

United States
Department of
Agriculture

National
Agricultural
Statistics
Service

Research and
Applications
Division

SRB Research Report
Number SRB-92-03

March 1992

JUNE 1990 REINTERVIEW SURVEY: PART II, EFFECT OF PARCEL AND FIELD LEVEL ACREAGE QUESTIONS

Fred Warren

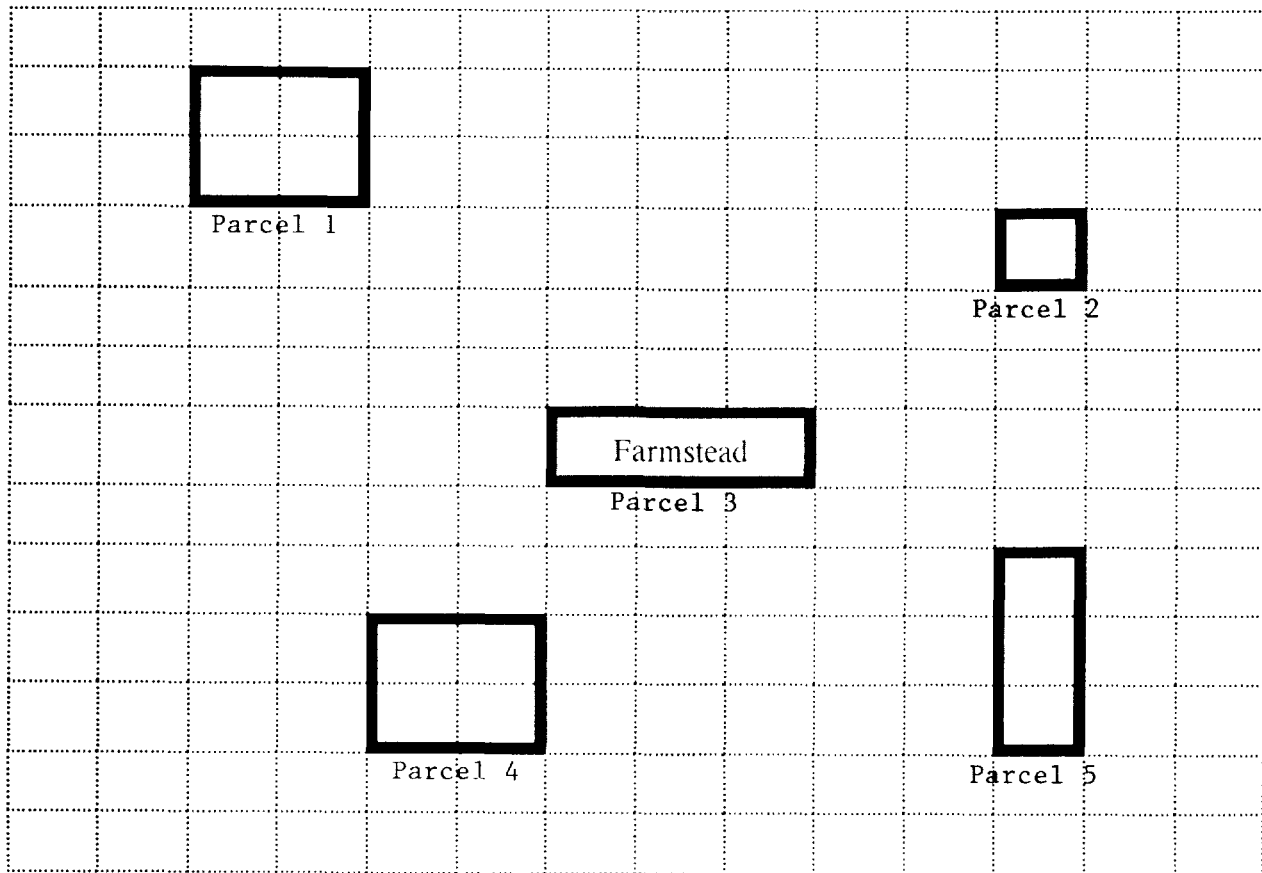


TABLE OF CONTENTS

SUMMARY	iii
INTRODUCTION	1
METHODOLOGY	2
Sample Size	2
The Sample	3
Questionnaire	4
Editing	5
Nonresponse	6
Expansion Factors	6
Analysis	9
RESULTS	9
General	9
Response Rates	10
Farm Size and Number of Parcels	10
Parcel vs. Whole Farm Reports	11
Field Level Analysis	13
CONCLUSIONS	14
RECOMMENDATIONS	14
REFERENCES	16
APPENDIX A - Pre-selected Parcels for Subsampling	17
APPENDIX B - Questionnaire	18

Tables

Table 1. Relative Differences between JES and JAS Estimates	1
Table 2. Number of Reinterview Sample Units	3
Table 3. Size of Farm for Cooperators and Non-cooperators	11
Table 4. Expanded Differences Between Whole Farm and Parcel Level Reports	12
Table 5. Maximum Absolute Relative Differences by Number of Parcels per Farm	13
Table 6. Expanded Differences Between Parcel Level and Individual Field Level Reports	13

SUMMARY

Farm operators in Indiana and Ohio were asked to report (personal interviews) acreages in their farms (total land, cropland, corn, and soybeans) first for the entire farm, then by separate parcels of land operated, and then for individual corn and soybean fields within each parcel. Expanded acreages of corn and of soybeans estimated from reports by parcels were about 3.5 percent smaller than estimates from reports for the same entire farms. These differences were statistically different from zero for both crops, and were mainly due to differences in farms that had more than one parcel of land. The probability of large relative differences increased as the number of parcels increased.

Similar comparisons between reports by parcels and by individual fields within the same parcels did not show any significant differences in the acreages planted either to corn or to soybeans.

These results show that individuals farming more than one parcel of land in this region are able to report acreages for individual parcels, but may not be prepared to respond accurately to questions about their entire operation. Although perhaps a third of the bias in the 1990 June Agricultural Survey (JAS) indications could have been eliminated if acreage data had been obtained for individual parcels rather than only for the entire farm, this procedure has not been tested for telephone interviews.

The following recommendations are made.

1. Continue to rely on the June area frame direct and ratio expansions for setting the planted acreage estimates.
2. Periodically conduct reinterview surveys for the Midwest region, or, if resources allow, at the National level, in order to estimate the size and variance of this inherent bias for major crops. The reinterview survey should be designed to obtain entire farm and parcel planted acreages, just as the 1990 June Reinterview Survey. This periodic bias estimate should be used to adjust the MF direct expansion. The bias adjusted indication would be an additional planted acreage indication for the Agricultural Statistics Board.
3. Conduct cognitive research to better understand the nature of the inherent bias. There may be factors that could cause an unexpected shift in the size of the bias unless the reasons for the bias are better understood. Such information could possibly be used to develop a more effective paper questionnaire or CATI instrument.
4. Consider research addressing across year MF sampling procedures for creating June/June ratio indications of changes in planted acreage.

INTRODUCTION

Multiple Frame (MF) Surveys as used by the National Agricultural Statistics Service (NASS) collect data from lists of individuals believed to be farmers (list frame) and for randomly selected segments of land (area frame).

Advantages of the list frame are the following:

1. Nearly complete lists can usually be compiled for minor crops and other rare items.
2. Data collection, especially with telephone interviewing, is relatively inexpensive.
3. Previously reported data can be used for efficient stratified sampling. (The NASS list frame is stratified both by size and type, such as grain storage, specialty crops, general crops, hogs, or other livestock or poultry species.)

In contrast, the area frame is complete but is not appropriate for collecting information about minor crops and other 'rare' items. The area frame is more expensive because it requires sending enumerators to the selected areas and accounting for all land within the segment boundaries. Also, stratification of the area sample is less efficient because it is based only on general land use. However, the June area frame tract indications have proven to be reliable over the years. To supplement these indications, NASS initiated an integrated MF survey system for its estimates of crop acreage and production, livestock numbers, and stocks of grain on farms. This system began in December 1986. (Separate MF surveys for livestock and on-farm grain storage had been conducted previously.) In the MF methodology, the list frame is the major source of information and the area frame provides estimates for farms not included in the list frame. Unfortunately, the June MF estimates of crop acreages have been consistently and significantly higher than those from the area frame tract indications (Table 1).

Table 1. Relative Differences Between the June Tract (JES) and Multiple Frame (JAS) Estimates of Acreages Planted to Corn and Soybeans, United States, 1987-91.

Year	Corn			Soybeans		
	JES	JAS - JES	% of JES	JES	JAS - JES	% of JES
	(000)	(000)	%	(000)	(000)	%
1987	65,890	1,836	2.8	58,613	1,697	2.9
1988	67,556	4,944	7.3	58,874	3,825	6.5
1989	72,570	4,478	6.2	61,401	4,167	6.8
1990	74,629	3,939	5.3	57,574	4,012	7.0
1991	75,680	3,687	4.9	60,205	2,474	4.1

NASS has conducted several reinterview studies to measure biases in the estimates of acreage, grain stocks, and livestock from the list portion of the MF survey. A summary paper by Hanuschak, Atkinson, Iwig, and Tolomeo (1991) describes the current NASS reinterview survey program and results (1987-1991) plus a historical perspective. However, these studies used the same one question definition of acreage operated and did not examine other ways of asking questions that might reduce respondent error. Therefore, the June 1990 Reinterview Study was planned specifically to investigate the following objectives:

1. To investigate the effect of an alternative format for identifying total acres operated by the selected respondent by asking specifically for acreages owned, rented to others, and rented from others.
2. To examine the possible gains in accuracy from obtaining acreages by each parcel of land in the operation, and by fields within parcels, rather than for the whole farm.
3. To examine the effect of the survey data imputation procedures for sample units where the respondent either refused to answer the questions or could not be contacted (was inaccessible) at the time of the survey.

Items 1 and 3 are discussed in separate reports (Warren, 1991; Wesley, 1991). This report deals only with the analysis of acreages reported by parcels and by fields within parcels.

Specifically, this study addressed the hypothesis that respondents can provide accurate information for individual parcels or fields, but tend to over estimate for the entire operation. Therefore, farm operators reinterviewed after the 1990 June Agricultural Survey (JAS) were asked to report acreages of corn and soybeans:

1. For their entire farm.
2. By individual (physically separated) parcels of land within this farm.
3. By individual fields within each (up to 5) parcel.

The individual parcel (field) information was aggregated and compared to corresponding reports for whole farms (parcels). The purpose of these questions was to determine if the additional detail would result in smaller response errors.

METHODOLOGY

Sample Size. The Reinterview Survey was planned for a total of 700 reinterviews in each State. These were to include about 400 respondents for whom "complete" reports had been obtained by telephone on the June Agricultural Survey (Domain I), about 150 people who had refused to answer the telephone inquiry (refusals - Domain II), and about 150 more who could not be reached by telephone (inaccessibles - Domain III). The 400 observations for Domain I were

expected to result in smaller sampling errors for the paired (JAS - JRS) differences than for the JAS. Actual sample sizes and response rates are in Table 2.

The number of JAS telephone interviews was smaller than expected. This resulted in less than 400 Domain I reinterviews in each State. The percentage of completed reports from Domain I was about the same as from the entire JAS for these States. The small number of samples from Domain III in Ohio resulted from a change by the Ohio office in their coding of refusals and inaccessible. This also affected the response statistics for Domain II in that a portion of the Domain II sample units for Ohio actually were inaccessible.

Table 2. Number of Reinterview Sample Units, By Domain and State, June 1990.

State	DOMAIN		
	I	II	III
Indiana	367	150	153
Ohio	383	146	36
----- Total	750	296	192
Good reports - #	607	153	118
%	81	52	62
Refusals - #	34	114	22
%	5	39	12
Inaccessibles - #	109	29	49
%	14	10	26

The Sample. List sample units from the 1990 June Agricultural Survey (JAS) strata 60-80 were divided into four different domains. Domain I included all sample units where the JAS telephone interview was concluded with a complete report. This included respondents who had reported that they were no longer farming. Domain II included all sample units where the specified respondent refused to provide the desired information (refusal). Domain III included all sample units where the intended respondent (or other knowledgeable person) could not be contacted by telephone (inaccessibles). Domain IV included those JAS sample units that had been contacted either by mail or by a personal interview. Domain IV was not included in the Reinterview Study. Extremely large sample units, strata 81-98, also were not included. This was to reduce the respondent burden on these operations as they are sampled heavily for other surveys.

The JAS sample consisted of five replications from each stratum. Two replications were expected to provide an adequately large sample for Domain 1. Replications 1 and 2 are used for the Monthly Agricultural Yield Surveys, from August through November. Therefore, to better distribute the respondent burden, the Reinterview sample for Domain I was limited to a preselected subsample from the replications 3 and 4. The number of preselected sample units in each stratum was proportionate to the number selected for the JAS. Since a portion of the preselected sample units would be refusals or inaccessible, the total number of preselected sample units in each State was larger than 400.

Reinterview sample units for Domains II and III were selected from all JAS sample "telephone refusals" and "inaccessibles." "Refusals" and "inaccessibles" from the JAS are not included in the Monthly Agricultural Surveys, so respondent burden for those list units is not a concern. Also, nearly all JAS "refusal" and "inaccessible" sample units were required to reach an acceptable number of observations for those domains. Domain II and III records were used primarily to address the third hypothesis, concerning potential bias from the data imputation procedures.

Sample units to be reinterviewed were identified periodically during the JAS survey, as additional reports passed the JAS Edit Program. Lists of the newly identified sample units were sent to the State Statistical Offices (SSO) for Indiana and Ohio where reinterview questionnaires were prepared and sent to the field enumerators for completion.

Reinterviews were taken from June 8 through June 30. One half of the reinterviews were completed by June 19.

Information on individual fields was obtained from only five parcels if the total cropland in the entire farm was greater than 500 acres and the operation included more than five parcels. The determination as to which parcels to enumerate was predefined (Appendix A), based upon the total number of parcels in the farm operation.

Questionnaire. Both a short and a long version of the questionnaire was used on the Reinterview Survey. The chief difference between the long and short versions is that the long version (Appendix B) also asks for total acreage, cropland acreage, and acreages planted to corn and to soybeans for each individual parcel (Section 5) and for each individual corn and soybean field within each parcel (Section 6). The long version questionnaire was designed to determine if farmers provided different or more accurate information when they are asked to provide data for individual parcels and fields rather than for the entire farm, and was used only for Domain I reinterviews. Before completing Section 5, the respondent was asked for the total number of parcels in the operation, and to sketch the location of each on a grid map. The parcels were then numbered systematically, by location. The respondent was then asked to provide total acreage, acreage of cropland, and acreages planted and to be planted to corn and soybeans for each parcel in numerical order.

Section 6 was completed for all parcels if the total number of parcels was not more than five and total cropland was not more than 500 acres. If there were more than 5 parcels and more than 500 acres of cropland, Section 6 was completed only for a systematic sample of five parcels. In either case, the respondent was asked to list the corn and soybean fields in each parcel, and to provide:

1. Total acreage in the field.
2. The actual acreage planted or to be planted to corn or soybeans.
3. The acreage of any wasteland or acreage used for other purposes.

The questionnaire design for obtaining field level data was the same as used to obtain field level data from the June area frame segments.

Editing. Completed questionnaires were hand edited as received in the State offices. This was primarily to identify complete (usable) or partially usable reports and to assign classification codes, as defined by the editing instructions for "Office Use" boxes.

After the survey, reports for which the relative difference between the whole farm (Sections 2 and 3) and the sum of reported parcels (Section 5) was greater than 10 percent for any one of the four acreage items (total land, cropland, corn, and soybeans) were reviewed. The purpose of this review was to determine probable reasons for the difference(s). The following codes were assigned to reports that seemed to fit the following definitions.

CODE DEFINITION

- 1 Probable response errors -- respondent may have:
 - a. Given gross approximations of entire farm acreages, or
 - b. Failed to include intentions to plant soybeans in the reported acreage of soybeans for the entire farm.
- 2 Probable enumerator error -- total land. The enumerator failed to record total land for all parcels operated.
- 3 Probable enumerator error -- cropland. The enumerator consistently entered sum of corn and soybean acreages as total cropland for parcels (even though whole farm corn and soybean acreages did not add to total cropland).

Thirteen reports with type 3 (enumerator) errors were deleted from the whole farm to parcel analysis both for total land and total cropland. An additional 17 code 2 reports were also deleted from all comparisons of total land in farms. Fifty-five type 1 reports were allowed to remain in the analysis.

Nonresponse. Three types of nonrespondents were identified. These were:

1. Individuals who reported no corn or soybeans for the entire farm and with no data recorded by parcels. These were all individuals with relatively small acreages. We assumed that the lack of corn and/or soybeans had led the enumerators to not record any parcel information. These operations were excluded from this analysis.
2. "Parcel" nonrespondents had reported some corn and/or soybeans for the entire farm but 'refused' to provide information for individual parcels, or for the fields within those parcels.
3. "Field" nonrespondents had reported for the individual parcels within their farms but refused to provide information by individual fields.

Of the 507 JRS reports for farms 'in business', 22 (4 percent) were nonrespondents with no corn or soybeans, 39 (8 percent) were nonrespondents with some corn and/or soybeans, and 35 reported for individual parcels but refused to provide the comparable acreages by fields. The second and third type of nonrespondents did require adjustment of expansion factors for this analysis.

Expansion factors. The original Reinterview Survey expansion factor for reports from Domain I, strata 'h' was computed as:

$$\text{REXPFACTR}_h = N_h / n_h$$

where:

N_h = the total number of list sample units in strata 'h', and

n_h = the corresponding number of 'complete (in and out of business, excluding refusals and inaccessible)' Domain I sample units.

This assumed that the "good" reports in each stratum were equivalent to a randomly selected subsample of the list frame.

Computation of expansion factors for the whole farm to aggregated parcel comparisons was more complicated. The usual procedure in dealing with nonrespondents is to assume that they represent a random subsample of the domain of interest, and to adjust the expansion factors accordingly. For the Reinterview Survey, this assumption is questionable, for at least two reasons. First, farmers with several parcels of land could be expected to refuse to answer the detailed questions on acreages by parcels and fields (Sections 5 and 6) more often than farmers with fewer parcels. Secondly, a review of the questionnaires revealed that enumerators apparently often ignored Sections 5 and 6 if the (admittedly marginal) farm operator reported having planted no corn or soybeans.

Preliminary analysis established that:

1. The average size of farm (and by implication, the number of parcels per farm) of farmers (having some corn and/or soybeans) who refused to answer the detailed questions for individual parcels was more than twice as large as for those who did answer for parcels (Table 3).
2. The total acreage reported by respondents was highly correlated with the number of parcels.

The analysis indicated that the average farm size for respondents having at least 2, at least 3, at least 4 and at least 5 parcels was significantly smaller than for those nonrespondents who reported any corn or soybean acreage for their entire farms. Consequently, nonrespondents reporting any corn or soybeans were assumed to have more than five parcels of land in their farms. Therefore the sample was post-stratified into three separate subdomains, as follows.

1. Respondents reporting not more than five parcels of land were assigned to subdomain 1.
2. Respondents who reported having more than five parcels and parcel nonrespondents with some acreage planted to corn and/or soybeans for the entire farm were assigned to subdomain 2.
3. Parcel nonrespondents who reported having no corn or soybeans planted on the entire farm were assigned to subdomain 3. (Since subdomain 3 had no information by parcels, it was ignored in the remainder of this analysis.)

Therefore the basic expansion factors for the whole farm to parcel comparisons were computed as:

$$PEXPFCR_{hj} = N_h/n_h * n_{hj}/m_{hj}$$

where:

n_{hj} = number of usable whole farm records in stratum h, subdomain j (j = 1 or 2, as defined above), and

m_{hj} = number of usable parcel records in stratum h, subdomain j. (Respondents found to be "out of business" on the Reinterview Survey are excluded from the whole farm to parcel comparisons.)

An additional complication was that while all usable reports (Section 5) were required to be complete for corn and soybeans, some reports were not usable for total land, or for total cropland. Therefore, different expansion factors are required for the whole farm to aggregated parcel comparisons of different acreage items in subdomain 2. These expansion factors are expressed as follows:

$$\begin{aligned} \text{PEXPFCR}_{hjk} &= N_h/n_h * n_{hj}/m_{hj} * m_{hjk}/m_{hjk} \\ &= N_h/n_h * n_{hj}/m_{hjk} \end{aligned}$$

where:

m_{hjk} = the number of usable reports in stratum h, subdomain j, classification k, and the subscript 'k' identifies the acreage item:

- corn and soybeans (k=1),
- total cropland (k=2), or
- total land (k=3).

For example, the total number of list sample units (N_h) in strata 60, Indiana, was 13,578. The total number (n_h) of "good" (including respondents found to be not farmers) reinterview reports in that strata was 33. Then the original Reinterview Survey expansion factor (REXPFCR_h) is $13,578 / 33 = 411.455$. Only 24 (m_h) of the 33 "good" reports were from farm operators. Of the 24, 16 (m_{h1}) were counted as having not more than five parcels (subdomain 1). The remaining 8 (m_{h2}) were counted as having more than five parcels (subdomain 2). Fourteen of the sixteen reports in subdomain 1 had good parcel information for all acreage items ($m_{h11}=m_{h12}=m_{h13}=14$). For subdomain 2, all eight were usable only for corn and soybeans (m_{h21}), seven were usable for total cropland (m_{h22}), and five were only usable for total land (m_{h23}). Therefore, the adjusted expansion factors (EF) for stratum 60, Indiana, would be:

$$\begin{aligned} \text{PEXPFCR}_{h1k} &= 13,578/33 * 16/14 = 470.234 \\ &= \text{EF for all subdomain 1 expansions,} \end{aligned}$$

$$\begin{aligned} \text{PEXPFCR}_{h21} &= 13,578/33 * 8/8 = 411.455 \\ &= \text{EF for subdomain 2, corn and soybean expansions} \end{aligned}$$

$$\begin{aligned} \text{PEXPFCR}_{h22} &= 13,578/33 * 8/7 = 470.233 \\ &= \text{EF for subdomain 2, cropland expansions and} \end{aligned}$$

$$\begin{aligned} \text{PEXPFCR}_{h23} &= 13,578/33 * 8/5 = 658.327 \\ &= \text{EF for subdomain 2, total land expansions.} \end{aligned}$$

Similar adjustments in expansion factors were required whenever any respondents reported for individual parcels but then refused to provide corn and soybean acreages by individual fields, and/or individual field data was obtained only for a subsample of the parcels operated. Expansion factors for parcel to field comparisons (FEXPFCR_{hjk}) were computed as:

$$\begin{aligned} \text{FEXPFCR}_{hjk} &= N_h/n_h * n_{hj}/m_{hj} * m_{hjk}/m_{hjk} * m_{hjk}/o_{hjk} * p_{hjk}/q_{hjk} \\ &= N_h/n_h * n_{hj}/o_{hjk} * p_{hjk}/q_{hjk} \end{aligned}$$

where:

o_{hjk} = the number of respondents in stratum h, subdomain j, category k, that also reported acreages for individual fields,

p_{hjk} = the total number of parcels reported by respondent l in stratum h , subdomain j , category k , and

q_{hjk} = the number of parcels for which information was obtained by individual fields for acreages planted to corn and/or soybeans. (Note: q_{hjk} will include parcels with no corn and no soybeans. Also, $q_{hjk} = p_{hjk}$ unless the respondent reported more than 5 parcels and more than 500 acres of total cropland.)

Analysis. The initial analysis examined the non-response rates for data by parcels and by fields within parcels, and the probable number of parcels operated by the non-respondents. The probable number of parcels operated by nonrespondents was determined by testing for significant differences in the average total acres per farm, in a weighted analysis of variance, between the nonrespondents and respondents who reported farming not more than one, two, three, four, five, six, or seven parcels. Statistics computed included weighted linear contrasts between average sizes of farm in a weighted analysis of variance. All weights used in this portion of the analysis were the Reinterview Survey Domain I expansion factors. This information was needed to determine an appropriate weighting procedure for non-respondents.

Further analysis of the parcel and field data tested the following hypotheses.

1. Differences between acreages reported for the whole farm (Sections 2 and 3 of the Reinterview Questionnaire) and parcel acreages aggregated to the whole farm were significantly different from zero. Tests included both Student's t for the individual crops and Hotelling's T^2 for all four acreage items.
2. Differences between parcel acreages of corn and soybeans aggregated to the whole farm level and individual fields aggregated to the whole farm were significantly different from zero. Statistics computed for this portion of the analysis included estimated acreages and differences, and tests of the hypothesis that the mean differences were not significantly different from zero.

Also, a frequency table of "maximum absolute relative differences", by number of parcels in the farm was constructed. (The 'maximum absolute relative difference' is the largest (absolute) of the relative differences [(sum of parcel acreages)-(whole farm acreage)]/[sum of parcel acreages] of the four acreage items.)

RESULTS

General

1. The average size of farm for farmers who did not report by parcels (but did report acreages of corn and/or soybeans planted for the entire farm) was significantly larger than for all farmers who reported for individual parcels. It was also significantly larger than for those farmers who reported having at least five parcels of land. Further, the average size of farm

was highly correlated with the number of parcels reported. Consequently, all parcel nonrespondents were counted as having at least 6 parcels when computing expansion factors for the parcel to whole farm analysis.

2. Enumeration by parcels rather than by whole farms resulted in a statistically significant 3.5 percent reduction in estimated acres planted both to corn and to soybeans (Table 4). The mean differences for the operations reporting at least two parcels were even larger, 3.9 percent for corn and 4.6 percent for soybeans. Both differences were statistically different from zero; $\text{Prob}(d=0) = .013$ for corn and $.006$ for soybeans.
3. The probability of a large relative difference between reports for the entire farm and the sum of reports by parcels increases as the number of parcels increase (Table 5). This indicates that larger operators have more difficulty in providing accurate data for their entire farms.
4. There was essentially no difference between corn and soybean acreages reported by fields and reported by parcels for the same farms (Table 6).
5. Twelve percent of the active farmers who reported for their entire farms refused to provide information by parcels. These farms accounted for 28 percent of the farms counted as having at least 6 parcels, and over one-fifth of the total land in that category. Another eight percent of the active farmers refused to provide information by individual fields within parcels. These farms accounted for almost 11 percent of the total land in the sample.

Response rates. Usable acreage information by parcels was obtained for corn and soybeans from 446 (88.0 percent) of the 507 actively farming respondents in Domain 1. These represented 82.5 percent of the total farm land in the two States. The non-respondents also represent 28.3 percent of reports counted as having more than five parcels. Usable information for corn and soybean acreages by fields was obtained from 411 (92.2 percent) of the 446 farmers who reported corn and soybean acreage by parcels. Farmers who refused to provide information for fields accounted for 10.6 percent of the total land in the sample. Non-respondents for fields were, on the average, significantly larger than those who did report [$\text{Prob} > |Z| < .0001$].

Farm size and number of parcels. The weighted average size of farm for parcel non-respondents who had corn and/or soybeans was 937 acres (Table 3). This average was significantly larger than the average of all respondents reporting for at least five parcels (765 acres). A highly significant correlation between size and number of parcels per farm, $r = .73$ [$\text{p}(r=0) < 0.0001$] also indicates a strong relationship between these two factors. Therefore, as discussed previously, all parcel non-respondents (with corn and/or soybeans) are assumed to have at least six parcels of land in their farm operations.

The weighted average size of farm for respondents who provided information by parcels but refused to give the field information (700 acres) was nearly twice as large as those who did [$\text{prob}(d=0) = .002$]. This finding is consistent with the hypothesis that refusal rates are greater for farmers with larger acreages but had no effect on the expansion factor adjustments.

Table 3. Weighted Average Size of Farm (JRS) and Test of Difference Between Respondents and Non-respondents, By Parcels and By Fields Within Parcels.

	Number of reports	Average size of farm	F	P(d=0)
	#	acres		
Nonrespondents for parcels (with corn and/or soybeans)	39	937		
Respondents reporting at least				
-- 2 parcels	285	426	26.5**	.0001
-- 3 parcels	250	562	17.4**	.0001
-- 4 parcels	157	675	9.1**	.0027
-- 5 parcels	121	765	4.4*	.0363
-- 6 parcels	99	828	1.5	.2213
-- 7 parcels	76	924	0.0	.9610
Nonrespondents for fields	35	700		
Respondents	411	379	11.02**	.0020

* Average size of farm for this group is statistically different from the average size of nonrespondents, $\alpha < .05$.

** Average size of farm for this group is statistically different from the average size of nonrespondents, $\alpha < .01$.

Parcel vs. whole farm reports. Initial comparisons of the whole farm versus aggregated parcel reports resulted in a statistically significant 3.5 percent reduction in estimated acres planted both to corn and to soybeans (Table 4). The mean differences for the operations reporting at least two parcels were even larger, 3.9 percent for corn and 4.6 percent for soybeans. Both differences were statistically different from zero, $\text{Prob}(d=0) = .013$ for corn and .006 for soybeans. The larger relative differences for soybeans may have resulted from changes in planting intentions (because of continued heavy rains in early June) between the time of the JAS telephone interview and the Reinterview.

The data was then grouped by number of parcels. Cross-tabulations of maximum (of the four acreage items) absolute relative differences versus numbers of parcels in the operation (Table 5) shows that the probability of a large relative difference between reports for the entire farm and the sum of reports by parcels increases as the number of parcels increase. For example, only 3.5 percent of the respondents with only one parcel had relative differences greater than 10 percent. This compares with 24 percent for respondents having from 2 to 4 parcels, and approximately 40 percent for respondents having more than 4 parcels.

Table 4. Expanded Differences Between Whole Farm and Parcel Level Reports of Total Land, Crop Land, and Acreages Planted to Corn and Soybeans, Indiana and Ohio, 1990 Reinterview Study.

Item		Expansion	Pct of Total Farm	S.E.	C.V.	t	P(d=0)
		(000)	%	(000)	%		
Observations - 416							
ALL LAND	Total Farm	21,768		868	4.0		
	Parcels	21,489		842	3.9		
	Differences	279	1.3	139		2.01	0.046*
Observations - 433							
CROPLAND	Total Farm	15,323		610	4.0		
	Parcels	15,012		572	3.8		
	Differences	311	2.0	146		2.13	0.034*
Observations - 446							
CORN	Total Farm	6,287		322	5.1		
	Parcels	6,066		301	5.0		
	Differences	220	3.5	87		2.54	0.011*
SOYBEANS	Total Farm	5,020		257	5.1		
	Parcels	4,842		235	4.9		
	Differences	178	3.5	77		2.32	0.021*
Hotelling's T ² statistic						8.52	0.014*
Farms with only one parcel, 165 observations.							
CORN	Total Farm	791		105	13.2		
	Parcels	788		104	13.2		
	Differences	3	0.3	2		1.09	0.279
SOYBEANS	Total Farm	608		85	14.0		
	Parcels	633		90	14.2		
	Differences	-25	-4.2	24		-1.06	0.292
Farms with more than one parcel, 281 observations.							
CORN	Total Farm	5,497		287	5.2		
	Parcels	5,280		264	5.0		
	Differences	217	3.9	87		2.50	0.013*
SOYBEANS	Total Farm	4,415		228	5.2		
	Parcels	4,211		202	4.8		
	Differences	204	4.6	73		2.79	0.006**

* - Significant at $\alpha = 0.05$

** - Significant at $\alpha = 0.01$

Table 5. Percentage Distributions of Maximum Absolute Relative Differences By Number of Parcels Per Farm, Indiana and Ohio, 1990 Reinterview Survey.

Maximum absolute relative difference	Parcels per farm					Row % of total
	1	2 to 4	5 to 9	10 to 16	17 to 25	
	-- Percent of column total --					
ABS(r.d.) < .01	89.7	36.1	18.9	8.5	24.5	58.1
.01 < ABS(r.d.) < .1	6.8	39.9	36.4	52.9	14.4	24.1
.10 < ABS(r.d.) < .2	1.3	12.0	13.5	8.9	6.2	7.1
.20 < ABS(r.d.) < .3	2.2	12.0	31.2	29.7	54.9	10.7
Column % of total	46.9	36.7	13.2	2.7	0.5	100.00

Field level analysis. Aggregated reports of corn and soybean acreages for individual fields were not significantly different from reports for the parcels in which they were located (Table 6). This result could be ascribed to one of two explanations. The first is that many individual parcels contained only one or two corn and/or soybean fields. The second is that farm operators are quite familiar with the acreages in the individual tracts operated. In either case, acreages reported by individual fields do not seem to be any more accurate than acreages reported by parcels.

Table 6. Expanded Differences Between Parcel Level and Individual Field Level Reports of Corn and Soybean Acreages, Indiana and Ohio, 1990 Reinterview Study.

Item	Expansion	Pct of Total Farm	S.E.	C.V.	t	P(d=0)
	(000)	%	(000)	%		
Observations - 411						
CORN	Total Parcel	5,800		323	5.6	
	Fields	5,800		324	5.6	
	Differences	1	0.0	13		0.05 0.959
SOYBEANS	Total Parcel	4,389		247	5.6	
	Fields	4,378		248	5.7	
	Differences	11	0.3	11		0.98 0.326

CONCLUSIONS

Corn and soybean acreage estimates based on entire farm data were biased upward 3.5 percent as compared to estimates based on parcel level data within the same farms. This bias was almost entirely in farm operations which had two or more parcels. Also, the accuracy of acreages (total, all cropland, corn or soybean) reported for the entire farm decreases as the number of separate parcels of land in the farm operation increases. For example, only three percent of the responses from farms of only one parcel had relative differences greater than ten percent. In comparison, two-thirds of the reports for farms of 17 or more parcels had relative differences of at least 10 percent.

One rationale for this result is based upon the nature of 'large farm' operations in this area, and, by extension, throughout at least the 'Corn Belt' States. The land operated by these individuals is distributed among several non-contiguous tracts, with several different landowners and rental agreements. The operator's day-to-day operations are concerned only with the acreages in the individual tracts. To the extent that this concept is true, the expectation that such an operator can provide accurate information for the entire farm in a telephone interview is unrealistic.

Acreage information by individual fields does not appear to provide any additional precision to the estimated acreages.

These results are based on a reinterview survey covering list strata 60 - 80 for Indiana and Ohio. The bias level of 3.5 percent cannot be extrapolated to the state level MF estimates which would cover the larger list strata and the nonoverlap. Also, the bias level cannot be extrapolated to other states since it is somewhat dependent on the average size of farm and number of parcels.

RECOMMENDATIONS

The bias in the MF crop acreage direct expansions is due to many factors. This study indicates that one of these factors is an inherent bias in entire farm reported acreages by survey respondents. This bias seems to be related to the average size of farm and number of parcels, so it may be different for different states. Also, the size of the bias may change over time as farms grow in size and number of parcels.

The following recommendations are made to address this inherent bias.

1. Continue to rely on the June area frame direct and ratio expansions for setting the planted acreage estimates.
2. Periodically conduct reinterview surveys for the Midwest region, or, if resources allow, at the National level, in order to estimate the size and variance of this inherent bias for major

crops. The reinterview survey should be designed to obtain entire farm and parcel planted acreages, just as the 1990 June Reinterview Survey. This periodic bias estimate should be used to adjust the MF direct expansion. The bias adjusted indication would be an additional planted acreage indication for the Agricultural Statistics Board.

3. Conduct cognitive research to better understand the nature of the inherent bias. There may be factors that could cause an unexpected shift in the size of the bias unless the reasons for the bias are better understood. Such information could possibly be used to develop a more effective paper questionnaire or CATI instrument.
4. Consider research addressing across year MF sampling procedures for creating June/June ratio indications of changes in planted acreage.

Another alternative that was considered was to conduct personal interviews for a subsample of operators with "moderately large" to "large" acreages of cropland, with additional questions of acreages by parcels. This would provide regional estimates of planted acreage with smaller response errors than the operational MF direct expansions. Although such an approach would cover most of the bias, it would still be incomplete since it only covers a portion of the list frame. Also, it would add substantially to the response burden on these operators and also to survey costs.

REFERENCES

1. Hanuschak, G., Atkinson, D., Iwig, W., Tolomeo, V. (1991). History of Reinterview Studies at NASS, 1991 Joint Statistical Meetings.
2. Warren, F. (1991). June 1990 Reinterview Survey: Part I, Effect of Alternative Acreage Operated Questions on Reported Acreages and Number of Hogs on Farms, SRB Research Report Number SRB-91-13, National Agricultural Statistics Service, U.S. Department of Agriculture.
3. Wesley, F. (1991). Evaluation of an Item Imputation Procedure for Agricultural Surveys, 1991 Joint Statistical Meetings.

APPENDIX A

Table of pre-selected parcels for subsampling when farm has more than five parcels and total cropland is more than 500 acres.

Total Number of Parcels	Pre-selected Parcels				
6	1	2	3	5	6
7	1	2	4	5	7
8	1	3	4	6	7
9	1	3	5	7	8
10	1	3	5	7	9
11	1	3	6	8	10
12	1	4	6	9	11
13	1	4	7	9	12
14	2	4	7	10	13
15	2	5	8	11	14
16	2	5	8	11	14
17	2	5	9	12	15
18	2	5	9	13	16
19	2	6	9	13	17
20	2	6	10	14	18
21	2	6	10	15	19
22	2	6	11	15	20
23	2	7	11	16	21
24	2	7	12	17	21
25	2	7	12	17	22



National Agricultural Statistics Service

U.S. Department of Agriculture

AGRICULTURAL SURVEY
JUNE 1, 1990
REINTERVIEW FORM

Form Approved
O.M.B. Number 0535-0213
Approval Expires 1/31/93
Project Code 119

IN, OH
V1

[Introduce yourself and ask for the operator.
Rephrase in your own words.]

I am working on a survey for the (State)
Agricultural Statistics Service. As part of a research
study to measure the quality of our survey data, we
are recontacting a few of the people interviewed for
our June Agricultural Survey. I would like to ask you
for some of the same information you gave in the
original survey. However, the questions will be
worded differently to see what effect the different
wording may have on your answers.

Facts about your operation are confidential, and
response is voluntary

SECTION 1 - INTRODUCTION

Enumerator Note: If the name on the label is an individual name or combination of individual names,
start with Item 1. If the name is a farm or ranch name, start with Item 2.

1. Do you (name on label) raise any crops, cut any hay, raise livestock or
poultry, have grain storage facilities or land in government programs?

- YES - Go to Item 3
NO - Go to Section 8 on page 10

2. Does (farm or ranch name on label) raise any crops, cut any hay, raise
livestock or poultry, have grain storage facilities or land in government programs?

- YES - Go to Item 3
NO - Go to Section 8 on page 10

3. Are the day-to-day operating decisions for this farm or ranch made by:

- You Individually?
You in Partnership with others? (Enter number of partners, including self)
A Hired Manager?

Office Use
821

Continue On Next Page

SECTION 2 - ACRES OPERATED

1. To help describe your farm or ranch, we need to identify the number of acres involved.

a. On June 1, how many acres did this farm or ranch OWN?

ACRES	
801	.

+

b. How many acres were RENTED FROM OTHERS?

803	.
-----	---

+

c. How many acres were RENTED TO OTHERS?

804	.
-----	---

-

d. Then the TOTAL acres in this farm or ranch is (a + b - c):

800	.
-----	---

Does this include the farmstead, all cropland, pasture, woodland, waste and idle land, and government program land?

YES - Continue with Item 2.

NO - Make corrections to the acres above, then continue with Item 2.

2. For the rest of this survey I will be asking for information on the corn and soybeans planted, and hogs and pigs on these (Item 1d) _____ acres.

3. Of these (Item 1d) _____ acres, how many would be considered cropland, including land in hay, government programs, and idle cropland?

798	.
-----	---

4. Of these (Item 1d) _____ acres, how many are in government programs such as CRP, ACR, set aside, etc.?

799	.
-----	---

SECTION 3 - CROPS AND LAND USE

1. Of the (Section 2, Item 1d) _____ acres in your farm or ranch, how many acres were planted, or will be planted, to CORN for all purposes? (exclude popcorn and sweet corn)

130	.
-----	---

2. How many acres were planted, or will be planted, to single crop SOYBEANS for all purposes

100	.
-----	---

3. How many acres were planted, or will be planted, to double crop SOYBEANS for all purposes

101	.
-----	---

Continue On Next Page

SECTION 4 - HOGS AND PIGS

1. On June 1, were any **HOGS** or **PIGS**, regardless of ownership, on these (Section 2, Item 1d) _____ acres?

YES NO → 1a. GO TO Item 6 below



2. Of the **HOGS** and **PIGS** for **BREEDING** on hand June 1, how many were:

- a. **SOWS, GILTS** and **YOUNG GILTS** bred and to be bred?

401	★
-----	---
- b. How many were **BOARS** and **YOUNG MALES** for breeding?

402	★
-----	---
- c. How many were **SOWS** and **BOARS** no longer used for breeding?

403	★
-----	---

3. Of the **HOGS** and **PIGS FOR MARKET** and **HOME USE**, how many were in each of the following four weight groups? (Exclude breeding hogs reported in Item 2.)

- a. Under 60 lbs (Include pigs not yet weaned)

404	★
-----	---
- b. 60 - 119 lbs

405	★
-----	---
- c. 120 - 179 lbs

406	★
-----	---
- d. 180 lbs. and over (Exclude hogs no longer used for breeding.)

407	★
-----	---

4. Then the **TOTAL** number of **HOGS** and **PIGS** on hand June 1 was:

400

(Add ★ Items 2a through 3d)

399

5. Do you own any hogs or pigs that are not located on these (Section 2, Item 1d) _____ acres?

NO YES



5a. Were these hogs or pigs included in the above total?

- NO - Continue with Item 6
- YES - Exclude these hogs from the above totals, then continue with Item 6

Office Use
694

6. Does anyone else own any hogs or pigs that are located on these (Section 2, Item 1d) _____ acres?

NO - GO TO Section 5 on next page YES

6a. Were these hogs or pigs included in the above totals?

- NO - Include these hogs in the above totals, then go to Section 5 on next page
- YES - GO TO Section 5 on next page.

Office Use
695

SECTION 5 - CROPS BY PARCEL

Office Use
699

1. Now I need to account for the acres of **CORN** and **SOYBEANS** by separate parcels of land that make up the total _____ acres in your farm or ranch.
(Section 2, Item 1d)

2. How many separate parcels of land make up your operation?

700

To help in reporting separate parcels, please help me complete a sketch of your operating parcels. (Use grid on page 12.)

3. Now I need to record acreage information for each of the (Item 2) parcels. Please report acres of **CORN** and **SOYBEANS** planted and to be planted for the **1990 CROP YEAR**. First, let's start with Parcel 1

PARCEL NUMBER	01	02	03
a. Total acres in parcel	228 .	228 .	228 .
b. CROPLAND ACRES	202 .	202 .	202 .
c. CORN acres for all purposes (exclude popcorn and sweet corn)	230 .	230 .	230 .
d. SOYBEANS, single cropped, acres for all purposes	200 .	200 .	200 .
e. SOYBEANS, double cropped, acres for all purposes (following another crop)	201 .	201 .	201 .

PARCEL NUMBER	04	05	06
a. Total acres in parcel	228 .	228 .	228 .
b. CROPLAND ACRES	202 .	202 .	202 .
c. CORN acres for all purposes (exclude popcorn and sweet corn)	230 .	230 .	230 .
d. SOYBEANS, single cropped, acres for all purposes	200 .	200 .	200 .
e. SOYBEANS, double cropped, acres for all purposes (following another crop)	201 .	201 .	201 .

Sum Of All Parcel Acreages
740 .

Continue On Next Page

SECTION 5 - CROPS BY PARCEL (continued)

PARCEL NUMBER	07	08	09
a. Total acres in parcel	228 .	228 .	228 .
b. CROPLAND ACRES	202 .	202 .	202 .
c. CORN acres for all purposes (exclude popcorn and sweet corn)	230 .	230 .	230 .
d. SOYBEANS, single cropped, acres for all purposes	200 .	200 .	200 .
e. SOYBEANS, double cropped, acres for all purposes (following another crop)	201 .	201 .	201 .

PARCEL NUMBER	10	11	12
a. Total acres in parcel	228 .	228 .	228 .
b. CROPLAND ACRES	202 .	202 .	202 .
c. CORN acres for all purposes (exclude popcorn and sweet corn)	230 .	230 .	230 .
d. SOYBEANS, single cropped, acres for all purposes	200 .	200 .	200 .
e. SOYBEANS, double cropped, acres for all purposes (following another crop)	201 .	201 .	201 .

PARCEL NUMBER	13	14	15
a. Total acres in parcel	228 .	228 .	228 .
b. CROPLAND ACRES	202 .	202 .	202 .
c. CORN acres for all purposes (exclude popcorn and sweet corn)	230 .	230 .	230 .
d. SOYBEANS, single cropped, acres for all purposes	200 .	200 .	200 .
e. SOYBEANS, double cropped, acres for all purposes (following another crop)	201 .	201 .	201 .

Continue On Next Page

SECTION 6 - CORN AND SOYBEANS BY FIELD WITHIN A PARCEL

Office Use
698

Enumerator Note: A block in Section 6 must be completed for each sampled parcel. If the operation includes more than 500 acres of cropland (Section 2, Item 3) and more than 5 parcels with corn or soybeans, sample parcels according to Enumerator Manual instructions. Otherwise, enumerate all parcels. Enter the number of the first parcel with corn or soybeans in Item A and account for the corn and soybean acreage in that parcel.

A. Parcel Number (from Section 5, Item 3).....

__ 00

How many separate fields of CORN are in this parcel?.....

__ 00

How many separate fields of SOYBEANS are in this parcel?.....

Now I would like to ask about each field of corn and soybeans planted, and to be planted, within this parcel during the 1990 crop year.

PARCEL / FIELD NUMBER	__ 01	__ 02	__ 03	__ 04	__ 05
1. Total acres in field	328	328	328	328	328
2. Woods, roads, ditches, waterways, waste, etc	369	369	369	369	369
3. CORN acres planted for all purposes	330	330	330	330	330
4. SOYBEANS, single cropped, acres planted for all purposes	500	500	500	500	500
5. SOYBEANS, double cropped, acres planted for all purposes following another crop	501	501	501	501	501
6. Other crops Acres planted or in use	748	748	748	748	748

PARCEL / FIELD NUMBER	__ 06	__ 07	__ 08	__ 09	__ 10
1. Total acres in field	328	328	328	328	328
2. Woods, roads, ditches, waterways, waste, etc	369	369	369	369	369
3. CORN acres planted for all purposes	330	330	330	330	330
4. SOYBEANS, single cropped, acres planted for all purposes	500	500	500	500	500
5. SOYBEANS, double cropped, acres planted for all purposes following another crop	501	501	501	501	501
6. Other crops Acres planted or in use	748	748	748	748	748

Enumerator Note: For each field listed above, verify that the sum of Items 2-6 equals Item 1. Verify number of corn and soybean fields in Item A above. If more than one parcel, go to the next page. If there are no more parcels, go to Section 7 on page 9.

SECTION 6 - CORN AND SOYBEANS BY FIELD WITHIN A PARCEL (Continued)

Enumerator Note: A block in Section 6 must be completed for each sampled parcel. Enter the number of the second parcel with corn or soybeans in Item B and account for the corn and soybean acreage in that parcel.

B. Parcel Number (from Section 5, Item 3)

__ __ 00

How many separate fields of CORN are in this parcel?

__ __ 00

How many separate fields of SOYBEANS are in this parcel?

Now I would like to ask about each field of corn and soybeans planted, and to be planted, within this parcel during the 1990 crop year.

PARCEL / FIELD NUMBER	__ __ 01	__ __ 02	__ __ 03	__ __ 04	__ __ 05
1. Total acres in field	328 .	328 .	328 .	328 .	328 .
2. Woods, roads, ditches, waterways, waste, etc	369 .	369 .	369 .	369 .	369 .
3. CORN acres planted for all purposes	330 .	330 .	330 .	330 .	330 .
4. SOYBEANS, single cropped, acres planted for all purposes	500 .	500 .	500 .	500 .	500 .
5. SOYBEANS, double cropped, acres planted for all purposes following another crop	501 .	501 .	501 .	501 .	501 .
6. Other crops Acres planted or in use	748 .	748 .	748 .	748 .	748 .

PARCEL / FIELD NUMBER	__ __ 06	__ __ 07	__ __ 08	__ __ 09	__ __ 10
1. Total acres in field	328 .	328 .	328 .	328 .	328 .
2. Woods, roads, ditches, waterways, waste, etc	369 .	369 .	369 .	369 .	369 .
3. CORN acres planted for all purposes	330 .	330 .	330 .	330 .	330 .
4. SOYBEANS, single cropped, acres planted for all purposes	500 .	500 .	500 .	500 .	500 .
5. SOYBEANS, double cropped, acres planted for all purposes following another crop	501 .	501 .	501 .	501 .	501 .
6. Other crops Acres planted or in use	748 .	748 .	748 .	748 .	748 .

Enumerator Note: For each field listed above, verify that the sum of Items 2-6 equals Item 1. Verify number of corn and soybean fields in Item B above. If more than two parcels, go to the next page. If there are no more parcels, go to Section 7 on page 9.

SECTION 6 - CORN AND SOYBEANS BY FIELD WITHIN A PARCEL (Continued)

Enumerator Note: A block in Section 6 must be completed for each sampled parcel. Enter the number of the third parcel with corn or soybeans in Item C and account for the corn and soybean acreage in that parcel.

C. Parcel Number (from Section 5, Item 3)

-- 00

How many separate fields of CORN are in this parcel?

-- 00

How many separate fields of SOYBEANS are in this parcel?

Now I would like to ask about each field of corn and soybeans planted, and to be planted, within this parcel during the 1990 crop year.

PARCEL / FIELD NUMBER	01	02	03	04	05
1. Total acres in field	328	328	328	328	328
2. Woods, roads, ditches, waterways, waste, etc	369	369	369	369	369
3. CORN acres planted for all purposes	330	330	330	330	330
4. SOYBEANS, single cropped, acres planted for all purposes	500	500	500	500	500
5. SOYBEANS, double cropped, acres planted for all purposes following another crop	501	501	501	501	501
6. Other crops Acres planted or in use	748	748	748	748	748

PARCEL / FIELD NUMBER	06	07	08	09	10
1. Total acres in field	328	328	328	328	328
2. Woods, roads, ditches, waterways, waste, etc	369	369	369	369	369
3. CORN acres planted for all purposes	330	330	330	330	330
4. SOYBEANS, single cropped, acres planted for all purposes	500	500	500	500	500
5. SOYBEANS, double cropped, acres planted for all purposes following another crop	501	501	501	501	501
6. Other crops Acres planted or in use	748	748	748	748	748

Enumerator Note: For each field listed above, verify that the sum of Items 2-6 equals Item 1. Verify number of corn and soybean fields in Item C above. If more than three parcels, use a supplemental page for additional parcels. If there are no more parcels, go to Section 7 on page 9.

SECTION 7 - PARTNER NAMES

1. Is partnership checked in Section 1, Item 3, on Face Page?

- YES - Continue with Item 2. NO - GO TO Section 9 on page 11.

2. Is a combination of individual names listed on the address label?

- YES - Continue with Item 3. NO - GO TO Item 4 below.

3. Is/are (read partners names from address label) still involved in making day to day operating decisions for this farm or ranch?

- YES - GO TO Section 9 on page 11.
 NO - Please explain the change.
(List the partners now involved in the operation in Item 4 below.)

4. I need to list the names and addresses of the partners involved in this partnership to make sure that we do not duplicate the information you have reported. Could you give me that information?

Name _____ (First) (Middle) (Last) Phone _____	825
Address _____ (Rt. or St.) (City) (State) (Zip)	
Name _____ (First) (Middle) (Last) Phone _____	826
Address _____ (Rt. or St.) (City) (State) (Zip)	
Name _____ (First) (Middle) (Last) Phone _____	827
Address _____ (Rt. or St.) (City) (State) (Zip)	
Name _____ (First) (Middle) (Last) Phone _____	828
Address _____ (Rt. or St.) (City) (State) (Zip)	

Go To Section 9 On Page 11

SECTION 8 - CHANGE IN OPERATOR

Enumerator Note: *This section should only be completed if the respondent has said that the farm or ranch does NOT raise any crops, cut any hay, raise livestock or poultry, or have grain storage facilities ("No" to Item 1 or 2 on the Face Page)*

1. Do you:

- Have any idle pasture, woods, or crop land that has potential for agricultural production? NO YES - Specify _____
- Raise any broilers, turkeys, or other poultry? NO YES - Specify _____
- Raise horses or ponies? NO YES - Specify _____
- Have any animal specialties such as bees or fish? NO YES - Specify _____
- Raise any vegetables, melons, or berries for sale? NO YES - Specify _____
- Have fruit, nut, or citrus trees or grapevines? NO YES - Specify _____
- Grow greenhouse or nursery crops? NO YES - Specify _____
- Have any other type of agricultural production or sales? NO YES - Specify _____

Office Use
697

Enumerator Note: *If the respondent indicates that some item(s) of interest are on the acres operated, correct Item 1 or 2 on the Face Page and continue the interview with Item 3 on the Face Page.*

Otherwise, continue with Item 2 below.

2. Has this farm or ranch (name on label) been sold or turned over to someone else (day to day operating decisions are now made by someone other than the name on the label)?

- No - CONCLUDE INTERVIEW.
- YES - Who is now making the operating decisions for this land?

Name _____

Address _____ Phone _____

City _____ State _____ Zip _____

When did this change occur? Date _____

CONCLUDE INTERVIEW

SECTION 9 - CONCLUSION

1. **Enumerator Note:** *Is the name on the label an individual name?*

YES - Continue. NO - Skip to Item 2

Do you make day-to-day operating decisions for another farm or ranch, either individually or in partnership with others?

YES - List other operation(s)

NO

2. **Verify spelling of name(s) and address on label.**

3. Does this farm or ranch do business under any name(s) other than (name listed on label)?

YES - List _____

Do you want this name to appear on the label? YES NO

4. Could anyone else (other than you or any partners listed in Section 7) report for these (Section 2, Item 1d) _____ acres? (Exclude spouse and hired workers.)

NO YES - List names and relationship to operator

Office Use
696

This completes the survey Thank you for your help

Reported by _____ Date _____

Telephone(Area Code) _____ (Number) _____

Respondent		Response Code		J/Date	Enum	Eval
1-Op	001	3 Int	810	094	097	099
2 Sp		4 Est				
3-Oth		8 IR				
4 Est R		9 Inac				
5-Est NR						
S-E N						



Complete a sketch of separate parcels that make up the total (Section 2, Item 1d) _____ acres in your farm or ranch. Identify each parcel by number -- 1, 2, 3, etc.

Farmstead