%	100%	335
40 to 49 . . . . .	65	35	100	278
50 to 59 . . . . .	65	35	100	357
60 and over . . . . .	72	28	100	263

youngest operators in the sample are quite similar in this case, both groups having higher proportions (about 72 percent) who consider this information to be very or somewhat useful in managing their operations than the two middle-aged groups (about 65 percent). But the finding is not a strong one, and its weakness is underscored by the absence of age-related differences in judgments about the usefulness of specific pieces of crop and livestock data in these reports, such as projected planting intentions, prices received, and so forth.

We noted in Chapter 2 that the majority of operators (about 78 percent) feel that groups other than farmers and ranchers benefit more from the publication of crop and livestock reports than do the producers themselves. Table 5.11 illustrates that, although this is generally true for all age groups, operators over 60 are somewhat less likely to hold this opinion, with 67 percent responding that other groups benefit more compared to about 81 percent for all other age groups. This finding appears to be due to the fact that the oldest operators are less likely than others to believe that the use of crop and livestock reports by market competitors is harmful to farmers' and ranchers' interests. Tables 5.12 through 5.14 provide examples of this effect. In each case, respondents 60 years and older were a good deal less likely than younger operators to claim that the use of reports by various purchasers of agricultural products was damaging to the producers. Equally significant, however, is the fact that in all three of these tables the combined percentages for the "neither" and "don't know" categories are largest for the oldest respondents, suggesting a lower degree of market sophistication among this group.

TABLE 5.11

PERCEPTIONS ABOUT WHO BENEFITS MOST FROM THE  
INFORMATION IN CROP AND LIVESTOCK  
REPORTS BY AGE  
(Percent)

Age Group	Farmers and Ranchers	Other Groups	Don't Know	Total	N
Under 40 . . . .	17%	81%	2%	100%	335
40 to 49 . . . .	14	82	4	100	276
50 to 59 . . . .	15	81	4	100	357
60 and over . . .	26	67	7	100	270

TABLE 5.12

PERCEIVED EFFECT OF CROP AND LIVESTOCK REPORT USE BY  
GRAIN BUYERS ON OPERATORS' INTERESTS BY AGE  
(Percent)

Age Group	Helps	Hurts	Neither	Don't Know	Total	N
Under 40 . . .	18%	66%	7%	9%	100%	333
40 to 49 . . .	13	69	8	10	100	268
50 to 59 . . .	21	66	5	8	100	330
60 and over . .	30	48	10	12	100	246

TABLE 5.13

PERCEIVED EFFECT OF CROP AND LIVESTOCK REPORT USE BY  
LIVESTOCK BUYERS ON OPERATORS' INTERESTS BY AGE  
(Percent)

Age Group	Helps	Hurts	Neither	Don't Know	Total	N
Under 40 . . .	24%	63%	6%	7%	100%	306
40 to 49 . . .	19	66	7	8	100	257
50 to 59 . . .	26	60	4	10	100	319
60 and over . .	33	47	10	10	100	243

TABLE 5.14

PERCEIVED EFFECT OF CROP AND LIVESTOCK REPORT USE BY  
FOOD PROCESSORS ON OPERATORS' INTERESTS BY AGE  
(Percent)

Age Group	Helps	Hurts	Neither	Don't Know	Total	N
Under 40 . . .	23%	63%	9%	5%	100%	299
40 to 49 . . .	17	71	6	6	100	238
50 to 59 . . .	23	60	8	9	100	296
60 and over . .	23	50	9	18	100	211

The oldest operators are also less likely than others to believe that government crop and livestock reports are tainted by politics. Table 5.15 shows that 62 percent of farmers and ranchers 60 and over tend to agree that politics influence government reports, while some 77 percent of the youngest age cohort hold this opinion.

Similarly, operators 60 and older were less likely than others to believe that the existence of government crop and livestock reports interferes with their ability to turn a profit (Table 5.16), degrades the stability of the market for agricultural products (Table 5.17), or confers a competitive market advantage on commodity buyers (Table 5.18). Furthermore, the oldest age group shows a higher percentage (57 percent) who think that government reports are clear and easy to understand, especially when compared with the youngest cohort, within which only 44 percent hold this view (Table 5.19).

#### EXPERIENCE WITH CROP AND LIVESTOCK SURVEYS

It seems reasonable to assume that, over the long run, older farmers and ranchers would have accumulated a good deal more experience with crop and livestock surveys than their younger counterparts. This must remain an assumption, since our survey did not attempt to assess operators' exposure to surveys over their entire lifetimes. In the short run, however (i.e., during the twelve months prior to our interview in March of 1978), operators in all age groups received roughly equal numbers of requests for participation in crop and livestock surveys. No significant differences were detected in either the subjective or quantitative measures of the number of survey requests. Furthermore, when operators were asked directly to evaluate the extent of the burden placed on them by survey requests, operators in the four age groups had very similar reactions, with only small, non-significant observed differences.

Participation rates appear to be another matter, however, for whether we examine subjective or numerical reports, we find evidence that participation habits differ significantly across the four age groups. In Table 5.20 we display age breakdowns for subjectively reported participation rates. Generally speaking, there is a modest positive relationship between participation rates and age. The youngest operators were least likely (27 percent) to claim that they respond to surveys almost always or most of the time, while the oldest operators were most likely (40 percent) to describe their participation rates in these terms. Operators in their 40s and 50s reported participation rates in the middle of this range, with an average of about 36 percent claiming to participate almost always or most of the time. Farmers and ranchers in their 40s were, in fact, nearly indistinguishable from the oldest cohort, with 39 percent of this group saying that they agree to respond to survey requests almost always or most of the time.

TABLE 5.15

PERCEIVED IMPACT OF POLITICS ON GOVERNMENT  
CROP AND LIVESTOCK REPORTS BY AGE  
(Percent)

Age Group	Influenced by Politics	Not Influ- enced by Politics	Don't Know	Total	N
Under 40 . . .	77%	20%	3%	100%	337
40 to 49 . . .	75	21	4	100	279
50 to 59 . . .	71	26	3	100	361
60 and over . .	62	32	6	100	269

NOTE: This table combines responses to very similar but not identical questions in the two versions of the questionnaire.

TABLE 5.16

EXPECTED IMPACT ON PROFITS OF ELIMINATION OF GOVERNMENT  
CROP AND LIVESTOCK REPORTS BY AGE  
(Percent)

Age Group	Profits Easier to Make	Profits Harder to Make	Don't Know	Total	N
Under 40 . . .	65%	32%	3%	100%	337
40 to 49 . . .	68	27	5	100	278
50 to 59 . . .	65	28	7	100	362
60 and over . .	53	36	11	100	270

NOTE: This table combines responses to very similar but not identical questions in the two versions of the questionnaire.

TABLE 5.17

EXPECTED IMPACT ON STABILITY OF AGRICULTURAL MARKETS  
OF ELIMINATION OF GOVERNMENT CROP AND  
LIVESTOCK REPORTS BY AGE  
(Percent)

Age Group	Make Mar- kets More Stable	Make Mar- kets Less Stable	Don't Know	Total	N
Under 40 . . .	70%	27%	3%	100%	335
40 to 49 . . .	69	28	3	100	278
50 to 59 . . .	64	32	4	100	360
60 and over . .	55	38	7	100	268

NOTE: This table combines responses to very similar but not identical questions in the two versions of the questionnaire.

TABLE 5.18

EXPECTED IMPACT ON COMMODITY BUYERS' ADVANTAGE OF  
ELIMINATION OF GOVERNMENT CROP AND  
LIVESTOCK REPORTS BY AGE  
(Percent)

Age Group	Give Buyers Less Advantage	Give Buyers More Advantage	Don't Know	Total	N
Under 40 . . .	76%	21%	3%	100%	335
40 to 49 . . .	70	24	6	100	278
50 to 59 . . .	69	23	8	100	362
60 and over . .	58	33	9	100	269

NOTE: This table combines responses to very similar but not identical questions in the two versions of the questionnaire.

TABLE 5.19

OPERATORS IN EACH AGE GROUP WHO AGREE THAT GOVERNMENT  
CROP AND LIVESTOCK REPORTS ARE CLEAR AND EASY TO  
UNDERSTAND--VERSION I RESPONDENTS ONLY  
(Percent)

Age Group	Percent	N
Under 40 . . . . .	44%	181
40 to 49 . . . . .	54	132
50 to 59 . . . . .	51	165
60 and over . . . . .	57	145

TABLE 5.20

SUBJECTIVE PARTICIPATION RATES BY AGE--  
VERSION I RESPONDENTS ONLY  
(Percent)

Age Group	Almost All or Most of the Time	Only Some of the Time or Hardly Ever	Total	N
Under 40 . . . . .	27%	73%	100%	151
40 to 49 . . . . .	39	61	100	121
50 to 59 . . . . .	34	66	100	141
60 and over . . . . .	40	60	100	124

In Table 5.21 we present age breakdowns for numerically computed participation rates (where the rate for each individual is the simple percentage of reported survey requests to which he agreed to respond). Entries for this table are the mean participation rates of the operators in each age group. With one exception, survey participation again appears to increase with each higher age group. Farmers and ranchers 60 and older reported the highest average participation rates, claiming to respond to about 56 percent of the requests they received. Next most cooperative are those in their 50s, reporting an average of 53 percent participation, followed by the youngest cohort, with a mean of 48 percent. Respondents in their 40s, however, reported the lowest cooperation rates on average, claiming to participate only about 41 percent of the time.

TABLE 5.21

MEAN NUMERICAL PARTICIPATION RATES BY AGE--  
VERSION I RESPONDENTS ONLY  
(Percent)

Age Group	Mean Participation Rate	N
Under 40 . . . . .	48%	106
40 to 49 . . . . .	41	103
50 to 59 . . . . .	53	139
60 and over . . . . .	56	93

The differences in the properties of our two participation measures (discussed in Chapter 3) hinder somewhat our ability to draw clear conclusions about age effects. According to the subjective measure, operators between the ages of 40 and 49 appear to participate just about as readily as those in their 60s--the group with the highest self-reported rates. On the numerical measure, this same cohort appears to have the worst participation record, some fifteen percentage points below the average rate for the oldest age group. Despite this discrepancy, the data do seem to support the notion that the older an operator is, the more likely he is to participate in crop and livestock surveys when asked.

We can suggest several reasons why this might be so. Every respondent to the NORC survey who said he had ever participated in a crop or livestock survey was asked to rate the importance of seven hypothetical factors that might have influenced his decision to participate. Table 5.22 shows that significant age-related differences exist in the responses to six out of the seven items; only the desire to promote the accuracy of resulting reports was cited as important about equally often by all four age groups (item 4). For five of the remaining six, the percentage designating each factor important increased steadily with age (in item 2, the two youngest age categories depart slightly from this pattern). From the table we see that the older a farmer or rancher is, the more likely he was to attribute importance to such factors as:

- o The feeling that it is difficult to refuse someone when asked for help
- o A perceived obligation to participate because he uses the resulting crop and livestock reports

TABLE 5.22  
 IMPORTANCE OF SEVEN HYPOTHETICAL FACTORS TO SURVEY PARTICIPATION DECISIONS BY AGE  
 (Percent)

Hypothetical Factor	Age Group			
	Under 40	40 to 49	50 to 59	60 and over
1. When someone asks me to do something, I find it hard to say no . . . . .	34%	44%	49%	56%
2. I use the crop and livestock reports, so I feel I ought to participate in the surveys . . .	39	38	42	50
3. I like being interviewed and having a chance to give information . . . . .	19	23	28	38
4. If farmers and ranchers don't participate, the crop and livestock information won't be accurate . . . . .	56	56	56	63 <sup>a</sup>
5. Once the survey contacts you or gets you on the phone, you're already hooked, so you might as well go ahead . . . . .	21	27	32	40
6. An organization I belong to encourages its members to participate . . . . .	16	25	32	41
7. When the government sponsors a survey, it's usually worthwhile . . . . .	27	31	42	57
N . . . . .	274	242	311	231

NOTE: Entries are percentages in each age group who designated each factor as important. Column percentages sum to more than 100 because operators could designate as many factors as they wished as important.

<sup>a</sup>Percentage differences not significant at the .05 level.

- o Enjoyment of being interviewed and having a chance to give information
- o The feeling that one is "hooked" once contacted by an interviewer over the telephone
- o Belonging to an organization that encourages participation
- o The belief that when the government sponsors a survey, it is usually worthwhile

Older operators appear to find more numerous justifications for participation. Six of the seven hypothetical factors were deemed important by 40 percent or more of the operators 60 and older, and four factors were cited by 50 percent or more. In contrast, only two items were rated as important by as many as 40 percent of the two youngest age groups, and only one factor (item 4) designated as important by 50 percent or more of all operators under 60 years of age.

Despite the differences in evaluations among age groups, when the seven factors are ranked *within* age group according to the percentage who consider them important reasons for participating, some interesting similarities emerge. First, the desire to enhance the accuracy of crop and livestock reports is the factor most likely to be considered important by operators in all four age groups. Second, for all cohorts, the remaining six factors fall into two identical clusters of three, with roughly similar percentages within each cluster. That is, in all four age groups more "important" ratings are given to the feeling that it is difficult to refuse someone when asked for help, to the feeling that one should participate if one uses the reports, and to the belief that government surveys are probably worthwhile, than to the remaining three reasons--membership in an organization that encourages participation, a sense of resignation once one is "hooked" on the phone, and the enjoyment of being interviewed and giving information. In fact, this last factor was least likely to be considered important by all operators save those in the youngest cohort, in which it was rated next to last, barely ahead of the organizational membership factor. This finding suggests a sort of hierarchy in operators' perceptions about their own motives for responding to surveys. Regardless of age, promoting the accuracy of published reports is more often considered important than are more general social responsibilities, which are in turn cited more often than more personal considerations.

The fact that only 16 percent of the youngest operators consider organizational pressures to be an important reason for participating is no doubt partly explained by the fact that those under 40 years of age are significantly less likely to hold membership in any farm organization or commodity association (Table 5.23). Among members, however, we find no evidence to

TABLE 5.23

MEMBERSHIP IN FARM ORGANIZATIONS AND  
COMMODITY ASSOCIATIONS BY AGE  
(Percent)

Age Group	Percent Who Belong to One or More Interest Groups	N
Under 40 . . . . .	50%	337
40 to 49 . . . . .	58	279
50 to 59 . . . . .	60	360
60 and over . . . . .	61	270

support the idea that younger operators tend to belong to organizations that discourage participation or that older operators belong to groups that encourage it.

Respondents to Version II of the NORC questionnaire were asked how willing they were to provide eight specific items of information when responding to a crop and livestock survey. Responses to these items are broken down by age group in Table 5.24. Six of these items display relationships that are statistically significant at the .05 level (the apparent relationship in item 6--prices paid for supplies--is not statistically significant, and that in item 8--off-farm income--is significant only at the .10 level). In brief, the evidence from these tables indicates that as we move from the youngest to the oldest age group we find progressively larger percentages of operators who are willing to reveal:

- o The acreage they intend to plant to different crops
- o The acreage actually planted to each main crop
- o The number of acres harvested and crop yields
- o The kinds and numbers of livestock on hand
- o The prices received when livestock were sold
- o The total income from their farm operations
- o Their off-farm incomes

In general, a majority of the oldest operators expressed willingness to provide all eight types of information we asked about. In contrast, in only one instance (prices paid out for

TABLE 5.24

WILLINGNESS TO PROVIDE EACH OF EIGHT ITEMS OF INFORMATION IN CROP AND LIVESTOCK SURVEYS BY AGE--VERSION II RESPONDENTS ONLY (Percent)

Item	Age Group			
	Under 40	40 to 49	50 to 59	60 and over
1. Information about how much acreage you intend to plant of different crops . . . . .	36%	39%	57%	64%
2. How much acreage you actually planted to each of your main crops . . . . .	44	47	63	71
3. The number of acres you harvested and your crop yields . . . . .	34	46	57	69
4. The kinds of livestock you have and the numbers of each kind . . . . .	44	43	57	65
5. The prices you received when you sold your livestock . . . . .	49	49	59	67
6. The prices you pay for things like seed, fertilizer, or feed . . . . .	69	71	74	78 <sup>a</sup>
7. The total income from your farm operation . . . . .	32	36	45	55
8. Your off-farm income . . . . .	41	42	52	54 <sup>b</sup>
N . . . . .	132	123	180	109

NOTE: Entries are percentages in each age group who indicated willingness to provide each type of information.

<sup>a</sup>Not significant.

<sup>b</sup>Significant at the .10 level.

farm supplies) was a majority in either of the two youngest age groups willing to disclose information. The younger the operator, the more sensitive he is likely to be about sacrificing his privacy and revealing information in surveys.

Something of a paradox emerges, however, when we examine the related issue of operators' perceptions about the confidentiality of responses to government surveys. First, we find no significant differences by age in operators' beliefs about whether the Department of Agriculture would reveal the survey responses of a particular operator to another government agency: about 70 percent of the operators in each group believe that USDA would do so. However, when the question focuses on revealing this information to a private company, contrary to our expectations the oldest operators are 11 percentage points *more likely* than the youngest to think that USDA would provide a private firm with information about a particular farmer's response. Table 5.25 shows that 51 percent of the operators 60 and older hold this belief, compared to only 40 percent of those under 40.

Further analysis reveals that, regardless of age, there is virtually no connection between operators' beliefs about whether USDA guards the confidentiality of survey responses and their degree of willingness to provide specific information when responding to surveys. Yet, our multivariate analysis of participation in Chapter 3 suggested that both willingness to provide information and the issue of confidentiality with respect to other government agencies appeared to exert independent, direct effects on readiness to participate. Willingness to reveal information and confidentiality considerations are simply independent of each other.

We had originally hypothesized that survey participation might be influenced in part by the difficulty experienced by

TABLE 5.25

OPERATORS IN EACH AGE GROUP WHO BELIEVE THAT USDA  
WOULD REVEAL A PARTICULAR OPERATOR'S SURVEY  
RESPONSES TO A PRIVATE COMPANY  
(Percent)

Age Group	Percent	N
Under 40 . . . . .	40%	306
40 to 49 . . . . .	44	250
50 to 59 . . . . .	50	302
60 and over . . . . .	51	212

operators in providing accurate information when responding to interviews. But, as the data indicated (see Chapter 2, Table 2.29), few operators are aware of any such difficulties: for most of the items we asked about, something like 80 percent of our respondents claimed that it was easy for them to give accurate information. Examining these same items by age group revealed only two significant relationships. In general, larger percentages of older operators find it difficult to give accurate information about prices received for livestock sold (Table 5.26) and about total farm/ranch income (Table 5.27). The finding that the age category most likely to experience such difficulties is also the group with the highest reported participation rates reinforces the conclusion that participation decisions are not influenced by the anticipated difficulty of the task (see Chapter 3).

TABLE 5.26

OPERATORS IN EACH AGE GROUP WHO WOULD FIND IT DIFFICULT TO GIVE ACCURATE INFORMATION ABOUT PRICES RECEIVED FOR LIVESTOCK SOLD--VERSION I RESPONDENTS ONLY (Percent)

Age Group	Percent	N
Under 40 . . . . .	16%	134
40 to 49 . . . . .	25	110
50 to 59 . . . . .	19	126
60 and over . . . . .	31	110

TABLE 5.27

OPERATORS IN EACH AGE GROUP WHO WOULD FIND IT DIFFICULT TO GIVE ACCURATE INFORMATION ABOUT TOTAL INCOME FROM THEIR FARM OPERATION--VERSION I RESPONDENTS ONLY (Percent)

Age Group	Percent	N
Under 40 . . . . .	18%	142
40 to 49 . . . . .	23	114
50 to 59 . . . . .	30	135
60 and over . . . . .	33	120

One final age relationship deserves mention here--one that raises a question about our general findings about the possible causes of survey participation. For the entire sample, operators who reported receiving income from an off-farm/ranch job were *more* likely than others to report higher subjective participation rates (Table 5.28). Yet, when we break down reports of off-farm/ranch income by age group (Table 5.29), we see that the likelihood of reporting an off-farm/ranch source of income decreases with age--and does so quite drastically for the two oldest age groups. While 44 percent of those under 40 claim some non-farm/ranch income, this proportion is reduced to 17 percent among operators 60 and older. Furthermore, when we examine each age group for participation differences related to off-farm income, we find that the differential is smallest for the oldest operators. In fact, the participation habits for operators 60 or older who derive income from an off-farm source are not significantly different from those of their cohorts who did not report off-farm income. Among other age groups, participation differences related to off-farm income are uniformly substantial (Table 5.30).

TABLE 5.28

SUBJECTIVE PARTICIPATION AND OFF-FARM INCOME--  
VERSION I RESPONDENTS ONLY  
(Percent)

Off-Farm Income	Participation Rate		Total	N
	All or Most of the Time	Only Some of the Time or Hardly Ever		
Yes . . . . .	43%	57%	100%	171
No . . . . .	31	69	100	371

TABLE 5.29

OPERATORS IN EACH AGE GROUP WHO  
REPORTED OFF-FARM INCOME  
(Percent)

Age Group	Percent	N
Under 40 . . . . .	44%	333
40 to 49 . . . . .	41	279
50 to 59 . . . . .	30	358
60 and over . . . . .	17	268

TABLE 5.30

SUBJECTIVE PARTICIPATION AND OFF-FARM INCOME  
BY AGE--VERSION I RESPONDENTS ONLY  
(Percent)

	Age Group			
	Under 40	40 to 49	50 to 59	60 and Over
Reported off-farm income . . .	34%	49%	48%	43%
No off-farm income . . . .	23	32	30	40
N . . . . .	148	121	138	124

NOTE: Entries are the percent of operators in each cell who reported participating in surveys "almost always or most of the time."

Although we do not have a sufficiently large pool of respondents in each age group to explore the determinants of participation separately for each class, some of these findings raise the possibility that the relative importance of the various factors influencing participation may differ for operators of different ages. Such a possibility amplifies the need for caution in any attempt to project future population characteristics (especially survey participation habits) on the basis of the data from this single study. Only the additional information provided by a much larger sample, repeated measures on the same respondents, data from quasi-experimental designs, and in-depth, non-structured interviews can provide the basis for full understanding of the dynamics of survey participation.

## CHAPTER 6

### ANALYSIS OF ERRORS

The statistics presented in this report are estimates based on a sample survey. As such, they are subject to errors of two major types, generally referred to as *sampling errors* and *non-sampling errors*. The former arise because we have obtained data from a relatively small, randomly selected sample of farmers and ranchers, rather than from the entire population of operators in the Dakotas. Nonsampling errors may occur for a variety of reasons, the most common being failure to make observations on all units in the selected sample (*nonresponse error*), and the presence of systematic bias or other flaws in the survey instrument (*measurement error*).

These two kinds of error operate jointly to affect the overall accuracy of the survey results. Sampling error affects the *precision* of the estimates. By precision we mean the degree to which our results approach the average result of all possible samples of farmers and ranchers that might have been drawn. That is, the 1,681 respondents to the Dakota survey should be viewed as only one of a very large number of samples of equal size that might have been selected. Statistics computed for all of these hypothetical samples would, of course, differ from one another, and from the average, across all possible samples. Precision is thus only one component of overall accuracy, reflecting, in a sense, the representativeness of a particular sample vis-à-vis the entire population. Highly precise estimates may still be inaccurate, then, if the survey instrument introduces systematic bias into the measurement process. Fortunately, the statistical properties of various sampling designs are well known; thus, we can determine the precision of our sample design with a high degree of confidence. The detection of bias, however, is a much more difficult matter, involving many complex subtleties. Here we examine the data from the Dakota survey for evidence of bias from the two sources noted--measurement error, resulting from the wording used to phrase survey questions and the order in which questions were presented, and nonresponse error, arising from inevitable failures to complete interviews with about 25 percent of the sample.

#### SAMPLING ERROR

The *standard error* of a statistic computed on survey data is an estimate of the variability of that statistic computed for all possible samples, and thus it provides us with some notion of the precision with which our sample statistics approach their true values for the whole population. Using the standard error we can construct an *interval estimate*, a range around the observed value, which tells us about how far (at a prescribed degree of

confidence) our computed statistic might deviate from its true value if a complete census were taken. For example, if we imagine that all possible samples of 1,287 Dakota operators were drawn using the same procedures, and an estimate of the proportion holding a particular opinion was computed for each sample, we would find that for about 95 percent of the samples the interval from 2 standard errors above the estimated proportion to 2 standard errors below would include the average estimated proportion for *all* of the samples. The magnitude of the standard error of a statistic generally depends on the sample size, the variability in the population on the measure in question, and the sampling procedures used. The size of the interval further depends on how confident one wishes to be that the interval includes the true population value.

Because the vast majority of the statistics presented in this report are percentages, we present the standard errors and 95 percent confidence bands associated with estimated percentages of various magnitudes and based on different numbers of cases (Tables 6.1 and 6.2). A simple example will demonstrate the use of these tables.

TABLE 6.1  
STANDARD ERRORS OF ESTIMATED PERCENTAGES  
(In Percentage Points)

Number of Cases	Estimated Percentage			
	5% or 95%	10% or 90%	25% or 75%	50%
1,287 . . . .	0.6%	0.8%	1.2%	1.4%
850 . . . .	0.7	1.0	1.5	1.7
650 . . . .	0.9	1.2	1.7	2.0
300 . . . .	1.3	1.7	2.5	2.9
200 . . . .	1.5	2.1	3.1	3.5
150 . . . .	1.8	2.4	3.5	4.1
75 . . . .	2.5	3.5	5.0	5.8
50 . . . .	3.1	4.2	6.1	7.1
25 . . . .	4.4	6.0	8.7	10.0

TABLE 6.2

NINETY-FIVE PERCENT CONFIDENCE BANDS  
FOR ESTIMATED PERCENTAGES  
(In Percentage Points)

Number of Cases	Estimated Percentage			
	5% or 95%	10% or 90%	25% or 75%	50%
1,287 . . . .	± 1.2%	± 1.6%	± 2.4%	± 2.7%
850 . . . .	± 1.5	± 2.0	± 2.9	± 3.4
650 . . . .	± 1.7	± 2.3	± 3.3	± 3.8
300 . . . .	± 2.5	± 3.4	± 5.0	± 5.7
200 . . . .	± 3.0	± 4.2	± 6.0	± 6.9
150 . . . .	± 3.5	± 4.8	± 6.9	± 8.0
75 . . . .	± 4.9	± 6.8	± 9.8	± 11.3
50 . . . .	± 6.0	± 8.3	± 12.0	± 13.9
25 . . . .	± 8.5	± 11.8	± 17.0	± 19.6

We estimate from the entire sample that the percentage of operators who use agricultural agents as a source of crop and livestock information is 30 percent. To obtain the standard error of this estimate, we consult the first row of Table 6.1. Since the estimated percentage is slightly larger than the 25 percent heading for the third column, we can assume that the standard error falls just above 1.2 percentage points. The 95 percent confidence band for this estimate can be approximated from the same cell (row 1, column three) of Table 6.2. That is, we can say with 95 percent confidence that the true percentage lies in the interval from 27.5 percent to 32.5 percent.

Other rows of the tables will be of use for percentages based on the cases in a single state or stratum, for items that appeared on only one version of the questionnaire, and for items asked only of respondents who answered a previous filter question in a particular way. For example, 68 percent of the 191 small cattle producers in North Dakota who answered Version II of the questionnaire agreed with the statement, "government crop and livestock reports are usually followed by a drop in the prices of agricultural products." The standard error for this percentage is approximated by the value in the fifth row (200 cases) and third column (75 percent) of Table 6.1, or about 3.2 percentage points. Using the same cell of Table 6.2, we can say with 95 percent confidence that the true percentage for North Dakota small cattle ranchers lies somewhere between 62 percent and 74 percent.

The standard error of the percentage difference between two subpopulations can be approximated by taking the square root of the sum of squares of the standard errors of the two individual estimates (as found in Table 6.1); 95 percent confidence limits can then be computed by doubling the standard error of the percentage difference. We found, for example, that 39 percent of North Dakota operators obtain crop and livestock information from agricultural agents and that only 21 percent of South Dakota operators do so, a difference of 18 points. Using the third row of Table 6.1, we estimate the standard errors for these subpopulation percentages as about 1.9 percentage points for North Dakota and about 1.6 percentage points for South Dakota. The standard error of the difference is thus:

$$\sqrt{(1.9)^2 + (1.6)^2} = 2.5 \text{ percentage points}$$

With 95 percent confidence, we conclude that the true percentage difference between North and South Dakota operators in the use of agents is somewhere between about 13 and 23 percentage points (18 points  $\pm$  5 points).

#### NONSAMPLING ERROR

##### MEASUREMENT ERROR

Regardless of the care taken in the construction of survey questionnaires, researchers can never be completely sure that the answers given by respondents are not somehow affected by the characteristics of the questionnaire itself. It is well known that response patterns may differ widely depending on how questions are worded or on their placement within the sequence of questions in an interview. Skilled practitioners are usually able to write questions that are free from the grossest sorts of bias and that succeed in measuring the desired characteristic quite accurately for most respondents. Experience suggests, however, that there is rarely a single "best" way to phrase questions about people's attitudes or experiences; equivalent alternatives often exist, each with its own subtle psychometric properties. Only direct comparisons of the response patterns evoked by alternative questions can inform us about the effects of such properties on substantive conclusions. Similarly, the sequential ordering of questions within the survey instrument may have unpredictable implications for the distributions of responses to individual items even when bias due to question wording has apparently been eliminated. Again, the effects on the findings can only be known if alternative orderings are directly compared.

With the two versions of the questionnaire, we conducted and analyzed a few simple experiments concerning response effects from question wording and order. The results, which we present below, suggest that such effects are indeed mild. In many cases,

the differences in responses between the two versions were not statistically significant. Moreover, even when observed version differences proved to be statistically significant, the magnitudes of the differences were generally too small to materially affect our conclusions. All exceptions are noted and discussed.

The first methodological experiment dealt with operators' evaluations of the usefulness of the information in crop and livestock reports. Two types of questions were used (see Table 6.3), one seeking a very general reaction (item A), and the other asking for evaluations of seven specific pieces of information usually found in crop and livestock reports (item B). In Version I the general question preceded the more focused one, and in Version II the order was reversed. Note that the series of specific items was not identical in the two versions; only two of the items (the number of livestock on farms and costs of production) appeared in both.

Table 6.4 displays response percentages for the general question by version placement. Operators who answered the more focused question first (Version II) are about 7 percentage points more likely than others to consider the information in reports very or somewhat useful (71 percent for Version II respondents, 64 percent for Version I respondents). The series of specific items may have served to jog the memories of some respondents about the typical contents of crop and livestock reports, perhaps leading some to recall useful kinds of information they might otherwise have forgotten. If this assumption is correct, the slightly more favorable evaluations of the usefulness of crop and livestock reports given by Version II respondents may be closer to the "true" opinions of Dakota farmers and ranchers.

It is also possible that usefulness evaluations of specific items of crop or livestock information might have been affected by the general usefulness question answered first by Version I respondents. Since these operators were slightly more likely to judge the reports not at all useful, any contamination of specific evaluations should be in the same direction. As mentioned above, only two specific information items were evaluated on both versions of the questionnaire (numbers of livestock and costs of production). Contrary to expectations, no significant differences in the pattern of evaluations for these two items were found between respondents to the two versions. Furthermore, looking at all seven items on both versions without regard to content, we find that the average percentage giving very or somewhat useful ratings does not differ significantly between versions (60 percent for Version I and 58 percent for Version II). Thus, respondents who answered the general question first do not appear to have projected their general judgments onto the focused evaluations in an attempt to maximize the consistency of their responses.

TABLE 6.3  
ITEMS USED TO ASSESS THE USEFULNESS OF CROP AND LIVESTOCK REPORTS TO FARMERS AND RANCHERS

	Version I	Version II
A.	<p><u>General Approach:</u> Generally speaking, do you find the information in crop and livestock reports to be very useful, somewhat useful, or not useful at all for managing your operation?</p> <p><u>Focused Approach:</u> Here are some types of information in crop and livestock reports. For each one, please tell me whether it has been very useful, somewhat useful, or not useful at all to you in managing your operation.</p>	<p>Information about weather influence on crop progress and forage conditions (Has this information been very useful, somewhat useful, or not useful at all?)</p> <p>Monthly forecasts of crop yields and acres to be harvested</p> <p>Information about the number of livestock on farms</p> <p>Reports on the number of livestock sold for slaughter (Has this information been very useful, somewhat useful, or not useful at all?)</p> <p>Prices received by farmers and ranchers for their livestock</p> <p>Costs of production, such as prices farmers and ranchers must pay for things like seed, fertilizer, and feed</p> <p>Anticipated market demand for crops</p>
B.	<p>Information on farmers' intentions to plant (Has this information been very useful, somewhat useful, or not useful at all?)</p> <p>End of season estimates of total crop production</p> <p>Prices received by farmers for their crops</p> <p>Information about the number of livestock on farms (Has this information been very useful, somewhat useful, or not useful at all?)</p> <p>Forecasts of livestock to be marketed</p> <p>Costs of production, such as prices farmers and ranchers must pay for things like seed, fertilizer, and feed</p> <p>Anticipated market demand for crops</p>	<p>Information about weather influence on crop progress and forage conditions (Has this information been very useful, somewhat useful, or not useful at all?)</p> <p>Monthly forecasts of crop yields and acres to be harvested</p> <p>Information about the number of livestock on farms</p> <p>Reports on the number of livestock sold for slaughter (Has this information been very useful, somewhat useful, or not useful at all?)</p> <p>Prices received by farmers and ranchers for their livestock</p> <p>Costs of production, such as prices farmers and ranchers must pay for things like seed, fertilizer, and feed</p> <p>Stocks of wheat, other grain, and oil seeds in storage</p>

TABLE 6.4

GENERAL EVALUATIONS OF CROP AND LIVESTOCK  
REPORTS BY QUESTIONNAIRE VERSION  
(Percent)

Questionnaire	Very or Somewhat Useful	Not at All Useful	Total	N
Version I (before specific items) .	64%	36%	100%	634
Version II (after specific items) .	71	29	100	635

The question remains whether the observed difference in responses to the general item are substantively meaningful. Of course, the answer depends upon our research aims. On the one hand, if we are interested in whether or not operators' judgments about crop and livestock reports can be influenced by providing them with specific contextual information to aid recall, our experimental results reveal small increases in the proportion of favorable responses. If, on the other hand, we are concerned only about estimating the overall proportion who find reports to be useful, the differences due to question order do not threaten our general finding that about two-thirds of Dakota farmers and ranchers consider the reports useful.

A second question placement experiment involved perceptions about the effects on operators' interests of the use of crop and livestock reports by groups other than farmers and ranchers. As in the preceding case, the order of a general question and a series of more specific items was alternated in the two questionnaire versions. The general question asked whether the respondent felt that farmers and ranchers or other groups benefited more from crop and livestock reports; the specific items sought opinions about which other groups used the reports and the effects of their use on operators' interests (see Table 6.5). In Version I the specific items preceded the general question; the reverse was true in Version II.

Looking at the general item first (Table 6.6), we find small, barely significant differences in the percentage distributions for the two versions. Version I respondents, having answered the questions about potential users first, are 5 percentage points more likely to say that other groups benefit more than farm or ranch operators, and 3 points less likely to say they don't know who benefits more. As above, we find that when a general question is preceded by a more detailed item on the same topic, responses to the general item shift slightly in a way that suggests that respondents' memories may be better focused on the issue in

TABLE 6.5

ITEMS USED TO MEASURE OPERATORS' PERCEPTIONS  
ABOUT THE DISTRIBUTION OF BENEFITS FROM  
CROP AND LIVESTOCK REPORTS

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A. General Approach

On the whole, who do you think benefits most from the crop and livestock reports--farmers and ranchers or other groups?

B. Focused Approach

First, an open-ended question asked:

Besides farmers and ranchers, what are some of the other groups you can think of that use the crop and livestock reports?

Each respondent was encouraged to name as many groups as he could think of. Records of responses were kept using the following precoded list:

- Grain buyers (I & II)
- Livestock buyers, slaughterhouses (I & II)
- Food processing and marketing companies (I & II)
- Bankers (I & II)
- Local and state government (I)
- Federal government (II)
- Farm organizations and cooperatives (I)
- Consumer groups (II)
- Elevator or storage facility operators (I)
- Farm supply dealers (II)
- Speculators (I)
- Railroads and truckers (II)
- Universities (I)
- Foreign buyers of food products (II)
- Others (specified)

If a respondent did not volunteer one of the above groups, he was then asked in a straightforward way whether he thought the group used the report, according to the following procedure:

- All respondents were asked about the first four groups listed
- Version I respondents were asked about the additional groups marked (I)
- Version II respondents were asked about the additional groups marked (II)

Following this, for each group identified as a report user (volunteered or in response to a direct question), he was asked whether he thought such use helped or hurt farmers and ranchers--also following the above procedure, dividing the groups between versions.

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question. The differences are quite small, however, and in no way alter our conclusion that about four out of five Dakota operators think that the existence of crop and livestock reports confers greater benefits on other groups than on themselves.

TABLE 6.6

OPERATORS' PERCEPTIONS OF WHO BENEFITS MOST FROM CROP  
AND LIVESTOCK REPORTS BY QUESTIONNAIRE VERSION  
(Percent)

Questionnaire	Farmers and Ranchers	Other Groups	Don't Know	Total	N
Version I (focused items first) . . . .	16%	81%	3%	100%	642
Version II (general item first) . . . .	18	76	6	100	632

In this instance, we also find that responses to some of the specific questions differed between versions. First, operators were asked to name as many groups as they could think of (other than farmers and ranchers) who used crop and livestock reports. Records of the number of mentions were kept for fourteen different groups we expected operators to volunteer (see Table 6.5). Significant differences were found between respondents to the two versions in the percentages who mentioned nine of the fourteen groups (see Table 6.7). In each case, there is evidence that Version II respondents tended to mention groups they felt were in *competition* with farmers and ranchers, and tended not to mention groups who usually work in *partnership* with operators, in support of their previous responses to the general question to the effect that other groups benefit more than operators (see Table 6.7a, b, c, f, k, and n). Version I respondents, who had not yet been asked the general question, were comparatively less likely to mention competing groups and comparatively more likely to mention supporting groups as report users (see Table 6.7d, i, and j). In some cases, especially when the overall percentage that mentioned a particular group is small, these methodologically induced differences are trivial, as in Table 6.7b (mentions of the Federal government), 6.7i (mentions of storage facility operators), 6.7j (mentions of farm supply dealers), and 6.7n (mentions of foreign buyers of food). In the remaining instances the version differences are larger, but never exceed 14 percentage points (Table 6.7a--mentions of grain buyers). As in previous examples, we would argue that the magnitudes of these artifactual response

differences are not so large as to overturn substantive findings when results from the two versions are pooled. This contention is buoyed by the fact that, when respondents were asked directly whether they thought that groups they had not volunteered used crop and livestock reports, there were no significant version differences in the percentages who ultimately cited the various groups as users.

TABLE 6.7  
 OPERATORS' SPONTANEOUS MENTION OF VARIOUS GROUPS AS USERS  
 OF CROP AND LIVESTOCK REPORTS BY QUESTIONNAIRE VERSION  
 (Percent)

Group	Version I	Version II	Significant Differences
a. Grain buyers . . . .	24% <sup>a</sup>	38% <sup>a</sup>	*
b. Livestock buyers, slaughterhouses . .	23	30	*
c. Food processing and marketing companies . . . . .	16	24	*
d. Bankers . . . . .	20	12	*
e. Local or state government . . . . .	3	3	
f. Federal government . . . . .	5	11	*
g. Farm organizations and cooperatives . . . . .	6	4	
h. Consumer groups . . . . .	5	7	
i. Elevator and storage facility operators . . . . .	14	9	*
j. Farm supply dealers . . . . .	16	12	*
k. Speculators . . . . .	17	27	*
l. Railroads and truckers . . . . .	2	1	
m. Universities . . . . .	1	1	
n. Foreign buyers of food products . . . . .	3	8	*
N . . . . .	633	631	

<sup>a</sup>Column percentages do not sum to 100 because of multiple answers.

Likewise, statistically significant but substantively unimportant version differences emerge in respondents' answers about the effects of use of crop and livestock reports by four specific groups. Respondents to Version II were relatively more likely to say that use of reports by grain buyers (Table 6.8) and by food processors (Table 6.9) is harmful to operators and relatively less likely to allow that such use might be helpful. These patterns are in keeping with our hypothesis that Version II respondents, having previously answered the general question in an overwhelmingly pessimistic way, tended to respond to subsequent questions in an internally consistent manner. Again, however, we would argue that differences of this size (5 to 8 percentage points) can safely be ignored by policy makers.

TABLE 6.8

PERCEIVED IMPACT ON OPERATORS' INTERESTS OF USE OF  
CROP AND LIVESTOCK REPORTS BY GRAIN BUYERS  
BY QUESTIONNAIRE VERSION  
(Percent)

Questionnaire	Helps	Hurts	Neither	Don't Know	Total	N
Version I . . .	23%	60%	7%	10%	100%	596
Version II . .	18	66	7	9	100	597

TABLE 6.9

PERCEIVED IMPACT ON OPERATORS' INTERESTS OF USE OF CROP AND  
LIVESTOCK REPORTS BY FOOD PROCESSING AND MARKETING  
COMPANIES BY QUESTIONNAIRE VERSION  
(Percent)

Questionnaire	Helps	Hurts	Neither	Don't Know	Total	N
Version I . . .	25%	58%	7%	10%	100%	529
Version II . .	17	64	10	9	100	538

In a third methodological experiment, we sought operators' opinions about *government* crop and livestock reports, altering question wording and format between the two questionnaire versions. Respondents were asked whether they agreed or disagreed with each of six statements about government reports. On one version, the statement was phrased in such a way that agreement would indicate a more or less favorable attitude toward the reports; on the other version the same favorable attitude would require disagreement with the statement. Table 6.10 lists the

TABLE 6.10  
VERSION DIFFERENCES IN QUESTION WORDING FOR PARALLEL-CONTENT AGREE-DISAGREE  
ITEMS ON THE EFFECTS OF GOVERNMENT CROP AND LIVESTOCK REPORTS

	Version I	Version II
	Here are some statements about government crop and livestock reports. As I read each one, please tell me whether you agree with it or disagree with it.	
a.	Crop and livestock reports published by private companies are generally more accurate than government reports.	Government crop and livestock reports are generally more accurate than reports published by private companies.
b.	Government crop and livestock reports are not influenced by politics.	Government crop and livestock reports are influenced by politics.
c.	If there were no government crop and livestock reports, it would be easier for farmers and ranchers to make a profit.	If there were no government crop and livestock reports, it would be harder for farmers and ranchers to make a profit.
d.	Government crop and livestock reports tend to make the market for agricultural products less stable.	Government crop and livestock reports tend to make the market for agricultural products more stable.
e.	Most farmers and ranchers refuse to participate in government crop and livestock surveys.	Most farmers and ranchers agree to participate in government crop and livestock surveys.
f.	Commodity buyers would have more of an advantage in the market if there were no government crop and livestock reports.	Commodity buyers would have less of an advantage in the market if there were no government crop and livestock reports.

pairs of parallel statements used in the two versions. Note that the wording changes are quite subtle, usually amounting to no more than changing a single word, and hence the meaning of the statement to its opposite. Unfortunately, by limiting our alterations to the absolute minimum, we were not always able to construct two statements that were precise, logical opposites in every respect, such that an operator who agreed with one version would necessarily disagree with the other. For example, operators who felt that government reports and those from private companies were about equally accurate would no doubt disagree with both versions of our statement about that issue (Table 6.10a). Similarly, respondents who felt that government crop and livestock reports have little or no impact on market stability would probably disagree with both of our statements on that topic (Table 6.10d). This sort of difficulty is endemic to questions in this format; it is never entirely possible to determine exactly what a respondent means to communicate by disagreeing with a reasonably precise statement. Thus we cannot be wholly certain that both versions of these items are tapping the same underlying attitude or belief.

This problem appears much less ominous in practice, however, than in theory. If we assume that agreement or disagreement with each of the statements in Table 6.10 reflects either a favorable or an unfavorable attitude toward government crop and livestock reports, we can code the responses to each pair of items *as if* they were indicative of the same latent beliefs and then test statistically for version-related differences in response distributions. (That is, for the first statement, dealing with the relative accuracy of government and private reports, favorable attitudes toward government reports would be indicated by disagreement with the Version I statement and by agreement with the Version II statement, and the reverse would be true for unfavorable attitudes.) In fact, we find that there are statistically significant differences in the response patterns for three of the six pairs of statements (see Tables 6.11 through 6.13). The question remains whether the observed differences are of practical significance.

Table 6.11 displays the data by version for the statements about whether "most farmers and ranchers" agree or refuse to participate in government crop and livestock surveys. The principal difference revealed in the table is that Version II respondents were 5 percentage points more likely to *agree* with the statement that most operators *do* participate than their Version I counterparts were to *disagree* with the statement that most operators *refuse* to participate. It hardly seems worthwhile to speculate about the possible explanations for this discrepancy, since the difference is so small that we would not hesitate to combine responses to the two versions into a single indicator of beliefs about participation levels.

Tables 6.12 and 6.13 present somewhat larger version differences. Version II respondents found it a good deal easier to

TABLE 6.11

OPERATORS' BELIEFS ABOUT WHETHER MOST OPERATORS AGREE OR  
REFUSE TO PARTICIPATE IN GOVERNMENT SURVEYS  
BY QUESTIONNAIRE VERSION  
(Percent)

Question- naire	Favorable <sup>a</sup>	Unfa- vorable <sup>b</sup>	Don't Know	Total	N
Version I . . .	30%	59%	11%	100%	639
Version II . .	35	58	7	100	639

NOTE: See Table 6.10, item e, for wording of questions.

<sup>a</sup>Favorable responses are defined as *disagreement* with the statement in Version I and *agreement* with the statement in Version II.

<sup>b</sup>Unfavorable responses are defined as *agreement* with the statement in Version I and *disagreement* with the statement in Version II.

TABLE 6.12

OPERATORS' BELIEFS ABOUT WHETHER PROFITS WOULD BE EASIER  
OR HARDER TO MAKE IF THERE WERE NO GOVERNMENT CROP  
AND LIVESTOCK REPORTS BY QUESTIONNAIRE VERSION  
(Percent)

Question- naire	Favorable <sup>a</sup>	Unfa- vorable <sup>b</sup>	Don't Know	Total	N
Version I . . .	37%	56%	7%	100%	641
Version II . .	24	70	6	100	641

NOTE: See Table 6.10, item c, for wording of questions.

<sup>a</sup>Favorable responses are defined as *disagreement* with the statement in Version I and *agreement* with the statement in Version II.

<sup>b</sup>Unfavorable responses are defined as *agreement* with the statement in Version I and *disagreement* with the statement in Version II.

TABLE 6.13

OPERATORS' BELIEFS ABOUT WHETHER COMMODITY BUYERS WOULD HAVE MORE OR LESS OF AN ADVANTAGE IF THERE WERE NO GOVERNMENT CROP AND LIVESTOCK REPORTS BY QUESTIONNAIRE VERSION  
(Percent)

Questionnaire	Favorable <sup>a</sup>	Unfavorable <sup>b</sup>	Don't Know	Total	N
Version I . . .	29%	63%	8%	100%	641
Version II . . .	21	74	5	100	639

NOTE: See Table 6.10, item f, for wording of questions.

<sup>a</sup>Favorable responses are defined as *agreement* with the statement in Version I and *disagreement* with the statement in Version II.

<sup>b</sup>Unfavorable responses are defined as *disagreement* with the statement in Version I and *agreement* with the statement in Version II.

*disagree* with the idea that profits would be more *difficult* to make if there were no government reports than Version I respondents did to *agree* that profits would come *easier* without government reports. However, since an operator who thought that government reports had *no* impact on profits could consistently disagree with either statement, in an important sense the two versions of this question do not have strictly comparable response alternatives and thus do not produce equivalent distributions. On this issue, the answer we get depends somewhat upon how we ask the question. Nevertheless, we can say with assurance that the operators who felt that government reports interfere with profit making substantially outnumber those who thought they enhance profits, regardless of version.

A nearly identical pattern emerges for the pair of statements about the relative advantages conferred upon commodity buyers by government reports. Again, the ambiguity associated with the disagree response to either statement is the major factor in our uncertainty about the true distribution of attitudes on this issue. Question wording clearly makes a difference in the percentages observed. In general, however, the percentage differences are quite small compared with the differences between favorable and unfavorable responses. The results from either version tell us clearly that the great majority of operators believe that commodity buyers derive market advantages from the existence of government crop and livestock reports (Table 6.13).

The final measurement experiment in the Dakota survey involved the use of two entirely different approaches to collecting data on operators' experiences with being solicited for and participating in government crop and livestock surveys. These approaches and their results are discussed in detail in Chapter 3.

In summary, we feel that the methodological experimentation discussed here encourages confidence in the results obtained from the entire survey schedule. Although limited in scope, our experiments reveal that question wording and order had little practical effect on our findings. This might have been a greater problem if we had been dealing with ephemeral attitudes or loosely held beliefs, but the relative invariance of our results across methods suggests strongly that operators' opinions on these matters are quite well defined and that they were captured with minimal bias by our survey instrument.

#### NONRESPONSE ERROR

Finally, it would be useful to know something about the effects on the accuracy of the Dakota survey results of the fact that we were unable to collect data from about 25 percent of the operators in the corrected list sample. Roughly half of the nonrespondents (13 percent of the total sample) were contacted but insistently refused to be interviewed. The remainder (12 percent) proved impossible to reach within our time and cost constraints. We have, of course, no direct means to ascertain how or to what degree these two types of nonrespondents might differ from the operators who agreed to be interviewed. However, by making a few simple assumptions, we can identify among our respondents those cases most likely to share the characteristics of those who refused or could not be reached.

Using the detailed records kept of all telephone calls (including unsuccessful ones) to the survey respondents, we have formulated two indicators of the effort required to induce operators to participate in the NORC survey. Respondents who initially refused to be interviewed but were later persuaded to participate were designated "temporary refusals." We assume that these "reluctant respondents" hold attitudes and beliefs closely resembling those of operators who ultimately refused to cooperate. These respondents composed about 6 percent of the total number of completed cases (unweighted). We also identified a second group of respondents who, although they never refused outright to be interviewed, were nevertheless difficult to reach by telephone (i.e., completing the interview required seven or more telephone calls). We assume that this group has characteristics similar to those of operators whom we were unable to interview, but who never directly refused. This group composed 17 percent of the total number of completed cases. We thus partitioned our sample of completed cases as shown in Table 6.14.

TABLE 6.14

CLASSIFICATION OF RESPONDENTS BY  
AVAILABILITY FOR INTERVIEW  
(Percent)

Respondent Type	Percent	Unweighted N
Temporary refusal . . . . .	6%	103
Difficult to reach . . . . .	17	285
All others . . . . .	77	1,293
Total . . . . .	100%	1,681

In constructing this classification scheme we made use of several items of information from the NORC survey records for each respondent, attempting to identify operators with particular characteristics. We must admit, however, that we are not sure that respondents can be accurately characterized as "prone to refuse participation" or "difficult to reach" on the basis of records for a single survey. On the one hand, it may well be that respondents who resist any given interview are more likely to resist all others as well. If our "reluctant respondents" are in fact the same as "nonrespondents" on other surveys, further analysis might reveal whether extra expense and effort by USDA survey operations would pay off by bringing in valuable information on chronic nonrespondents. On the other hand, it may be that participation in any particular survey is instead a function of more volatile moods, or pressures of daily life, so that operators are led to refuse on one occasion but to respond on another. If this is true, our "reluctant" respondents may actually be quite cooperative at other times, and there may in reality be no difference between them and more willing participants. In such a case, the added expense and special efforts required to convert recalcitrant operators into participants would still not reach the "hard-core" nonrespondents.

The results of our survey questions about operators' histories of participation in USDA crop and livestock surveys suggest that the first of these two hypotheses is more correct. Among Version I respondents, some 38 percent told us that they hardly ever agree to participate in crop or livestock surveys. From the numerical reports collected from Version II respondents we estimate that about 37 percent participated in fewer than one in ten of the surveys in which they were asked to participate (see Table 3.7). Nonresponse thus appears to be more a habit than a random occurrence.

We can examine the distributions for each of the participation measures for each of the three types of respondents, thereby testing our assumptions about the similarities between reluctant or difficult-to-reach respondents and nonrespondents. These breakdowns are displayed separately for the subjective participation measure (Table 6.15) and the numerically derived measure (Table 6.16). Although the numbers of cases are somewhat reduced because of the split-ballot questionnaire format and missing data, the findings are quite clear. Operators who temporarily refused to submit to the NORC interview are much more likely to have lower overall participation rates than others. On the subjective measure, about two-thirds (66 percent) of our reluctant respondents said that they hardly ever participated in crop or livestock surveys, compared with 42 percent of the difficult-to-reach group, and to only 36 percent of all others. On the numerical measure, the average participation rate for the reluctants (24 percent) was less than half that reported by the other two groups (51 percent).

TABLE 6.15

SUBJECTIVE PARTICIPATION RATES FOR EACH TYPE OF RESPONDENT--VERSION I RESPONDENTS ONLY (Percent)

Respondent Type	Almost Always or Most of the Time	Only Some of the Time	Hardly Ever	Total	N
Temporary refusal . . .	5%	29%	66%	100%	38
Difficult to reach . .	30	28	42	100	117
All others . .	38	26	36	100	582

TABLE 6.16

NUMERICAL PARTICIPATION RATES FOR EACH TYPE OF RESPONDENT--VERSION II RESPONDENTS ONLY (Percent)

	Temporary Refusal	Difficult to Reach	All Others
Average participation rate .	24%	51%	52%
N . . . . .	25	100	480

This same pattern is evident in responses to our inquiries about participation in two particular USDA surveys: the Acreage and Production of Crops (Small Grain Crops in South Dakota) Survey in the Fall of 1977, and the January Calf and Cattle Inquiry in the Winter of 1977-78 (Tables 6.17 and 6.18). The numbers of cases are again reduced, this time because the subsamples are limited to those who told us that they had been asked to participate in one of these surveys (45 percent of the total sample for the Acreage and Production Survey and 22 percent for the Calf and Cattle Inquiry). Even so, the parallels with the findings for

TABLES 6.17

PARTICIPATION IN THE USDA ACREAGE AND PRODUCTION SURVEY  
DURING THE FALL OF 1977 BY RESPONDENT TYPE  
(Percent)

Respondent Type	Participated	Refused	Total	N
Temporary refusal . . .	32%	68%	100%	25
Difficult to reach . .	58	42	100	133
All others . . . . .	60	40	100	603

NOTE: This question was asked only of those respondents who reported that they had been asked to participate in the Fall survey.

TABLE 6.18

PARTICIPATION IN THE USDA CALF AND CATTLE INQUIRY DURING  
THE WINTER OF 1977-78 BY RESPONDENT TYPE  
(Percent)

Respondent Type	Participated	Refused	Total	N
Temporary refusal . . .	20%	80%	100%	20
Difficult to reach . .	48	52	100	58
All others . . . . .	50	50	100	297

NOTE: This question was asked only of those respondents who reported that they had been asked to participate in the Winter survey.

overall participation are quite striking. About 68 percent of our reluctant respondents who were asked to participate in the Acreage and Production Survey refused to do so, compared to only 42 percent of those who were difficult to reach, and to 40 percent of all others. Among operators who were asked to respond to the Calf and Cattle Survey, 80 percent of our reluctant respondents said they had refused to cooperate, compared to 52 percent of the operators who were hard to contact, and 50 percent of the remainder.

These findings provide convincing evidence that there is indeed a substantial number of operators who respond very rarely, if at all, to agricultural surveys. Just how large this segment is remains unclear. One estimate is provided by the total number of operators who refused to respond to the NORC survey (temporarily or insistentlly)--roughly 18 percent of the original corrected sample of Dakota operators--another by the 37 percent who told us in one way or another that they hardly ever agree to answer survey requests. But the true proportion may be even higher than either of these, amounting to the sum of those who hardly ever participate *plus* the great majority of those who refused to respond to the NORC survey--roughly 42 percent of the original sample.

Of course, we cannot place complete confidence in any of these estimates. For one thing, we know nothing about the participation habits of the 276 operators whom we were never able to contact for the NORC survey. We can assume that if we had succeeded in contacting them they would have refused us at about average rates. However, it is not clear that the participation histories of these operators would be similar to those of operators we interviewed. Operators who are difficult to contact may, for example, participate in a high proportion of the surveys for which they *are* reached.

Furthermore, we cannot be certain about what operators were trying to tell us when they said they hardly ever respond to crop and livestock surveys. The percentage of Version I respondents who described themselves in this way is identical to the percentage of Version II respondents who reported participating in 10 percent or less of the surveys they were solicited for. However, because the subjective and numerical participation measures were used with entirely different respondents, we cannot directly translate one measure into the other except by reasonable guesses. Further research is necessary to establish the precise number of habitual nonrespondents.

Yet, despite our inability to estimate this number accurately, we can say with assurance that a significant number of our respondents, especially of those who were most reluctant to submit to the NORC interview, belong to this group. Given the association between reluctant response to our survey and low response or nonresponse to USDA surveys, we assume that most of

the operators who ultimately rejected NORC appeals belong to this group as well.

There is some evidence (from the subjective participation measure, Table 6.15), that the more difficult to reach respondents to our survey have distinctively lower participation tendencies as well (though not nearly as low as those who temporarily refused). However, most of our data (such as the numerical measure and the participation reports for the fall and winter surveys, Tables 6.16 to 6.18) refute this. There are many reasons why hard-to-reach operators might participate less frequently than less difficult cases--busier schedules, geographically dispersed operations, involvements in second occupations, to name but a few. Still, it may be that these operators, once they are contacted, are perfectly willing to participate at high rates but are prevented from doing so by circumstances beyond their control. If this is the case, then being "difficult to reach" may be a relatively fixed characteristic of some operators. On average, such operators would fall into survey samples just as often as others, but would have a much lower probability of actually responding to a questionnaire. By examining the response patterns of hard-to-reach operators in our sample we may learn a good deal about the attitudes and beliefs of farmers and ranchers we were not able to contact. Just as in the case of reluctant operators, this information would add to our understanding of the impact of nonresponse on the accuracy of our survey results.

In the remainder of this section we describe significant differences in survey responses among the three types of respondents: reluctant, difficult to reach, and all others. As above, we emphasize items that appear to exert significant influence on participation. Because the number of respondents who refused temporarily is relatively small (6 percent of the sample) all tables in this section were constructed using unweighted data.

In Table 6.19 are displayed the percentages of each respondent type who reported using each of nine possible sources of crop and livestock information, as well as the percentage using no information source. Significant differences among types were found only for use of reports from the Crop and Livestock Reporting Service, use of journals and other periodicals, and use of no information source at all. Nearly one quarter of the reluctant respondents (23 percent) claimed to have no information source at all, a much higher proportion than for the other two types. Reluctant respondents were also substantially less likely to report using CLRS reports or any type of farm magazine or commodity journal, and, even where the differences are not statistically significant, they were less likely to report use of most of the other information outlets. In contrast, the differences between difficult-to-reach operators and all others are minimal.

TABLE 6.19

## INFORMATION USE BY RESPONDENT TYPE

Information Source	Respondent Type			Significant Difference
	Temporary Refusal	Difficult to Reach	All Others	
USDA publications .	14%	21%	20%	
CLRS reports . . .	6	17	12	*
Magazines, journals, etc. .	40	55	63	*
Newspapers . . . . .	25	26	27	
Radio . . . . .	18	23	18	
Television . . . . .	13	15	16	
Agricultural agents . . . . .	20	27	28	
Business contacts .	7	6	8	
Friends, neighbors, etc. .	6	6	8	
No information source . . . . .	23	8	7	*
N . . . . .	103	285	1,292	

NOTE: Entries are percentages based on column Ns. Column percentages do not sum to 100 because operators were permitted to name multiple information sources.

How do such findings affect the accuracy of the statistics presented in our substantive chapters? With the use of a few simplifying assumptions, an example will demonstrate that the impact of differences of this size is negligible. Using unweighted data, we find that about 8 percent of the operators (or 136 cases) in our interviewed sample reported using no information source at all. (The percentage computed on weighted cases is identical.) Now let us assume that we can use the results in Table 6.19 to estimate accurately the number of operators among those who insistently refused (297 cases) or were never contacted (252 cases) who would have reported having no information source *if they had been interviewed*. The totals would be 69 (23 percent of 297) and 19 (8 percent of 252), respectively. Adding these to the 136 cases who *actually* reported no source and dividing by the 2,230 operators in the corrected list sample, our estimate of the percentage of the population using no information source would increase from 8 to 10 percent. Performing the same operations on the data for use of CLRS reports and periodicals, we obtain

revised estimates of 12 percent using CLRS reports (identical with our estimate based on weighted, completed cases only), and 57 percent using magazines, journals, or newsletters (again equal to the estimate using only completed cases, see Table 2.1). If our assumptions for imputing missing data from nonrespondents are reasonably correct, we can trust that any biases due to nonresponse are not likely to have grossly distorted the findings presented in earlier chapters.

We also analyzed data on the usefulness evaluations of the information in crop and livestock reports by our three respondent types (Table 6.20). Again, we find no differences in the evaluations of the more difficult and the easy-to-reach respondents, but operators who temporarily refused were some 21 percentage points more likely to say that such information is not at all useful. Our original estimate of the population giving not-useful responses was 33 percent (weighted and unweighted estimates are equal). When we apply the imputation techniques described above, our estimate increases very slightly to 36 percent, further reinforcing our confidence that the extent of nonresponse bias is small.

TABLE 6.20

EVALUATIONS OF THE GENERAL USEFULNESS OF THE INFORMATION  
IN CROP AND LIVESTOCK REPORTS BY RESPONDENT TYPE  
(Percent)

Respondent Type	Very or Somewhat Useful	Not at All Useful	Total	N
Temporary refusal . . . . .	47%	53%	100%	97
Difficult to reach . . . . .	68	32	100	277
All others . . . . .	68	32	100	1,283

Reluctant respondents also differ from the other two types on the issue of whether farmers and ranchers or other groups realize greater benefits from the existence of various crop and livestock reports (see Table 6.21). While they are only 4 percentage points more likely to say that other groups benefit more than producers, they are 10 points more likely to admit that they don't know who benefits more. This no doubt stems from their lesser familiarity with the contents of crop and livestock reports, since, as we have seen above, they are a good deal less likely than others to use them.

TABLE 6.21

OPERATORS' BELIEFS ABOUT WHETHER FARMERS AND RANCHERS  
OR OTHER GROUPS BENEFIT MOST FROM CROP AND  
LIVESTOCK REPORTS BY RESPONDENT TYPE  
(Percent)

Respondent Type	Farmers and Ranchers	Other Groups	Don't Know	Total	N
Temporary refusal . . . . .	3%	83%	14%	100%	101
Difficult to reach . . . . .	17	79	4	100	282
All others . . . . .	17	79	4	100	1,283

Our next set of findings involves a cluster of many items designed to assess operators' attitudes toward *government* crop and livestock reports and surveys. Breakdowns for these items by type of respondent are presented in Tables 6.22 through 6.38. A few of these tables are distinctive enough to merit detailed discussion (these are treated below), but the great majority (thirteen out of eighteen) simply repeat a single theme. First, we see again that the evaluations of respondents who required the largest numbers of follow-up phone calls were, by and large, identical with those of respondents who were much easier to reach. Second, reluctant operators were characterized by a much higher percentage of responses in the don't-know category than all others. In most cases, reluctant respondents gave significantly lower percentages of *both* favorable and unfavorable evaluations than others (see, for example, Tables 6.22, 6.23, 6.26, 6.27, 6.28). In a few instances, however, reluctant respondents gave higher percentages of both don't-knows and negative evaluations (as, for example, in Tables 6.24 and 6.25).

As mentioned above, in a few of the tables reluctant operators exhibit unique evaluation patterns that are not simply the result of lack of knowledge or opinions. Table 6.28 presents data on opinions about the degree of control farm organizations should have over the kinds of information collected in crop and livestock surveys (a multiple-choice-format item asked on Version I only) by respondent type. Reluctant respondents were a good deal more likely than others to say that these organizations should have *less* to say about the data collected. (As Table 6.39 shows, reluctant respondents were also significantly less likely to hold memberships in such organizations, which may account for their opinions on control over surveys.) In addition, Table 6.32 shows that reluctant respondents were much less sanguine about whether participants in government surveys give accurate information. Correspondingly, these operators were much more likely to say

that they can hardly ever trust the results of government reports (Table 6.37). Also, both reluctant respondents and those who were difficult to reach appear to be more likely to feel that release of government crop and livestock reports results in a decrease in the prices received for agricultural products (Table 6.34). Finally, in Table 6.38 we display breakdowns for operators' perceptions about the burdens imposed on them by requests to fill out survey questionnaires. Hard-to-reach respondents tended to be somewhat more likely than easier cases to feel that they had been solicited much too often, and reluctant operators were even more likely to feel this way--nearly 30 percentage points more than the comparatively easy to reach group.

TABLE 6.22

OPERATORS' PERCEPTIONS OF THE RELATIVE ACCURACY OF CROP  
AND LIVESTOCK REPORTS FROM GOVERNMENT AND FROM  
PRIVATE COMPANIES BY RESPONDENT TYPE  
(Percent)

Respondent Type	Govern- ment More Accurate	Private More Accurate	Don't Know	Total	N
Temporary refusal . . . .	21%	47%	32%	100%	101
Difficult to reach . . . .	29	62	9	100	283
All others . . . .	29	62	9	100	1,293

TABLE 6.23

OPERATORS' BELIEFS ABOUT WHETHER GOVERNMENT CROP  
AND LIVESTOCK REPORTS ARE INFLUENCED BY  
POLITICS BY RESPONDENT TYPE  
(Percent)

Respondent Type	Influ- enced by Politics	Not Influ- enced by Politics	Don't Know	Total	N
Temporary refusal . . . .	65%	13%	22%	100%	102
Difficult to reach . . . .	74	21	5	100	284
All others . . . .	71	26	3	100	1,291

TABLE 6.24

OPERATORS' BELIEFS ABOUT WHETHER PROFITS WOULD BE EASIER  
OR HARDER TO MAKE IF THERE WERE NO GOVERNMENT CROP  
AND LIVESTOCK REPORTS BY RESPONDENT TYPE  
(Percent)

Respondent Type	Profits Easier to Make	Profits Harder to Make	Don't Know	Total	N
Temporary refusal . . . .	68%	13%	19%	100%	101
Difficult to reach . . . .	62	29	9	100	284
All others . . . .	64	30	6	100	1,290

TABLE 6.25

OPERATORS' BELIEFS ABOUT WHETHER GOVERNMENT CROP AND LIVE-  
STOCK REPORTS MAKE MARKETS FOR AGRICULTURAL PRODUCTS  
MORE OR LESS STABLE BY RESPONDENT TYPE  
(Percent)

Respondent Type	More Stable	Less Stable	Don't Know	Total	N
Temporary refusal . . . .	13%	74%	13%	100%	99
Difficult to reach . . . .	32	65	3	100	282
All others . . . .	30	67	3	100	1,290

TABLE 6.26

OPERATORS' BELIEFS ABOUT WHETHER MOST FARMERS AND RANCHERS  
AGREE OR REFUSE TO PARTICIPATE IN GOVERNMENT CROP  
AND LIVESTOCK SURVEYS BY RESPONDENT TYPE  
(Percent)

Respondent Type	Most Operators Agree	Most Operators Refuse	Don't Know	Total	N
Temporary refusal . . . .	16%	48%	36%	100%	98
Difficult to reach . . . .	33	57	10	100	284
All others . . . .	31	62	7	100	1,291

TABLE 6.27

OPERATORS' BELIEFS ABOUT WHETHER COMMODITY BUYERS WOULD  
HAVE MORE OR LESS OF AN ADVANTAGE IF THERE WERE  
NO GOVERNMENT CROP AND LIVESTOCK REPORTS  
BY RESPONDENT TYPE  
(Percent)

Respondent Type	More Advantage	Less Advantage	Don't Know	Total	N
Temporary refusal . . . .	25%	52%	23%	100%	98
Difficult to reach . . . .	25	68	7	100	283
All others . . . .	25	70	5	100	1,292

TABLE 6.28

OPERATORS' BELIEFS ABOUT WHETHER GOVERNMENT CROP AND  
LIVESTOCK REPORTS ARE CLEAR AND EASY TO UNDERSTAND  
BY RESPONDENT TYPE--VERSION I RESPONDENTS ONLY  
(Percent)

Respondent Type	Clear	Not Clear	Don't Know	Total	N
Temporary refusal . .	41%	39%	20%	100%	46
Difficult to reach . .	53	45	2	100	142
All others . . . . .	53	46	1	100	644

TABLE 6.29

OPERATORS' BELIEFS ABOUT WHETHER ORGANIZATIONS REPRESENTING  
THE INTERESTS OF FARMERS AND RANCHERS SHOULD HAVE MORE OR  
LESS TO SAY ABOUT THE KINDS OF INFORMATION COLLECTED  
IN GOVERNMENT CROP AND LIVESTOCK SURVEYS BY RE-  
SPONDENT TYPE--VERSION I RESPONDENTS ONLY  
(Percent)

Respondent Type	More	Less	Same	Total	N
Temporary refusal . .	50%	21%	29%	100%	48
Difficult to reach . .	59	9	32	100	142
All others . . . . .	55	8	37	100	644

TABLE 6.30

OPERATORS' BELIEFS ABOUT WHETHER ORGANIZATIONS REPRESENTING  
THE INTERESTS OF FARMERS AND RANCHERS SHOULD HAVE MORE  
CONTROL OVER THE KINDS OF INFORMATION COLLECTED IN  
GOVERNMENT CROP AND LIVESTOCK SURVEYS BY  
RESPONDENT TYPE--VERSION II  
RESPONDENTS ONLY  
(Percent)

Respondent Type	Agree	Dis- agree	Don't Know	Total	N
Temporary refusal . .	59%	9%	32%	100%	53
Difficult to reach .	77	19	4	100	142
All others . . . . .	79	18	3	100	646

TABLE 6.31

OPERATORS' BELIEFS ABOUT WHETHER GOVERNMENT CROP AND  
LIVESTOCK SURVEYS ARE MORE USEFUL TO LARGE FARM  
OPERATORS THAN TO SMALL ONES BY RESPONDENT  
TYPE--VERSION II RESPONDENTS ONLY  
(Percent)

Respondent Type	Agree	Dis- agree	Don't Know	Total	N
Temporary refusal . .	47%	16%	37%	100%	55
Difficult to reach .	64	29	7	100	142
All others . . . . .	68	28	4	100	646

TABLE 6.32

OPERATORS' BELIEFS ABOUT HOW OFTEN FARMERS AND RANCHERS WHO  
PARTICIPATE IN GOVERNMENT CROP AND LIVESTOCK SURVEYS  
GIVE ACCURATE INFORMATION BY RESPONDENT TYPE--  
VERSION II RESPONDENTS ONLY  
(Percent)

Respondent Type	Most of the Time	Some of the Time	Hardly Ever	Total	N
Temporary refusal . . . .	15%	52%	33%	100%	48
Difficult to reach . . . .	41	40	19	100	133
All others . . . .	38	46	16	100	636

TABLE 6.33

OPERATORS' BELIEFS ABOUT WHETHER GOVERNMENT CROP AND  
LIVESTOCK REPORTS LEAD TO A DROP IN THE PRICES OF  
AGRICULTURAL PRODUCTS BY RESPONDENT TYPE--  
VERSION II RESPONDENTS ONLY  
(Percent)

Respondent Type	Agree	Dis- agree	Don't Know	Total	N
Temporary refusal . .	53%	9%	38%	100%	53
Difficult to reach .	58	36	6	100	141
All others . . . . .	58	34	8	100	644

TABLE 6.34

OPERATORS' BELIEFS ABOUT THE IMPACT OF GOVERNMENT CROP AND LIVESTOCK REPORTS ON THE PRICES OF AGRICULTURAL PRODUCTS BY RESPONDENT TYPE--VERSION I RESPONDENTS ONLY (Percent)

Respondent Type	No Effect on Prices	Raise Prices	Lower Prices	Depends	Don't Know	Total	N
Temporary refusal . . . . .	2%	6%	52%	17%	23%	100%	48
Difficult to reach . . . . .	7	2	57	30	4	100	142
All others . . . . .	10	2	47	31	10	100	646

TABLE 6.35

OPERATORS' BELIEFS ABOUT WHETHER GOVERNMENT CROP AND LIVESTOCK REPORTS SHOULD CONTAIN MORE OR LESS DETAILED INFORMATION BY RESPONDENT TYPE--VERSION I RESPONDENTS ONLY (Percent)

Respondent Type	More Detail	Less Detail	Same as Now	Don't Know	Total	N
Temporary refusal . . . . .	22%	24%	29%	25%	100%	45
Difficult to reach . . . . .	27	30	41	2	100	142
All others . . . . .	25	27	45	3	100	640

TABLE 6.36

OPERATORS' BELIEFS ABOUT WHETHER FARMERS AND RANCHERS WHO  
CRITICIZE GOVERNMENT CROP AND LIVESTOCK REPORTS STILL  
USE THEM IN MANAGING THEIR OPERATIONS BY RESPONDENT  
TYPE--VERSION I RESPONDENTS ONLY  
(Percent)

Respondent Type	Critics Use Reports	Critics Don't Use Reports	Don't Know	Total	N
Temporary refusal . .	30%	51%	19%	100%	47
Difficult to reach .	49	43	8	100	141
All others . . . . .	48	47	5	100	645

TABLE 6.37

OPERATORS' BELIEFS ABOUT HOW OFTEN OPERATORS CAN TRUST  
THE RESULTS OF GOVERNMENT CROP AND LIVESTOCK  
SURVEYS TO BE RIGHT BY RESPONDENT TYPE--  
VERSION I RESPONDENTS ONLY  
(Percent)

Respondent Type	Most of the Time	Only Some of the Time	Hardly Ever	Total	N
Temporary refusal . .	7%	37%	56%	100%	45
Difficult to reach .	20	64	16	100	141
All others . . . . .	23	61	16	100	643

TABLE 6.38

OPERATORS' EVALUATIONS OF THE FREQUENCY OF REQUESTS FOR  
THEIR PARTICIPATION IN GOVERNMENT CROP AND LIVE-  
STOCK SURVEYS BY RESPONDENT TYPE--  
VERSION I RESPONDENTS ONLY  
(Percent)

Response Pattern	Much Too Often	Slightly Too Often	About Right or Too Few	Total	N
Temporary refusal . . . . .	55%	24%	21%	100%	29
Difficult to reach . . . . .	40	14	46	100	96
All others . . . . .	27	16	57	100	465

TABLE 6.39

MEMBERSHIP IN FARM ORGANIZATIONS AND COMMODITY  
ASSOCIATIONS BY RESPONDENT TYPE  
(Percent)

Respondent Type	Members	Non- members	Total	N
Temporary refusal . . . . .	50%	50%	100%	97
Difficult to reach . . . . .	56	44	100	281
All others . . . . .	62	38	100	1,292

We also find significant differences among respondent types in beliefs about how well the Agency protects the confidentiality of the answers operators give to government surveys. Reluctant respondents again show substantially more negative views about government performance, being nearly 20 percentage points more likely than the other two types to think that USDA would reveal a particular farmer's survey responses to a private company that asked for them (see Table 6.40). Also, both hard-to-reach and reluctant respondents are more likely than the baseline group to feel that USDA would reveal data given by an individual operator to another government agency that asked for it, with reluctant respondents showing the greater percentage difference (Table 6.41).

TABLE 6.40

OPERATORS' BELIEFS ABOUT WHETHER USDA WOULD REVEAL  
A PARTICULAR OPERATOR'S SURVEY RESPONSES TO  
A PRIVATE COMPANY BY RESPONDENT TYPE  
(Percent)

Respondent Type	Would Reveal	Would Not Reveal	Total	N
Temporary refusal . . . . .	65%	35%	100%	71
Difficult to reach . . . . .	46	54	100	250
All others . . . . .	46	54	100	1,122

TABLE 6.41

OPERATORS' BELIEFS ABOUT WHETHER USDA WOULD REVEAL A  
PARTICULAR OPERATOR'S SURVEY RESPONSES TO ANOTHER  
GOVERNMENT AGENCY BY RESPONDENT TYPE  
(Percent)

Respondent Type	Would Reveal	Would Not Reveal	Total	N
Temporary refusal . . . .	82%	18%	100%	72
Difficult to reach . . .	75	25	100	260
All others . . . . .	69	31	100	1,181

As described earlier, operators were given a list of statements representing hypothetical reasons why they might decide to participate in crop and livestock surveys and asked to indicate which ones they considered "important" when making up their minds. Responses to these items are broken down by respondent type in Table 6.42. Reluctant respondents were much less likely than others to allow that any of the seven reasons were important to them (as we might expect, knowing that they tend to participate at very low rates). Percentage differences range from approximately 14 points up to as much as 25 points across the various reasons offered, with the greatest discrepancy appearing in the proportions citing the fact that they use the crop and livestock reports as important (6.42b). In the main, differences between difficult-to-reach respondents and the baseline group are negligible.

We also attempted to explore differences among respondent types on two additional sets of questions, one measuring the willingness of operators to provide certain types of information in crop and livestock surveys, and the other measuring the difficulty of providing accurate data on these same items in the surveys. Unfortunately, because each of these two sets of questions was asked on only one of the questionnaire versions, and because of the amount of missing data for these items, the numbers of reluctant respondents available for analysis are too small to provide reliable results.

The analysis presented in this section demonstrates the possible risks of survey error that might result from nonresponse by a substantial proportion of a randomly selected sample. Operators who temporarily refused our requests for an interview tended to express attitudes and beliefs very different from those of more cooperative respondents, including those who required a number of callbacks to arrange and complete the interviews. Had there been a very large proportion of refusals, the impact on the accuracy of some of our reported statistics could have been

TABLE 6.42  
 IMPORTANCE OF SEVEN HYPOTHETICAL REASONS FOR PARTICIPATION IN  
 CROP AND LIVESTOCK SURVEYS BY RESPONDENT TYPE  
 (Percent)

	Temporary Refusal <sup>a</sup>	Difficult to Reach	All Others
a. When someone asks me to do some- thing, I find it hard to say no. . . . .	31%	44%	45%
b. I use the crop and livestock reports, so I feel I ought to participate in the surveys. . . . .	16	47	41
c. I like being interviewed and having a chance to give information. . . . .	13	21	27
d. If farmers and ranchers don't parti- cipate, the crop and livestock reports won't be accurate. . . . .	39	63	57
e. Once the survey contacts you or gets you on the phone, you're already hooked, so you might as well go ahead. . . . .	18	28	31
f. An organization I belong to encourages its members to participate. . . . .	14	23	28
g. When the government sponsors a survey, it's usually worthwhile. . . . .	16	34	38
N . . . . .	58	244	1,148

NOTE: Entries are the percentages of each respondent type who cited each reason as important. The columns do not sum to 100 percent because multiple answers were allowed.

<sup>a</sup>Note the reduced N for the "Temporary Refusal" column. This series of items was not asked of respondents who claimed they had never participated in a crop or livestock survey.

serious--assuming that our reluctant respondents have given us a good idea of the way operators who actually refused would have responded.

As it was, however, only 13 percent of the operators on the original list sample ultimately refused to be interviewed. We can get some feeling for the limits of the potential distortion in survey results caused by this refusal rate by examining the implications of one of the most extreme cases of opinion divergence between the reluctant respondents and all others: the percentage of operators who said that their personal use of crop and livestock reports was an important factor in their participation in surveys. (Data for this item are displayed in Table 6.42b.)

Over 40 percent of both the difficult-to-reach and the more easily interviewed respondents cited personal use of reports as an important reason for survey participation. Among reluctant respondents, however, only about 16 percent answered in the same way, a difference of about 25 percentage points. Using only our sample of completed cases, we estimate that about 41 percent of Dakota farmers and ranchers would feel that personal use of reports is an important factor in their participation decisions. What would our estimate be if we had completed interviews with all of the 2,230 operators in the original list sample? Using the assumptions and imputation procedures outlined earlier, we computed a revised estimate of about 38 percent, only 3 percentage points lower than the estimate that ignores nonresponse error. Thus, even when we assume that operators who insistently refused hold views that are substantially different from the bulk of our respondents, their numbers are simply too few to alter our descriptive inferences more than a few percentage points. Of course, the reader should keep in mind that this conclusion rests not only on the *proportion* who refused to respond to our survey but also on our assumptions of *similarity* between certain classes of survey respondents and the two principal types of nonrespondents--those we could not contact and those who repeatedly refused. These assumptions may vary somewhat from reality. We doubt, however, that any such variation would be extreme enough to invalidate our conclusions.

**APPENDICES**

APPENDIX A  
RESPONSE RATES

The overall response rate for the Dakota survey was 75 percent, after the excision of ineligible cases from the initial sample list. Table A.1 presents a detailed breakdown of ineligibility and response rates by state, sampling stratum, and questionnaire version.

The table shows that the percentage of ineligible cases was quite low, averaging about 8 percent of the initial sample. The great majority of these reported that they no longer operated farms or ranches. Ineligible cases were more or less uniformly distributed across the strata with three noteworthy exceptions: stratum 3 in North Dakota (smaller grain farmers) contained 14 percent ineligible cases; stratum 3 in South Dakota (smaller hog producers) had 12 percent ineligible, and stratum 5 in South Dakota (smaller grain farmers) contained 26 percent ineligible cases.

Interviews were completed with 75 percent of the corrected (eligible) sample in both North and South Dakota, with roughly equivalent completion rates across strata. Exceptions were South Dakota stratum 1 (large livestock producers), with an 82 percent completion rate, and the two strata of smaller crop growers (North Dakota stratum 3 and South Dakota Stratum 5), in which response rates were somewhat lower than average.

Roughly 50 percent of the sampled operators in each state responded to each version of the questionnaire. A 50/50 division of questionnaire versions was also maintained in each of the ten strata with only slight deviation.

Interviews could not be completed with 549 operators, 25 percent of the corrected sample of 2,230 operators in the two states. Of these, 297 (13 percent of the total) were contacted but consistently refused to be interviewed. Such refusals constituted 12 percent of the corrected sample in North Dakota and 15 percent in South Dakota. Refusal rates were about equal in each stratum, with the single exception of South Dakota stratum 4 (smaller producers of cattle *and* hogs), where refusals constituted about 20 percent of the corrected sample.

In addition, interviews could not be conducted with 145 operators (7 percent of the eligible sample) who were found to have no telephone and who could not be induced by written requests to call NORC collect for an interview. The remaining 5 percent (107 cases) who were not interviewed includes operators whose phones were never answered, who were absent from their residences

TABLE A.1  
 INELIGIBILITY AND RESPONSE RATES BY STATE,  
 STRATUM, AND QUESTIONNAIRE VERSION

	Stratum <sup>a</sup>					Totals
	North Dakota					
	1	2	3	4		
Initial Sample	190	507	230	260		1,187
Ineligible:						
Not Operator	6	28	30	11		75
Deceased	3	6	3	1		(7.4%)
Percent Ineligible	(5%)	(7%)	(14%)	(5%)		(7.4%)
Corrected Sample	181	473	197	248		1,099
Completed Cases						
Version I	66	180	64	96		406
Version II	72	192	61	98		423
Total Completed	138	372	125	194		829
Percent Completed	(76%)	(78%)	(63%)	(78%)		(75%)

South Dakota							
	1	2	3	4	5	6	Totals
Initial Sample	169	402	113	232	154	180	1,250
Ineligible:							
Not Operator	4	34	12	7	37	7	101
Deceased	1	3	2	3	3	6	18
Percent Ineligible	(3%)	(9%)	(12%)	(4%)	(26%)	(7%)	(9.5%)
Corrected Sample	164	365	99	222	114	167	1,131
Completed Cases:							
Version I	67	138	34	81	44	66	430
Version II	67	141	39	79	34	62	422
Total Completed	134	279	73	160	78	128	852
Percent Completed	(82%)	(76%)	(74%)	(72%)	(68%)	(77%)	(75%)

<sup>a</sup>Strata are numbered as follows:

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Large cattle producers</li> <li>2. Small cattle producers</li> <li>3. Small crop producers</li> <li>4. Large crop producers</li> </ol> | <ol style="list-style-type: none"> <li>1. Large livestock producers</li> <li>2. Small cattle producers</li> <li>3. Small hog producers</li> <li>4. Small producers of cattle and hogs</li> <li>5. Small crop producers</li> <li>6. Large crop producers</li> </ol> |
|--|--|

during the entire field period and could not be reached elsewhere, who stated that they would call NORC for the interview but did not do so, or who had unlisted phone numbers and could not be induced by letters and mailgrams to call NORC collect. These cases were also distributed proportionally across all strata.

## APPENDIX B

### CALCULATION OF CASE WEIGHTS FOR THE SURVEY OF DAKOTA FARMERS AND RANCHERS

The sample design for the Dakota survey employed stratification similar to that used for USDA surveys in these states (see Chapter 1). The ten strata (four in North Dakota and six in South Dakota) are defined in Table B.1. To insure a sufficient number of cases for the analysis of responses within each stratum, the smallest strata in both states (i.e., the largest livestock producers) were heavily oversampled, with achieved sampling fractions of .266 and .224 in North and South Dakota respectively. Other small strata--large-scale crop producers and small-scale hog producers in South Dakota--were moderately oversampled, with sampling fractions of .10 and .07 respectively. Selection probabilities for all remaining strata ranged from .01 to .03. The overall achieved sampling fraction was .021.

Our analysis of the response differences among strata (see Chapter 4) revealed several instances of divergence in the attitudes and behaviors of different types of operators. Stratum differences must therefore be weighted if unbiased population estimates are to be obtained. To avoid artificially increasing the sensitivity of significance tests with weighted data, fractional weights were used (transformations of the reciprocals of sampling fractions). The initial weighted sample size was thus constrained to be equal to the number of interviews actually completed (1,681 cases).

If the variances of survey responses had been higher for the oversampled strata than for others, our weighted estimates might have been relatively more efficient than those from a self-weighting sample of equal size. Examination of the data showed, however, that within-stratum variances were roughly equal, even where stratum means and proportions diverged, suggesting that our design was actually less efficient than a simple random sample (or one using proportional allocation) of the same size. However, given the number and variety of statistics of interest, the calculation of a precise design effect was not as straightforward as many sampling texts imply. The method chosen focused on the inefficiencies introduced by the disproportionate selection probabilities and, hence, widely varying stratum weights (see Leslie Kish, *Survey Sampling*, New York, Wiley, 1965, pp. 429-33).

Table B.2 displays the data used to calculate the design effect. Column 1 contains population totals for each stratum ( $N_h$ ) as reflected in USDA list frames. In column 2 are measures of stratum size ( $N_h/N$ ) or proportion of the total population of both states. Column 3 displays the number of completed interviews in

TABLE B.1  
SAMPLING STRATA FOR DAKOTA FARMERS  
AND RANCHERS

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---

North Dakota:

1. Large-scale cattle producers: operators with 500 or more head of cattle
2. Small-scale cattle producers: operators with from 1 to 499 head of cattle
3. Small-scale crop producers: operators with no (or unknown numbers of) cattle and fewer than 500 acres planted to crops
4. Large-scale crop producers: operators with no (or unknown numbers of) cattle and 500 or more acres planted to crops

South Dakota:

1. Large-scale livestock producers: operators with either 1,000 or more head of cattle *or* 400 or more hogs
  2. Small-scale cattle producers: operators with no hogs and with fewer than 1,000 head of cattle
  3. Small-scale hog producers: operators with no cattle but with up to 399 hogs
  4. Small-scale producers of both cattle and hogs: operators with 1-999 head of cattle *and* 1-399 hogs
  5. Small-scale crop producers: operators with no livestock and fewer than 500 acres to crops
  6. Large-scale crop producers: operators with no livestock and 500 or more acres planted to crops
-

TABLE B.2

DATA USED IN CALCULATING THE DESIGN EFFECT

Stratum	(1) $N_h$	(2) $N_h/N$	(3) $n_h$	(4) $f_h$	(5) $n_h$ desired	(6) $k'_h$	(7) $W_h k'_h (1 - \frac{f}{k'_h})$	(8) $k_h$
<b>North Dakota</b>								
1	518	.0065	138	.266	11	.079	.0004	.0605
2	23,856	.2983	372	.016	501	1.348	.3958	1.0320
3	9,463	.1183	125	.013	199	1.591	.1857	1.2180
4	7,623	.0953	194	.025	160	.826	.0767	.6323
<b>South Dakota</b>								
1	597	.0075	134	.224	13	.094	.0005	.0720
2	17,904	.2239	279	.016	376	1.349	.2973	1.0327
3	1,087	.0136	73	.067	23	.313	.0040	.2396
4	11,075	.1385	160	.014	233	1.455	.1986	1.1139
5	6,584	.0823	78	.012	138	1.774	.1443	1.3581
6	1,255	.0157	128	.102	27	.206	.0029	.1577
							<u>1.3063</u>	

NOTE: Overall achieved sampling fraction = .021. A weighted n of size 1681 is thus .7655 as efficient as either an unrestricted random sample or a stratified sample with proportionate allocation--the loss of efficiency due to the degree of variation among sampling fractions. For estimation of population parameters, our sample is equivalent to a self-weighting sample of about 1,287 cases.

each stratum ( $n_h$ ), and column 4 contains within-stratum achieved sampling fractions ( $f_h = n_h/N_h$ ).

Column 5 displays the number of cases per stratum that would have resulted if achieved sampling fractions for strata were proportional-to-size. In column 6 are the initial fractional case weights described above. The design effect was then computed using the following formula (adapted from that given by Kish, p. 429):

$$nV^2 = \left[ \sum W_h k_h' \left( 1 - \frac{f}{k_h'} \right) \right] \left[ \sum W_h / k_h' \right]$$

where  $W_h$  equals  $N_h/N$ , the stratum weight;  $k_h'$  equals the initial element weight; and  $f$  equals  $n/N$ , the overall sampling fraction. Note that since we have constrained the initially weighted  $n$  to equal the raw  $n$ , the second term,  $\sum W_h / k_h'$ , equals 1 and may be ignored. The products of the stratum weights,  $W_h$ , initial element weights, ( $k_h'$ ), and finite population corrections,  $(1-f/k_h')$ , are presented in column 7 of Table B.1. Taking the reciprocal of the sum of these entries, our estimate of the relative efficiency of the sample is .77, or just over 75 percent of that of a self-weighting sample of equal size. Final case weights (column 8 of the table) are the products of the initial weights and the relative efficiency, resulting in a weighted sample of 1,287 cases.

The use of design effect compensation allows us to use a conventional statistical analysis package to obtain unbiased population estimates of means and proportions. Our estimates of error, however, are approximations and may be subject to bias. Thus, we calculated a few of the estimated errors using the correct formula in order to judge whether our design effect adjustment of the weights works reasonably well.

For our measure of whether an operator mentioned that he got information from an agricultural agent, small crop producers in both states were more likely to mention agents, while large livestock ranchers were nearer to zero in the proportion mentioning agents. The greatly oversampled groups thus had smaller variances, resulting in an estimate even less efficient than anticipated in our design effect argument. Our approximations of standard error of the 30 percent mentioning agents as information sources is 1.3 percent, while the properly calculated estimate is 1.6 percent.

For a second variable, indicating whether an operator felt that forecasts of livestock to be marketed were not useful because they were inaccurate, the greatly oversampled strata exhibit proportions much closer to 50 percent. In this case, our sample should be slightly more efficient than a proportional sample. But both the design effect calculation and the correct estimation of the standard error of the weighted estimate (15 percent) were 1.4 percent.

Several other measures were examined with similar results. In short, our overall impression is that the design effect correction of case weights to produce a weighted sample size of 1,287 allows us to use standard statistical analysis programs designed for simple random samples to obtain very close approximations of the correct estimates of the standard errors for proportions.

APPENDIX C

THE QUESTIONNAIRES USED IN THE SURVEY OF DAKOTA FARMERS AND RANCHERS--VERSIONS I AND II

OMB #40-77045  
Exp. 9/30/78

DECK 01  
NORC-4265  
2/78

Version 1

NORC CASE #

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31-36/

SURVEY OF DAKOTA FARMERS AND RANCHERS

INTRODUCTION AND SCREENING:

IF RESPONDENT'S NAME IS PROVIDED ON COVER SHEET, BEGIN WITH Q. 1.  
IF RESPONDENT'S NAME IS NOT PROVIDED ON COVER SHEET, BEGIN WITH Q. 4, p. 3.

1. Hello. May I please speak with (RESPONDENT'S NAME)?
  - IF ASSIGNED RESPONDENT ANSWERED OR COMES TO PHONE . . . GO TO Q. 3
  - IF ASSIGNED RESPONDENT IS NOT AVAILABLE . . . . . GO TO Q. 2

---

2. Can you suggest a convenient time when I can reach (him/her)?
  - A. RECORD INFORMATION FOR CALL BACK/TRACE ON RECORD OF CALLS
  - B. THANK R. AND END THIS CALL

---

3. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We recently sent you a letter describing a survey we are conducting of the attitudes of farmers and ranchers toward crop and livestock reports. Did you receive the letter?
  - Yes . . . (READ B) . . . . . 1            37/
  - No . . (READ A AND B) . . . . . 2
  - A. The National Opinion Research Center is affiliated with the University of Chicago. In this survey we are cooperating with the U.S. Department of Agriculture to study the attitudes of farmers and ranchers toward crop and livestock reports. A major goal of this study is to determine the true feelings of farmers and ranchers about the value and role of statistical and economic information. A further goal is to identify possible ways in which the crop and livestock reports might be made more useful to farmers and ranchers.
  - B. In the survey, we're talking with people who make the day-to-day management decisions about the operation of farms and ranches. Do you make most of the day-to-day management decisions about the operation of a farm or ranch?
    - Yes . . (SKIP TO Q. 5, p. 6) . 1            38/
    - No . . . . . (ASR C) . . . . . 2

NOTE: Full-size copies of the questionnaires are available from the authors.

(1)

-2-

DECK 01

3. (Continued)

C. I was given your name as someone who operates a farm or ranch. Have you operated a farm or ranch in the last few years--even a very small one?

Yes . . . (ASK D) . . . 1 39/  
No . . (GO TO F) . . . 2

D. How long has it been since you stopped managing that operation? Has it been less than six months, from six months to a year, or more than a year?

Less than six months . (READ E) . . 1 40/  
Six months to a year . (READ E) . . 2  
More than a year . . . (GO TO F) . . 3

E. For this survey, we are interested in the attitudes and opinions of persons like yourself who have operated a farm or ranch at any time during the past year. (SKIP TO Q. 5)

F. CHECK SAMPLING LABEL: IF MORE THAN ONE NAME IS LISTED (E.G., A PARTNER OF THE PERSON ON THE PHONE), ASK G

IF ONLY ONE NAME IS LISTED, THANK R. AND END THIS CALL

G. Does (OTHER NAME ON SAMPLING LABEL) still operate a farm or ranch?

Yes .(ENTER OTHER NAME ON RECORD OF CALLS; ASK H) . . . . . 1 41/  
No . (THANK R.; END THIS CALL) . . 2

H. May I please speak with (OTHER NAME)?

--IF NOT AVAILABLE:

- (1) OBTAIN INFORMATION FOR CALL BACK/TRACE;
- (2) RECORD RESULTS ON RECORD OF CALLS;
- (3) THANK R. AND END THIS CALL.

--IF NEW RESPONDENT COMES TO PHONE, REPEAT Q. 3.

IF R'S NAME NOT PROVIDED ON COVER SHEET:

4. Hello. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We are conducting a survey of the attitudes of farmers and ranchers toward crop and livestock reports. In this survey, we are talking with people who make the day-to-day management decisions about the operation of farms and ranches. Do you make most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

Yes . . . . (ASK A) . . . 1 42/  
No . . . . (ASK C) . . . 2

A. May I have your name, please?

- (1) RECORD NAME OF DESIGNATED RESPONDENT ON RECORD OF CALLS
- (2) READ B

B. Recently we sent a letter to your address describing our survey. Did you receive the letter?

Yes . . . . (READ J) . . 1 43/  
No . . . . (READ K) . . 2

C. Can you please tell me the name of the person who does make most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

R. GIVES NAME . . ([a] RECORD NAME OF DESIGNATED RESPONDENT ON RECORD OF CALLS;

[b] ASK D) . . . . . 1 44/

R. DOES NOT KNOW NAME . . . . (ASK F) . . . . . 2

D. May I please speak to (PERSON NAMED IN C)?

--IF NOT AVAILABLE:

- (1) OBTAIN CALL BACK/TRACE INFORMATION
- (2) RECORD RESULTS ON RECORD OF CALLS
- (3) THANK R. AND END THIS CALL

--IF DESIGNATED RESPONDENT COMES TO PHONE:

- (1) READ E:

(1)

4. (Continued)

E. Hello. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We are conducting a survey of the attitudes of farmers and ranchers toward crop and livestock reports. In this survey we are talking with people who make the day-to-day management decisions about the operation of farms and ranches. Do you make most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

Yes . . . (ASK I) . . . . 1 45/  
 No . . (REPEAT C) . . . 2

F. Is there someone available who would know the name of the person who makes most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

Yes . . . (ASK G) . . . . . 1 46/  
 No . . . ([a] THANK R. AND END THIS CALL;  
 [b] RECORD RESULTS ON RECORD OF CALLS) . . . 2

G. (May I please speak with that person?)

WHEN PERSON WHO COULD IDENTIFY DESIGNATED RESPONDENT COMES TO PHONE:

Hello. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We are conducting a survey of the attitudes of farmers and ranchers toward crop and livestock reports. In this survey, we are talking with people who make the day-to-day management decisions about the operation of farms and ranches. Can you tell me the name of the person who makes most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

R. GIVES NAME . . . . . ([a] RECORD NAME ON  
 RECORD OF CALLS;  
 [b] READ H) . . . . . 1 47/  
 R. DOES NOT KNOW NAME . ([a] THANK R. AND END THIS CALL;  
 [b] RECORD RESULTS ON  
 RECORD OF CALLS) . . . 2

H. May I please speak to (PERSON NAMED IN G)?

--IF DESIGNATED RESPONDENT IS NOT AVAILABLE  
 (1) OBTAIN INFORMATION FOR CALL BACK/TRACE  
 (2) RECORD RESULTS ON RECORD OF CALLS  
 (3) THANK R. AND END THIS CALL

--IF PERSON ON PHONE IS DESIGNATED RESPONDENT  
 (1) READ I

--IF DESIGNATED RESPONDENT COMES TO PHONE  
 (1) REPEAT E

4. (Continued).

I. Recently we sent a letter to your address describing our survey.  
Did you receive the letter?

Yes . . . (READ J) . . . 1 48/

No . . . (READ K) . . . 2

J. Then, as you know, we are interested in asking about your attitudes  
toward the crop and livestock reports. --SKIP TO Q. 5--

K. The National Opinion Research Center is affiliated with the University of  
Chicago. In this survey we are cooperating with the U.S. Department of  
Agriculture to study the attitudes of farmers and ranchers toward crop and  
livestock reports. A major goal of this study is to determine the true feel-  
ings of farmers and ranchers about the value and role of statistical and  
economic information. A further goal is to identify possible ways in which  
the crop and livestock reports might be made more useful to farmers and  
ranchers.

-- GO ON TO Q. 5 --

(1)

5. Your participation in the survey is voluntary, and is not required by law. However, we would appreciate your answering our questions. It will take about 30 minutes. The results of the study will be presented only in statistical or summary form, with no identification of the individuals who participated in the survey, so any answers you give will remain confidential.

RESPONDENT FOR THIS INTERVIEW IS:

FIRST OPERATOR NAMED ON LABEL . . . (QS. 1-3) . . . . .	1	49/
SPOUSE OF FIRST OPERATOR . . . . .	2	
PARTNER OF FIRST OPERATOR . . . . . (QS. 1-3) . . . . .	3	
SPOUSE OF PARTNER . . . . . (QS. 1-3) . . . . .	4	
OPERATOR OF FARM NAMED ON LABEL . . (Q. 4) . . . . .	5	
SPOUSE OF FARM OPERATOR . . . . . (Q. 4) . . . . .	6	
OTHER . . . . .	7	

6. Are we talking on a party line or a private line?

Party line . . . (ASK A) . . . . .	1	50/
Private line .(SKIP TO Q. 7) . . . . .	2	

- A. IF PARTY LINE: If you prefer, I can call you on another number, or I can give you a number where you can call us collect at a time convenient to you. May we go ahead with the interview now?

Yes, go ahead. (SKIP TO Q. 7) . . . . .	1	51/
No, call on another number (ASK B) . . . . .	2	
No, R. will call back . . (READ C) . . . . .	3	

- B. What is the number where I can reach you?

- (1) RECORD NEW NUMBER ON RECORD OF CALLS
- (2) CHECK TIME WHEN R. WILL BE AVAILABLE AT NEW NUMBER AND NOTE ON RECORD OF CALLS
- (3) THANK R. AND END THIS CALL

- C. Our telephone number is (312) 753-\_\_\_\_\_. It would be very helpful to us if you would call back (later today or) tomorrow. When you call, ask for me, (YOUR NAME), or for Lee Bradley. One of us will be available anytime between 9:00 in the morning and 9:00 at night. Remember to call collect.

Thank you very much for your help. I think you'll enjoy the interview, and we'll look forward to hearing from you.

- (1) END THIS CALL
- (2) RECORD RESULTS ON RECORD OF CALLS

(1)

-7-

DECKS 01-02

TIME	_____	AM
BEGAN:	_____	PM
	52-53/	54/

PART I

INTRODUCTION: Farmers and ranchers use information from many different sources to help them make decisions about the management of their operations. These first questions are about the sources from which you get crop and livestock information.

7. (1) Where do you get your information about things like livestock numbers, acres planted to various crops, and forecasts of yields?  
 (2) PROBE: Where else do you get your information?

8. From which one of these sources do you get most of your crop and livestock information?

	ALL SOURCES MENTIONED	ONE SOURCE FOR MOST INFORMATION
USDA publications . . . . .	01 55-56/	01
Crop and Livestock Reporting Service.	02 57-58/	02 } SKIP TO Q.10
Magazines, journals, newsletters . .	03 59-60/	03
Newspapers . . . . .	04 61-62/	04 } 10-11/
Radio . . . . .	05 63-64/	05
TV . . . . .	06 65-66/	06
Consultation with extension agent, ASCS agent, other persons in government or university . . . . .	07 67-68/	07 } ASK Q. 9
Consultation with persons in agriculture-related business (e.g., bankers, buyers of farm products, suppliers of farm equipment) . . .	08 69-70/	08
Informal conversations with friends, neighbors, relatives, other farmers	09 71-72/	09
Other sources (SPECIFY) _____		
_____	10 73-74/	10
_____	BEGIN DECK 02	
None . . . . .	11--SKIP TO Q. 10	

--IF MORE THAN ONE SOURCE MENTIONED, ASK Q. 8 08-09/

--IF ONLY ONE SOURCE MENTIONED:

(a) IF THE ONE SOURCE IS "01" OR "02"--"government publications"--SKIP TO Q.10.

(b) IF ANY OTHER SOURCE ("03"--"10"), ASK Q. 9.

(1)

9. As you understand it, where does (SOURCE FROM Q. 7 OR 8) get its information about crop and livestock developments?

(CODE ALL SOURCES MENTIONED)

USDA/Crop and Livestock Reporting Service surveys and reports . . . . .	1	12/
University; Agricultural Experiment Station; ASCS . . . . .	2	13/
Its own, independently sponsored research . . . . .	3	14/
Research or reports from other commercial sources (e.g., Chicago Board of Trade, Sioux Falls Stockyards) . . . . .	4	15/
Day to day business dealings with farmers and ranchers . . . . .	5	16/
Informal conversations with friends, neighbors, relatives, other farmers . . . . .	6	17/
Other (SPECIFY): _____	7	18/
Don't know . . . . .	8	19/

20-54/R

10. Generally speaking, do you find the information in crop and livestock reports to be very useful, somewhat useful, or not useful at all for managing your operation?

Very useful . . . . .	1	55/
Somewhat useful . . . . .	2	
Not at all useful . . . . .	3	
Don't know . . . . .	8	

(1)

-9-

DECKS 02-03

11. A. Here are some types of information in crop and livestock reports. For each one, please tell me whether it has been very useful, somewhat useful, or not useful at all to you in managing your operation.

READ EACH ITEM BELOW AND RECORD R'S ANSWER;

FOR EACH "NOT USEFUL" ANSWER, ASK B: \_\_\_\_\_ B. Why is that?

	A.				B. CODE ALL THAT APPLY				
	VERY USEFUL	SOMEWHAT USEFUL	NOT USEFUL	NOT AWARE IT IS AVAILABLE	DON'T NEED	NOT ACCURATE	TOO LATE	OTHER (SPECIFY)	
a. Information on farmers' intentions to plant (Has this information been very useful, somewhat useful, or not useful at all?)	1	2	3 (ASK B)	4	56/	57/	58/	59/	60/
b. End of season estimates of total crop production	1	2	3 (ASK B)	4	61/	62/	63/	64/	65/
c. Prices received by farmers for their crops	1	2	3 (ASK B)	4	66/	67/	68/	69/	70/
d. Information about the number of livestock on farms (Has this information been very useful, somewhat useful, or not useful at all?)	1	2	3 (ASK B)	4	BEGIN DECK 03 08/	09/	10/	11/	12/
e. Forecasts of livestock to be marketed	1	2	3 (ASK B)	4	13/	14/	15/	16/	17/
f. Costs of production, such as prices farmers and ranchers must pay for things like seed, fertilizer, and feed	1	2	3 (ASK B)	4	18/	19/	20/	21/	22/
g. Anticipated market demand for crops	1	2	3 (ASK B)	4	23/	24/	25/	26/	27/

(1)

12. Which of the following do you generally find most useful? Reports on crop and livestock developments in your own county, in your state, in the United States as a whole, or in other countries?

(CODE ALL MENTIONED)

County . . . . .	1	28/
State . . . . .	2	29/
United States . . . . .	3	30/
Other countries . . . . .	4	31/
Don't know . . . . .	8	32/

13. When you are not certain about the meaning of information in a crop or livestock report, do you ever discuss this information with someone else?

Yes . . (ASK A) . . . . .	1	33/
No . . . . .	2	
Don't know . . . . .	8	

A. IF YES: Who do you usually discuss it with?

Extension agent, ASCS office, University, Agricultural Experiment Station . . . . .	1	34/
Persons in agriculture-related business (e.g., banker, buyers of farm products, suppliers of farm equipment) . . . . .	2	
Friends, neighbors, relatives, other farmers . . .	3	
Farm, ranch organization . . . . .	4	
Other (SPECIFY) _____		
_____	5	
Don't know . . . . .	8	

35/R

(1)

14. A. Besides farmers and ranchers, what are some of the other groups you can think of that use the crop and livestock reports?

PROBE: Any others?

--FOR ALL GROUPS MENTIONED,  
(a) CODE IN COLUMN A, AND  
ALSO  
(b) CODE "1" FOR "YES" IN  
COLUMN B IF GROUP IS  
LISTED IN COLUMN B.

--THEN READ B.

B. Here are some other groups that may or may not use the reports. As I read them, please tell me whether or not you think they use the reports.

--ASK AND CODE FOR ALL GROUPS LISTED IN COLUMN B. EXCEPT GROUPS ALREADY MENTIONED BY R AND CODED "1"

--THEN, FOR EACH "YES" ASK C AND CODE RESPONSE IN COLUMN C.

C. When (GROUP) uses the reports, does this help or hurt farmers and ranchers?

A.		B.			C.				
ALL GROUPS MENTIONED		YES	NO	DON'T KNOW	HELP	HURT	NEI-THER	DON'T KNOW	
		BEGIN DECK 04							
Grain buyers . . . . .	01 36-37/	1	2	8 08/	1	2	3	8 22/	
Livestock buyers, slaughterhouses . . . . .	02 38-39/	1	2	8 09/	1	2	3	8 23/	
Food processing and marketing companies . . . . .	03 40-41/	1	2	8 10/	1	2	3	8 24/	
Bankers . . . . .	04 42-43/	1	2	8 11/	1	2	3	8 25/	
Local or state government . . . . .	05 44-45/	1	2	8 12/	1	2	3	8 26/	
Federal government . . . . .	06 46-47/	//////////			13/R	//////////			27/R
Farm organizations and co-ops . . . . .	07 48-49/	1	2	8 14/	1	2	3	8 28/	
Consumer groups . . . . .	08 50-51/	//////////			15/R	//////////			29/R
Elevator or storage facility operators . . . . .	09 52-53/	1	2	8 16/	1	2	3	8 30/	
Farm supply dealers . . . . .	10 54-55/	//////////			17/R	//////////			31/R
Speculators . . . . .	11 56-57/	1	2	8 18/	1	2	3	8 32/	
Railroads and truckers . . . . .	12 58-59/	//////////			19/R	//////////			33/R
Universities . . . . .	13 60-61/	1	2	8 20/	1	2	3	8 34/	
Foreign buyers of food products . . . . .	14 62-63/	//////////			21/R	//////////			35/R
Others (SPECIFY) _____	15 64-65/	//////////				//////////			
_____									
Don't know . . . . .	98 66-67/	//////////				//////////			

(1)

15. On the whole, who do you think benefits most from the reports--farmers and ranchers or other groups?

Farmers and ranchers . . .	1	36/
Other groups . . . . .	2	
Don't know . . . . .	8	

16. Here are some statements about government crop and livestock reports. As I read each one, please tell me whether you agree with it or disagree with it.

	AGREE	DISAGREE	DON'T KNOW, NO OPINION	
A. Crop and livestock reports published by private companies are generally <u>more accurate than government reports.</u>	1	2	8	37/
B. Government crop and livestock reports are not influenced by politics.	1	2	8	38/
C. If there were no government crop and livestock reports, it would be easier for farmers and ranchers to make a profit.	1	2	8	39/
D. Government crop and livestock reports are clear and easy to understand.	1	2	8	40/
E. Government crop and livestock reports tend to make the market for <u>agricultural products less stable.</u>	1	2	8	41/
F. Farmers and ranchers almost always give accurate information in <u>government crop and livestock surveys.</u>	1	2	8	42/
G. Most farmers and ranchers refuse to participate in <u>government crop and livestock surveys.</u>	1	2	8	43/
H. Commodity buyers would have more of an advantage in the market if there were no government crop and livestock reports.	1	2	8	44/

17. Do you think that organizations representing farmers and ranchers should have more to say about the kinds of information collected in government crop and livestock surveys, should they have less to say, or do they have about the right amount to say?

Should have more to say . . . . .	1	45/
Should have less to say . . . . .	2	
Have right amount to say . . . . .	3	
Don't know . . . . .	8	

18. Do you think the government crop and livestock reports affect the prices you receive for your agricultural products, or don't they affect the prices you receive?

Affect . . . (ASK A) . . . . .	1	46/
Do not affect . . . . .	2	
Don't know . . . . .	8	

A. IF AFFECT: What effect do you think the reports usually have on prices?

Make prices go up . . . . .	1	47/
Make prices go down . . . . .	2	
Depends on the content of the report . . . . .	3	
Other (SPECIFY) _____	4	
Don't know . . . . .	8	

19. Do you think the government crop and livestock reports should contain more detailed information, less detailed information, or about the same amount of detail as they have now?

More detail . . . . .	1	48/
Less detail . . . . .	2	
Same as now . . . . .	3	
Don't know . . . . .	8	

20. Do you think that most of the farmers and ranchers who criticize the government crop and livestock reports still use them in managing their operations, or don't they use them at all?

Use reports . . . . .	1	49/
Don't use reports . . . . .	2	
Don't know . . . . .	8	

21. How often do you think you can trust the results of government crop and livestock surveys? Do you think they are almost always right, right most of the time, right only some of the time, or hardly ever right?

Almost always . . . . .	1	50/
Most of the time . . . . .	2	
Only some of the time . . . . .	3	
Hardly ever . . . . .	4	
Don't know . . . . .	8	

22. OMITTED.

PART II -- PARTICIPATION IN SURVEYS

INTRODUCTION: The next few questions ask about the surveys of farmers and ranchers that provide the information for the crop and livestock reports.

23. We are interested in finding out your opinions on why farmers and ranchers might refuse to participate in crop and livestock surveys. What do you think are the main reasons some farmers and ranchers refuse?

51-52/

53-54/

55-56/

24. We are also interested in finding out your opinions on why farmers and ranchers might agree to participate in crop and livestock surveys. What do you think are the main reasons some farmers and ranchers agree?

57-58/

59-60/

61-62/

25. Have you ever been asked to participate in a crop or livestock survey, either by mail, or on the phone, or in person?

Yes . . . . . 1 63/

No . . . (SKIP TO Q. 38) . . . 2

Don't know (SKIP TO Q. 38) . 8

(1)

26. When you are asked to participate in a crop or livestock survey, do you almost always agree to participate, do you agree most of the time, only some of the time, or do you hardly ever agree to participate?

Almost always agree . . . . .	1	64/
Agree most of the time . . . . .	2	
Agree only some of the time . . . . .	3	
Hardly ever agree . . . . .	4	
Don't know . . . . .	8	

27. During the past 12 months--that is, between March 1977 and February 1978--how often were you asked to participate in crop or livestock surveys? Were you asked more than 10 times, from 5 to 10 times, 1 to 4 times, or were you not asked at all during the past 12 months?

More than 10 times . . . . .	1	65/
5 to 10 times . . . . .	2	
1 to 4 times . . . . .	3	
0 times . (SKIP TO Q. 34) . . . . .	4	

28. Did you feel that you were asked to participate in these surveys too often, about the right number of times, or not often enough during the past 12 months?

Too often . . . (ASK A) . . . . .	1	66/
About the right number . . . . .	2	
Not often enough . . . . .	3	
Don't know . . . . .	8	

A. IF TOO OFTEN: Would you say that this was much too often or only a little too often?

Much too often . . . . .	1	67/
Only a little too often . . . . .	2	
Don't know . . . . .	8	

29. During those 12 months--between March 1977 and February 1978--were you asked to participate in crop and livestock surveys more often or less often than you were in the 12 months before that?

More often . . . . .	1	68/
Less often . . . . .	2	
No change (IF VOLUNTEERED) . . . . .	3	
Don't know . . . . .	8	

(1)

30. During the months of December 1977, January and February 1978, the Crop and Livestock Reporting Service conducted the January Cattle and Calf Inquiry. Were you asked to participate in that survey?

Yes . . . . .	1	69/
No . . . . . (SKIP TO Q. 32) . . . .	2	
Don't know (SKIP TO Q. 32) . . . .	8	

31. Did you agree to participate in that survey?

Yes . . . . .	1	70/
No . . . . .	2	
Don't know . . . . .	8	

32. And during the months of September, October and November of 1977, the Crop and Livestock Reporting Service conducted the ([ND] Acreage and Production of Crops Survey/[SD] Acreage and Production of Small Grain Crops Survey). Were you asked to participate in that survey?

Yes . . . . .	1	71/
No . . . . . (SKIP TO Q. 34) . . . .	2	
Don't know (SKIP TO Q. 34) . . . .	8	

33. And did you agree to participate in that survey?

Yes . . . . .	1	72/
No . . . . .	2	
Don't know . . . . .	8	

OMIT DECK 05

(1)

IF R VOLUNTEERS THAT HE HAS NEVER PARTICIPATED IN A SURVEY  08/  
CHECK BOX AND SKIP TO Q. 38.

34. People agree to participate in surveys for many different reasons. For each of the following, please tell me whether it is important or not important for you when you decide to participate in crop and livestock surveys.

	IMPORTANT	NOT IMPORTANT	NOT APPLICABLE	
a. When someone asks me to do something, I find it hard to say no.	1	2	3	09/
b. I use the crop and livestock reports, so I feel I ought to participate in the surveys.	1	2	3	10/
c. I like being interviewed and having a chance to give information.	1	2	3	11/
d. If farmers and ranchers don't participate, the crop and livestock reports won't be accurate.	1	2	3	12/
e. Once the survey contacts you or gets you on the phone, you're already hooked, so you might as well go ahead.	1	2	3	13/
f. An organization I belong to encourages its members to participate.	1	2	3	14/
g. When the government sponsors a survey, it's usually worthwhile.	1	2	3	15/

35. When you are asked to fill out a crop and livestock questionnaire by mail, are you more likely to fill it out on a weekday or during the weekend?

Weekday . . . . .	1	16/
Weekend . . . . .	2	
No difference . . . . .	3	
Never participated in mail survey . . . .	4	
Don't know . . . . .	8	

(1)

-18-

DECK 06

36. For a crop and livestock survey conducted by telephone, what part of the day is most convenient for you to be interviewed--morning, noon, afternoon, or evening?

Morning (until noon) . . . . . 1 17/  
 Noon (12:00 Noon - 1:00 PM) . 2  
 Afternoon (1:00PM - 6:00PM) . 3  
 Evening (after 6:00 PM) . . . 4  
 Don't know . . . . . 8

18-25/R

37. We are interested in finding out whether or not it is difficult for farmers and ranchers to give accurate information about different aspects of their operations. When you are asked to give the following kinds of information, is it usually difficult or not difficult for you to give it accurately?

	DIFFI- CULT	NOT DIFFI- CULT	NEVER BEEN ASKED	NOT APPLI- CABLE	DON'T KNOW	
--	----------------	-----------------------	------------------------	------------------------	---------------	--

a. Information about how much acreage you intend to plant of different crops. (Is it usually difficult or not difficult for you to give this information accurately?)	1	2	4	5	8	26/
b. How much acreage you actually planted to each of your main crops.	1	2	4	5	8	27/
c. The number of acres you harvested and your crop yields.	1	2	4	5	8	28/
d. The kinds of livestock you have and the numbers of each kind (Is it usually difficult or not difficult for you to give this information accurately?)	1	2	4	5	8	29/
e. The prices you received when you sold your livestock.	1	2	4	5	8	30/
f. The prices you pay for things like seed, fertilizer, or feed	1	2	4	5	8	31/
g. The total income from your farm operation.	1	2	4	5	8	32/
h. Your off-farm income	1	2	4	5	8	33/

(1)

-19-

DECK 06

38. If a private company asked the Department of Agriculture how a particular farmer or rancher had answered questions in a crop and livestock survey, do you think the Department of Agriculture would or would not provide the private company with that information?

Would provide . . . . . 1	34/
Would not provide . . . . . 2	
Don't know . . . . . 8	

---

39. And what if a government agency asked the Department of Agriculture how a particular farmer or rancher had answered questions in a crop and livestock survey? Do you think the Department of Agriculture would or would not provide the government agency with that information?

Would provide . . . . . 1	35/
Would not provide . . . . . 2	
Don't know . . . . . 8	

---

40. What suggestions do you have for making the crop and livestock surveys more useful to farmers and ranchers?

No suggestions . . . . . 98

36-37/

38-39/

40-41/

(1)

41. Are you a member of any farm organization or commodity association organized to represent the interests of farmers and ranchers?
- Yes . . . . . (ASK A AND B) . . . . . 1 42/  
 No . . . . . 2

IF YES:

A. Which organizations are you a member of?

RECORD ALL ORGANIZATIONS MENTIONED; THEN, FOR EACH ORGANIZATION, ASK B AND CODE RESPONSE IN COLUMN B.

B. FOR EACH ORGANIZATION NAMED IN A: As far as you know, does the (ORGANIZATION) encourage or discourage participation in government crop and livestock surveys?

	B.				
	EN-COURAGE	DIS-COURAGE	NEUTRAL	DON'T KNOW	
_____ 43-44/ →	1	2	3	8	51/
_____ 45-46/ →	1	2	3	8	52/
_____ 47-48/ →	1	2	3	8	53/
_____ 49-50/ →	1	2	3	8	54/

These last few questions ask for a little more information about you and your operation. After your name has been removed, this information will be used only for statistical purposes to compare results from different groups of people who participate in the survey.

42. What is your present age?
- YEARS  
 Refused . . . . . 97 55-56/

43. What is the highest grade in elementary school, high school or college that you completed?
- Some grade school (1st-7th grades) . . . . . 01 57-58/  
 Completed grade school (8th grade) . . . . . 02  
 Some high school (9th-11th grades) . . . . . 03  
 Completed high school (12th grade or GED) . . . . . 04  
 Some college . . . . . 05  
 Completed college (4 years) . . . . . 06  
 More than college (more than 4 years) . . . . . 07  
 Refused . . . . . 97

(1)

-21-

DECKS 06-07

44. A. Altogether, about how many cropland acres do you operate?

						ACRES	59-63/
0	0	0	0	0	0	.. None . (SKIP TO Q. 46)	
9	9	9	9	7		.. Refused . . . . (ASK B)	

B. IF REFUSED:

To give us just a rough idea, would you say you have 500 or more cropland acres or less than 500 cropland acres?

500 acres or more . 1	64/
Less than 500 acres. 2	
Refused . . . . . 7	

BEGIN DECK 07

45. What are your main crops?

	CODE ALL MENTIONED	
Winter (fall planted) wheat . 01		08-09/
Durum . . . . . 02		10-11/
Spring wheat . . . . . 03		12-13/
Corn . . . . . 04		14-15/
Oats . . . . . 05		16-17/
Barley . . . . . 06		18-19/
Alfalfa . . . . . 07		20-21/
Soybeans . . . . . 08		22-23/
Flaxseed . . . . . 09		24-25/
Hay . . . . . 10		26-27/
Potatoes . . . . . 11		28-29/
Sorghum . . . . . 12		30-31/
Rye . . . . . 13		32-33/
Sugar Beets . . . . . 14		34-35/
Other (SPECIFY) _____ 15		36-37/
Other (SPECIFY) _____ 16		38-39/

46. What kinds of livestock are on the land you operate?

IN COLUMN 1 CODE EACH KIND OF LIVESTOCK NAMED;  
THEN, FOR CATTLE AND HOGS, ASK "A" AND ENTER NUMBER IN COLUMN 2.

A. FOR CATTLE AND HOGS ONLY: In rough figures, what is the largest number of (cattle/hogs) you had on hand at any one time last year?

COLUMN 1		COLUMN 2	
CODE ALL THAT APPLY			
Cattle . . . . .	1 40/	<input type="text"/>	(NUMBER CATTLE) 46-49/ Refused (ASK B) . 9997
Hogs, pigs . . . . .	2 41/	<input type="text"/>	(NUMBER HOGS) 50-53/ Refused (ASK C) . 9997
Sheep, lambs, goats . . .	3 42/		
Poultry . . . . .	4 43/		
Other (SPECIFY) _____	5 44/		
_____			
None . . . . .	6 45/		

B. IF REFUSED NUMBER OF CATTLE: To give us just a rough idea, would you say that the most you had on hand at any time last year was 1,000 or more cattle or less than 1,000 cattle?

1,000 or more . . . 1	54/
Less than 1,000 . . 2	
Refused . . . . . 7	

C. IF REFUSED NUMBER OF HOGS: To give us just a rough idea, would you say that the most you had on hand at any one time last year was 400 or more hogs or less than 400 hogs?

400 or more . . . . 1	55/
Less than 400 . . . 2	
Refused . . . . . 7	

47. During the past year, have you had any non-farm or non-ranch job from which you received income?

Yes . . . . . 1	56/
No . . . . . 2	

(1)

-23-

DECK 07

These are all the questions I have. Thank you very much for your time and cooperation. Before I hang up, are there any questions you would like to ask about the survey or any comments you would like to make?

Thank you again.

TIME: _____	AM
	PM

57-58/

59/

OMB #40-77045  
Exp. 9/30/78

DECK 01  
NORC-4265  
2/78

Version 2

NORC CASE #

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31-36/

SURVEY OF DAKOTA FARMERS AND RANCHERS

INTRODUCTION AND SCREENING:

IF RESPONDENT'S NAME IS PROVIDED ON COVER SHEET, BEGIN WITH Q. 1.  
IF RESPONDENT'S NAME IS NOT PROVIDED ON COVER SHEET, BEGIN WITH Q. 4, p. 3.

1. Hello. May I please speak with (RESPONDENT'S NAME)?

--IF ASSIGNED RESPONDENT ANSWERED OR COMES TO PHONE . . . GO TO Q. 3  
--IF ASSIGNED RESPONDENT IS NOT AVAILABLE . . . . . GO TO Q. 2

2. Can you suggest a convenient time when I can reach (him/her)?

- A. RECORD INFORMATION FOR CALL BACK/TRACE ON RECORD OF CALLS
- B. THANK R. AND END THIS CALL

3. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We recently sent you a letter describing a survey we are conducting of the attitudes of farmers and ranchers toward crop and livestock reports. Did you receive the letter?

Yes . . . (READ B) . . . . . 1      37/  
No . . (READ A AND B) . . . . . 2

A. The National Opinion Research Center is affiliated with the University of Chicago. In this survey we are cooperating with the U.S. Department of Agriculture to study the attitudes of farmers and ranchers toward crop and livestock reports. A major goal of this study is to determine the true feelings of farmers and ranchers about the value and role of statistical and economic information. A further goal is to identify possible ways in which the crop and livestock reports might be made more useful to farmers and ranchers.

B. In the survey, we're talking with people who make the day-to-day management decisions about the operation of farms and ranches. Do you make most of the day-to-day management decisions about the operation of a farm or ranch?

Yes . . (SKIP TO Q. 5, p. 6) . 1      38/  
No . . . . . (ASK C) . . . . . 2

(2)

-2-

DECK 01

3. (Continued)

- C. I was given your name as someone who operates a farm or ranch. Have you operated a farm or ranch in the last few years--even a very small one?
- Yes . . . (ASK D) . . . 1 39/  
No . . (GO TO F) . . . 2
- D. How long has it been since you stopped managing that operation?  
Has it been less than six months, from six months to a year, or more than a year?
- Less than six months . (READ E) . . 1 40/  
Six months to a year . (READ E) . . 2  
More than a year . . . (GO TO F) . . 3
- E. For this survey, we are interested in the attitudes and opinions of persons like yourself who have operated a farm or ranch at any time during the past year. (SKIP TO Q. 5)
- F. CHECK SAMPLING LABEL: IF MORE THAN ONE NAME IS LISTED  
(E.G., A PARTNER OF THE PERSON  
ON THE PHONE), ASK G
- IF ONLY ONE NAME IS LISTED, THANK R.  
AND END THIS CALL
- G. Does (OTHER NAME ON SAMPLING LABEL) still operate a farm or ranch?
- Yes .(ENTER OTHER NAME ON RECORD  
OF CALLS; ASK H) . . . . . 1 41/  
No . (THANK R.; END THIS CALL) . . . 2
- H. May I please speak with (OTHER NAME)?
- IF NOT AVAILABLE:
- (1) OBTAIN INFORMATION FOR CALL BACK/TRACE;
  - (2) RECORD RESULTS ON RECORD OF CALLS;
  - (3) THANK R. AND END THIS CALL.
- IF NEW RESPONDENT COMES TO PHONE, REPEAT Q. 3.

IF R'S NAME NOT PROVIDED ON COVER SHEET:

4. Hello. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We are conducting a survey of the attitudes of farmers and ranchers toward crop and livestock reports. In this survey, we are talking with people who make the day-to-day management decisions about the operation of farms and ranches. Do you make most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

Yes . . . . (ASK A) . . . 1      42/  
No . . . . (ASK C) . . . 2

A. May I have your name, please?

- (1) RECORD NAME OF DESIGNATED RESPONDENT ON RECORD OF CALLS
- (2) READ B

B. Recently we sent a letter to your address describing our survey. Did you receive the letter?

Yes . . . . (READ J) . . 1      43/  
No . . . . (READ K) . . 2

C. Can you please tell me the name of the person who does make most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

R. GIVES NAME . . ([a] RECORD NAME OF DESIGNATED RESPONDENT ON RECORD OF CALLS;

[b] ASK D) . . . . . 1      44/

R. DOES NOT KNOW NAME . . . . (ASK F) . . . . . 2

D. May I please speak to (PERSON NAMED IN C)?

--IF NOT AVAILABLE:

- (1) OBTAIN CALL BACK/TRACE INFORMATION
- (2) RECORD RESULTS ON RECORD OF CALLS
- (3) THANK R. AND END THIS CALL

--IF DESIGNATED RESPONDENT COMES TO PHONE:

- (1) READ E:

4. (Continued)

E. Hello. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We are conducting a survey of the attitudes of farmers and ranchers toward crop and livestock reports. In this survey we are talking with people who make the day-to-day management decisions about the operation of farms and ranches. Do you make most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

Yes . . . (ASK I) . . . . 1 45/  
 No . . . (REPEAT C) . . . 2

F. Is there someone available who would know the name of the person who makes most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

Yes . . . (ASK G) . . . . . 1 46/  
 No . . . ([a] THANK R. AND END THIS CALL;  
 [b] RECORD RESULTS ON RECORD OF CALLS) . . . 2

G. (May I please speak with that person?)

WHEN PERSON WHO COULD IDENTIFY DESIGNATED RESPONDENT COMES TO PHONE:

Hello. My name is \_\_\_\_\_, and I'm calling from the National Opinion Research Center. We are conducting a survey of the attitudes of farmers and ranchers toward crop and livestock reports. In this survey, we are talking with people who make the day-to-day management decisions about the operation of farms and ranches. Can you tell me the name of the person who makes most of the day-to-day management decisions about the operation of (FARM OR RANCH NAME FROM LABEL)?

R. GIVES NAME . . . . . ([a] RECORD NAME ON  
 RECORD OF CALLS;  
 [b] READ H) . . . . . 1 47/  
 R. DOES NOT KNOW NAME . ([a] THANK R. AND END THIS CALL;  
 [b] RECORD RESULTS ON  
 RECORD OF CALLS) . . . 2

H. May I please speak to (PERSON NAMED IN G)?

--IF DESIGNATED RESPONDENT IS NOT AVAILABLE

- (1) OBTAIN INFORMATION FOR CALL BACK/TRACE
- (2) RECORD RESULTS ON RECORD OF CALLS
- (3) THANK R. AND END THIS CALL

--IF PERSON ON PHONE IS DESIGNATED RESPONDENT

- (1) READ I

--IF DESIGNATED RESPONDENT COMES TO PHONE

- (1) REPEAT E

4. (Continued)

I. Recently we sent a letter to your address describing our survey.  
Did you receive the letter?

Yes . . . (READ J) . . . 1 48/

No . . . (READ K) . . . 2

J. Then, as you know, we are interested in asking about your attitudes  
toward the crop and livestock reports. --SKIP TO Q. 5--

K. The National Opinion Research Center is affiliated with the University of  
Chicago. In this survey we are cooperating with the U.S. Department of  
Agriculture to study the attitudes of farmers and ranchers toward crop and  
livestock reports. A major goal of this study is to determine the true feel-  
ings of farmers and ranchers about the value and role of statistical and  
economic information. A further goal is to identify possible ways in which  
the crop and livestock reports might be made more useful to farmers and  
ranchers.

-- GO ON TO Q. 5 --

5. Your participation in the survey is voluntary, and is not required by law. However, we would appreciate your answering our questions. It will take about 30 minutes. The results of the study will be presented only in statistical or summary form, with no identification of the individuals who participated in the survey, so any answers you give will remain confidential.

RESPONDENT FOR THIS INTERVIEW IS:

FIRST OPERATOR NAMED ON LABEL . . . (QS. 1-3) . . . . .	1	49/
SPOUSE OF FIRST OPERATOR . . . . . (QS. 1-3) . . . . .	2	
PARTNER OF FIRST OPERATOR . . . . . (QS. 1-3) . . . . .	3	
SPOUSE OF PARTNER . . . . . (QS. 1-3) . . . . .	4	
OPERATOR OF FARM NAMED ON LABEL . . (Q. 4) . . . . .	5	
SPOUSE OF FARM OPERATOR . . . . . (Q. 4) . . . . .	6	
OTHER . . . . .	7	

6. Are we talking on a party line or a private line?

Party line . . . (ASK A) . . . . .	1	50/
Private line .(SKIP TO Q. 7) . . . . .	2	

A. IF PARTY LINE: If you prefer, I can call you on another number, or I can give you a number where you can call us collect at a time convenient to you. May we go ahead with the interview now?

Yes, go ahead. (SKIP TO Q. 7) . . . . .	1	51/
No, call on another number (ASK B) . . . . .	2	
No, R. will call back . . (READ C) . . . . .	3	

B. What is the number where I can reach you ?

- (1) RECORD NEW NUMBER ON RECORD OF CALLS
- (2) CHECK TIME WHEN R. WILL BE AVAILABLE AT NEW NUMBER AND NOTE ON RECORD OF CALLS
- (3) THANK R. AND END THIS CALL

C. Our telephone number is (312) 753-\_\_\_\_\_. It would be very helpful to us if you would call back (later today or) tomorrow. When you call, ask for me, (YOUR NAME), or for Lee Bradley. One of us will be available anytime between 9:00 in the morning and 9:00 at night. Remember to call collect.

Thank you very much for your help. I think you'll enjoy the interview, and we'll look forward to hearing from you.

- (1) END THIS CALL
- (2) RECORD RESULTS ON RECORD OF CALLS

(2)

-7-

DECKS 01-02

PART I

TIME _____	AM
BEGAN:	PM
52-53/	54/

INTRODUCTION: Farmers and ranchers use information from many different sources to help them make decisions about the management of their operations. These first questions are about the sources from which you get crop and livestock information.

7. (1) Where do you get your information about things like livestock numbers, acres planted to various crops, and forecasts of yields?  
 (2) PROBE: Where else do you get your information?

8. From which one of these sources do you get most of your crop and livestock information?

	ALL SOURCES MENTIONED	ONE SOURCE FOR MOST INFORMATION	
USDA publications . . . . .	01 55-56/	01	} SKIP TO Q.10
Crop and Livestock Reporting Service.	02 57-58/	02	
Magazines, journals, newsletters . .	03 59-60/	03	} 10-11/
Newspapers . . . . .	04 61-62/	04	
Radio . . . . .	05 63-64/	05	
TV . . . . .	06 65-66/	06	
Consultation with extension agent, ASCS agent, other persons in government or university . . . . .	07 67-68/	07	} ASK Q. 9
Consultation with persons in agriculture-related business (e.g., bankers, buyers of farm products, suppliers of farm equipment) . . .	08 69-70/	08	
Informal conversations with friends, neighbors, relatives, other farmers	09 71-72/	09	}
Other sources (SPECIFY) _____	10 73-74/	10	
	BEGIN DECK 02		
None . . . . .	11--SKIP TO Q. 10		
	08-09/		

--IF MORE THAN ONE SOURCE MENTIONED, ASK Q. 8

--IF ONLY ONE SOURCE MENTIONED:

- (a) IF THE ONE SOURCE IS "01" OR "02"--"government publications"--SKIP TO Q.10  
 (b) IF ANY OTHER SOURCE ("03"--"10"), ASK Q.9.

(2)

-8-

DECK 02

9. As you understand it, where does (SOURCE FROM Q. 7 OR 8) get its information about crop and livestock developments?

(CODE ALL SOURCES MENTIONED)

USDA/Crop and Livestock Reporting Service surveys and reports . . . . .	1	12/
University; Agricultural Experiment Station; ASCS . . . . .	2	13/
Its own, independently sponsored research . . . . .	3	14/
Research or reports from other commercial sources (e.g., Chicago Board of Trade, Sioux Falls Stockyards) . . . . .	4	15/
Day to day business dealings with farmers and ranchers . . . . .	5	16/
Informal conversations with friends, neighbors, relatives, other farmers . . . . .	6	17/
Other (SPECIFY): _____ _____	7	18/
Don't know . . . . .	8	19/

10. A. Here are some types of information in crop and livestock reports. For each one, please tell me whether it has been very useful, somewhat useful, or not useful at all to you in managing your operation.

READ EACH ITEM BELOW AND RECORD R'S ANSWER;

FOR EACH "NOT USEFUL" ANSWER, ASK B: → B. Why is that?

	A.				B. CODE ALL THAT APPLY			
	VERY USEFUL	SOMEWHAT USEFUL	NOT USEFUL	NOT AWARE IT IS AVAILABLE	DON'T NEED	NOT ACCURATE	TOO LATE	OTHER (SPECIFY)
a. Information about weather influence on crop progress and forage conditions (Has this information been very useful, somewhat useful, or not useful at all?)	1	2	3 (ASK B)	20/ 4	21/ 1	22/ 2	23/ 3	24/ 4 _____
b. Monthly forecasts of crop yields and acres to be harvested	1	2	3 (ASK B)	25/ 4	26/ 1	27/ 2	28/ 3	29/ 4 _____
c. Information about the number of livestock on farms	1	2	3 (ASK B)	30/ 4	31/ 1	32/ 2	33/ 3	34/ 4 _____
d. Reports on the number of livestock sold for slaughter (Has this information been very useful, somewhat useful, or not useful at all?)	1	2	3 (ASK B)	35/ 4	36/ 1	37/ 2	38/ 3	39/ 4 _____
e. Prices received by farmers and ranchers for their livestock	1	2	3 (ASK B)	40/ 4	41/ 1	42/ 2	43/ 3	44/ 4 _____
f. Costs of production, such as prices farmers and ranchers must pay for things like seed, fertilizer and feed	1	2	3 (ASK B)	45/ 4	46/ 1	47/ 2	48/ 3	49/ 4 _____
g. Stocks of wheat, other grain, and oil-seeds in storage	1	2	3 (ASK B)	50/ 4	51/ 1	52/ 2	53/ 3	54/ 4 _____

(2)

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DECKS 02-03

11. Generally speaking, do you find the information in crop and livestock reports to be very useful, somewhat useful, or not useful at all for managing your operation?

Very useful . . . . .	1	55/
Somewhat useful . . . . .	2	
Not at all useful . . . . .	3	
Don't know . . . . .	8	

56-70/R

12. Which of the following do you generally find most useful? Reports on crop and livestock developments in your own county, in your state, in the United States as a whole, or in other countries?

BEGIN DECK 03

(CODE ALL MENTIONED) 08-27/R

County . . . . .	1	28/
State . . . . .	2	29/
United States . . . . .	3	30/
Other countries . . . . .	4	31/
Don't know . . . . .	8	32/

13. When you are not certain about the meaning of information in a crop or livestock report, do you ever discuss this information with someone else?

Yes . . (ASK A) . . . . .	1	33/
No . . . . .	2	
Don't know . . . . .	8	

A. IF YES: Who do you usually discuss it with?

Extension agent, ASCS office, University, Agricultural Experiment Station . . . . .	1	34/
Persons in agriculture-related business (e.g., banker, buyers of farm products, suppliers of farm equipment) . . . . .	2	
Friends, neighbors, relatives, other farmers . . . . .	3	
Farm, ranch organization . . . . .	4	
Other (SPECIFY) _____ . . . . .	5	
Don't know . . . . .	8	

14. On the whole, who do you think benefits most from the crop and livestock reports--farmers and ranchers or other groups?

Farmers and ranchers . . . . .	1	35/
Other groups . . . . .	2	
Don't know . . . . .	8	

(2)

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DECKS 03-04

15. A. Besides farmers and ranchers what are some of the other groups you can think of that use the crop and livestock reports?

PROBE: Any others?

--FOR ALL GROUPS MENTIONED, (a) CODE IN COLUMN A, AND ALSO (b) CODE "1" FOR "YES" IN COLUMN B IF GROUP IS LISTED IN COLUMN B.

--THEN READ B.

B. Here are some other groups that may or may not use the reports. As I read them, please tell me whether or not you think they use the reports.

--ASK AND CODE FOR ALL GROUPS LISTED IN COLUMN B EXCEPT GROUPS ALREADY MENTIONED BY R AND CODED "1"

--THEN, FOR EACH "YES" ASK C AND CODE RESPONSE IN COLUMN C.

C. When (GROUP) uses the reports, does this help or hurt farmers and ranchers?

A.		B.			C.			
ALL GROUPS MENTIONED		YES	NO	DON'T KNOW	HELP	HURT	NEI-THER	DON'T KNOW
BEGIN DECK 04								
Grain buyers . . . . .	01 36-37/	1	2	8 08/	1	2	3	8 22/
Livestock buyers, slaughterhouses . .	02 38-39/	1	2	8 09/	1	2	3	8 23/
Food processing and marketing companies .	03 40-41/	1	2	8 10/	1	2	3	8 24/
Bankers . . . . .	04 42-43/	1	2	8 11/	1	2	3	8 25/
Local or state government . . . . .	05 44-45/	////////// 12/R			////////// 26/R			
Federal government . .	06 46-47/	1	2	8 13/	1	2	3	8 27/
Farm organizations and coops . . . . .	07 48-49/	////////// 14/R			////////// 28/R			
Consumer groups . . . .	08 50-51/	1	2	8 15/	1	2	3	8 29/
Elevator or storage facility operators .	09 52-53/	////////// 16/R			////////// 30/R			
Farm supply dealers . .	10 54-55/	1	2	8 17/	1	2	3	8 31/
Speculators . . . . .	11 56-57/	////////// 18/R			////////// 32/R			
Railroads and truckers.	12 58-59/	1	2	8 19/	1	2	3	8 33/
Universities . . . . .	13 60-61/	////////// 20/R			////////// 34/R			
Foreign buyers of food products . . . .	14 62-63/	1	2	8 21/	1	2	3	8 35/
Others (SPECIFY) _____	15 64-65/	//////////			//////////			
_____					36-72/R			
Don't know . . . . .	98 66-67/	//////////			//////////			

16. Here are some statements about government crop and livestock reports. As I read each one, please tell me whether you agree with it or disagree with it.

	AGREE	DISAGREE	DON'T KNOW, NO OPINION	
A. Government crop and livestock reports tend to make the market for agricultural products more stable.	1	2	8	08/
B. Government crop and livestock reports are influenced by politics.	1	2	8	09/
C. If there were no government crop and livestock reports, it would be harder for farmers and ranchers to make a profit.	1	2	8	10/
D. Government crop and livestock reports are more useful to large farm and ranch operations than to small ones.	1	2	8	11/
E. Government crop and livestock reports are generally more accurate than reports published by private companies.	1	2	8	12/
F. Organizations representing farmers and ranchers should have more to say about the kinds of information collected in government crop and livestock surveys.	1	2	8	13/
G. Government crop and livestock reports are usually followed by a drop in the prices of agricultural products.	1	2	8	14/
H. Commodity buyers would have less of an advantage in the market if there were no government crop and livestock reports.	1	2	8	15/
I. Most farmers and ranchers agree to participate in government crop and livestock surveys.	1	2	8	16/

17. Do you think that farmers and ranchers who participate in government crop and livestock surveys give accurate information almost all of the time, most of the time, only some of the time, or hardly ever?

Almost all of the time . . . . . 1	17/
Most of the time . . . . . 2	
Only some of the time . . . . . 3	
Hardly ever . . . . . 4	
Don't know . . . . . 8	

PART II - PARTICIPATION IN SURVEYS

INTRODUCTION: The next few questions ask about the surveys of farmers and ranchers that collect the information for the crop and livestock reports.

18. During the months of December 1977, January and February 1978, the Crop and Livestock Reporting Service conducted the January Cattle and Calf Inquiry. Were you asked to participate in that survey?

Yes . . . (CODE "01" FOR JANUARY CATTLE IN HEADING OF COLUMN 1, OPPOSITE PAGE) . . . . . 1 18/
No . . . . . 2
Don't know . . . . . 8

19. (Counting that survey) How many crop and livestock surveys were you asked to participate in altogether during December of last year and January and February of this year?

IF 0 SURVEYS . . . (SKIP TO Q. 21)
NUMBER OF SURVEYS: [ ] [ ] IF 1 OR MORE SURVEYS:
19-20/ - AND Q. 18 = "Yes" FOR JANUARY CATTLE,
Q. 19 ADJUSTMENT [ ] [ ] (SKIP TO Q. 21)
21-22/ - AND Q. 18 = "No" OR "Don't Know"
(ASK Q. 20)

20. As you recall it, what was the name of (that survey/the survey during this period you remember best)?

IF NECESSARY, PROBE: What was it about?
RECORD NAME OR TOPIC OF SURVEY IN HEADING OF COLUMN 1, OPPOSITE PAGE

21. During the months of September, October, and November of 1977 the Crop and Livestock Reporting Service Conducted the ([ND] Acreage and Production of Crops Survey/[SD] Acreage and Production of Small Grain Crops Survey). Were you asked to participate in that survey?

Yes . . . (CODE "01" FOR "ACREAGE AND PRODUCTION" IN HEADING OF COLUMN 2, OPPOSITE PAGE) . . . . . 1 23/
No . . . . . 2
Don't know . . . . . 8

22. (Counting that survey) How many crop and livestock surveys were you asked to participate in altogether during September, October, and November of last year?

IF 0 SURVEYS . . . (SKIP TO Q. 24)
NUMBER OF SURVEYS: [ ] [ ] IF 1 OR MORE SURVEYS:
24-25/ - AND Q. 21 = "Yes" FOR ACREAGE AND
Q. 22 ADJUSTMENT [ ] [ ] PRODUCTION . . . (SKIP TO Q. 24)
26-27/ - AND Q. 21 = "No" or "Don't Know"
(ASK Q. 23)

23. As you recall it, what was the name of (that survey/the survey during this period you remember best)?

IF NECESSARY, PROBE: What was it about?
RECORD NAME OR TOPIC OF SURVEY IN HEADING OF COLUMN 2, OPPOSITE PAGE.

24. And during the months of March through August of 1977, how many crop and livestock surveys were you asked to participate in?

NUMBER OF SURVEYS: [ ] [ ] 28-29/ Q. 24 ADJUSTMENT: [ ] [ ] 30-31/

25. A. ADD NUMBER OF SURVEYS IN QS. 19, 22 & 24 AND ENTER TOTAL NUMBER OF SURVEYS: [ ] [ ] 32-33/

B. CONFIRM Let's see. (That makes a total of Q.25-A TOTAL: [ ] [ ] surveys/So you were not asked ADJUSTMENT: [ ] [ ] 34-35/ to participate in any surveys) in the past 12 months. Is that correct? IF R. DISAGREES, REVIEW QS. 19, 22, 24 AND ALLOW R. TO ADJUST TOTALS; RECORD ANY ADJUSTMENTS IN "ADJUSTMENT" BOXES--THEN, --IF TOTAL = 0, ASK C --IF TOTAL = 1 OR MORE, ASK D

C. IF 0 SURVEYS: Have you ever been asked to participate in a crop or livestock survey, either by mail, or on the phone, or in person? Yes . . . . (SKIP TO Q. 35) . 1 36/ No . . . . (SKIP TO Q. 39) . 2 Don't know (SKIP TO Q. 39) . 8

D. IF 1 OR MORE SURVEYS: Of these surveys, how many did you agree to participate in? NUMBER OF PARTICIPATIONS: [ ] [ ] 37-38/ --IF ENTRY IN EITHER COLUMN HEADING BELOW, READ Q.26 FOR FIRST SURVEY LISTED --IF NO ENTRY IN COLUMN HEADINGS, SKIP TO Q. 35.

26. COMPLETE QS.26-34 FOR ONE COLUMN BEFORE GOING ON TO NEXT COLUMN

These next questions are about the (SURVEY NAME FROM COLUMN HEADING) survey.

	Designated Survey	COLUMN 1		COLUMN 2	
		JANUARY CATTLE AND CALF (Q.18)	ACREAGE AND PRODUCTION (Q. 21)		
	Survey name/Topic given by R: SPECIFY	01 39-40/ (Q.20) _____	01 43-44/ (Q.23) _____		
	Don't know	98	98		
27. IS COLUMN HEADING CODED "01" FOR DESIGNATED SURVEY"?	Yes	1 41/ (SKIP TO Q.29 COL 1, NEXT PAGE)	1 45/ (SKIP TO Q. 29 COL 2, NEXT PAGE)		
	No	2 (ASK Q.28)	2 (ASK Q.28)		
28. As you remember it, who conducted this survey?	USDA	1 42/	2 46/		
	C&L Rptg Svc	2	2		
	Other govt. agency	3	3		
	College/university	4	4		
	Private Co.	5	5		
	Other (SPECIFY)	6	6		
	Don't know	8	8		
		GO ON TO Q. 29 FOR COLUMN 1	GO ON TO Q. 29 FOR COLUMN 2		

		COLUMN 1	COLUMN 2
29. Were you first asked to participate in this survey by mail, on the phone, or by an interviewer who contacted you in person?	Mail	1 47/	1 58/
	Phone	2	2
	Person	3	3
	Don't know	8	8
30. How well was the purpose of this survey explained? Would you say very well, fairly well, not very well, or not well at all?	Very well	1 48/	1 59/
	Fairly well	2	2
	Not very well	3	3
	Not well at all	4	4
	Don't know	8	8
31. Did you complete this survey when first asked?	Yes	1 (SKIP 49/ TO Q. 33)	1 (SKIP 60/ TO Q. 33)
	No	2	2
32. Did you complete this survey at some later time?	Yes	1 50/	1 61/
	No	2 (SKIP TO Q. 34)	2 (SKIP TO Q. 34)
33. Overall, do you feel the time and effort you put into answering the questions in this survey was very well spent, somewhat well spent, or not very well spent?	Very well spent	1 51/	1 62/
	Somewhat well spent	2	2
	Not very well spent	3	3
	Don't know	8	8
		NEXT COLUMN, Q. 26 OR GO TO Q. 35	GO ON TO Q. 35
34. What were your reasons for deciding not to participate in this survey?	RECORD	52-53/	53-64/
	VERBATIM	54-55/	65-66/
		56-57/	67-68/
		NEXT COLUMN, Q. 26, OR GO TO Q. 35	GO ON TO Q. 35

(2)

IF R VOLUNTEERS THAT HE HAS NEVER PARTICIPATED IN A SURVEY,  08/  
CHECK BOX AND SKIP TO Q. 39.

35. People agree to participate in surveys for many different reasons. For each of the following, please tell me whether it is important or not important for you when you decide to participate in crop and livestock surveys.

	IMPORTANT	NOT IMPORTANT	NOT APPLICABLE	
a. When someone asks me to do something, I find it hard to say no.	1	2	3	09/
b. I use the crop and livestock reports, so I feel I ought to participate in the surveys.	1	2	3	10/
c. I like being interviewed and having a chance to give information.	1	2	3	11/
d. If farmers and ranchers don't participate, the crop and livestock reports won't be accurate.	1	2	3	12/
e. Once the survey contacts you or gets you on the phone, you're already hooked, so you might as well go ahead.	1	2	3	13/
f. An organization I belong to encourages its members to participate.	1	2	3	14/
g. When the government sponsors a survey, it's usually worthwhile.	1	2	3	15/

36. When you are asked to fill out a crop and livestock questionnaire by mail, are you more likely to fill it out on a weekday or during the weekend?

Weekday . . . . .	1	16/
Weekend . . . . .	2	
No difference . . . . .	3	
Never participated in mail survey . . . . .	4	
Don't know . . . . .	8	

(2)

37. For a crop and livestock survey conducted by telephone, what part of the day is most convenient for you to be interviewed--morning, noon, afternoon or evening?

Morning (until noon) . . . . . 1 17/  
 Noon (12:00 noon - 1:00 PM) . . . 2  
 Afternoon (1:00 PM - 6:00 PM) . . 3  
 Evening (after 6:00 PM) . . . . . 4  
 Don't know . . . . . 8

38. We are interested in finding out how farmers and ranchers feel about giving different kinds of information in crop and livestock surveys. When you are asked to give the following kinds of information, are you willing, reluctant, or unwilling to give it?

WILL- ING	RELUC- TANT	UNWILL- ING	NEVER BEEN ASKED	NOT APPLI- CABLE	DON'T KNOW
--------------	----------------	----------------	------------------------	------------------------	---------------

a. Information about how much acreage you intend to plant of different crops. (Are you willing, reluctant, or unwilling to give this information?)	1	2	3	4	5	8	18/
b. How much acreage you actually planted to each of your main crops.	1	2	3	4	5	8	19/
c. The number of acres you harvested and your crop yields.	1	2	3	4	5	8	20/
d. The kinds of livestock you have and the numbers of each kind (Are you willing, reluctant, or unwilling to give this information?)	1	2	3	4	5	8	21/
e. The prices you received when you sold your livestock.	1	2	3	4	5	8	22/
f. The prices you pay for things like seed, fertilizer, or feed	1	2	3	4	5	8	23/
g. The total income from your farm operation	1	2	3	4	5	8	24/
h. Your off-farm income	1	2	3	4	5	8	25/

26-33/R

39. If a private company asked the Department of Agriculture how a particular farmer or rancher had answered questions in a crop and livestock survey, do you think the Department of Agriculture would or would not provide the private company with that information?

Would provide . . . . . 1	34/
Would not provide . . . . 2	
Don't know . . . . . 8	

40. And what if a government agency asked the Department of Agriculture how a particular farmer or rancher had answered questions in a crop and livestock survey? Do you think the Department of Agriculture would or would not provide the government agency with that information?

Would provide . . . . . 1	35/
Would not provide . . . . 2	
Don't know . . . . . 8	

41. What suggestions do you have for making the crop and livestock surveys more useful to farmers and ranchers?

No suggestions . . . . . 98	36-37/
	38-39/
	40-41/

42. Are you a member of any farm organization or commodity association organized to represent the interests of farmers and ranchers?

Yes . . . . (ASK A AND B) . . . 1 42/
No . . . . . 2

IF YES:

A. Which organizations are you a member of?

RECORD ALL ORGANIZATIONS MENTIONED; THEN, FOR EACH ORGANIZATION, ASK B AND CODE RESPONSE IN COLUMN B.

B. FOR EACH ORGANIZATION NAMED IN A: As far as you know, does the (ORGANIZATION) encourage or discourage participation in government crop and livestock surveys?

Table with columns: EN-COURAGE, DIS-COURAGE, NEUTRAL, DON'T KNOW. Rows for age groups: 43-44/, 45-46/, 47-48/, 49-50/.

These last few questions ask for a little more information about you and your operation. After your name has been removed, this information will be used only for statistical purposes to compare results from different groups of people who participate in the survey.

43. What is your present age?

YEARS
Refused . . . 97 55-56/

44. What is the highest grade in elementary school, high school or college that you completed?

Some grade school (1st-7th grades) . . . . 01 57-58/
Completed grade school (8th grade) . . . . . 02
Some high school (9th-11th grades) . . . . . 03
Completed high school (12th grade or GED) . . . . . 04
Some college . . . . . 05
Completed college (4 years) . 06
More than college (more than 4 years) . . . . . 07
Refused . . . . . 97

45. A. Altogether, about how many cropland acres do you operate?

						ACRES	59-63/
0	0	0	0	0	0	. . None . (SKIP TO Q. 47)	
9	9	9	9	7		. . Refused . . . . (ASK B)	

B. IF REFUSED:

To give us just a rough idea, would you say you have 500 or more cropland acres or less than 500 cropland acres?

500 acres or more . 1	64/
Less than 500 acres. 2	
Refused . . . . . 7	

BEGIN DECK 07

46. What are your main crops?

CODE ALL MENTIONED

Winter (fall planted) wheat . 01	08-09/
Durum . . . . . 02	10-11/
Spring wheat . . . . . 03	12-13/
Corn . . . . . 04	14-15/
Oats . . . . . 05	16-17/
Barley . . . . . 06	18-19/
Alfalfa . . . . . 07	20-21/
Soybeans . . . . . 08	22-23/
Flaxseed . . . . . 09	24-25/
Hay . . . . . 10	26-27/
Potatoes . . . . . 11	28-29/
Sorghum . . . . . 12	30-31/
Rye . . . . . 13	32-33/
Sugar Beets . . . . . 14	34-35/
Other (SPECIFY) _____ 15	36-37/
Other (SPECIFY) _____ 16	38-39/

47. What kinds of livestock are on the land you operate?

IN COLUMN 1 CODE EACH KIND OF LIVESTOCK NAMED;  
THEN, FOR CATTLE AND HOGS, ASK "A" AND ENTER NUMBER IN COLUMN 2.

A. FOR CATTLE AND HOGS ONLY: In rough figures, what is the largest number of (cattle/hogs) you had on hand at any one time last year?

	COLUMN 1		COLUMN 2
CODE ALL THAT APPLY			
Cattle . . . . .	1	40/	<input type="text"/> (NUMBER CATTLE) 46-49/ Refused (ASK B) . 9997
Hogs, pigs . . . . .	2	41/	<input type="text"/> (NUMBER HOGS) 50-53/ Refused (ASK C) . 9997
Sheep, lambs, goats . . .	3	42/	
Poultry . . . . .	4	43/	
Other (SPECIFY) _____	5	44/	
_____			
None . . . . .	6	45/	

B. IF REFUSED NUMBER OF CATTLE: To give us just a rough idea, would you say that the most you had on hand at any time last year was 1,000 or more cattle or less than 1,000 cattle?

1,000 or more . . . 1	54/
Less than 1,000 . . 2	
Refused . . . . . 7	

C. IF REFUSED NUMBER OF HOGS: To give us just a rough idea, would you say that the most you had on hand at any one time last year was 400 or more hogs or less than 400 hogs?

400 or more . . . . 1	55/
Less than 400 . . . 2	
Refused . . . . . 7	

48. During the past year, have you had any non-farm or non-ranch job from which you received income?

Yes . . . . . 1	56/
No . . . . . 2	

(2)

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DECK 07

These are all the questions I have. Thank you very much for your time and cooperation. Before I hang up, are there any questions you would like to ask about the survey or any comments you would like to make?

Thank you again.

TIME: _____	AM
	PM

57-58/

59/

## APPENDIX D

### DIFFERENCES BETWEEN QUESTIONNAIRE VERSIONS

The following outline highlights the differences between the two questionnaire versions used in the Dakota survey. Version differences are of three types. Some topics were covered on only one version of the questionnaire, allowing us to expand the scope of the study at the cost of slightly lower precision in statistical estimates from each randomly selected half of the sample. In other instances, similar questions were asked, but with differences in question wording or format between the two versions. Most of the differences were minor, but, in the sections of the questionnaire designed to measure survey participation tendencies, our two measurement approaches required significant differences in question wording and format. Finally, we experimented with question sequence by shifting the order of selected items between versions.

The analysis of the differences in our participation measures appears in Chapter 3. Estimates from other version-specific items are reported as appropriate in Chapters 2 through 5. Response bias due to question wording and sequence is taken up in Chapter 6.

The complete text of both questionnaire versions may be found in Appendix C. Full-size copies are available on request from the authors. Note that identical items are not necessarily numbered identically in the two versions.

#### VERSION DIFFERENCES

##### TOPICS COVERED ONLY IN ONE VERSION

<u>Version I</u>	<u>Version II</u>
Question 11, parts a, b, c, e, and g, evaluations of specific information in crop and livestock reports.	Question 10, parts a, b, d, e, and g, evaluations of specific information in crop and livestock reports.
Questions 14.B and 14.C, parts covering use of crop and livestock use by local or state government, farm organizations and cooperatives, elevator or storage facility operators, speculators, and universities.	Questions 15.B and 15.C, parts covering use of crop and livestock reports by the federal government, consumer groups, farm supply dealers, railroads and truckers, and foreign buyers of food products.

Question 16, part D, on the clarity of government reports.

Question 16, part D, on the relative usefulness of government reports to large and small farm operators.

Questions 19, 20, and 21, on the amount of detail in government reports, the use of government reports by critics, and the trustworthiness of government reports.

Question 37, parts a through h, on the difficulty of providing accurate information when responding to crop and livestock reports.

Question 38, parts a through h, on operators' willingness to provide information when responding to crop and livestock surveys.

TOPICS COVERED IN BOTH VERSIONS WITH DIFFERENT QUESTION WORDING OR FORMAT

*Wording differences only--same format (evaluations of government reports):*

Version I

Version II

Q. 16-A  
Q. 16-B  
Q. 16-C  
Q. 16-E  
Q. 16-G  
Q. 16-H

Q. 16-E  
Q. 16-B  
Q. 16-C  
Q. 16-A  
Q. 16-I  
Q. 16-H

*Differences in both wording and format (evaluations of government reports):*

Version I

Version II

Q. 16-F  
Q. 17  
Q. 18

Q. 17  
Q. 16-F  
Q. 16-G

*Measures of survey participation habits:*

Version I

Version II

Questions 23 through 33

Questions 18 through 34.

TOPICS COVERED IN BOTH VERSIONS USING DIFFERENT QUESTION ORDER

Version I

General usefulness evaluation of crop and livestock reports (Q. 10) precedes focused evaluations (Q. 11)

Items on the use of crop and livestock reports by other groups besides producers (Q. 14) precedes general item on whether producers or other groups benefit more from the reports (Q. 15)

Version II

Focused evaluations of the usefulness of specific information in crop and livestock reports (Q. 10) precedes general evaluations (Q. 11)

General item on whether producers or other groups benefit more from crop and livestock reports (Q. 14) precedes focused items on the use of the reports by other groups besides producers (Q. 15)

Evaluations of government crop and livestock reports (Version I, Questions 16, 17, and 18; Version II, Questions 16 and 17) were solicited in different sequences in the two versions.

## APPENDIX E

### CONSTRUCTION OF INDICES USED IN THE ANALYSIS OF SURVEY PARTICIPATION RATES

In our analysis of the factors affecting the survey participation rates of Dakota farmers and ranchers, six of the thirty-eight predictor variables employed were numerical indices built from sets of categorical items focusing on the same issue or psychological dimension (see Chapter 3). Our aim in scale construction was not to develop precise mathematical models of the nature of variation in participation rates associated with different values on numerical predictor scales. We sought merely to reduce the number of potential predictor variables to manageable numbers by combining several indicators of the same underlying variable, and to incorporate quantitative measures of central concepts (for example, an operator's degree of unwillingness to provide information) whenever direct numerical measures were not available. Elaborate scaling techniques were therefore unnecessary; simpler, unweighted, additive scales suited our purposes well enough. Indices were constructed using the following procedures.

1. Number of specific information items in crop and livestock reports the operator considered useful ( $X_6$  in Table 3.20)

Survey items:

Version I, Question 11-A, parts a through g  
Version II, Question 10-A, parts a through g

Data modification:

Responses of "very useful" and "somewhat useful" were scored 1, all other responses were scored 0.

Scale score computation:

In both versions, the scale score was set equal to the sum of the recoded items a through g.

2. Number of groups other than farmers and ranchers that the operator believes use crop and livestock reports against producers' interests ( $X_7$  in Table 3.20)

Survey items:

Version I, nine groups treated in Question 14-C  
Version II, nine groups treated in Question 15-C

**Data modification:**

Responses of "hurt farmers and ranchers" were scored 1, all other responses were scored 0.

**Scale score computation:**

In both versions, the scale score was set equal to the sum of the nine recoded group evaluations.

3. Number of groups other than farmers and ranchers that the operator believes use crop and livestock reports in ways that are helpful to producers ( $X_8$  in Table 3.20)

**Survey items:**

Version I, nine groups treated in Question 14-C  
Version II, nine groups treated in Question 15-C

**Data modification:**

Responses of "help farmers and ranchers" were scored 1, all other responses were scored 0.

**Scale score computation:**

In both versions, the scale score was set equal to the sum of the nine recoded group evaluations.

4. Index of general evaluations of government crop and livestock reports and their impact on agricultural economics ( $X_{10}$  in Table 3.20)

**Survey items:**

Version I, Question 16, parts A through H  
Version II, Question 16, parts A through I

**Data modification:**

All items in both versions were recoded such that responses reflecting favorable evaluations or beliefs about government reports were scored 1, those reflecting unfavorable evaluations or beliefs were scored -1, and all other responses were scored 0.

**Scale score construction:**

In both versions, the scale score was set equal to the sum of the recoded evaluation items (eight in Version I, nine in Version II).

5. Index of unwillingness to provide specific information when responding to crop and livestock surveys ( $X_{28}$  in Table 3.20)--Version II respondents only.

Survey items:

Version II, Question 38, parts a through h

Data modification:

Responses of "willing" were scored 1, responses of "reluctant" were scored 2, and responses of "unwilling" were scored 3. The few responses in the remaining categories were treated as missing data.

Scale score computation:

The scale score was set equal to the sum of the eight recoded willingness items.

6. Attitudes of the operator's agricultural organizations towards their members' participation in crop and livestock surveys ( $X_{32}$  in Table 3.20).

Survey items:

Version I, Question 41  
Version II, Question 42

Data modification:

For each instance of organizational membership (up to a total of four, the organization was scored 1 if it encouraged its members to participate in crop and livestock surveys, -1 if it discouraged its members from participating, and 0 if it was neutral on the issue or if the operator did not know the organization's position on participation.

Scale score computation:

The scale score was set equal to the sum of the scores assigned to each organization to which the operator belonged. Operators who reported no organizational affiliations were assigned scale scores of 0.

APPENDIX F  
COMPARISON OF SAMPLING STRATA DEFINITIONS  
WITH NORC SURVEY RESPONSES

For sampling purposes, Dakota farm and ranch operators were sorted into ten strata (four in North Dakota, six in South Dakota) as described in Chapters 1 and 4 and Appendix B. Data from USDA lists provided the basis for this classification of operators, which appeared to offer a suitable means for analyzing differences in survey responses related to the operator's main product and scale of production. A second possibility was to use data from NORC survey questions on cropland acreage and numbers of livestock to compare the responses of various types of operators. However, NORC survey items on farm and ranch characteristics were designed to elicit only rough estimates of acreage and livestock holdings and offered no means for classifying respondents in terms of their primary product. Use of the stratum variable was thus preferable for this purpose. Original stratum assignments were compared with NORC survey data on numbers of livestock and cropland acres to insure that the initial classifications were not excessively out of line.

Beginning with North Dakota, the stratum of large scale cattle ranchers contained operators who, according to USDA records, held 500 or more head of cattle. In response to NORC survey questions, the mean number of cattle reported by operators in this stratum was 714 (the median was 601). There is, however, some evidence suggesting shrinkage of herd size in this stratum: 68 percent of these operators reported having 500 or more cattle, and 79 percent reported more than 400 head. The remaining 21 percent reported fewer than 400 head.

The North Dakota stratum of small-scale cattle producers was composed of ranchers holding fewer than 500 head of cattle, according to USDA records. NORC survey responses revealed that 99 percent of the operators assigned to this stratum still fit this description. The average number of cattle reported was 117, with a median of 75 heads.

Small-scale crop growers without cattle (or with unknown numbers of cattle) composed the third North Dakota stratum. NORC data suggests that cropland acreage for many of these operators has expanded beyond the 500-acre upper bound used in the original stratum definition. About 70 percent reported cultivating up to 700 acres, and 83 percent reported up to 1,000 acres planted to crops. In addition, 64 percent of these operators reported having no cattle at all, and a total of 84 percent reported fewer than 50 head.

Large crop growers in North Dakota (stratum 4) were originally specified as having over 500 acres planted to crops and no (or unknown) livestock. According to NORC self-reports, 97 percent of these operators have 500 or more cropland acres, and some 85 percent have over 700 acres. Mean cropland acreage is 1,554. These operators also report holding very few livestock, with 82 percent reporting no cattle at all, and 87 percent reporting under 50 head at their highest point during the previous year.

The findings for South Dakota are similar. Originally operators were included in the stratum of large livestock producers if they held either 1,000 or more cattle or 400 or more hogs. About 87 percent of the operators originally assigned to this stratum still fit this criteria by their own reports: 66 percent have more than 400 hogs and an additional 21 percent report 1,000 or more head of cattle.

The second South Dakota stratum contained smaller producers of cattle only (no hogs). Of this group, 97 percent reported having fewer than 1,000 head of cattle, with an average reported herd size of 181 head. Furthermore, 92 percent reported that they produced no hogs.

In the third South Dakota stratum were operators who, according to USDA information, were smaller-scale hog producers with zero cattle holdings. In the NORC survey, 88 percent of these operators said they had fewer than 400 hogs, with average holdings of 197 hogs. In addition, 51 percent of this group reported having no cattle, and a total of 82 percent said they had under 100 head of cattle.

Smaller scale producers of *both* cattle and hogs composed the fourth South Dakota stratum. These operators reported averages of 141 head of cattle and 180 hogs in the NORC survey. In fact, none of these operators reported having 1,000 head of cattle, and only 12 percent claimed to have as many as 400 hogs or more.

In the fifth South Dakota stratum were smaller-scale crop producers who raise no livestock. On average, these operators claimed to have about 368 acres planted to crops, with 84 percent reporting 700 or fewer cropland acres and 97 percent with fewer than 1,000 acres in crops. Some 53 percent of this group said they had no cattle at all, with 70 percent reporting less than 50 head and 84 percent less than 100 head. In addition, 86 percent said they had no hogs and a total of 92 percent reported fewer than 100 hogs.

Finally, in the sixth South Dakota stratum were the larger crop producers. According to our survey reports, these operators have cropland holdings of 1,495 acres on average. Some 93 percent have farms of more than 500 acres and a total of 80 percent have

more than 700 acres planted to crops. About 64 percent reported having no cattle, and about 70 percent reported holding less than 50 head at peak. About 93 percent of these operators reported having no hogs.