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This project was funded by the Montana Department of Revenue.

Agricultural Leasing Study

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Agricultural Marketing Policy Paper No. 48
July 2015

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Introduction

This study describes crop-share and cash leasing arrangements in Montana for calendar year 2013 by surveying land owners, who own dry and irrigated cropland and grazing land. A dataset containing names and address of all land owners in Montana was provided by the Department of Revenue's Property Assessment Division. A sample of 880 land owners selected from this population completed the telephone implemented by the Bureau of Business and Economic Research at the University of Montana. Faculty members in the Department of Agricultural Economics and Economics at Montana State University were responsible for developing the questionnaire; conducting personal interviews with landlords, tenants, and real estate agents; and, analyzing these data.

The next four sections review the methods, report the results, discuss the findings in the summary and conclusions section, and consider the limitations to this study.

Methods

Data Collection

The interviewers at the Bureau of Business and Economic Research (BBER) at the University of Montana collected the primary data for this study. The BBER was given a list of land owners from the Department of Revenue. Using a telephone number look-up service, the BBER called 7,338 telephone numbers to determine if the respondent owned agricultural land in Montana; and if the respondent leased agricultural land to farmers and ranchers. The questionnaire used for this study is in Appendix B. These 7,338 telephone numbers yielded 3,007 respondents with agricultural land; however, only 880 of the respondents had leased land. Table 1 reports the case disposition for this study. Based on the American Association for Public Opinion Research's calculation methods, the response rate was 47 percent.

The most substantial challenge in this data collection effort was soliciting answers to questions involving amounts of money (such as cash lease rates), cattle numbers, and crop yields. Respondents were able to answer the share lease percentage questions (for instance, what was the typical crop-share for dry crop land last year); hence, there was a high rate of usable observations (84% dry crop land, 76% irrigated crop land, and 59% grazing land) for share leases. Respondents either had a difficult time answering cash lease questions or they weren't interested in reporting cash lease rates to the interviewer; hence there was a low rate of usable observations (35% dry crop land, 28% irrigated crop land, 31% grazing land, acre basis, and 23% grazing land, AUM basis) for cash leases. Missing values for nonresponse or refusals was positively correlated with age.

Table 1: Response rates for the sample

Case Disposition Description	N
Complete	880
Complete, no leased land	2,127
Refused	1,370
Broken interview	133
Unresolved appointment	76
Non-interview due to hearing or other disability	63
No answer	204
Answering machine	1,549
Owns no land	368
Duplicate telephone number	34
Non-working number	534
Total telephone numbers used	**7,338**
AAPOR Response Rate 1 (RR1)	**47.0%**
Screening rate (SR)	**29.3%**

RR1 = Complete + Complete, no leased land/ Complete + Complete, no leased land + Refused + Broken interview + Unresolved appointment + Non-interview + No answer + Answering machine

R =Complete / Complete + Complete, no leased land

Questionnaire

The questionnaire was divided into two sections: Section 1, which provided a leasing profile for each of the respondents; and Section 2, which provided a more in-depth profile of the leasing arrangement generating the most revenue or compensation for the land owner. Section 1 asked respondents how many acres were leased on share or cash arrangement for dry crop, irrigated crop, and grazing land; what was the typical share (percentage to the owner) or cash (money paid to the owner) lease; and, what expenses (except property taxes and liability insurance) were incurred by owner. Nearly all respondents, 860 of 880, answered Section 1 questions.

Section 2 asks respondents to provide substantially more detail on these lease arrangements. Respondents were asked the following for crop leases: (1) location of the property, (2) crop grown on the parcel of land, (3) acres in the field, (4) crop yield, (5) crop rotation, (6) gross value of the lease, (7) percent of the crop received (share leases only), (8) percent of expenses paid for selected expense items (share leases only), (9) expenses paid for selected expense items (cash leases only), (10) years the tenant leases the land, (11) any blood relationship between the owner and tenant, (12) type of lease (written or verbal), and (13) market value of the land. Respondents were asked the following for grazing leases: (1) location of the property, (2) months of grazing covered under the arrangement, (3) acres in the pasture, (4) number of animal units, (5) gross value of the lease, (6) land owners share (share lease only), (7) percent of expenses paid for selected expense items (share lease only), (8) expenses paid for selected expense items (cash leases only), (9) years the tenant leases the land, (10) any blood relationship between the owner and tenant, (11) type of lease (written or verbal), and (12) market value of the land. Please see Appendix B for a copy of the questionnaire used in this study.

Analysis

The analysis for this study primarily used frequencies, means, medians, standard deviations, and 95% confidence intervals. The main body of the report discusses these statistical measures for complete observations (where the respondent answered both revenue and expense questions); and, all results are weighted by the number of acres in the lease.

The leasing questionnaire was based on similar land use studies conducted by the USDA's National Agricultural Statistics Service, Iowa State University, Kansas State University, and North Central Farm Management Extension Committee. The questionnaire began with a summary section asking respondents about "typical" leasing arrangements for each type of lease; and ended with a section asking detailed questions about leasing arrangements for the parcel of leased land generating the highest lease revenue.

Characteristics of the Sample

This section profiles leasing activity in Montana by asking respondents about their dry and irrigated crop and grazing land leases. Share and cash leases were identified for each type of land. The survey identified 1,081 leasing arrangements for the 879 respondents interviewed (Table 2). Nearly 60% of the respondents were over 64 years of age.

Table 2: Number of crop-share and cash leases by land type by respondent

Type of Land	Share	Cash
Dry Crop	221	285
Irrigated Crop	51	152
Grazing	22	350

Chart 1 shows the acreage distribution of share and cash leases by land type for this sample. The leases in this sample represent nearly 751,000 acres in Montana. Nearly half (46%) of the acres in this sample were cash leases for grazing, 24% were cash leases for dry land crops, 20% were share leases for dry land crops, the remaining 10% were for other leases. Dry crop leases were nearly evenly divided between share (49.3%) and cash (50.7%) leases, while both irrigated crop and grazing leases were primarily cash leases (Chart 2). The land owners in the sample had from one to four types of leases.

Chart 1: Percentage of lease agreements by land type

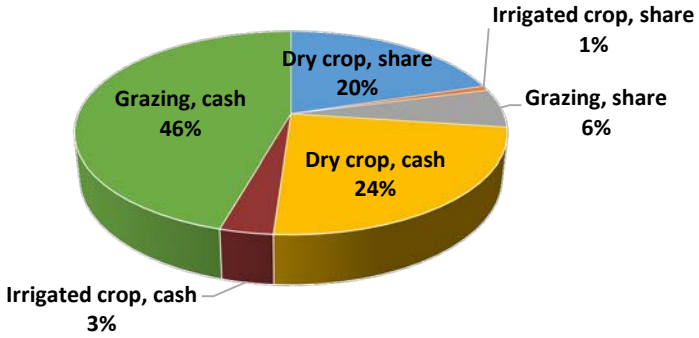
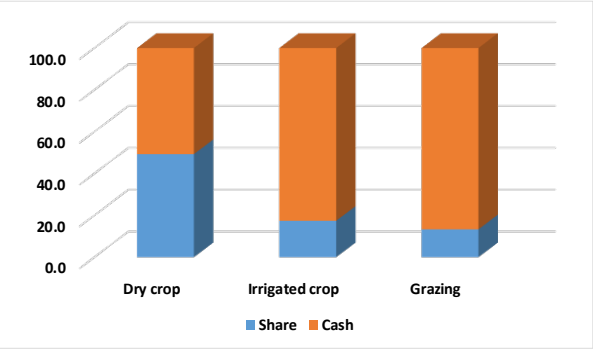


Chart 2: Percentage of share and cash lease arrangements by land type



A majority of the land owners held just one type of lease with the largest number of leases being grazing land cash (200), dry land cash (162) and dry land crop share (144) leases (see Table 3 for additional details). And finally, a majority of the observations were from the crop reporting Districts 2 (Triangle), 3 (Northeast) and 5 (Central). Please see Table 4 for additional details.

Table 3: Distribution of leases held by land owners in the sample

Leases							
Dry Land		Irrigated Land		Grazing Land			
Share	Cash	Share	Cash	Share	Cash	N	%
1						144	17.2
	1					162	19.3
		1				26	3.1
			1			89	10.6
				1		9	1.1
					1	200	23.8
1					1	25	3.0
	1				1	62	7.4
		1			1	6	0.7
			1		1	29	3.5
				1	1	2	0.2
1				1		5	0.6
	1			1		1	0.1
			1	1		1	0.1
	1		1			15	1.8
1	1					23	2.7
		1	1			5	0.6
1		1				5	0.6
	1		1		1	9	1.1
1	1				1	8	1.0
		1	1		1	2	0.2
1		1			1	4	0.5
1	1			1		2	0.2
1	1		1			1	0.1
1				1	1	1	0.1
1		1	1		1	1	0.1

Table 4: Number and percentage of observations by Crop Reporting District

Crop Reporting District	n	%
Northwest (CRD-1)	106	12.1
Triangle (CRD-2)	206	23.4
Northeast (CRD-3)	192	21.8
Central (CRD-5)	155	17.6
Southwest (CRD-7)	49	5.6
Soutcentral (CRD-8)	107	12.2
Southeast (CRD-9)	64	7.3

Results

The next six sections summarize the share and cash leases for each type of land (dry land crop, irrigated crop, and grazing land). All statistics reported in the next section are weighted by the number of acres in the lease, rather than the number of respondents. The tables report weighted frequencies, means, standard deviations, medians, and confidence intervals. In addition, these tables include only responses where the tenant's cash payment and expenses are reported. Given the substantial number of missing values for expenses, a significant number of tenants' cash payment observations are not used. Appendix A reports tenants' cash payment information, which includes the observations not used. All percentages and dollar amounts for dry and irrigated crop land are reported on a per acre basis, while percentages and dollar amounts for grazing land are reported on a per acre and per animal unit month (AUM) basis.

Dry crop land share arrangements

Share leasing arrangements comprised 46% of the acreage in dry crop land leases. Sixty percent of the dry crop land acres under a share lease paid the owner from 30 to 34% of the crop yield (Table 5). The mean and median crop share percentages were 34% and 33%, respectively. Based on the 186 respondents with dry crop land share leases answering the questionnaire, the 95% confidence interval suggests that the true mean is between 32% and 35%.

Typically, share lease arrangements require the land owner and tenant to share in the revenue and expenses. In this sample, two-thirds of the land owners shared in some expenses (Table 8 – column 1). Over 30% of these land owners shared in fertilizer, federal crop insurance and hail insurance expenses, while less than 25% shared in other expenses, including seed, pesticides, and other expenses.

Table 5: Owner percentage of share leasing arrangements on dry crop land

	Weighted	
Owner Percentage	**n (acres)**	**%**
Less than 25%	571	0
25% to 29%	33,309	25
30% to 34%	80,897	60
35% to 39%	0	0
40% to 44%	5,159	4
45% to 49%	0	0
50% or more	15,291	11
	135,227	100
Mean		34
Standard deviation		10
Median		33
Confidence Interval (95%), lower bound		32
Confidence Interval (95%), upper bound		35

Table 6: Owner percentage of share leasing arrangements on irrigated crop land

	Weighted	
Crop share percentage	**n (acres)**	**%**
Less than 25%	630	14
25% to 29%	420	10
30% to 34%	1,864	43
35% to 39%	32	1
40% to 44%	175	4
45% to 49%	0	0
50% or more	1,249	29
	4,370	100
Mean		38
Standard deviation		15
Median		33
Confidence Interval (95%), lower bound		33
Confidence Interval (95%), upper bound		43

Irrigated crop land share arrangements

Share leasing arrangements comprised 19% of the acreage in irrigated crop land leases. Over 50% of the irrigated crop land acres under a share lease paid the owner from 25 to 34% of the crop yield (Table 6). The mean and median crop share percentages were 38% and 33%, respectively. Based on the 39 respondents with irrigated crop land share leases answering the questionnaire, the 95% confidence interval suggests that the true mean is between 33% and 43%.

In this sample, nearly two-thirds of the land owners shared in some expenses (Table 8 – column 2). Over 39% of these land owners shared in fertilizer and irrigation expenses, while less than 25% shared in other expenses, including building and fence maintenance, federal crop insurance, seed, and other expenses.

Grazing land share arrangements

Share leasing arrangements comprised 12% of the acreage in grazing land leases; however, only 13 grazing leases were reported in this sample. Over 75% of the grazing land acres under a shared lease paid the owner less than 45% of the revenue, while just under 20% paid the owner 50% or more of the revenue (Table 7). The mean and median share percentages were 41% and 30%, respectively. Based on the 13 respondents with grazing land share leases answering the questionnaire, the 95% confidence interval suggests that the true mean is between 27% and 56%. Given the small sample, these results should be used with caution.

In this sample, about 40% of the land owners shared in some livestock expenses (Table 9 – column 1). Over 25% of these land owners shared in building and fence maintenance and nearly 14% shared in veterinary supplies.

Table 7: Owner percentage of share leasing arrangements on grazing land

	Weighted	
Share percentage	**n (acres)**	**%**
Less than 25%	0	0
25% to 29%	880	2
30% to 34%	33,000	75
35% to 39%	0	0
40% to 44%	1,300	3
45% to 49%	0	0
50% or more	8,815	20
	43,995	100
Mean		41
Standard deviation		23
Median		30
Confidence Interval (95%), lower bound		27
Confidence Interval (95%), upper bound		56

Table 8: Percentage of owners paying each type of crop expenses

	Column (1)	Column (2)	Column (3)	Column (4)
	Share Lease Arrangement		Cash Lease Arrangement	
Expense Item[1]	**Dry**	**Irrigated**	**Dry**	**Irrigated**
Any expense paid by land owner	67.0	62.8	20.4	54.6
Seed	19.9	13.7	7.0	6.6
Fertilizer	36.7	39.2	6.0	5.3
Pestisides	22.2	13.7	6.0	7.2
Custom harvesting	8.1	9.8	2.8	2.6
Federal crop insurance	39.4	19.6	5.6	2.0
Hail insurance	31.7	15.7	4.2	1.3
Building and fence maintenance	22.2	21.6	14.4	24.3
Irrigation	NA	43.1	NA	43.4
Number of observations	221	51	285	152

[1] Assumes all land taxes and liability insurance are paid by the owner

Table 9: Percentage of owners paying each type of livestock expense

	Column (1)	Column (2)
Expense Item[1]	**Share Lease Arrangement**	**Cash Lease Arrangement**
Any expense paid by land owner	40.9	38.5
Breeding Stock	9.1	2.9
Purchased feed	4.6	4.3
Veterinary supplies	13.6	3.1
Veterinary services	9.1	3.4
Livestock insurance	0.0	2.3
Livestock water	9.1	12.6
Building and fence maintenance	27.3	32.9
Number of observations	22	350

[1] Assumes all land taxes and liability insurance are paid by the owner

Dry crop land cash arrangements

Cash leasing arrangements comprised 54% of the acreage in dry crop land leases (Table 10). Over 60% of the dry crop land acres under cash leases paid the owner from $20 to $35 per acre. The mean and median revenue from cash leases were both $26/acre. Based on the 99 respondents with dry crop land cash leases answering the questionnaire, the 95% confidence interval suggests that the true mean is between $24/acre and $29/acre.

Typically, cash lease arrangements do not require the land owner to share in the operating expenses. In this study, we assume that all property taxes and liability insurance are paid by the owner. In this sample of 99 owners who answered the revenue and expense questions, owners leasing 62% of the acreage paid no expenses (Table 11). The mean and median expense amounts were $2/acre and $0/acre, respectively. The 95% confidence interval suggests that the true mean is between $1/acre and $4s/acre.

Table 10: Tenant's cash payment on dry crop land

	Weighted	
Tenant's Cash Payment	**n (acres)**	**%**
Less than $20/acre	12,066	21
$20 to 24.99	9,382	16
$25 to 29.99	12,125	21
$30 to 34.99	14,480	25
$35 to 39.99	3,115	5
$40 or more	7,210	12
	58,378	100
Mean		26
Standard deviation		13
Median		26
Confidence Interval (95%), lower bound		24
Confidence Interval (95%), upper bound		29

Table 11: Owner's cash expenses on dry crop land

	Weighted	
Expenses	**n (acres)**	**%**
None	36,001	62
Greater than 0 - $4.99	14,952	26
$5 to 9.99	2,630	5
$10 or more	4,815	8
Mean		2
Standard deviation		6
Median		0
Confidence Interval (95%), lower bound		1
Confidence Interval (95%), upper bound		4

Even though many respondents chose not to answer the revenue and expense value (dollar amount) questions, they did identify expenses they typically paid. In this sample of 285 owners, 20% of them paid some expenses (Table 8 – column 3). Over 14% of these land owners paid building and fence maintenance expenses, while less than 10% paid other operating expenses.

The net cash lease is estimated by subtracting revenue paid to the owner by the tenant from expense paid by the owner. The mean net cash lease is $24/acre with the 95% confidence interval between $21 and $26/acre (Table 12).

Table 12: Net cash lease income (revenue less expenses) on dry crop land

	Weighted	
Net Income	**n (acres)**	**%**
Less than $10/acre	6,736	12
$10 to 19.99	10,810	19
$20 to 29.99	24,506	42
$30 to 39.99	9,276	16
$40 or more	7,050	12
	58,378	100
Mean		24
Standard deviation		13
Median		25
Confidence Interval (95%), lower bound		21
Confidence Interval (95%), upper bound		26

Irrigated land cash arrangements

Cash leasing arrangements comprised 82% of the acreage in irrigated crop land leases. Over 60% of the irrigated crop land acres under cash leases paid the owner from $50 to $90 per acre (Table 13). The mean and median revenue from cash leases were both $75/acre. Based on the 42 respondents with irrigated crop land cash leases answering the questionnaire, the 95% confidence interval suggests that the true mean is between $68/acre and $82/acre.

Table 13: Tenant's cash payment on irrigated crop land

	Weighted	
Tenant's Cash Payment	**n (acres)**	**%**
Less than $50/acre	1,089	16
$50 to 69.99	742	11
$70 to 89.99	3,357	50
$90 to 109.99	709	11
$110 to 129.99	723	11
$130 or more	43	1
	6,663	100
Mean		75
Standard deviation		23
Median		75
Confidence Interval (95%), lower bound		68
Confidence Interval (95%), upper bound		82

In this sample of 42 owners who answered the revenue and expense questions, owners leasing 16% of the acreage paid no expenses (Table 14). The mean and median expense amounts were $10/acre and $2/acre, respectively. The 95% confidence interval suggests that the true mean is between $6/acre and $14/acre. The survey did not distinguish among gravity and sprinkler irrigation.

Table 14: Owner's cash expenses on irrigated crop land

	Weighted	
Expenses	**n (acres)**	**%**
None	1,070	16
Greater than 0 - $9.99	3,209	48
$10 to 19.99	1,032	15
$20 to 29.99	596	9
$30 to 39.99	493	7
$40 or more	263	4
	6,663	100
Mean		10
Standard deviation		13
Median		2
Confidence Interval (95%), lower bound		6
Confidence Interval (95%), upper bound		14

Even though many respondents chose not to answer the revenue and expense value (dollar amount) questions, they did identify expenses they typically paid. In this sample of 152 owners, 55% of them paid some expenses (Table 8 – column 3). Over 43% of these land owners paid irrigation expenses, 24% paid building and fence maintenance expenses, and less than10% paid other operating expenses.

The net cash lease is estimated by subtracting revenue paid to the owner by the tenant from expense paid by the owner. The mean net cash lease is $65/acre with the 95% confidence interval between $58 and $72/acre (Table 15).

Table 15: Net cash lease income (revenue less expenses) on irrigated crop land

	Weighted	
Net Income	**n (acres)**	**%**
Less than $20/acre	476	7
$20 to 40.99	608	9
$40 to 59.99	1,223	18
$60 to 79.99	2,787	42
$80 or more	1,569	24
	6,663	100
Mean		65
Standard deviation		22
Median		73
Confidence Interval (95%), lower bound		58
Confidence Interval (95%), upper bound		72

Grazing land cash arrangements

Cash leasing arrangements comprised 88% of the acreage in grazing land leases. Grazing land lease information was collected on a per acre and per animal unit month basis. Tables 16 through 18 examine grazing land leases on a per acre basis. Grazing lease rates on a per acre basis were highly variable because no information was provided on the number of months of grazing, number of animal units, or quality of the grazing land. Over 72% of the grazing land acres under a cash lease paid the owner less than $10/acre (Table 16). The mean and median revenue from cash leases were $8/acre and $4/acre, respectively. Based on the 109 respondents with grazing land cash leases answering the questionnaire, the 95% confidence interval suggests that the true mean is between $7/acre and $10/acre.

Table 16: Tenant's cash payment on grazing land, acre basis

	Weighted	
Tenant's Cash Payment	**n (acres)**	**%**
Less than $10/acre	94,383	72
$10 - 19.99	18,025	14
$20 - 29.99	12,065	9
MJore than $30	5,930	5
	130,403	100
Mean		8
Standard deviation		9
Median		4
Confidence Interval (95%), lower bound		7
Confidence Interval (95%), upper bound		10

In this sample of 109 owners who answered the revenue and expense questions, 37% paid no expenses (Table 17). The mean and median expense amounts were $3/acre and $1/acre, respectively. The 95% confidence interval suggests that the true mean is between $2/acre and $4/acre.

Table 17: Owner's cash expenses on grazing land, acre basis

	Weighted	
Expenses	**n (acres)**	**%**
None	48,689	37
Greater than 0 - $9.99/acre	74,494	57
$10 - 49.99	6,750	5
$50 or more	470	0
	130,403	100
Mean		3
Standard deviation		5
Median		1
Confidence Interval (95%), lower bound		2
Confidence Interval (95%), upper bound		4

Even though many respondents chose not to answer the revenue and expense value (dollar amount) questions, they did identify expenses they typically paid. In this sample of 350 owners, 38.5% of them paid some expenses (Table 9 – column 2). Over 32% of these land owners paid building and fence maintenance expenses and about 13% paid livestock water expenses.

The net cash lease is estimated by subtracting revenue paid to the owner by the tenant from expense paid by the owner. The mean net cash lease is $5/acre with the 95% confidence interval between $4 and $7/acre (Table 18).

Table 18: Net cash lease income (revenue less expenses) on grazing land, acre basis

	Weighted	
Net Income	**n (acres)**	**%**
Less than $0/acre	35,947	28
$0 to 9.99	61,571	47
$10 - $19.99	23,190	18
$20 - $29.99	9,575	7
$30 or more	120	0
	130,403	100
Mean		5
Standard deviation		9
Median		3
Confidence Interval (95%), lower bound		4
Confidence Interval (95%), upper bound		7

Tables 19 through 21 examine grazing land leases on an AUM basis. Grazing lease rates on a per AUM basis were less variable because more information was provided by the respondent, such as the number of months of grazing, and number of animal units. Over 50% of the grazing land cash leases paid the owner less than $20/AUM (Table 19). The mean and median revenue from cash leases were $21/AUM and $19/AUM, respectively. Based on the 66 respondents with grazing land cash leases answering the questionnaire, the 95% confidence interval suggests that the true mean is between $17/acre and $25/acre.

Table 19: Tenant's cash payment on grazing land, AUM basis

	Weighted	
Tenant's Cash Payment	**n (acres)**	**%**
Less than $10/acre	7,829	15
$10 - 19.99	21,427	40
$20 - 29.99	18,613	35
more than $30	5,350	10
	53,219	100
Mean		21
Standard deviation		473
Median		19
Confidence Interval (95%), lower bound		17
Confidence Interval (95%), upper bound		25

In this sample of 66 owners who answered the revenue and expense questions, 54% paid no expenses (Table 20). The mean and median expense amounts were $3/AUM and $0/AUM and $4/AUM.

The net case lease is estimated by subtracting revnue paid to the owner by the tenant form expense paid by the owner. The mean net cash lease is $18/AUM with the 95% confidence interval between $14 and $22/AUM (Table 21).

Table 20: Owner's cash expenses on grazing land, AUM basis

	Weighted	
Expenses	**n (acres)**	**%**
None	28,690	54
Greater than 0 - $9.99/acre	20,366	38
$10 - 49.99	4,163	8
$50 or more	0	0
	53,219	100
Mean		3
Standard deviation		139
Median		0
Confidence interval (95%), lower bound		2
Confidence interval (95%),upper bound		4

Table 21: Net cash lease income (revenue less expenses) on grazing land, AUM basis

	Weighted	
Net Income	**n (acres)**	**%**
Less than $0/acre	2,900	5
$0 to 9.99	8,854	17
$10 - $19.99	24,630	46
$20 - $29.99	11,485	22
	53,219	100
Mean		18
Standard deviation		438
Median		15
Confidence interval (95%), lower bound		14
Confidence interval (95%),upper bound		22

Summary and Conclusions

NASS – Montana Office does not publish any information on crop or livestock share leases; however, they do publish crop and livestock leasing rates. The most recent rates were published in 2013 (cash rent values on per acre basis are for 2013 and grazing fees on AUM basis are for 2012). Table 22 summarizes the share arrangements for dry and irrigated crop land and grazing land. Clearly, traditional one-third – two-thirds crop share lease is still employed on dry and irrigated crop land in Montana. The 95% confidence interval for the dry land crop share estimate was between 32% and 35%, while the irrigated crop share estimate was between 33% and 43%. The grazing share estimate was much less precise with the 95% confidence interval between 27% and 56%.

Table 22: Share lease arrangement summary, land owners only

Land Type	Mean	Lower Bound	Upper Bound	Median
Dry crop land, owner %	34	32	35	33
Irrigated crop land, owner %	38	33	43	33
Grazing land, acre basis, owner %	41	27	56	30

Table 23 summarizes the cash lease arrangements for dry and irrigated crop land and grazing land. The cash lease rates for operators interviewed by NASS – Montana Office were within the 95% confidence intervals of cash lease rates for owners interviewed for this study. The mean cash payment to the owner was $26/acre (95% confidence interval between $24 and $29/acre) for dry crop land was very similar to the NASS estimate of $23.50/acre. This study assumed that owner's paid property taxes and liability insurance expenses. When the owner's expenses are subtracted from the tenant's payment, the net cash amount received by the owner is $24/acre (95% confidence interval between $$21 and $26/acre).

The mean cash payment to the owner was $78/acre (95% confidence interval between $70 and $86/acre) for irrigated crop land was somewhat lower than the NASS estimate of $86/acre. The net cash amount received by the owner is $12 less, or $66 per acre (95% confidence interval between $59 and $73/acre).

The mean cash payment to the owner of $8/acre (95% confidence interval between $7 and $10/acre) for grazing land was somewhat higher than the NASS estimate of $6/acre. The net cash amount received by the owner is $3 less, or $5/acre (95% confidence interval between $4 and $7/acre. The mean cash payment to the owner of $21/AUM (95% confidence interval between $17 and $25/acre) for

grazing land was slightly higher than the NASS estimate of $20.50/AUM. The net cash amount received by the owner is $18/AUM (95% confidence interval between $14 and $22/acre).

In general, this study supports cash lease estimates provided by NASS – Montana Office and added share lease estimates to the discussion. Clearly, cash leases dominate share leases on irrigated and grazing land, and comprise about one-half of the dry crop land leases. As owners become further removed from the land and have less knowledge of farming and ranching practices, cash leases become a more attractive option for many land owners.

Limitations

The study provided an important supplement to the NASS – Montana Office results because it interviewed owners, rather than farm and ranch operators. The initial sample included over 30,000 names and addresses, which needed to cleaned (elimination of duplicates) and supplemented with telephone. The questionnaire required about 15 minutes to answer; however, the questions on the dollar value of the lease, cattle number and yields were challenging for many respondents to answer. Other important limitations to this study include the following:

1) The characteristics of the population of owners wasn't known in this study because the list of owners only included names and addresses. Hence, it's unlikely that the results of the study are generalizable to the population of leaseholders in Montana.

2) The grazing land data needed substantial editing to clarify whether the respondent was answering per acre or per AUM measurement units. In several cases, both per acre and per AUM information was reported by the respondent enabling the measurement unit to be determined.

3) This study interviewed owners, rather than operators. The high percentage of unusable responses was due to owners have limited knowledge of the lease agreement. The grazing leases were especially challenging because respondents were not aware of the number of animal units grazing their land in the past year. Farm and ranch operators, interviewed as a supplement, to this study were very aware of the number of animal units and other expense details. There appears to be an asymmetric information problem, where operators know more than owners, especially as owners age.

4) Leasing rates for irrigated crop land had high variances. More information was needed on irrigation methods, especially gravity versus sprinkler irrigation systems.

5) This study assumed that all acreage was leased on a parcel basis; however, many leases are whole farm leases. A question should be added to the survey to determine if the whole farm is being leased to a single tenant.

Table 23: Cash lease arrangement summary for land owners and operators

	Tenant's Cash Payment to Owner				Net Cash Lease			
Land Type	Mean	Lower Bound	Upper Bound	Median	Mean	Lower Bound	Upper Bound	Median
Dry crop land, owner $/acre	26	24	29	26	24	21	26	25
NASS estimate, operator $/acre[1]	23.5							
Irrigated crop land, owner $/acre	78	70	86	75	66	59	73	73
NASS estimate, operator $/acre[1]	86							
Grazing land, acre basis, owner $/acre	8	7	10	4	5	4	7	3
NASS estimate, operator $/acre[1]	6							
Grazing land, acre basis, owner $/AUM	21	17	25	19	18	14	22	15
NASS estimate, operator, $/AUM[1,2]	20.5							

[1]Montana 2013 Agricultural Statistics, 2011-2012 County Estimates, NASS

[2]Assumes cow-calf pair is 1.3 animal units

Appendix A – Gross Revenue Estimates Only

Appendix A Table 1: Tenant's cash payment on dry crop land

	Unweighted			Weighted	
Tenant's Cash Payment	**n**	**%**		**n (acres)**	**%**
Less than $20/acre	32	21.2		16,861	20
$20 to 24.99	22	14.6		13,546	16
$25 to 29.99	26	17.2		19,790	23
$30 to 34.99	33	21.9		19,470	23
$35 to 39.99	10	6.6		4,715	5
$40 or more	28	18.5		11,535	13
	151	100.0		85,917	100
Mean		28.6			27
Standard Deviation		14.8			283
Median		27.0			25
Confidence Interval (95%), lower bound		26.2			25
Confidence Interval (95%), upper bound		31.0			29

Appendix A Table 2: Tenant's cash payment on irrigated crop land

	Unweighted			Weighted	
Tenant's Cash Payment	**n**	**%**		**n (acres)**	**%**
Less than $50/acre	16	20		2,009	17
$50 to 69.99	17	21		1,313	11
$70 to 89.99	19	23		5,199	43
$90 to 109.99	15	18		1,685	14
$110 to 129.99	13	16		1,649	14
$130 or more	2	2		203	2
Less than $50/acre	16	20		2,009	17
	82	100		12,058	100
Mean		28.6			27
Standard Deviation		14.8			283
Median		27.0			25
Confidence Interval (95%), lower bound		26.2			25
Confidence Interval (95%), upper bound		31.0			29

Appendix A Table 3: Tenant's cash payment on grazing land, acre basis

	Unweighted			Weighted	
Tenant's Cash Payment	**n**	**%**		**n (acres)**	**%**
Less than $10/acre	63	58		94,383	72
$10 - 19.99	20	18		18,025	14
$20 - 29.99	16	15		12,065	9
More than $30	10	9		5,930	5
	109	100		130,403	100
Mean		13		8	
Standard Deviation		14		317	
Median		7		4	
Confidence Interval (95%), lower bound		10		7	
Confidence Interval (95%), upper bound		16		10	

Appendix B – Questionnaire

My name is [INSERT YOUR FIRST AND LASTNAME]. I am calling from the University of Montana in Missoula on behalf of the Montana State University Extension to learn about crop-share and cash leasing arrangements. This will help the State of Montana in its program to support Montana agriculture.

A.1 Is the land you own in Montana or another state?
Montana – A1a
Other State –End Interview

A1a Do you have any crop-share or cash leasing arrangements on your land with any farm or ranch operators? Do you rent land to anyone else for their use with any type of payment or exchange?
yes – go to DC1
no –End Interview

DRY CROP

DC1 How many total acres of dry crop land do you lease to farm or ranch operators?

DC2 (If DC1> 0) How many of those acres are leased for crop share?

DC2A (If DC1 > 0) What was the typical crop-share for dry crop land last year?
_____% owner DC2B _____% renter

DC3 (If DC1> 0) How many of those acres are leased for Cash?

DC3A (If DC3 > 0) What is your tenants' typical Cash payment to you per acre for this land (per year)?

DC3A2 Is that before or after expenses?
1=Before 8=DK
2=After 9=Refused

DC3A1 And what was the per acre cost to you for expenses related to this land last year?

IRRIGATED CROP

IC1 How many total acres of irrigated crop land do you lease to farm or ranch operators?
IC2 (If IC1> 0) How many of those acres are leased for crop share?

IC2A (If IC1 > 0) What was the typical crop-share for irrigated crop land last year?
_____% owner IC2B_____% renter

IC3 (If IC1> 0) How many of those acres are leased for Cash?

IC3A (If IC3> 0) What is your tenants' typical Cash payment to you per acre for this land (per year)?

IC3A2 Is that before or after expenses?
1=Before 8=DK
2=After 9=Refused

IC3A1 And what was the per acre cost to you for expenses related to this land last year?

GRAZING

GR1 How many total acres of grazing land do you lease to farm or ranch operators?

GR2 (If GR1> 0) How many of those acres are leased for a share?

GR2A (If GR1> 0) What was the typical share for grazing land last year?
_____% owner GR2B _____% renter

GR3 (If GR1> 0) How many of those acres are leased for Cash?

GR3A (If GR3> 0) What is your tenants' typical Cash payment to you per acre for this land (peryear)?

GR3A2 Is that before or after expenses?
1=Before 8=DK
2=After 9=Refused
GR3A1 And what was the per acre cost to you for expenses related to this land last year?

OTHER AGRICULTURAL LEASED LAND

OALL1 How many total acres of OTHER land do you lease to farm or ranch operators?

OALLI_SPEC. What was the specific use for the other agricultural land?

OALL2 (If OALL1> 0) How many of those acres are leased for crop share?
OALL3 (If OALL1> 0)Cash?

OALL2A (If OALL1> 0) What was the typical crop-share for other land last year?
_____% owner OOALL2B _____% renter

OALL3A (IF OALL3> 0) What is your tenants' typical Cash payment to you per acre for this land?
OALL3A1 And what was the per acre cost to you for expenses related to this land last year?

CS (If DC2 OR IC2 > 0) In your crop-share lease do you typically pay expenses for?
CS1. Seed? (Y/N)
CS2 Fertilizer? (Y/N)
CS3 Pesticides? (Y/N)
CS4 Custom harvesting? (Y/N)
CS5 Federal crop insurance? (Y/N)
CS6.E Hail insurance? (Y/N)
CS7 Building or fence maintenance? (Y/N)

CS8 Irrigation costs? (Y/N)
CS9 Other? (Y/N)
CS9_SPEC (TYPE IN EXPLANATION OF OTHER)

CC (If DC3 OR IC3 > 0) In your cash lease do you typically pay expenses for?
CC1 Seed? (Y/N)
CC2 Fertilizer? (Y/N)
CC3 Pesticides? (Y/N)
CC4 Custom harvesting? (Y/N)
CC5 Federal crop insurance? (Y/N)
CC6. Hail insurance? (Y/N)
CC7 Building or fence maintenance? (Y/N)
CC8 Irrigation costs? (Y/N)
CC9 Other? (Y/N)
CC9_SPEC (TYPE IN EXPLANATION OF OTHER)

GS (If GR2> 0) In your grazing share lease do you typically pay expenses for?
GS1 Breeding stock? (Y/N)
GS2 Purchased feed (grain, hay, etc)? (Y/N)
GS3 Veterinary supplies? (Y/N)
GS4 Veterinary services? (Y/N)
GS5 Livestock insurance? (Y/N)
GS6 Livestock water? (Y/N)
GS7 Buildings and fence maintenance? (Y/N)
GS8 Other? (Y/N)
GS8_SPEC (TYPE IN EXPLANATION OF OTHER)

GC (If GR3> 0) In your cash grazing lease do you typically pay expenses for?
GC1 Breeding stock? (Y/N)
GC2. Purchased feed (grain, hay, etc)? (Y/N)
GC3 Veterinary supplies? (Y/N)
GC4 Veterinary services? (Y/N)
GC5 Livestock insurance? (Y/N)
GC6 Livestock water? (Y/N)
GC7 Buildings and fence maintenance? (Y/N)
GC8 Other? (Y/N)
GC8_SPEC (TYPE IN EXPLANATION OF OTHER)

I would now like to visit with you in more detail about one type of lease on one parcel of land (field).

A.6 How many different tenants do you have?
_____ tenants
IF 1=GO TO A.7
IF >1= GOT TO A.6.b

A.6.A Think now about the tenant who rents the parcel that generates the most revenue or compensation. How many acres do you lease to this tenant under any crop-share or cash rent or other type of arrangement?
_____ acres
GO TO A7

A.7 IF MORE THAN ONE TYPE LAND, ASK: And what type of land does this tenant primarily rent, is it irrigated crop land, dry crop land, or grazing? IF ONE TYPE LAND, VERIFY AND ENTER TYPE AT CHECKPOINT HERE FOR BRANCHING TO OCCUR
1=Dry Crop
2=Irrigated Crop
3=Grazing

A.8 And is that parcel that generates the most revenue or compensation PRIMARILY rented for cash, or crop share, or something else?
1=Cash
2=Crop share
3= Something else A8SPEC_____

SPLIT:
IF A7=1, A8=2 GO TO B3
IF A7=2, A8=2 GO TO C3
IF A7=3, A8=2 GO TO D3
IF A7=1, A8=1OR3 GO TO E3
IFA7=2, A8=1OR3 GO TO F3
IF A7=3, A8=1OR3 GO TO G3

Section B – CROP-SHARE / DRY CROP

Q3 Thinking about the tenant renting the dry crop parcel on crop share that generates the most revenue, in which county or counties is this property located?
_____ county

C4 Thinking about the dry crop land field rented to this tenant, what crop was grown on this field in 2013?
_____ crop

Q5 How many acres are in this field?
_____ acres

C6 What was the yield per acre for the MAIN crop grown on this dry crop land in 2013?
C6. _____ bushels per acre C6a. _____ Crop type

C7 What type of crop rotation is typically used on this dry crop land field?
1=continuous crop,
2=Crop-fallow, where one-half of the land is fallowed each year
Other, please explain[C7A]_____

Q8 For this parcel in 2013, what was the Gross value (before expenses) of your landlord's share of the crop production per acre? (subtract any lease payment from renter to you specifically for houses, buildings, or improvements)?
$_____(Q8) unit measure_____(Q8_UNITS)

CS9.a We are interested in how you are involved in your crop-share arrangement. What percent of the crop yield do you receive? _____ %

CS9.b What percent of the government farm program payments do you receive? _____ %

CS11 What percent of [insert item] did you pay for this particular tenant?

CS11.a Seed	_____ %
CS11.b Fertilizer	_____ %
CS11.c Pesticides	_____ %
CS11.d Custom harvesting	_____ %
CS11.e Federal crop insurance (multi-peril)	_____ %
CS11.f. Hail insurance	_____ %
CS11.g Building or fence maintenance	_____ %
CS11.I Other _____	_____ %

Q12 How many years has this tenant been renting this land?
_____ years

Q13 Are you related to this tenant (either by blood or marriage)?
1=Yes
0=No

Q14 Is your rental agreement written or verbal?

1=WRITTEN
2=VERBAL
3=OTHER [Q14A]_____

Q15 if you decided to sell this land today, what is the market value in price per acre?
Price per acre_____

AGE. Just to verify, how old were you on your last birthday?
_____ years old

END. Thank you for your time in answering this survey. Your participation makes a substantial contribution to Montana State University's program of research in support of Montana Agriculture.

Section C – CROP-SHARE / IRRIGATED CROP

Q3 Thinking about the tenant renting the Irrigated crop land acres from you on crop share that generates the most revenue, in which county or counties is this property located?

C.4 Thinking about the irrigated crop land field rented to this tenant, what crop was grown on this land in 2013?
_____ crop

Q.5 How many acres are in this field?
_____ acres

C.6 What was the yield per acre for the MAIN crop grown on this land in 2013?
C6. _____ bushels per acre C6a. _____ Crop type

C.7 What type of crop rotation is used on this irrigated land?
1=continuous crop,
2=Crop-fallow, where one-half of the land is fallowed each year
Other, please explain [C.7.a] _____

Q8 For this parcel in 2013, what was the Gross value (before expenses) of your landlord's share of the crop production per acre? (subtract any lease payment from renter to you specifically for houses, buildings, or improvements)?
Q8. $_____ Q8_units. unit measure_____

CS9.a We are interested in how you are involved in your crop-share arrangement. What percent of the crop yield do you receive? _____ %

CS9.b What percent of the government farm program payments do you receive? _____ %

CS11 What percent of [insert item] did you pay for this particular tenant?

CS11a Seed	_____ %
CS11b Fertilizer	_____ %
CS11c Pesticides	_____ %
CS11d Custom harvesting	_____ %
CS11e Federal crop insurance (multi-peril)	_____ %
CS11f Hail insurance	_____ %
CS11G Building or fence maintenance	_____ %
CS11H Irrigation	_____ %
CS11i Other _____	_____ %

Q12 How many years has this tenant been renting this land?
_____ years

Q13 Are you related to this tenant (either by blood or marriage)?
1=Yes
0=No

Q14 Is your rental agreement written or verbal?
1=WRITTEN
2=VERBAL
3=OTHER [Q14A]_____

Q15 if you decided to sell this land today, what is the market value in price per acre?
Price per acre_____

AGE. Just to verify, how old were you on your last birthday?
_____ years old

END. Thank you for your time in answering this survey. Your participation makes a substantial contribution to Montana State University's program of research in support of Montana Agriculture.

Section D – SHARE LEASE / GRAZING

Q3 Thinking about the tenant renting the Grazing land acres from you on crop share that generates the most revenue, in which county or counties is this property located?

G4 How many months of grazing were covered under this share arrangement?
_____ months

Q5 How many acres are in this field?
_____ acres

G6 How many animal units were on this grazing land for the number of months of grazing reported in the previous question (D.5)?
_____ animal units

Q8 For this parcel in 2013, what was the Gross value (before expenses) of your landlord's share of the crop production per AUM? (AUM is Animal Unit Month) (subtract any lease payment from renter to you specifically for houses, buildings, or improvements)
Q8. $_____ Q8_unit. unit measure_____

GS9 We are interested in how you are involved in your share arrangement. What percent Livestock produced (e.g., calves or lambs) do you receive? _____ %

GS11 What percent of [insert item] do you receive or pay for this particular tenant?

GS11.a Breeding stock	_____ %
GS11.b Feed (grain, hay, silage, mixed feeds, etc.)	_____ %
GS11.c Veterinary supplies	_____ %
GS11.d Veterinary services	_____ %
GS11.e Livestock insurance	_____ %
GS11.f Livestock water	_____ %
GS11.g Building and fence maintenance	_____ %
GS11.i Other _____	_____ %

Q12 How many years has this tenant been renting this land?
_____ years

Q13 Are you related to this tenant (either by blood or marriage)?
1=Yes
0=No

Q14 Is your rental agreement written or verbal?
1=WRITTEN
2=VERBAL
3=OTHER [Q14A]_____

Q15 if you decided to sell this land today, what is the market value in price per acre?
Price per acre_____

AGE. Just to verify, how old were you on your last birthday?
_____ years old

END. Thank you for your time in answering this survey. Your participation makes a substantial contribution to Montana State University's program of research in support of Montana Agriculture.

Section E – CASH LEASE / DRY CROP

Q3 Thinking about the tenant renting the dry crop land acres from you on a cash rental or lease arrangement that generates the most revenue, in which county or counties is this property located?
_____ county (counties)

C4 Thinking about the dry crop land field rented to this tenant with a cash lease, what crop was grown on this land in 2013?
_____ crop

Q5 How many acres are in this field?
_____ acres

C6 What was the yield per acre for the MAIN crop grown on this land in 2013?
C6. _____ bushels per acre C6a. _____ Crop type

C7 What type of crop rotation is used on this dry crop land?
1=continuous crop,
2=Crop-fallow, where one-half of the land is fallowed each year
Other, please explain[C7.a]_____

Q8 For this parcel in 2013, what was the renter's payment to you per acre? (subtract any lease payment from renter to you specifically for houses, buildings, or improvements) ?
Q8. $_____ Q8_unit. unit measure_____

Q8a. Did you include any deductions in that number you just gave me, such as for fencing, seed, taxes, or any other expenses?
1=Yes GO TO Q8B
0=No GO TO CL9

Q8b. How much did you deduct? What was dollar amount of that deduction?

CL9 Is the cash lease a fixed amount, or is it flexible, based on the yield or price?
1=Fixed amount
2=Flexible, based on the yield
3=Flexible, based on crop price
4=Flexible, based on both yield and price
5=Something else?[CL9A]_____

CL10. We are interested in how you are involved in your cash arrangement. Did you have any farm operating expenses deducted from your cash payment in 2013?
1=Yes
0=No

CL11 How much did you pay per acre for [insert item] for this particular tenant:

CL11.a	Seed	_____ $/acre
CL11.b	Fertilizer	_____ $/acre
CL11.c	Pesticides	_____ $/acre
CL11.d	Custom harvesting paid	_____ $/acre
CL11.e	Federal crop insurance	_____ $/acre
CL11.f.	Hail insurance	_____ $/acre
CL11.g	Building or fence maintenance	_____ $/acre
CL11.i	Other _____	_____ $/acre

Q12 How many years has this tenant been renting this land?
_____ years

Q13 Are you related to this tenant (either by blood or marriage)?
1=Yes
0=No

Q14 Is your rental agreement written or verbal?
1=WRITTEN
2=VERBAL
3=OTHER [Q14.a]_____

Q15 if you decided to sell this land today, what is the market value in price per acre?
Price per acre_____

AGE. Just to verify, how old were you on your last birthday?
_____ years old

END. Thank you for your time in answering this survey. Your participation makes a substantial contribution to Montana State University's program of research in support of Montana Agriculture.

Section F – CASH LEASE / IRRIGATED CROP

Q3 Thinking about the tenant renting the Irrigated crop land acres from you on a cash rental or lease arrangement that generates the most revenue, in which county or counties is this property located?

C4 Thinking about the irrigated crop land field rented to this tenant with a cash lease, what crop was grown on this land in 2013?

_____ crop

Q5 How many acres are in this field?

_____ acres

C6 What was the yield per acre for the MAIN crop grown on this land in 2013?

C6. _____ bushels per acre C6a. _____ Crop type

C7 What type of crop rotation is used on this dry crop land?

1=continuous crop,
2=Crop-fallow, where one-half of the land is fallowed each year
Other, please explain[C7.a]_____

Q8 For this parcel in 2013, what was the renter's payment to you per acre? (subtract any lease payment from renter to you specifically for houses, buildings, or improvements)

Q8. $_____ Q8_unit. unit measure_____

Q8a. Did you include any deductions in that number you just gave me, such as for fencing, seed, taxes, or any other expenses?

1=Yes GO TO Q8B
0=No GO TO CL9

Q8b. How much did you deduct? What was dollar amount of that deduction?

CL9 Is the cash lease a fixed amount, or is it flexible, based on the yield or price?

1=Fixed amount
2=Flexible, based on the yield
3=Flexible, based on crop price
4=Flexible, based on both yield and price
5=Something Else? [CL9A]_____

CL10 We are interested in how you are involved in your cash arrangement. Did you have any farm operating expenses deducted from your cash payment in 2013?

1=Yes
0=No

CL11 How much did you pay per acre for [insert item] for this particular tenant?

CL1.a Seed	_____ $/acre
CL11.b. Fertilizer	_____ $/acre
CL11.c Pesticides	_____ $/acre
CL11.d Custom harvesting paid	_____ $/acre
CL11.e Federal crop insurance	_____ $/acre
CL11.f Hail insurance	_____ $/acre
CL11.G Building or fence maintenance	_____ $/acre
CL11.H Irrigation water	_____ $/acre
CL11.i Other _____	_____ $/acre

Q12 How many years has this tenant been renting this land?
_____ years

Q13 Are you related to this tenant (either by blood or marriage)?
1=Yes
2=No

Q14 Is your rental agreement written or verbal?
1=WRITTEN
2=VERBAL
3=OTHER [Q14A]_____

Q15 if you decided to sell this land today, what is the market value in price per acre?
Price per acre_____

AGE. Just to verify, how old were you on your last birthday?
_____ years old

END. Thank you for your time in answering this survey. Your participation makes a substantial contribution to Montana State University's program of research in support of Montana Agriculture.

Section G – CASH LEASE / GRAZING

Q3 Thinking about the tenant renting the grazing land acres from you on a cash lease arrangement that generates the most revenue, in which county or counties is this property located?

_____ county (counties)

G4 Thinking about the pasture leased out, how many months of grazing were covered under this cash lease arrangement?

_____ months

Q5 How many acres are in this pasture?

_____ acres

G6 How many animal units were on this grazing land for the number of months of grazing reported in the previous question?

_____ animal units

Q8 For this parcel in 2013, what was the renter's payment to you per AUM? (subtract any lease payment from renter to you specifically for houses, buildings, or improvements) (AUM is Animal Unit Month)

Q8. $_____ Q8_unit. unit measure_____

Q8a. Did you include any deductions in that number you just gave me, such as for fencing, seed, taxes, or any other expenses?

1=Yes GO TO Q8B
0=No GO TO CL9

Q8b. How much did you deduct? What was dollar amount of that deduction?

GL9 Is the cash lease a fixed amount, or is it flexible, based on the yield or price?

1=Fixed amount
2=Flexible, based on the weight gain
3=Flexible, based on livestock prices
4=Flexible, based on both weight gain and livestock prices
5=Something Else? [GL9A]_____

GL10 We are interested in how you are involved in your cash arrangement. Did you have any farm operating expenses deducted from your cash payment in 2013?

1=Yes
0=No

GL11 How much did you pay on an AUM basis for [insert item]? IF NOT GIVEN IN AUM BASIS, TYPE IN UNIT MEASURE GIVEN ALONG WITH $ AMOUNT.

GL11a Breeding stock	_____ $/AUM
GL11b Feed (grain, hay, silage, mixed feeds, etc.)	_____ $/AUM
GL11c Veterinary/medical supplies	_____ $/AUM
GL11d Veterinary services	_____ $/AUM
GL11e Livestock Insurance	_____ $/AUM

GL11f. Livestock water _____ $/AUM
GL11g Building and fence maintenance _____ $/AUM
GL11h Other _____ _____ $/AUM

Q12 How many years has this tenant been renting this land?
_____ years

Q13 Are you related to this tenant (either by blood or marriage)?
1=Yes
0=No

Q15 if you decided to sell this land today, what is the market value in price per acre?
Price per acre_____

Q14 Is your rental agreement written or verbal?
1=WRITTEN
2=VERBAL
3=OTHER [G13A]_____

AGE. Only persons 18 years and older are eligible for this survey, so to verify, how old were you on your last birthday?
_____ years old

END. Thank you for your time in answering this survey. Your participation makes a substantial contribution to Montana State University's program of research in support of Montana Agriculture.