LCLUC Later Stage Analyses

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2025-06-26

This relies on the combined dfs from 1_data_import. There is not currently any commentary in this document because I'm still running through analyses and chunking them in here as I go.

I. LABOR

1. Who does the daily moves for herding?

Column: (labor_whoMovesDaily) (broken up by soum)

labor_whoMovesDaily	Buren	Bayan	Bayantal	Delgerkhaan	Sumber	Deren	Erdenedalai	Bayantsagaan	Total
husband	23	21	19	19	18	15	15	13	143
child, unspecified	5	11	10	1	15	5	6	2	55
wife	13	12	9	10	12	9	10	8	83
son	8	7	1	5	2	7	11	5	46
unspecified	5	0	2	4	4	8	8	9	40
daughter	2	5	1	1	0	2	3	1	15
herder	0	4	0	0	0	0	0	0	4
grandchild, unspecified	2	0	0	0	0	4	0	2	8
neighbor	1	0	0	0	2	4	1	0	8
daughter-in-law	3	0	1	0	1	2	1	3	11
grandparent	0	2	0	1	0	0	0	0	3
assistant herder	1	1	0	0	0	0	0	2	4
friend	0	0	1	0	0	0	0	0	1
sibling, unspecified	0	0	1	0	0	0	0	0	1
grandmother	0	0	0	0	0	0	0	1	1
grandfather	1	0	0	0	0	0	0	0	1
brother	0	0	0	1	0	1	1	0	3
hired help	0	0	0	1	0	0	0	0	1
son-in-law	0	0	0	0	0	1	0	0	1
brother-in-law	0	0	0	0	1	0	1	0	2
father-in-law	0	0	0	0	0	0	1	0	1

2. Who undertakes herding migrations?

Column: labor_whoMigrates

labor_whoMigrates	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
husband	18	18	8	19	17	17	18	19	134
wife	17	14	8	19	13	14	15	18	118

labor_whoMigrates	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
son(s)	8	4	7	8	3	7	7	1	45
daughter(s)	2	1	1	1	0	2	2	1	10
child(ren), unspecified	5	2	1	5	3	5	3	8	32
brother(s)	0	1	0	0	1	0	1	0	3
sibling(s), unspecified	2	3	0	0	1	1	1	0	8
father	1	0	0	0	0	0	0	0	1
mother	3	0	1	0	0	1	0	0	5
grandparent(s), unspecified	1	0	1	1	1	0	0	0	4
grandchild(ren), unspecified	0	0	1	1	0	2	0	0	4
household head	2	0	0	0	0	0	1	1	4
extended family/in-laws	1	0	2	7	1	3	4	4	22
friend/neighbor(s)	2	2	1	0	1	1	1	0	8
person(s), unspecified	1	1	8	5	4	1	4	0	24
hired help	1	0	0	0	1	1	0	0	3
just myself	0	0	0	0	0	0	1	1	2
other	1	1	0	0	0	1	2	0	5

3. How many people undertake migrations?

Column: labor_numMigrates

labor_numMigrates	Bayantsagaan	Buren	Delgerkhaan	Sumber	Bayan	Deren	Erdenedalai	Bayantal	Total
2	12	10	10	10	4	9	8	7	70
4	1	2	6	1	9	4	3	2	28
3	3	8	2	3	4	4	7	2	33
6	2	1	0	0	3	1	2	4	13
5	1	3	2	4	2	3	1	1	17
1	3	1	1	0	0	2	2	1	10
8	0	1	0	1	0	0	0	2	4
7	0	0	0	2	0	1	2	0	5
0	0	0	0	1	0	0	0	1	2
11	1	0	0	0	0	0	0	0	1
9	0	1	0	0	0	0	1	0	2
10	0	0	1	0	0	0	1	0	2

4. Does migration impact labor and/or herding practices?

A. Impact on labor: Column: labor_migImpactLabor

labor_migImpactLabor	Buren	Deren	Erdenedalai	Bayan	Sumber	Bayantal	Bayantsagaan	Delgerkhaan	Total
Yes	15	8	14	8	11	10	10	6	82
No	7	15	12	13	9	9	9	10	84
NA	5	1	1	1	2	1	4	6	21

B. Impact on herding practices: Column: labor_migImpactPract

labor_migImpactPra	Deren	Buren	Erdenedalai	Bayan	Sumber	Bayantsagaan	Bayantal	Delgerkhaan	Total
No	16	8	14	13	13	11	9	10	94
Yes	7	14	12	8	7	8	10	6	72
NA	1	5	1	1	2	4	1	6	21

5. Do you hire labor?

Column: labor_hire

labor_hire	Buren	Erdenedalai	Deren	Sumber	Bayantal	Bayantsagaan	Bayan	Delgerkhaan	Total
No	22	22	20	20	18	17	16	14	149
Yes	5	5	3	2	2	6	6	8	37
NA	0	0	1	0	0	0	0	0	1

6. If you do hire labor, for what?

A. Moving the herds daily: Column: labor_hire_DailyMove

labor_hire_dailyMove	Buren	Erdenedalai	Deren	Sumber	Bayantal	Bayantsagaan	Bayan	Delgerkhaan	Total
NA	22	22	21	20	18	18	16	14	151
Yes	3	4	2	0	0	3	5	7	24
No	2	1	1	2	2	2	1	1	12

B. Moving the herds seasonally: Column: labor_hire_bigMove

labor_hire_bigMove	Buren	Erdenedalai	Deren	Sumber	Bayantal	Bayantsagaan	Bayan	Delgerkhaan	Total
NA	22	22	21	20	18	18	16	14	151
Yes	2	5	3	1	2	5	5	7	30
No	3	0	0	1	0	0	1	1	6

C. Moving the herds for Otor: Column: labor_hire_forOtor

labor_hire_forOtor	Buren	Erdenedalai	Deren	Sumber	Bayantal	Bayantsagaan	Bayan	Delgerkhaan	Total
NA	22	22	21	20	18	18	16	14	151
No	3	2	1	1	1	2	5	3	18
Yes	2	3	2	1	1	3	1	5	18

D. Hiring for other tasks: Column: labor_hire_Other

labor_hire_Other	Buren	Erdenedalai	Sumber	Bayantsagaan	Delgerkhaan	Deren	Bayantal	Bayan	Total
NA	22	20	18	17	15	15	14	11	132
shearing livestock	3	5	2	5	3	6	5	7	36
day laboring	1	0	0	0	1	3	0	2	7
herding	0	0	0	2	1	0	1	1	5

labor_hire_Other	Buren	Erdenedalai	Sumber	Bayantsagaan	Delgerkhaan	Deren	Bayantal	Bayan	Total
household chores	1	0	0	0	2	0	0	0	3
migration	1	2	0	1	1	0	0	0	5
livestock care	0	1	2	0	0	1	0	1	5

II. TENURE

1. Land tenure arrangements:

A. Cross-tab: Not the best looking, I'll work on making it more legible. Is easier to look at if it's viewed in the markdown or in the script.

```
##                                                                                 sprPasContract No Yes
## wintCamp wintContract wintPas wintPasContract sameCamp sprCamp sprCampContract
## No       No           No      No              No       No      No                              5   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             0   0
##                               Yes             No       No      No                              1   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             0   0
##                       Yes     No              No       No      No                              8   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              4   1
##                                                                 Yes                             0   0
##                               Yes             No       No      No                              0   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             0   0
##          Yes          No      No              No       No      No                              0   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             0   0
##                               Yes             No       No      No                              0   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             0   0
##                       Yes     No              No       No      No                              0   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             2   0
##                               Yes             No       No      No                              0   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             0   0
## Yes      No           No      No              No       No      No                              0   0
##                                                                 Yes                             0   0
##                                                           Yes   No                              0   0
##                                                                 Yes                             0   0
```

```
##                               Yes             No       No      No                              0   0
##                                                                Yes                             0   0
##                                                        Yes     No                              0   0
##                                                                Yes                             0   0
##                       Yes     No              No       No      No                              0   0
##                                                                Yes                             0   0
##                                                        Yes     No                              6   1
##                                                                Yes                             1   0
##                               Yes             No       No      No                              1   0
##                                                                Yes                             0   0
##                                                        Yes     No                              0   0
##                                                                Yes                             0   0
##          Yes          No      No              No       No      No                              1   0
##                                                                Yes                             0   0
##                                                        Yes     No                              1   0
##                                                                Yes                             1   0
##                               Yes             No       No      No                              0   0
##                                                                Yes                             0   0
##                                                        Yes     No                              0   0
##                                                                Yes                             0   0
##                       Yes     No              No       No      No                              7   0
##                                                                Yes                             0   0
##                                                        Yes     No                              8   2
##                                                                Yes                            45   2
##                               Yes             No       No      No                              1   0
##                                                                Yes                             1   0
##                                                        Yes     No                              1   0
##                                                                Yes                             2   3
```

B. Contingency table: This one looks better and is depicting the same information.

wintCamp	wintContract	wintPas	wintPasContract	sameCamp	sprCamp	sprCampContract	sprPasContract	n
Yes	Yes	Yes	No	Yes	No	No	No	50
Yes	Yes	Yes	No	No	Yes	Yes	No	45
No	No	Yes	No	Yes	No	No	No	10
Yes	No	Yes	No	Yes	No	No	No	10
Yes	Yes	Yes	No	No	Yes	No	No	9
No	No	Yes	No	No	No	No	No	8
Yes	Yes	Yes	No	No	No	No	No	7
Yes	No	Yes	No	No	Yes	No	No	6
No	No	No	No	No	No	No	No	5
No	No	Yes	No	No	Yes	No	No	4
No	Yes	Yes	No	No	Yes	Yes	No	3
Yes	Yes	No	No	Yes	No	No	No	3
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	3
No	No	No	Yes	No	No	No	No	2
Yes	No	Yes	Yes	Yes	No	No	No	2
Yes	Yes	Yes	No	No	Yes	No	Yes	2
Yes	Yes	Yes	No	No	Yes	Yes	Yes	2
Yes	Yes	Yes	Yes	No	Yes	Yes	No	2
No	No	No	No	Yes	No	No	No	1
No	No	Yes	No	No	Yes	No	Yes	1
No	No	Yes	No	No	Yes	Yes	No	1

wintCamp	wintContract	wintPas	wintPasContract	sameCamp	sprCamp	sprCampContract	sprPasContract	n
Yes	No	No	No	Yes	No	No	No	1
Yes	No	Yes	No	No	Yes	No	Yes	1
Yes	No	Yes	No	No	Yes	Yes	No	1
Yes	No	Yes	Yes	No	No	No	No	1
Yes	Yes	No	No	No	No	No	No	1
Yes	Yes	No	No	No	Yes	No	No	1
Yes	Yes	No	No	No	Yes	Yes	No	1
Yes	Yes	Yes	Yes	No	No	No	No	1
Yes	Yes	Yes	Yes	No	No	Yes	No	1
Yes	Yes	Yes	Yes	No	Yes	No	No	1
Yes	Yes	Yes	Yes	Yes	No	No	No	1

2. Contingency Tables on tenure, by Soum:

A. Winter Camp (y/n):

	No	Yes
Bayan	1	21
Bayantal	5	15
Bayantsagaan	1	22
Buren	6	21
Delgerkhaan	3	19
Deren	5	19
Erdenedalai	8	19
Sumber	6	16

B. Winter Camp Contract (y/n):

	No	Yes
Bayan	3	19
Bayantal	9	11
Bayantsagaan	1	22
Buren	8	19
Delgerkhaan	7	15
Deren	9	15
Erdenedalai	9	18
Sumber	8	14

C. Winter Pasture (y/n):

	No	Yes
Bayan	2	20
Bayantal	1	19
Bayantsagaan	0	23
Buren	4	23
Delgerkhaan	2	20
Deren	2	22
Erdenedalai	2	25

	No	Yes
Sumber	2	20

D. Winter Paster Contract (y/n):

	No	Yes
Bayan	21	1
Bayantal	19	1
Bayantsagaan	23	0
Buren	24	3
Delgerkhaan	19	3
Deren	22	2
Erdenedalai	25	2
Sumber	20	2

E. Is your winter camp your spring camp (y/n)?

	No	Yes
Bayan	14	8
Bayantal	12	8
Bayantsagaan	16	7
Buren	22	5
Delgerkhaan	13	9
Deren	13	11
Erdenedalai	10	17
Sumber	9	13

F. Spring Camp? (y/n):

	No	Yes
Bayan	8	14
Bayantal	10	10
Bayantsagaan	9	14
Buren	12	15
Delgerkhaan	15	7
Deren	12	12
Erdenedalai	22	5
Sumber	16	6

G. Spring Camp Contract (y/n):

	No	Yes
Bayan	9	13
Bayantal	14	6
Bayantsagaan	11	12
Buren	20	7
Delgerkhaan	16	6

	No	Yes
Deren	17	7
Erdenedalai	23	4
Sumber	18	4

H. Spring Pasture Contract (y/n):

	No	Yes
Bayan	21	1
Bayantal	18	2
Bayantsagaan	22	1
Buren	24	3
Delgerkhaan	22	0
Deren	23	1
Erdenedalai	26	1
Sumber	22	0

III. ALTERNATIVE LIVELIHOODS

1. Is someone in the household doing non-herding work?

Column: altLife_nonHerdWork

	No	Yes
Bayan	13	9
Bayantal	13	7
Bayantsagaan	16	7
Buren	21	6
Delgerkhaan	17	5
Deren	16	8
Erdenedalai	14	13
Sumber	15	6

A. If so, who is doing the non-herding work? Column: labor_hire

altLife_whoNoHerdwork	Erdenedalai	Deren	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Sumber	Total
not specified	8	7	5	5	5	3	2	1	36
daughter	0	0	1	1	1	3	1	1	8
wife	1	2	1	1	0	0	2	1	8
household head	1	0	1	0	1	0	0	0	3
son	1	0	1	1	1	0	0	1	5
father	1	0	0	0	0	0	0	0	1
husband	1	0	0	0	0	0	0	1	2
extended family members	0	0	0	0	0	0	0	1	1
TOTAL	13	9	9	8	8	6	5	6	64

B. Is so, what is the non-herding work? Column: labor_hire

altLife_noHerdWhatWork	Buren	Deren	Erdenedalai	Bayantal	Bayantsagaan	Sumber	Bayan	Delgerkhaan	Total
employment unspecified	5	1	2	0	1	0	0	0	9
commerce-related and restaurants	1	4	4	3	2	0	2	0	16
mining and construction	0	0	0	2	3	2	2	0	9
education	0	0	1	1	0	3	1	2	8
government employment	1	2	1	1	2	1	2	2	12
agriculture and pastoralist-adjacent	0	1	2	0	1	1	0	0	5
government leadership	0	0	2	0	0	0	0	0	2
arts, crafts, and handwork	0	0	1	1	0	0	1	1	4
medical/veterinary	0	1	0	1	0	0	1	0	3
mischellaneous	0	0	1	0	1	1	0	0	3
TOTAL	7	9	14	9	10	8	9	5	71

2. Additional sources of income for the household? Broken up by Soum

Column: altLife_otherInc

altLife_otherInc	Erdenedalai	Deren	Bayan	Buren	Delgerkhaan	Bayantal	Bayantsagaan	Sumber	Total
government allowances	14	11	12	12	12	11	10	9	91
pension	13	13	8	9	7	4	10	10	74
salary	8	7	11	6	5	7	7	4	55
other	3	1	1	4	0	2	1	1	13
saving in bank	3	2	2	3	1	0	0	1	12
crafts	3	1	0	1	1	1	0	0	7
remits	0	1	0	2	1	2	0	1	7
pension saving in bank	0	0	0	0	0	0	1	0	1
hourly wage	1	0	0	0	0	0	0	1	2
herding lsk from other household	0	0	0	0	0	0	0	1	1
TOTAL	45	36	34	37	27	27	29	28	263

3. Loans:

A. Number of loans taken out per year? Column: altLife_loansPerYr

	0	0.5	1	2	3	Sum
Bayan	4	1	16	0	0	21
Bayantal	6	0	11	1	0	18
Bayantsagaan	2	0	17	4	0	23
Buren	3	1	19	3	1	27
Delgerkhaan	1	0	17	4	0	22
Deren	2	0	12	8	1	23
Erdenedalai	1	1	20	4	0	26
Sumber	4	0	16	2	0	22
Sum	23	3	128	26	2	182

B. Loan Sizes (min, max, mean, median, range) Column: altLife_loansMin/altLife_loansMax

Soum	min_minLn	max_minLn	mean_minLn	median_minLn	min_maxLn	max_maxLn	mean_maxLn	median_maxLn
Bayan	3.0	30	9.882353	10.0	3.0	30	15.294118	14.0
Bayantal	2.0	25	10.000000	9.0	10.0	30	19.250000	20.0
Bayantsagaan	0.3	10	4.752381	5.0	1.0	30	10.466667	6.0
Buren	1.0	20	5.104167	4.0	3.0	20	9.187500	8.5
Delgerkhaan	1.0	40	8.619048	5.0	2.0	50	12.047619	7.0
Deren	0.3	50	6.823810	5.0	0.5	50	10.119048	5.0
Erdenedalai	0.5	20	4.286000	3.0	2.0	50	8.240000	5.0
Sumber	1.0	30	6.222222	3.5	1.0	30	8.472222	6.5

C. When do you typically need loans? Column: altLife_loansWhenNeed

altLife_loansWhenNeed	Buren	Delgerkhaan	Bayan	Bayantsagaan	Deren	Bayantal	Sumber	Erdenedalai	Total
winter	18	16	14	14	14	13	13	10	112
spring	9	4	4	3	2	3	0	6	31
autumn	7	8	6	4	8	7	8	8	56
lunar new year	6	3	5	5	6	2	5	2	34
summer	0	2	1	0	2	1	1	3	10
year round	0	0	0	0	1	1	1	2	5
depends on needs	0	0	0	1	0	1	0	1	3
never	1	1	0	1	1	1	0	0	5
during medical treatment	0	1	0	0	0	0	0	0	1
during migration	0	0	0	0	0	0	0	1	1
TOTAL	41	35	30	28	34	29	28	33	258

IV. HERD MANAGEMENT

1. Distance for daily herding, generally:

Column: altLife_nonHerdWork

A. All together:

herdMgmt_dailyDist	n
5	33
4	21
6	15
10	14
3	13
20	9
2	7
8	4
15	4
7	3
12	3

herdMgmt_dailyDist	n
1	2
35	2
0	1
11	1
13	1

B. Broken up by Soum:

herdMgmt_dailyDist	Erdenedalai	Bayantsagaan	Bayan	Buren	Deren	Delgerkhaan	Sumber	Bayantal	Total
5	8	7	5	5	2	3	1	2	38
3	3	4	0	0	4	1	1	0	16
6	2	0	2	2	4	3	1	1	21
4	4	3	2	2	3	3	3	1	25
10	3	1	3	3	2	1	0	1	24
2	2	0	0	1	1	0	3	0	9
20	1	0	0	2	2	2	1	1	29
15	1	0	1	0	0	0	1	1	19
35	0	0	1	0	0	1	0	0	37
1	0	0	0	1	0	0	0	1	3
8	0	0	0	1	0	1	1	1	12
7	0	1	0	0	0	1	1	0	10
11	0	1	0	0	0	0	0	0	12
12	1	1	0	0	0	1	0	0	15
13	0	1	0	0	0	0	0	0	14
0	1	0	0	0	0	0	0	0	1

2. Distances for daily herding, summer & winter:

Column: herdMgmt_sumDailyDist/herdMgmt_wintDailyDist

A. Basic distances, summer:

herdMgmt_sumDailyDist	n
10	36
6	32
5	31
4	14
8	12
7	11
20	11
3	10
2	9
15	5
1	4
0	2
11	2
12	2
18	2
9	1

herdMgmt_sumDailyDist	n
25	1
30	1

B. Basic distances, winter:

herdMgmt_wintDailyDist	n
3	35
5	35
4	27
2	22
6	17
10	17
7	8
1	5
8	4
20	3
15	2
0	1
9	1
11	1
12	1
14	1
18	1
25	1
30	1
40	1
100	1
150	1

C. Basic distances, summer, by soum:

herdMgmt_sumDailyDist	Binder	Erdenedalai	Bayantal	Delgerkhaan	Bayantsagaan	Deren	Bayan	Sumber	Total
10	8	4	6	4	4	3	4	3	46
5	4	7	0	6	4	3	3	4	36
6	4	4	6	3	3	5	3	4	38
7	0	0	0	2	5	0	2	2	18
4	3	5	0	2	1	3	0	0	18
8	2	1	1	0	2	4	1	1	20
3	0	1	0	1	2	2	3	1	13
20	1	0	2	2	0	1	3	2	31
2	2	1	1	0	0	2	0	3	11
15	0	0	2	1	0	0	1	1	20
1	2	1	0	0	0	1	0	0	5
9	0	0	0	0	0	0	1	0	10
18	0	0	0	1	0	0	1	0	20
0	0	1	1	0	0	0	0	0	2
30	0	0	1	0	0	0	0	0	31
11	0	1	0	0	1	0	0	0	13
12	1	0	0	0	0	0	0	1	14

herdMgmt_sumDailyDist	Buren	Erdenedalai	Bayantal	Delgerkhaan	Bayantsagaan	Deren	Bayan	Sumber	Total
25	0	1	0	0	0	0	0	0	26

D. Basic distances, winter, by soum:

herdMgmt_wintDailyDist	Buren	Erdenedalai	Bayantsagaan	Buren	Bayan	Delgerkhaan	Sumber	Bayantal	Total
4	8	4	5	2	1	2	2	3	31
3	2	8	3	6	5	4	4	3	38
5	4	4	7	6	5	5	1	3	40
2	2	5	2	3	2	2	5	1	24
10	3	1	0	4	4	2	2	1	27
6	1	2	2	3	3	1	2	3	23
7	3	1	0	1	0	2	1	0	15
15	0	0	0	0	0	0	0	2	17
8	0	1	0	1	0	0	2	0	12
9	0	0	0	0	1	0	0	0	10
30	0	0	0	0	1	0	0	0	31
0	0	0	0	0	0	0	0	1	1
1	1	0	1	1	0	0	1	1	6
20	0	1	0	0	0	0	1	1	23
150	0	0	0	0	0	0	0	1	151
11	0	0	1	0	0	0	0	0	12
18	0	0	1	0	0	0	0	0	19
12	0	0	0	0	0	1	0	0	13
14	0	0	0	0	0	1	0	0	15
25	0	0	0	0	0	1	0	0	26
40	0	0	0	0	0	1	0	0	41
100	0	0	0	0	0	0	1	0	101

3. Do people travel greater distances for summer vs. winter?

Column: herdMgmt_sumDailyDist/herdMgmt_wintDailyDist

A. All together:

dist_comparison	n
Equal	34
greater dist in summer	130
greater dist in winter	22
NA	1

B. Broken up by Soum:

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
Equal	4	5	6	5	3	3	4	4	34
greater dist in summer	16	14	15	18	16	16	19	16	130
greater dist in winter	2	1	1	4	3	5	4	2	22

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
NA	0	0	1	0	0	0	0	0	1
TOTAL	22	20	23	27	22	24	27	22	187

4. Distance moved this year vs. last year:

Column: herdMgmt_timesMoved_thisYr/herdMgmt_timesMoved_lastYr

A. Times moved this year, broken up by Soum:

herdMgmt_timesMoved_thisYr	Deren	Sumber	Erdenedalai	Bayan	Bayantal	Buren	Delgerkhaan	Bayantsagaan	Total
3	11	2	5	5	7	7	7	5	52
2	5	10	9	3	8	5	7	6	55
4	4	2	2	8	1	6	3	4	34
0	0	2	6	2	2	0	0	2	14
5	0	1	1	1	0	5	2	1	16
1	3	4	3	2	1	0	1	1	16
6	1	1	1	1	0	3	1	3	17
10	0	0	0	0	1	1	0	0	12

B. Times moved last year, broken up by Soum:

herdMgmt_timesMoved_lastYr	Erdenedalai	Bayantsagaan	Buren	Delgerkhaan	Deren	Bayan	Sumber	Bayantal	Total
2	13	9	5	8	7	5	6	5	60
4	2	4	8	4	6	6	0	1	35
3	3	1	6	6	8	7	5	4	43
1	1	1	0	1	2	0	6	4	16
5	2	2	4	1	1	2	2	3	22
0	4	2	0	0	0	1	2	2	11
6	1	2	2	2	0	0	1	0	14
8	0	1	2	0	0	0	0	0	11
7	0	0	0	0	0	1	0	0	8
10	1	0	0	0	0	0	0	0	11

C. Times moved, this yr vs. last year, difference for everyone:

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
Equal	12	9	13	18	11	17	12	14	106
moved more last year	8	5	4	5	5	5	12	4	48
moved more this year	2	5	5	4	5	2	3	4	30
NA	0	1	1	0	1	0	0	0	3
TOTAL	22	20	23	27	22	24	27	22	187

D. One table showing the difference, coalesced together:

move_description	n
moved 1 times fewer this year than last year	32
moved 1 times more this year than last year	17
moved 2 times fewer this year than last year	11
moved 2 times more this year than last year	9
moved 3 times fewer this year than last year	3
moved 3 times more this year than last year	2
moved 4 times fewer this year than last year	1
moved 5 times fewer this year than last year	1
moved 5 times more this year than last year	1
moved 6 times more this year than last year	1
moved an equal number of times	106
NA	3

E. The differences in times moved, broken up by Soum:

1. Bayan

move_description	n
moved 1 times fewer this year than last year	7
moved 1 times more this year than last year	1
moved 2 times fewer this year than last year	1
moved 2 times more this year than last year	1
moved an equal number of times	12

2. Bayantal

move_description	n
moved 1 times fewer this year than last year	4
moved 1 times more this year than last year	3
moved 3 times fewer this year than last year	1
moved 3 times more this year than last year	1
moved 5 times more this year than last year	1
moved an equal number of times	9
NA	1

3. Bayansagaan

move_description	n
moved 1 times fewer this year than last year	2
moved 1 times more this year than last year	3
moved 2 times fewer this year than last year	1
moved 2 times more this year than last year	2
moved 4 times fewer this year than last year	1
moved an equal number of times	13
NA	1

4. Buren

move_description	n
moved 1 times fewer this year than last year	4
moved 1 times more this year than last year	2
moved 2 times fewer this year than last year	1
moved 2 times more this year than last year	2
moved an equal number of times	18

5. Delgerkhaan

move_description	n
moved 1 times fewer this year than last year	4
moved 1 times more this year than last year	4
moved 2 times more this year than last year	1
moved 3 times fewer this year than last year	1
moved an equal number of times	11
NA	1

6. Deren

move_description	n
moved 1 times fewer this year than last year	4
moved 2 times fewer this year than last year	1
moved 2 times more this year than last year	1
moved 3 times more this year than last year	1
moved an equal number of times	17

7. Erdenedalai

move_description	n
moved 1 times fewer this year than last year	4
moved 1 times more this year than last year	1
moved 2 times fewer this year than last year	6
moved 2 times more this year than last year	1
moved 3 times fewer this year than last year	1
moved 5 times fewer this year than last year	1
moved 6 times more this year than last year	1
moved an equal number of times	12

8. Sumber

move_description	n
moved 1 times fewer this year than last year	3
moved 1 times more this year than last year	3
moved 2 times fewer this year than last year	1
moved 2 times more this year than last year	1
moved an equal number of times	14

5. What is the average distance of moves, now vs. 10yrs ago?

Column: herdMgmt_avgDistMoves/herdMgmt_10yrs_avgMoveDist

A. Unsimplified:

move_description	n
moved an equal amount of distance	45
NA	15
moved 10 kilometers more 10yrs ago than last year	8
moved 20 kilometers more 10yrs ago than last year	4
moved 1 kilometers more 10yrs ago than last year	3
moved 15 kilometers more 10yrs ago than last year	3
moved 2 kilometers less 10yrs ago than last year	3
moved 25 kilometers more 10yrs ago than last year	3
moved 27 kilometers more 10yrs ago than last year	3
moved 3 kilometers more 10yrs ago than last year	3
moved 40 kilometers more 10yrs ago than last year	3
moved 5 kilometers less 10yrs ago than last year	3
moved 5 kilometers more 10yrs ago than last year	3
moved 50 kilometers more 10yrs ago than last year	3
moved 7 kilometers more 10yrs ago than last year	3
moved 10 kilometers less 10yrs ago than last year	2
moved 2 kilometers more 10yrs ago than last year	2
moved 20 kilometers less 10yrs ago than last year	2
moved 22 kilometers more 10yrs ago than last year	2
moved 25 kilometers less 10yrs ago than last year	2
moved 275 kilometers more 10yrs ago than last year	2
moved 3 kilometers less 10yrs ago than last year	2
moved 30 kilometers less 10yrs ago than last year	2
moved 30 kilometers more 10yrs ago than last year	2
moved 4 kilometers more 10yrs ago than last year	2
moved 43 kilometers more 10yrs ago than last year	2
moved 60 kilometers more 10yrs ago than last year	2
moved 70 kilometers more 10yrs ago than last year	2
moved 8 kilometers more 10yrs ago than last year	2
moved 84 kilometers more 10yrs ago than last year	2
moved 95 kilometers more 10yrs ago than last year	2
moved 0.5 kilometers less 10yrs ago than last year	1
moved 1 kilometers less 10yrs ago than last year	1
moved 101 kilometers less 10yrs ago than last year	1
moved 105 kilometers more 10yrs ago than last year	1
moved 108 kilometers more 10yrs ago than last year	1
moved 115 kilometers more 10yrs ago than last year	1
moved 120 kilometers more 10yrs ago than last year	1
moved 127 kilometers less 10yrs ago than last year	1
moved 130 kilometers less 10yrs ago than last year	1
moved 130 kilometers more 10yrs ago than last year	1
moved 16 kilometers less 10yrs ago than last year	1
moved 162 kilometers more 10yrs ago than last year	1
moved 170 kilometers more 10yrs ago than last year	1
moved 19.25 kilometers more 10yrs ago than last year	1
moved 195 kilometers more 10yrs ago than last year	1
moved 2.1 kilometers less 10yrs ago than last year	1
moved 2.5 kilometers less 10yrs ago than last year	1
moved 2.6 kilometers more 10yrs ago than last year	1
moved 200 kilometers more 10yrs ago than last year	1

move_description	n
moved 21 kilometers more 10yrs ago than last year	1
moved 225 kilometers more 10yrs ago than last year	1
moved 23 kilometers more 10yrs ago than last year	1
moved 270 kilometers more 10yrs ago than last year	1
moved 28 kilometers more 10yrs ago than last year	1
moved 280 kilometers more 10yrs ago than last year	1
moved 290 kilometers more 10yrs ago than last year	1
moved 294 kilometers more 10yrs ago than last year	1
moved 350 kilometers more 10yrs ago than last year	1
moved 36 kilometers more 10yrs ago than last year	1
moved 37 kilometers more 10yrs ago than last year	1
moved 38 kilometers less 10yrs ago than last year	1
moved 38 kilometers more 10yrs ago than last year	1
moved 39 kilometers more 10yrs ago than last year	1
moved 45 kilometers more 10yrs ago than last year	1
moved 490 kilometers more 10yrs ago than last year	1
moved 50 kilometers less 10yrs ago than last year	1
moved 51 kilometers more 10yrs ago than last year	1
moved 53 kilometers more 10yrs ago than last year	1
moved 57 kilometers more 10yrs ago than last year	1
moved 6 kilometers less 10yrs ago than last year	1
moved 6 kilometers more 10yrs ago than last year	1
moved 63 kilometers more 10yrs ago than last year	1
moved 66 kilometers more 10yrs ago than last year	1
moved 68 kilometers more 10yrs ago than last year	1
moved 77 kilometers more 10yrs ago than last year	1
moved 79 kilometers more 10yrs ago than last year	1
moved 80 kilometers more 10yrs ago than last year	1
moved 85 kilometers more 10yrs ago than last year	1
moved 90 kilometers less 10yrs ago than last year	1
moved 90 kilometers more 10yrs ago than last year	1

B. Simplified:

move_description	n
moved more 10yrs ago than last year	99
moved an equal amount of distance	45
moved less 10yrs ago than last year	28
NA	15

6. Contingency tables for having reserved various types of pasture

Columns: herdMgmt_lastYr_Otor, herdMgmt_thisYr_Otor, herdMgmt_lastYr_wintPast, herdMgmt_thisYr_wintPast, herdMgmt_lastYr_springPast, herdMgmt_thisYr_springPast, herdMgmt_lastYr_DzudPast, herdMgmt_thisYr_DzudPast

A. Big, ugly contingency table to start:

lastYr_Otor	thisYr_Otor	lastYr_Winter	thisYr_Winter	lastYr_Spring	thisYr_Spring	lastYr_Dzud	thisYr_Dzud	n
No	No	No	No	No	No	No	No	63
No	No	Yes	Yes	Yes	Yes	Yes	Yes	12
No	No	Yes	Yes	Yes	Yes	No	No	11
Yes	No	No	No	No	No	No	No	10
No	No	Yes	Yes	No	No	No	No	9
Yes	Yes	No	No	No	No	No	No	9
No	Yes	No	No	No	No	No	No	7
No	No	No	No	Yes	Yes	No	No	4
No	No	Yes	Yes	No	No	Yes	Yes	4
Yes	No	Yes	Yes	Yes	Yes	No	No	4
No	No	Yes	Yes	No	Yes	No	No	3
Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	3
No	No	No	No	No	Yes	No	No	2
No	No	No	Yes	No	No	No	No	2
No	No	Yes	No	No	No	No	No	2
No	No	Yes	Yes	Yes	Yes	No	Yes	2
No	Yes	No	No	No	Yes	No	No	2
No	Yes	No	Yes	No	Yes	No	No	2
No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2
Yes	No	No	No	No	Yes	No	No	2
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2
No	No	No	No	No	No	No	Yes	1
No	No	No	No	No	No	Yes	Yes	1
No	No	No	No	No	Yes	No	Yes	1
No	No	No	No	Yes	No	No	No	1
No	No	No	No	Yes	Yes	No	Yes	1
No	No	No	Yes	No	No	No	Yes	1
No	No	No	Yes	No	No	Yes	No	1
No	No	No	Yes	No	Yes	No	No	1
No	No	Yes	No	No	Yes	No	No	1
No	No	Yes	Yes	No	No	No	Yes	1
No	No	Yes	Yes	Yes	No	Yes	Yes	1
No	No	Yes	Yes	Yes	Yes	Yes	No	1
No	No	Yes	NA	No	No	Yes	Yes	1
No	Yes	No	Yes	Yes	Yes	No	No	1
No	Yes	Yes	No	Yes	No	No	No	1
No	Yes	Yes	Yes	No	No	No	No	1
No	Yes	Yes	Yes	Yes	Yes	No	No	1
No	Yes	Yes	NA	No	No	No	No	1
Yes	No	No	No	No	No	No	Yes	1
Yes	No	No	No	No	No	Yes	No	1
Yes	No	No	No	No	No	Yes	Yes	1
Yes	No	No	Yes	No	No	No	No	1
Yes	No	Yes	Yes	No	No	No	No	1
Yes	No	Yes	Yes	No	No	No	Yes	1
Yes	Yes	Yes	No	Yes	Yes	Yes	No	1
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	1
Yes	Yes	Yes	Yes	No	No	Yes	No	1
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	1
Yes	Yes	Yes	Yes	Yes	Yes	No	No	1
NA	NA	NA	NA	NA	NA	NA	NA	1

B. Did you undertake a fall/winter otor last year?

herdMgmt_lastYr_Otor	Buren	Deren	Bayantsagaan	Delgerkhaan	Sumber	Erdenedalai	Bayantal	Bayan	Total
No	24	23	18	18	18	17	16	11	145
Yes	3	1	4	4	4	10	4	11	41
NA	0	0	1	0	0	0	0	0	1

C. Are you likely to go on fall/winter otor this year?

herdMgmt_thisYr_Otor	Erdenedalai	Buren	Deren	Delgerkhaan	Bayan	Bayantal	Sumber	Bayantsagaan	Total
No	24	23	23	21	16	16	15	14	152
Yes	3	4	1	1	6	4	7	8	34
NA	0	0	0	0	0	0	0	1	1

D. Going on fall/winter otor last year vs. this year:

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber
Did not take Otor either year	10	14	14	21	17	22	16	13
Too Otor this yr but not last yr	1	2	4	3	1	1	1	5
Took Otor both years	5	2	4	1	0	0	2	2
Took Otor last yr but not this yr	6	2	0	2	4	1	8	2
NA	0	0	1	0	0	0	0	0

E. Did you reserve winter pasture area this year?

herdMgmt_thisYr_winterPast	Erdenedalai	Sumber	Deren	Bayan	Buren	Delgerkhaan	Bayantsagaan	Bayantal	Total
No	20	16	15	13	13	13	12	11	113
Yes	7	6	9	9	12	9	10	9	71
NA	0	0	0	0	2	0	1	0	3

F. Did you reserve winter pasture area last year?

herdMgmt_lastYr_winterPast	Erdenedalai	Sumber	Deren	Bayantal	Buren	Delgerkhaan	Bayantsagaan	Bayan	Total
No	20	16	15	14	14	14	12	11	116
Yes	7	6	9	6	13	8	10	11	70
NA	0	0	0	0	0	0	1	0	1

G. Reserving winter pasture last year vs. this year:

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber
Did not reserve Winter Pasture either year	11	11	10	12	13	15	19	16

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber
Reserved Winter Pasture both yrs	9	6	8	10	8	9	6	6
Reserved Winter paster last yr but not this yr	2	0	2	1	0	0	1	0
Reserved Winter Pasture this yr but not last yr	0	3	2	2	1	0	1	0
NA	0	0	1	2	0	0	0	0

H. Did you reserve spring pasture area this year?

herdMgmt_thisYr_springPast	Erdenedalai	Bayantal	Buren	Deren	Bayantsagaan	Sumber	Delgerkhaan	Bayan	Total
No	19	18	18	17	14	14	13	11	124
Yes	8	2	9	7	8	8	9	11	62
NA	0	0	0	0	1	0	0	0	1

I. Did you reserve spring pasture area last year?

herdMgmt_lastYr_springPast	Erdenedalai	Bayantal	Sumber	Deren	Bayantsagaan	Delgerkhaan	Bayan	Total
No	22	20	18	17	16	15	15	13	136
Yes	5	7	2	5	8	7	7	9	50
NA	0	0	0	0	0	1	0	0	1

J. Reserving spring pasture last year vs. this year:

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber
Did not reserve Spring Pasture either year	11	18	14	18	13	15	18	14
Reserved Spring Pasture both yrs	9	2	7	5	7	6	6	5
Reserved Spring Pasture this yr but not last yr	2	0	1	4	2	1	2	3
NA	0	0	1	0	0	0	0	0
Reserved Spring paster last yr but not this yr	0	0	0	0	0	2	1	0

K. Did you reserve dzud pasture this year?

herdMgmt_thisYr_DzudPast	Erdenedalai	Bayan	Bayantal	Sumber	Bayantsagaan	Delgerkhaan	Deren	Total
No	23	20	18	18	18	17	17	17	148
Yes	4	7	4	2	4	5	5	7	38
NA	0	0	0	0	0	1	0	0	1

L. Did you reserve dzud pasture last year?

herdMgmt_lastYr_DzudPast	Erdenedalai	Bayan	Bayantal	Delgerkhaan	Deren	Bayantsagaan	Sumber	Total
No	22	22	20	18	18	18	17	17	152

herdMgmt_lastYr_DzudBrest	Erdenedalai	Bayan	Bayantal	Delgerkhaan	Deren	Bayantsagaan	Sumber	Total
Yes	5	5	2	2	4	6	5	5	34
NA	0	0	0	0	0	0	1	0	1

M. Reserving spring pasture last year vs. this year:

dist_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber
Did not reserve Dzud Pasture either year	18	17	16	21	17	17	20	17
Reserved Dzud Pasture both yrs	2	1	4	3	4	6	5	4
Reserved Dzud Pasture this yr but not last yr	2	1	1	1	1	1	2	0
Reserved Dzud Pasture last yr but not this yr	0	1	1	2	0	0	0	1
NA	0	0	1	0	0	0	0	0

7. Means of travel 10, 5, and 1 year ago:

Columns: herdMgmt_10yrsAgo_herdTravel/herdMgmt_5yrsAgo_herdTravel/herdMgmt_lastYr_herdTravel

transport	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
camel	21-15-9	9-7-5	16-9-8	24-18-13	20-17-13	18-13-10	15-11-7	12-9-9	135-99-74
car	1-4-11	0-2-7	1-5-13	2-1-2	3-4-6	0-1-5	1-3-3	2-4-8	10-24-55
horse	21-15-9	9-7-5	16-9-8	24-18-13	20-17-13	18-13-10	15-11-7	12-9-9	135-99-74
motorbike	12-19-20	13-18-20	15-19-17	14-24-27	13-20-22	12-18-18	19-23-22	12-17-19	110-158-165
NA	1-0-0	2-1-0	1-1-1	2-0-0	1-0-0	1-0-0	1-1-0	3-1-0	12-4-1
walk	0-0-0	0-0-2	2-2-2	3-5-5	4-3-2	5-5-3	1-2-4	0-1-3	15-18-21

8. Daily distance traveled, 10, 5, and 1 year ago:

Columns: herdMgmt_10yrsAgo_dailyDist/herdMgmt_5yrsAgo_dailyDist/herdMgmt_lastYr_dailyDist

distance	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
2.0	1-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	4-2-3	1-1-3	6-3-6
3.0	0-0-1	0-0-0	1-0-0	1-1-2	0-2-3	1-0-3	4-3-3	1-1-1	8-7-13
4.0	1-0-0	0-0-0	0-0-0	3-4-4	0-0-0	4-4-0	1-2-2	1-1-2	10-11-8
5.0	3-4-4	0-2-2	5-4-5	7-5-2	4-6-4	4-5-3	2-2-3	3-3-2	28-31-25
6.0	1-0-0	1-0-0	0-0-0	1-1-2	4-0-2	3-1-1	2-2-1	0-1-1	12-5-7
7.0	1-0-1	2-0-1	0-1-0	1-0-0	0-0-1	0-0-0	1-0-0	1-0-0	6-1-3
8.0	1-0-2	0-1-2	1-1-1	1-1-0	0-0-2	0-0-1	0-0-1	0-0-0	3-3-9
9.0	0-0-1	0-0-0	0-0-0	0-0-0	0-1-0	0-0-0	0-0-0	0-0-0	0-1-1
10.0	4-5-5	0-2-1	4-3-4	2-2-3	3-1-4	1-2-3	6-4-4	3-3-3	23-22-27
15.0	1-3-0	2-2-3	1-1-1	1-0-0	2-1-0	0-0-0	0-0-0	1-1-0	8-8-4
20.0	0-1-1	3-1-1	0-2-1	1-1-2	1-2-3	0-0-0	0-0-0	0-1-1	5-8-9

distance	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
25.0	1-0-0	0-0-0	1-0-0	0-0-0	0-0-0	0-0-0	1-0-0	0-0-0	3-0-0
30.0	1-1-0	0-0-0	0-0-1	1-0-0	0-0-0	0-0-1	0-1-0	0-0-0	2-2-2
60.0	1-1-1	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	1-1-1
0.0	0-0-0	2-2-0	1-1-0	1-0-0	2-2-1	1-2-2	0-0-1	2-1-0	9-8-4
12.0	0-0-0	1-1-0	0-1-0	1-1-1	1-2-0	2-1-1	1-2-2	0-0-0	6-8-4
50.0	0-0-0	1-0-0	1-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	2-0-0
13.0	0-0-0	0-0-0	0-1-0	0-0-0	0-0-0	0-0-0	0-0-0	1-0-0	1-1-0
19.0	0-0-0	0-0-0	1-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	1-0-0
35.0	0-0-0	0-0-0	1-1-0	0-0-1	0-0-0	0-0-0	0-0-0	0-0-0	1-1-1
55.0	0-0-0	0-0-0	0-0-1	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-1
7.5	0-0-0	0-0-0	0-0-0	0-0-1	0-0-0	0-0-0	0-0-0	0-0-0	0-0-1
17.0	0-0-0	0-0-0	0-0-0	0-1-1	0-0-0	0-0-0	0-0-0	0-0-0	0-1-1
80.0	0-0-0	0-0-0	0-0-0	0-1-0	0-0-0	0-0-0	0-0-0	0-0-0	0-1-0
14.0	0-0-0	0-0-0	0-0-0	0-0-0	0-1-0	0-0-0	0-0-0	0-0-0	0-1-0
18.0	0-0-0	0-0-0	0-0-0	0-0-0	0-1-0	0-0-0	0-0-0	0-0-0	0-1-0
23.0	0-0-0	0-0-0	0-0-0	0-0-0	1-0-0	0-0-0	0-1-0	0-0-0	1-1-0
28.0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	1-1-0	0-0-0	0-0-0	1-1-0
3.5	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-1	0-0-0	0-0-1
100.0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-1-0	0-0-0	0-1-0

9. In the past five years, have you changed your herding management practices?

Columns: herdMgmt_past5Yrs_mgmtChanges/herdMgmt_mgmtChanges_what

A. Changed management practices (yes/no):

herdMgmt_past5Yrs_mgmtChanges	Erdenedalai	Buren	Bayantal	Bayantsagaan	Bayan	Delgerkhaan	Deren	Sumber	Total
No	21	19	18	17	13	13	13	13	127
Yes	6	7	2	5	9	8	11	9	57
NA	0	1	0	1	0	1	0	0	3

B. Changes to management that have been made:

herdMgmt_mgmtChanges_what	Bayan	Buren	Deren	Sumber	Bayantsagaan	Delgerkhaan	Erdenedalai	Bayantal	Total
reserved/moved to improved pasture	1	4	3	3	2	0	2	0	15
improved the quality of the livestock	4	0	2	0	0	2	1	1	10
rotational grazing	0	0	2	2	2	1	1	0	8
fencing the pasture	1	1	2	2	1	1	0	0	8
provided more fodder	2	1	0	2	0	2	0	0	7
reduced the overall herd size	1	0	1	1	0	0	0	1	4
maintain the overall herd size	3	0	0	0	0	0	0	0	3
negotiating with others to protect pasture from stray livestock	0	0	0	0	0	1	1	0	2
Engaged less in dairy farming	0	1	0	0	0	0	0	0	1
improved approach and practice	0	0	0	0	0	1	0	0	1
Improved water supply	0	0	1	0	0	0	0	0	1
no place to graze	0	0	1	0	0	0	0	0	1

10. Do you have plans to make changes to management practices in the next 5 years?

Columns: herdMgmt_next5Yrs_mgmtChanges/herdMgmt_futureChg_what

A. Planning to change management practices (yes/no):

herdMgmt_next5Yrs_mgmtChanges	Deren	Erdenedalai	Bayantsagaan	Buren	Bayantal	Delgerkhaan	Sumber	Bayan	Total
Yes	17	10	15	15	13	13	13	12	108
No	7	17	7	12	7	9	9	10	78
NA	0	0	1	0	0	0	0	0	1

B. Planned changes to management practices:

herdMgmt_futureChg_what	Delgerkhaan	Erdenedalai	Deren	Sumber	Bayan	Bayantal	Bayantsagaan	Buren	Total
fence the pasture	8	8	7	7	6	5	5	3	49
plant pasture grass	3	2	2	1	2	6	1	3	20
improve the quality of the livestock	0	1	4	2	2	0	4	4	17
reduce the overall herd size	1	0	1	4	3	1	3	2	15
reserve/move to improved pasture	1	0	1	2	0	1	1	2	8
improve water supply	1	0	1	1	0	0	2	0	5
maintain the overall herd size	0	1	1	1	1	0	0	0	4
rotational grazing	1	0	2	0	0	0	0	0	3
Engage more in dairy farming	1	0	0	0	0	1	1	0	3
increase the overall herd size	0	0	0	0	0	1	1	0	2
forage/fodder related	0	1	0	0	0	0	1	0	2
build shelter to keep animals warm	0	0	1	0	0	0	0	1	2
contribute to the saving	0	0	0	0	0	0	1	0	1
placing the animals in a same area	0	0	0	0	0	0	1	0	1
community-based pasture management	0	0	0	0	0	0	0	1	1
allocate the animals to children	0	0	1	0	0	0	0	0	1
move to town	0	0	0	1	0	0	0	0	1

11. Are there changes you want to make to your management practices but can't?

Columns: herdMgmt_whatChanges_cantMake/herdMgmt_chg_limitingFactor

A. (yes/no):

herdMgmt_whatChanges_Barrier	Buren	Deren	Bayantsagaan	Erdenedalai	Bayan	Bayantal	Delgerkhaan	Sumber	Total
Yes	21	17	15	15	14	14	14	13	123
No	6	7	7	12	8	6	8	9	63
NA	0	0	1	0	0	0	0	0	1

B. Barrier to making changes to management practices:

herdMgmt_chg_limitingFactor	Erdenedalai	Bayan	Buren	Sumber	Bayantsagaan	Delgerkhaan	Deren	Bayantal	Total
NA	12	9	6	9	8	8	7	6	65
financial difficulty	6	6	9	5	3	7	6	5	47
fencing related	2	3	4	4	4	1	4	4	26
lack of human capacity/skills	1	1	4	3	3	3	4	0	19
insufficient land, equipment, or materials	3	1	1	3	2	2	1	1	14
insufficient water resources	1	0	4	2	1	2	1	1	12
lack of time	0	2	4	1	2	1	0	2	12
difficulties in selling/breeding livestock	2	0	0	1	2	1	0	4	10
degraded pastureland	2	1	1	0	0	0	3	1	8
legal issues/conflict with other herders	1	1	0	0	2	2	2	0	8
little attention/resources for herders	0	0	0	0	0	1	1	0	2
more interested in herding	0	0	0	0	1	0	0	0	1
difficulties in selling/breeding/managing livestock	0	0	0	1	0	0	0	0	1

12. Condition and degree of pastoral change:

Columns: herdMgmt_pastureCon_chg_yn/herdMgmt_pastureCon_chg_deg

condition_comparison	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
Moderately Degraded	3	5	8	9	8	10	11	9	63
Moderately Improved	3	2	0	1	1	3	1	0	11
No change	5	3	8	9	8	4	4	3	44
Slightly Degraded	4	3	1	1	3	1	3	2	18
Substantially Degraded	7	6	5	6	2	6	8	8	48
Slightly Improved	0	1	0	0	0	0	0	0	1
NA	0	0	1	1	0	0	0	0	2

V. LIVESTOCK

1. Livestock Counts, multiple ways:

Column: livestock_2023_camel/livestock_2023_cow/livestock_2023_horse/livestock_2023_sheep/livestock_2023_goat/lives

A. Total counts in 2019 vs. 2023, by Bag:

Soum	bag	camel_2019	camel_2023	cow_2019	cow_2023	goat_2019	goat_2023	horse_2019	horse_2023	sheep_2019	sheep_2023
Bayan	Bag 1	1	3	576	386	2730	2446	870	630	4727	4168
Bayan	Bag 2	0	0	112	151	970	1050	160	196	1500	1750
Bayan	Bag 3	0	0	255	202	1327	1714	369	454	2812	1857
Bayantal	Bag 1	33	26	344	816	2769	4552	418	612	4161	5844
Bayantal	Bag 2	0	0	9	11	540	620	0	20	780	439
Bayantsagaan	Bag 1	0	0	130	180	1193	1405	260	385	1933	2490
Bayantsagaan	Bag 2	6	1	134	153	910	1114	106	131	1803	1991
Bayantsagaan	Bag 3	55	60	117	160	885	921	519	609	2698	3078
Bayantsagaan	Bag 4	11	6	79	76	1263	1172	152	195	3180	2662
Buren	Bag 1	0	0	51	43	517	332	44	53	310	239
Buren	Bag 2	0	0	80	123	230	365	1115	128	270	1755
Buren	Bag 3	0	0	212	161	2009	1664	327	269	3528	2883
Buren	Bag 4	20	1	337	163	1180	1194	282	258	1950	2005
Buren	Bag 5	0	0	12	30	60	200	15	33	200	460
Delgerkhaan	Bag 1	0	0	249	223	1360	1608	465	487	2688	2818
Delgerkhaan	Bag 2	9	0	349	208	1846	1606	354	352	2537	2340
Delgerkhaan	Bag 3	0	0	26	26	205	305	57	100	220	403
Delgerkhaan	Bag 5	0	0	12	23	95	205	7	13	118	417
Deren	Bag 1	0	0	10	19	370	400	15	24	230	290
Deren	Bag 2	24	20	133	90	2223	2304	213	344	1830	2124
Deren	Bag 3	6	4	20	32	630	488	70	88	1311	1278
Deren	Bag 4	2	3	44	40	1221	1108	49	75	1312	1345
Erdenedalai	Bag 1	10	7	36	53	580	615	60	8	785	604
Erdenedalai	Bag 2	0	0	24	49	702	835	47	91	600	842
Erdenedalai	Bag 3	10	0	80	35	610	460	55	5	980	570

Soum	bag	camel_2019	camel_2023	cow_2019	cow_2023	goat_2019	goat_2023	horse_2019	horse_2023	sheep_2019	sheep_2023
Erdenedalai	Bag 4	0	0	45	42	850	940	100	85	730	810
Erdenedalai	Bag 5	0	0	18	6	370	210	42	28	420	380
Erdenedalai	Bag 6	0	0	28	44	597	886	50	47	810	788
Erdenedalai	Bag 7	0	0	62	79	315	340	40	67	332	365
Sumber	Bag 3	0	0	5	36	160	135	2	3	290	138
Sumber	Bag 4	0	0	140	229	3696	2256	262	256	4840	3319
Sumber	Bag 5	0	0	101	124	517	667	24	39	682	683
Sumber	Bag 6	0	0	55	35	660	76	52	45	850	210

B. Total counts in 2019 vs. 2023, by Soum:

Soum	camel_2019	camel_2023	cow_2019	cow_2023	goat_2019	goat_2023	horse_2019	horse_2023	sheep_2019	sheep_2023
Bayan	1	3	943	739	5027	5210	1399	1280	9039	7775
Bayantal	33	26	353	827	3309	5172	418	632	4941	6283
Bayantsagaan	72	67	460	569	4251	4612	1037	1320	9614	10221
Buren	20	1	692	520	3996	3755	1783	741	6258	7342
Delgerkhaan	9	0	636	480	3506	3724	883	952	5563	5978
Deren	32	27	207	181	4444	4300	347	531	4683	5037
Erdenedalai	20	7	293	308	4024	4286	394	331	4657	4359
Sumber	0	0	301	424	5033	3134	340	343	6662	4350

C. Have certain types of livestock increased or decreased? by Bag:

Soum	bag	camel_comparison	cow_comparison	horse_comparison	sheep_comparison	goat_comparison
Bayan	Bag 1	2023: more camels	2023: fewer cows	2023: fewer horses	2023: fewer sheep	2023: fewer goats
Bayan	Bag 2	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Bayan	Bag 3	2023: same camels	2023: fewer cows	2023: more horses	2023: fewer sheep	2023: more goats
Bayantal	Bag 1	2023: fewer camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Bayantal	Bag 2	2023: same camels	2023: more cows	2023: more horses	2023: fewer sheep	2023: more goats
Bayantsagaan	Bag 1	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Bayantsagaan	Bag 2	2023: fewer camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Bayantsagaan	Bag 3	2023: more camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats

Soum	bag	camel_comparison	cow_comparison	horse_comparison	sheep_comparison	goat_comparison
Bayantsagaan	Bag 4	2023: fewer camels	2023: fewer cows	2023: more horses	2023: fewer sheep	2023: fewer goats
Buren	Bag 1	2023: same camels	2023: fewer cows	2023: more horses	2023: fewer sheep	2023: fewer goats
Buren	Bag 2	2023: same camels	2023: more cows	2023: fewer horses	2023: more sheep	2023: more goats
Buren	Bag 3	2023: same camels	2023: fewer cows	2023: fewer horses	2023: fewer sheep	2023: fewer goats
Buren	Bag 4	2023: fewer camels	2023: fewer cows	2023: fewer horses	2023: more sheep	2023: more goats
Buren	Bag 5	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Delgerkhaan	Bag 1	2023: same camels	2023: fewer cows	2023: more horses	2023: more sheep	2023: more goats
Delgerkhaan	Bag 2	2023: fewer camels	2023: fewer cows	2023: fewer horses	2023: fewer sheep	2023: fewer goats
Delgerkhaan	Bag 3	2023: same camels	2023: same cows	2023: more horses	2023: more sheep	2023: more goats
Delgerkhaan	Bag 5	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Deren	Bag 1	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Deren	Bag 2	2023: fewer camels	2023: fewer cows	2023: more horses	2023: more sheep	2023: more goats
Deren	Bag 3	2023: fewer camels	2023: more cows	2023: more horses	2023: fewer sheep	2023: fewer goats
Deren	Bag 4	2023: more camels	2023: fewer cows	2023: more horses	2023: more sheep	2023: fewer goats
Erdenedalai	Bag 1	2023: fewer camels	2023: more cows	2023: fewer horses	2023: fewer sheep	2023: more goats
Erdenedalai	Bag 2	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Erdenedalai	Bag 3	2023: fewer camels	2023: fewer cows	2023: fewer horses	2023: fewer sheep	2023: fewer goats
Erdenedalai	Bag 4	2023: same camels	2023: fewer cows	2023: fewer horses	2023: more sheep	2023: more goats
Erdenedalai	Bag 5	2023: same camels	2023: fewer cows	2023: fewer horses	2023: fewer sheep	2023: fewer goats
Erdenedalai	Bag 6	2023: same camels	2023: more cows	2023: fewer horses	2023: fewer sheep	2023: more goats
Erdenedalai	Bag 7	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Sumber	Bag 3	2023: same camels	2023: more cows	2023: more horses	2023: fewer sheep	2023: fewer goats
Sumber	Bag 4	2023: same camels	2023: more cows	2023: fewer horses	2023: fewer sheep	2023: fewer goats
Sumber	Bag 5	2023: same camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Sumber	Bag 6	2023: same camels	2023: fewer cows	2023: fewer horses	2023: fewer sheep	2023: fewer goats

D. Have certain types of livestock increased or decreased? How many Bags for each category:

livestock_type	comparison	n
camel_comparison	2023: same camels	21
camel_comparison	2023: fewer camels	9
camel_comparison	2023: more camels	3
cow_comparison	2023: more cows	18
cow_comparison	2023: fewer cows	14
cow_comparison	2023: same cows	1
goat_comparison	2023: more goats	21
goat_comparison	2023: fewer goats	12
horse_comparison	2023: more horses	21
horse_comparison	2023: fewer horses	12
sheep_comparison	2023: more sheep	18
sheep_comparison	2023: fewer sheep	15

E. Have certain types of livestock increased or decreased? by Soum:

Soum	camel_comparison	cow_comparison	horse_comparison	sheep_comparison	goat_comparison
Bayan	2023: more camels	2023: fewer cows	2023: fewer horses	2023: fewer sheep	2023: more goats
Bayantal	2023: fewer camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Bayantsagaan	2023: fewer camels	2023: more cows	2023: more horses	2023: more sheep	2023: more goats
Buren	2023: fewer camels	2023: fewer cows	2023: fewer horses	2023: more sheep	2023: fewer goats
Delgerkhaan	2023: fewer camels	2023: fewer cows	2023: more horses	2023: more sheep	2023: more goats
Deren	2023: fewer camels	2023: fewer cows	2023: more horses	2023: more sheep	2023: fewer goats
Erdenedalai	2023: fewer camels	2023: more cows	2023: fewer horses	2023: fewer sheep	2023: more goats
Sumber	2023: same camels	2023: more cows	2023: more horses	2023: fewer sheep	2023: fewer goats

F. Have certain types of livestock increased or decreased? How many Soums for each category:

livestock_type	comparison	n
camel_comparison	2023: fewer camels	6
camel_comparison	2023: more camels	1
camel_comparison	2023: same camels	1
cow_comparison	2023: fewer cows	4
cow_comparison	2023: more cows	4
goat_comparison	2023: more goats	5
goat_comparison	2023: fewer goats	3
horse_comparison	2023: more horses	5
horse_comparison	2023: fewer horses	3
sheep_comparison	2023: more sheep	5
sheep_comparison	2023: fewer sheep	3

2. SFU Counts, multiple ways:

Column: livestock_2023_camel/livestock_2023_cow/livestock_2023_horse/livestock_2023_sheep/livestock_2023_goat/lives

A. OVERALL SFU. :

SFU_2019	SFU_2023
152100	149971.7

B. SFU by Bag:

Soum	bag	SFU_2019	SFU_2023	SFU_comparison
Bayan	Bag 1	16735.0	13110.4	2023: less SFU
Bayan	Bag 2	4165.0	4973.0	2023: greater SFU
Bayan	Bag 3	8119.3	7789.6	2023: less SFU
Bayantal	Bag 1	11808.1	19250.8	2023: greater SFU
Bayantal	Bag 2	1320.0	1203.0	2023: less SFU
Bayantsagaan	Bag 1	5606.7	7529.5	2023: greater SFU
Bayantsagaan	Bag 2	4198.0	4833.6	2023: greater SFU
Bayantsagaan	Bag 3	8104.5	9429.9	2023: greater SFU
Bayantsagaan	Bag 4	5909.7	5567.8	2023: less SFU
Buren	Bag 1	1389.3	1166.8	2023: less SFU
Buren	Bag 2	8762.0	3717.5	2023: less SFU
Buren	Bag 3	8897.1	7229.6	2023: less SFU
Buren	Bag 4	7108.0	5868.6	2023: less SFU
Buren	Bag 5	431.0	1051.0	2023: greater SFU
Delgerkhaan	Bag 1	8661.0	9012.2	2023: greater SFU
Delgerkhaan	Bag 2	8815.4	7497.4	2023: less SFU
Delgerkhaan	Bag 3	959.5	1533.5	2023: greater SFU
Delgerkhaan	Bag 5	324.5	830.5	2023: greater SFU
Deren	Bag 1	728.0	932.0	2023: greater SFU
Deren	Bag 2	6239.7	7245.6	2023: greater SFU
Deren	Bag 3	2518.0	2545.2	2023: greater SFU
Deren	Bag 4	3027.9	3122.2	2023: greater SFU
Erdenedalai	Bag 1	1993.0	1566.5	2023: less SFU
Erdenedalai	Bag 2	1704.8	2524.5	2023: greater SFU
Erdenedalai	Bag 3	2444.0	1229.0	2023: less SFU
Erdenedalai	Bag 4	2465.0	2503.0	2023: greater SFU
Erdenedalai	Bag 5	1155.0	801.0	2023: less SFU
Erdenedalai	Bag 6	1865.3	2178.4	2023: greater SFU
Erdenedalai	Bag 7	1267.5	1614.0	2023: greater SFU
Sumber	Bag 3	478.0	496.5	2023: greater SFU
Sumber	Bag 4	10840.4	8515.4	2023: less SFU
Sumber	Bag 5	1921.3	2300.3	2023: greater SFU
Sumber	Bag 6	2138.0	803.4	2023: less SFU

C. SFU by Bag, summarized:

livestock_type	comparison	n
SFU_comparison	2023: greater SFU	19
SFU_comparison	2023: less SFU	14

livestock_type	comparison	n

D. SFU by Soum:

Soum	SFU_2019	SFU_2023	SFU_comparison
Bayan	29019.3	25873.0	2023: less SFU
Bayantal	13128.1	20453.8	2023: greater SFU
Bayantsagaan	23818.9	27360.8	2023: greater SFU
Buren	26587.4	19033.5	2023: less SFU
Delgerkhaan	18760.4	18873.6	2023: greater SFU
Deren	12513.6	13845.0	2023: greater SFU
Erdenedalai	12894.6	12416.4	2023: less SFU
Sumber	15377.7	12115.6	2023: less SFU

3. Did you purchase supplemental fodder last year?

Column: lastYr_fodder

A. All answers:

Yes	No	NA	Total
169	16	2	187

B. By Bag:

Soum	bag	Yes	No	NA
Bayan	Bag 1	9	1	0
Bayan	Bag 2	5	0	0
Bayan	Bag 3	7	0	0
Bayantal	Bag 1	11	6	0
Bayantal	Bag 2	3	0	0
Bayantsagaan	Bag 1	8	0	1
Bayantsagaan	Bag 2	3	0	0
Bayantsagaan	Bag 3	5	0	0
Bayantsagaan	Bag 4	4	2	0
Buren	Bag 1	3	0	0
Buren	Bag 2	2	0	0
Buren	Bag 3	10	0	1
Buren	Bag 4	9	1	0
Buren	Bag 5	1	0	0
Delgerkhaan	Bag 1	9	1	0
Delgerkhaan	Bag 2	8	1	0
Delgerkhaan	Bag 3	2	0	0
Delgerkhaan	Bag 5	1	0	0
Deren	Bag 1	3	0	0
Deren	Bag 2	9	1	0
Deren	Bag 3	4	0	0
Deren	Bag 4	5	2	0
Erdenedalai	Bag 1	6	1	0

Soum	bag	Yes	No	NA
Erdenedalai	Bag 2	4	0	0
Erdenedalai	Bag 3	2	0	0
Erdenedalai	Bag 4	3	0	0
Erdenedalai	Bag 5	1	0	0
Erdenedalai	Bag 6	7	0	0
Erdenedalai	Bag 7	3	0	0
Sumber	Bag 3	2	0	0
Sumber	Bag 4	13	0	0
Sumber	Bag 5	5	0	0
Sumber	Bag 6	2	0	0

C. By Soum:

Soum	Yes	No	NA
Bayan	21	1	0
Bayantal	14	6	0
Bayantsagaan	20	2	1
Buren	25	1	1
Delgerkhaan	20	2	0
Deren	21	3	0
Erdenedalai	26	1	0
Sumber	22	0	0

4. Do you plan to purchase supplemental fodder this year?:

Column: thisYr_fodder

A. All answers:

Yes	No	NA	Total
176	10	1	187

B. By Bag:

Soum	bag	Yes	No	NA
Bayan	Bag 1	9	1	0
Bayan	Bag 2	5	0	0
Bayan	Bag 3	7	0	0
Bayantal	Bag 1	14	3	0
Bayantal	Bag 2	3	0	0
Bayantsagaan	Bag 1	8	0	1
Bayantsagaan	Bag 2	3	0	0
Bayantsagaan	Bag 3	5	0	0
Bayantsagaan	Bag 4	6	0	0
Buren	Bag 1	3	0	0
Buren	Bag 2	2	0	0
Buren	Bag 3	11	0	0
Buren	Bag 4	10	0	0

Soum	bag	Yes	No	NA
Buren	Bag 5	1	0	0
Delgerkhaan	Bag 1	9	1	0
Delgerkhaan	Bag 2	8	1	0
Delgerkhaan	Bag 3	2	0	0
Delgerkhaan	Bag 5	1	0	0
Deren	Bag 1	3	0	0
Deren	Bag 2	10	0	0
Deren	Bag 3	4	0	0
Deren	Bag 4	6	1	0
Erdenedalai	Bag 1	6	1	0
Erdenedalai	Bag 2	3	1	0
Erdenedalai	Bag 3	1	1	0
Erdenedalai	Bag 4	3	0	0
Erdenedalai	Bag 5	1	0	0
Erdenedalai	Bag 6	7	0	0
Erdenedalai	Bag 7	3	0	0
Sumber	Bag 3	2	0	0
Sumber	Bag 4	13	0	0
Sumber	Bag 5	5	0	0
Sumber	Bag 6	2	0	0

C. By Soum:

Soum	Yes	No	NA
Bayan	21	1	0
Bayantal	17	3	0
Bayantsagaan	22	0	1
Buren	27	0	0
Delgerkhaan	20	2	0
Deren	23	1	0
Erdenedalai	24	3	0
Sumber	22	0	0

5. Have you noticed any long term shifts in vegetation/forage?:

Column: vegShifts_yn/vegShifts_quanQual

A. Yes or no, and how so?:

Soum	bag	Yes: Both	Yes: Quality	Yes: Quantity	No change	Unclear
Bayan	Bag 1	9	1	0	0	0
Bayan	Bag 2	4	0	1	0	0
Bayan	Bag 3	4	0	2	1	0
Bayantal	Bag 1	10	0	2	5	0
Bayantal	Bag 2	2	0	0	1	0
Bayantsagaan	Bag 1	6	0	1	1	1
Bayantsagaan	Bag 2	3	0	0	0	0
Bayantsagaan	Bag 3	4	0	1	0	0
Bayantsagaan	Bag 4	4	0	2	0	0

Soum	bag	Yes: Both	Yes: Quality	Yes: Quantity	No change	Unclear
Buren	Bag 1	1	1	0	1	0
Buren	Bag 2	2	0	0	0	0
Buren	Bag 3	11	0	0	0	0
Buren	Bag 4	7	0	2	1	0
Buren	Bag 5	0	0	1	0	0
Delgerkhaan	Bag 1	8	0	1	1	0
Delgerkhaan	Bag 2	6	0	3	0	0
Delgerkhaan	Bag 3	2	0	0	0	0
Delgerkhaan	Bag 5	1	0	0	0	0
Deren	Bag 1	2	0	1	0	0
Deren	Bag 2	9	0	1	0	0
Deren	Bag 3	4	0	0	0	0
Deren	Bag 4	7	0	0	0	0
Erdenedalai	Bag 1	3	1	2	1	0
Erdenedalai	Bag 2	2	1	1	0	0
Erdenedalai	Bag 3	1	1	0	0	0
Erdenedalai	Bag 4	3	0	0	0	0
Erdenedalai	Bag 5	1	0	0	0	0
Erdenedalai	Bag 6	6	1	0	0	0
Erdenedalai	Bag 7	3	0	0	0	0
Sumber	Bag 3	1	0	0	1	0
Sumber	Bag 4	11	0	2	0	0
Sumber	Bag 5	3	1	0	1	0
Sumber	Bag 6	2	0	0	0	0
TOTAL		142	7	23	14	1

B. If so, what type of change? Big ugly table: Column: livestock_vegShifts_type

vegShifts_type	n
less vegetation overall	78
shorter/sparser vegetation	47
more weeds	23
less nutritious plants	19
reduced plant species diversity	19
disappearance of native plants	9
fewer native plants	8
reduced precipitation	8
less fattening of animals	7
less milk production	6
higher frequency of dzud	5
pasture degradation	5
changing climate	4
desertification	4
higher number of mice	3
less surface water	2
more invasive/alien species	2
more sand	2
overgrazing	2
reduced plant regeneration	2
reduced wild onion abundance	2
air pollution	1

vegShifts_type	n
better vegetation in some years	1
decrease in certain weed	1
delayed precipitation	1
dust/land degredation by mining trucks	1
higher temperature in summer	1
improved had drought 5 years ago	1
increase number of animals that has brought change	1
increased vegetation	1
later summer	1
longer spring	1
more brown grass	1
more needlegrass	1
more snow	1
need to move more regularly	1
no	1
no more forbs	1
not much snow since 2000 except for this year to feed the soil	1
reduced number of plant species	1
reduced wild onion abundance higher number of mice	1
seasonal changes	1
some positive outcomes from tree planting	1
sparser soil	1
unable to buy fodder	1
varied year by year	1

C. If so, what type of change? Big ugly table broken up by Soum:

vegShifts_type	Erdenedalai	Bayantsagaan	Baruun	Bayan	Deren	Sumber	Bayantal	Delgerkhaan	Total
less vegetation overall	16	11	9	10	10	9	7	6	78
shorter/sparser vegetation	3	7	11	5	6	7	2	6	47
more weeds	1	2	7	3	3	3	2	2	23
less nutritious plants	4	1	1	1	5	3	1	3	19
reduced precipitation	5	1	0	2	0	0	0	0	8
reduced plant species diversity	2	3	1	4	3	4	1	1	19
fewer native plants	4	1	0	0	1	1	0	1	8
disappearance of native plants	0	1	1	2	1	3	1	0	9
higher frequency of dzud	0	1	0	2	0	0	0	2	5
higher number of mice	0	0	0	2	0	0	0	1	3
more sand	0	0	0	2	0	0	0	0	2
desertification	0	0	0	0	0	1	2	1	4
less fattening of animals	1	2	1	0	2	0	1	0	7
more invasive/alien species	0	0	0	0	0	0	0	2	2
less milk production	1	1	0	0	2	1	1	0	6
pasture degradation	2	0	1	1	0	1	0	0	5
air pollution	0	0	0	1	0	0	0	0	1
dust/land degredation by mining trucks	0	0	0	1	0	0	0	0	1
higher temperature in summer	0	0	0	1	0	0	0	0	1
improved had drought 5 years ago	0	0	0	1	0	0	0	0	1
less surface water	0	0	0	1	0	0	0	1	2
longer spring	0	0	0	1	0	0	0	0	1

vegShifts_type	Erdenedalai	Bayantsagaan	Buren	Bayan	Deren	Sumber	Bayantal	Delgerkhaan	Total
reduced plant regeneration	0	0	0	1	1	0	0	0	2
seasonal changes	0	0	0	1	0	0	0	0	1
changing climate	1	1	0	0	1	0	1	0	4
decrease in certain weed	0	0	0	0	0	0	1	0	1
delayed precipitation	0	0	0	0	0	0	1	0	1
increased vegetation	0	0	0	0	0	0	1	0	1
later summer	0	0	0	0	0	0	1	0	1
more brown grass	0	0	0	0	0	0	1	0	1
overgrazing	1	0	0	0	0	0	1	0	2
more snow	0	1	0	0	0	0	0	0	1
need to move more regularly	0	1	0	0	0	0	0	0	1
no	0	0	1	0	0	0	0	0	1
not much snow since 2000 except for this year to feed the soil	0	0	1	0	0	0	0	0	1
reduced number of plant species	0	0	1	0	0	0	0	0	1
reduced wild onion abundance	0	0	1	0	1	0	0	0	2
better vegetation in some years	0	0	0	0	0	0	0	1	1
reduced wild onion abundance higher number of mice	0	0	0	0	0	0	0	1	1
sparser soil	0	0	0	0	0	0	0	1	1
unable to buy fodder	0	0	0	0	0	0	0	1	1
varied year by year	0	0	0	0	0	0	0	1	1
increase number of animals that has brought change	0	0	0	0	1	0	0	0	1
more needlegrass	0	0	0	0	1	0	0	0	1
no more forbs	0	0	0	0	1	0	0	0	1
some positive outcomes from tree planting	1	0	0	0	0	0	0	0	1

D. If so, what type of change? Bucketed verion:

vegShifts_type	Erdenedalai	Deren	Bayan	Bayantsagaan	Buren	Sumber	Bayantal	Delgerkhaan	Total
less vegetation overall	16	12	11	11	9	9	7	7	82
shorter/sparser vegetation	3	6	5	7	11	7	2	6	47
reduced plant species diversity	6	5	6	5	3	8	3	2	38
more weeds	1	4	3	2	7	3	3	2	25
less nutritious plants	4	6	1	1	2	3	1	4	22
precipitation issues	5	0	3	2	0	0	1	0	11
changing climate in general	1	1	3	1	1	0	2	1	10
desertification issues	0	0	3	0	0	1	2	2	8
dzud issues	0	0	2	1	0	0	0	2	5
higher number of mice	0	0	2	0	0	0	0	2	4
less fattening of animals	1	2	0	2	1	0	1	0	7
more invasive/alien species	0	0	0	0	0	0	0	2	2
less milk production	1	2	0	1	0	1	1	0	6
pasture degradation	2	0	1	0	1	1	0	0	5
air pollution	0	0	1	0	0	0	0	0	1
less surface water	0	0	1	0	0	0	0	1	2
increased vegetation	0	0	0	0	0	0	1	0	1
overgrazing	1	1	0	1	0	0	1	0	4

vegShifts_type	Erdenedalai	Deren	Bayan	Bayantsagaan	Buren	Sumber	Bayantal	Delgerkhaan	Total
no	0	0	0	0	1	0	0	0	1
unable to buy fodder	0	0	0	0	0	0	0	1	1
some positive outcomes from tree planting	1	0	0	0	0	0	0	0	1

6. Has your herd size changed over the last five years?:

Column: past5yrs_herdsize

A. All answers:

Increase	Decrease	The same	NA	Total
85	62	38	2	187

B. by Bag:

Soum	bag	Increase	The same	Decrease	NA
Bayan	Bag 1	5	3	2	0
Bayan	Bag 2	3	2	0	0
Bayan	Bag 3	4	1	2	0
Bayantal	Bag 1	12	2	3	0
Bayantal	Bag 2	1	1	1	0
Bayantsagaan	Bag 1	3	3	2	1
Bayantsagaan	Bag 2	1	1	1	0
Bayantsagaan	Bag 3	1	4	0	0
Bayantsagaan	Bag 4	3	1	2	0
Buren	Bag 1	1	2	0	0
Buren	Bag 2	2	0	0	0
Buren	Bag 3	4	1	6	0
Buren	Bag 4	3	3	3	1
Buren	Bag 5	1	0	0	0
Delgerkhaan	Bag 1	5	1	4	0
Delgerkhaan	Bag 2	3	2	4	0
Delgerkhaan	Bag 3	1	0	1	0
Delgerkhaan	Bag 5	1	0	0	0
Deren	Bag 1	2	0	1	0
Deren	Bag 2	4	1	5	0
Deren	Bag 3	2	1	1	0
Deren	Bag 4	2	2	3	0
Erdenedalai	Bag 1	4	0	3	0
Erdenedalai	Bag 2	2	0	2	0
Erdenedalai	Bag 3	0	0	2	0
Erdenedalai	Bag 4	2	0	1	0
Erdenedalai	Bag 5	0	0	1	0
Erdenedalai	Bag 6	5	0	2	0
Erdenedalai	Bag 7	1	2	0	0
Sumber	Bag 3	0	2	0	0
Sumber	Bag 4	5	1	7	0
Sumber	Bag 5	2	2	1	0

Soum	bag	Increase	The same	Decrease	NA
Sumber	Bag 6	0	0	2	0
TOTAL		85	38	62	2

C. by Soum:

Soum	Increase	The same	Decrease	NA
Bayan	12	6	4	0
Bayantal	13	3	4	0
Bayantsagaan	8	9	5	1
Buren	11	6	9	1
Delgerkhaan	10	3	9	0
Deren	10	4	10	0
Erdenedalai	14	2	11	0
Sumber	7	5	10	0
TOTAL	85	38	62	2

7. If your herd size has increased, what are the reasons?:

Column: past5yrs_herdInc

past5yrs_herdInc	Bayan	Bayantal	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Total
births	12	12	8	11	8	10	13	7	81
purchased more	1	2	1	2	1	2	2	3	14
received as gift	0	1	0	0	0	0	1	0	2
other	0	0	0	0	1	0	0	0	1

8. If your herd size has decreased, what are the reasons?:

past5yrs_herdDec:

past5yrs_herdDec	Bayan	Bayantsagaan	Buren	Delgerkhaan	Deren	Erdenedalai	Sumber	Bayantal	Total
drought-related death	3	2	3	7	6	6	3	0	30
sold	0	1	1	2	2	4	4	3	17
slaughter for home consumption	1	1	1	0	2	1	1	0	7
gave away as gift	0	1	3	0	0	0	1	0	5
other	0	0	1	0	0	0	1	1	3

9. Do you have plans to substantially change the size of your herd:

Column: nextYr_herdChg

A. All answers:

Yes	No	NA	Total
98	88	1	187

B. by Bag:

Soum	bag	No	Yes	NA
Bayan	Bag 1	7	3	0
Bayan	Bag 2	2	3	0
Bayan	Bag 3	1	6	0
Bayantal	Bag 1	8	9	0
Bayantal	Bag 2	2	1	0
Bayantsagaan	Bag 1	2	6	1
Bayantsagaan	Bag 2	2	1	0
Bayantsagaan	Bag 3	2	3	0
Bayantsagaan	Bag 4	2	4	0
Buren	Bag 1	2	1	0
Buren	Bag 2	1	1	0
Buren	Bag 3	7	4	0
Buren	Bag 4	3	7	0
Buren	Bag 5	1	0	0
Delgerkhaan	Bag 1	3	7	0
Delgerkhaan	Bag 2	5	4	0
Delgerkhaan	Bag 3	1	1	0
Delgerkhaan	Bag 5	0	1	0
Deren	Bag 1	2	1	0
Deren	Bag 2	2	8	0
Deren	Bag 3	3	1	0
Deren	Bag 4	4	3	0
Erdenedalai	Bag 1	3	4	0
Erdenedalai	Bag 2	0	4	0
Erdenedalai	Bag 3	2	0	0
Erdenedalai	Bag 4	2	1	0
Erdenedalai	Bag 5	1	0	0
Erdenedalai	Bag 6	3	4	0
Erdenedalai	Bag 7	1	2	0
Sumber	Bag 3	1	1	0
Sumber	Bag 4	9	4	0
Sumber	Bag 5	4	1	0
Sumber	Bag 6	0	2	0
TOTAL		88	98	1

C. by Soum:

Soum	Yes	No	NA
Bayan	12	10	0
Bayantal	10	10	0
Bayantsagaan	14	8	1
Buren	13	14	0
Delgerkhaan	13	9	0
Deren	13	11	0
Erdenedalai	15	12	0
Sumber	8	14	0
TOTAL	98	88	1

10. If you are changing the herd composition, what are you doing?:

Column: livestock_nextYr_what

A. All answers:

NA	Increase	Decrease	Maintain	Unsure	Total
92	49	30	15	1	187

B. by Bag:

Soum	bag	NA	Maintain	Decrease	Increase	Unsure
Bayan	Bag 1	7	2	1	0	0
Bayan	Bag 2	2	0	0	3	0
Bayan	Bag 3	2	2	1	2	0
Bayantal	Bag 1	8	0	4	5	0
Bayantal	Bag 2	2	0	0	1	0
Bayantsagaan	Bag 1	3	2	2	2	0
Bayantsagaan	Bag 2	2	1	0	0	0
Bayantsagaan	Bag 3	2	0	1	2	0
Bayantsagaan	Bag 4	3	1	0	2	0
Buren	Bag 1	2	0	0	0	1
Buren	Bag 2	1	0	0	1	0
Buren	Bag 3	7	2	0	2	0
Buren	Bag 4	3	1	5	1	0
Buren	Bag 5	1	0	0	0	0
Delgerkhaan	Bag 1	3	1	2	4	0
Delgerkhaan	Bag 2	5	0	1	3	0
Delgerkhaan	Bag 3	1	0	1	0	0
Delgerkhaan	Bag 5	0	0	1	0	0
Deren	Bag 1	2	0	0	1	0
Deren	Bag 2	2	1	1	6	0
Deren	Bag 3	3	0	0	1	0
Deren	Bag 4	4	0	2	1	0
Erdenedalai	Bag 1	4	0	0	3	0
Erdenedalai	Bag 2	0	0	1	3	0
Erdenedalai	Bag 3	2	0	0	0	0
Erdenedalai	Bag 4	2	0	0	1	0
Erdenedalai	Bag 5	1	0	0	0	0
Erdenedalai	Bag 6	3	0	1	3	0
Erdenedalai	Bag 7	1	1	1	0	0
Sumber	Bag 3	1	0	0	1	0
Sumber	Bag 4	9	0	4	0	0
Sumber	Bag 5	4	0	0	1	0
Sumber	Bag 6	0	1	1	0	0
TOTAL		92	15	30	49	1

C. by Soum:

Soum	NA	Increase	Maintain	Decrease	Unsure
Bayan	11	5	4	2	0
Bayantal	10	6	0	4	0
Bayantsagaan	10	6	4	3	0
Buren	14	4	3	5	1
Delgerkhaan	9	7	1	5	0
Deren	11	9	1	3	0
Erdenedalai	13	10	1	3	0
Sumber	14	2	1	5	0
TOTAL	92	49	15	30	1

11. If you are changing the herd composition, why?:

Column: nextYr_why

nextYr_why	n
livelihood improvement	19
improve the quality of livestock	15
pasture degradation	7
lacking human capacity	4
purchase more	4
children's education	3
because of dzud	2
increase horses to use them for herding/work	2
increase the number of new borns	2
children's consumption	1
climate conditions	1
decrease smaller	1
don't know yet	1
expansion of the family	1
hoping for better climate	1
increase bigger animals	1
maintain cows only	1
sold out cows and horses to herd smaller animals only	1
transition to intensive husbandry	1

V. GINGER'S ADVICE, ANALYSES

1. Contract & Reservation Cross-tabs:

Columns: herdMgmt_thisYr_wintPast/herdMgmt_lastYr_wintPast/herdMgmt_thisYr_springPast/ herdMgmt_lastYr_springPast/herdMgmt_thisYr_DzudPast/herdMgmt_lastYr_DzudPast/wintContract/ wintPasContract/sprCampContract/sprPasContract

2. Contract Percentages:

Columns: wintCamp/wintContract/wintPas/wintPasContract/sprCamp/sprCampContract/sprPasContract

res_label	WintCon: No	WintCon: Yes	WintPasCon: No	WintPasCon: Yes	SprCampCon: No	SprCampCon: Yes	SprPasCon: No	SprPasCon: Yes
WintThisYr: Yes	13	58	68	3	15	27	39	2
WintLastYr: Yes	13	57	66	4	12	31	41	2
SprThisYr: Yes	16	46	56	6	15	23	35	3
SprLastYr: Yes	13	37	45	5	11	18	27	2
DzudThisYr: Yes	7	31	36	2	5	17	20	2
DzudLastYr: Yes	8	26	32	2	4	16	18	1
WintThisYr: No	41	72	102	11	35	31	59	7
WintLastYr: No	41	75	106	10	38	28	58	7
SprThisYr: No	38	86	116	8	35	36	64	6
SprLastYr: No	41	95	127	9	39	41	72	7
DzudThisYr: No	47	101	136	12	45	42	79	7
DzudLastYr: No	46	106	140	12	46	43	81	8

Variable	No (%)	Yes (%)
sprCamp	23.9	76.1
sprCampContract	45.9	54.1
sprPasContract	91.7	8.3
wintCamp	17.4	82.6
wintContract	28.9	71.1
wintPas	8.0	92.0
wintPasContract	92.5	7.5

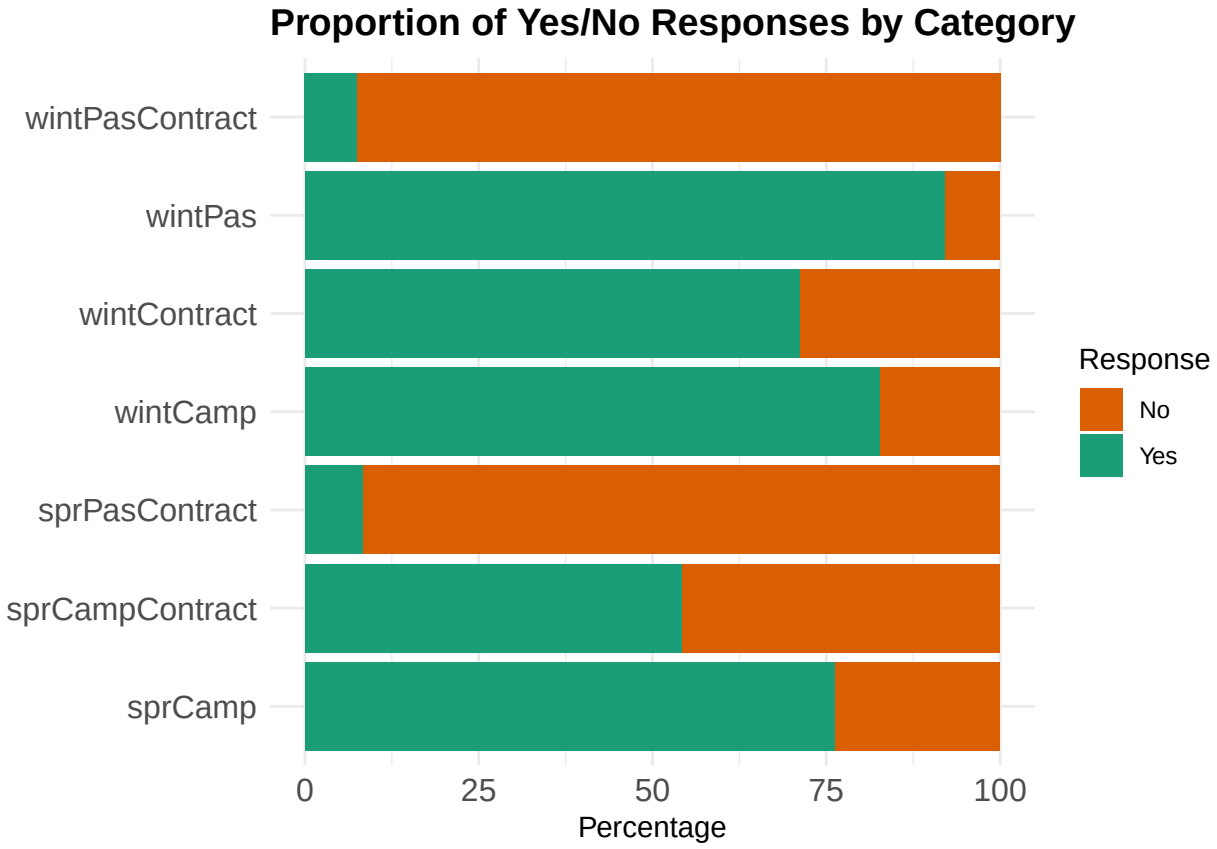
3. Reservation Percentages:

Columns: herdMgmt_thisYr_wintPast/herdMgmt_lastYr_wintPast/herdMgmt_thisYr_springPast/ herdMgmt_lastYr_springPast/herdMgmt_thisYr_DzudPast/herdMgmt_lastYr_DzudPast

Variable	No (%)	Yes (%)
herdMgmt_lastYr_DzudPast	81.7	18.3
herdMgmt_lastYr_springPast	73.1	26.9
herdMgmt_lastYr_wintPast	62.4	37.6
herdMgmt_thisYr_DzudPast	79.6	20.4
herdMgmt_thisYr_springPast	66.7	33.3
herdMgmt_thisYr_wintPast	61.4	38.6

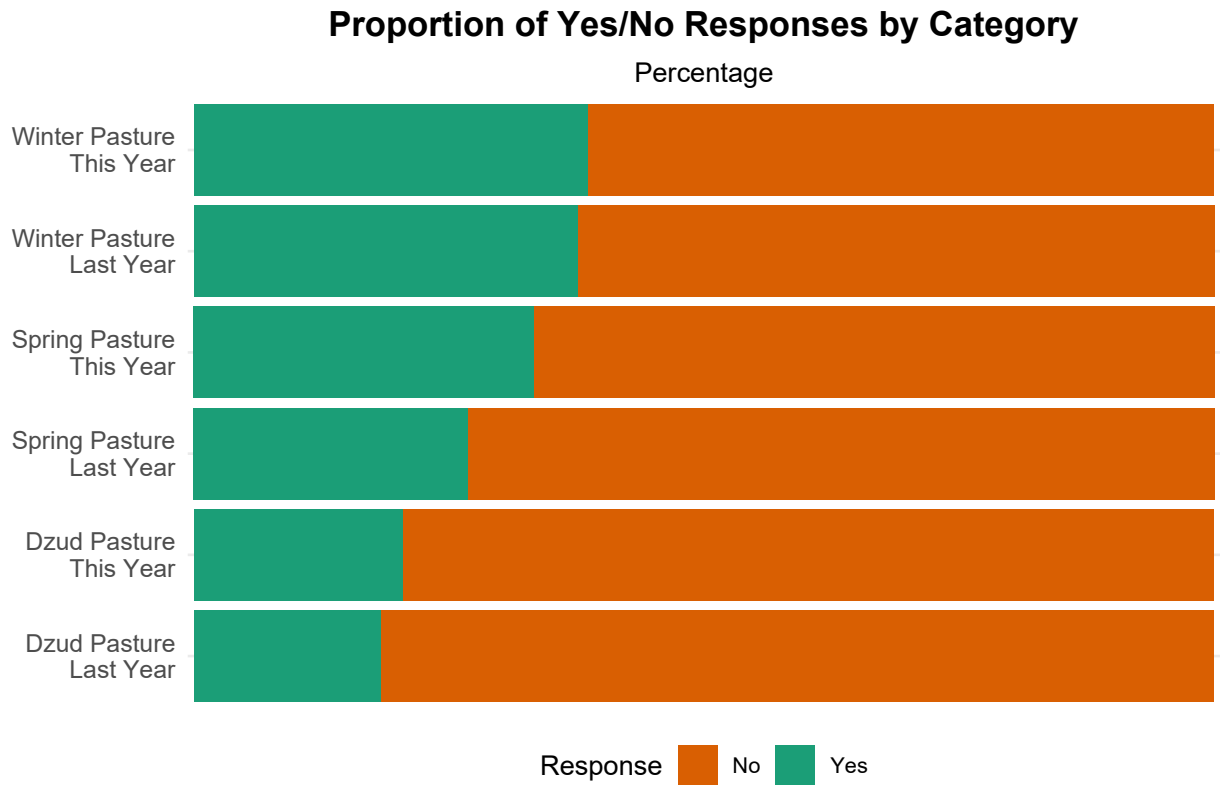
4. Contract Bar Chart:

Columns: wintCamp/wintContract/wintPas/wintPasContract/sprCamp/sprCampContract/sprPasContract



5. Reservation Bar Chart:

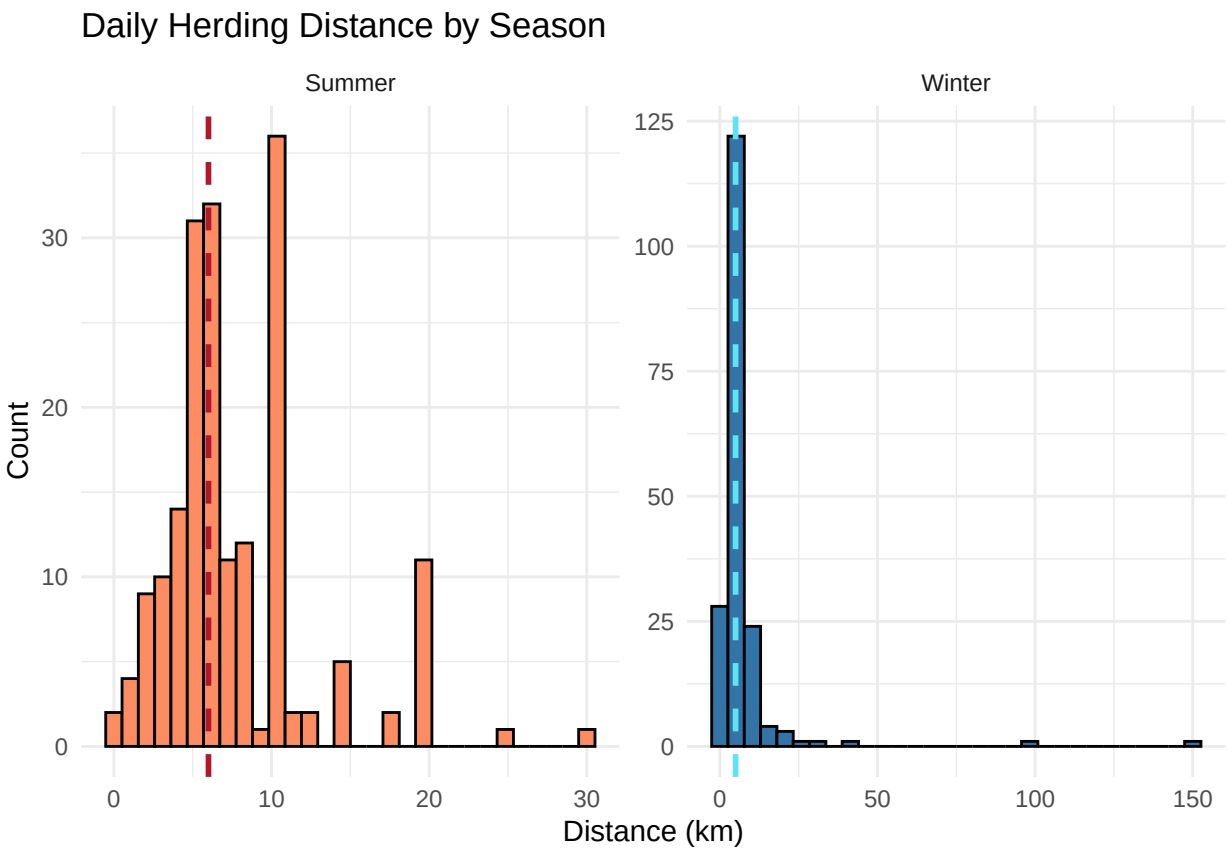
Columns: herdMgmt_thisYr_wintPast/herdMgmt_lastYr_wintPast/herdMgmt_thisYr_springPast/ herd-Mgmt_lastYr_springPast/herdMgmt_thisYr_DzudPast/herdMgmt_lastYr_DzudPast



6. Herding Distance Histograms:

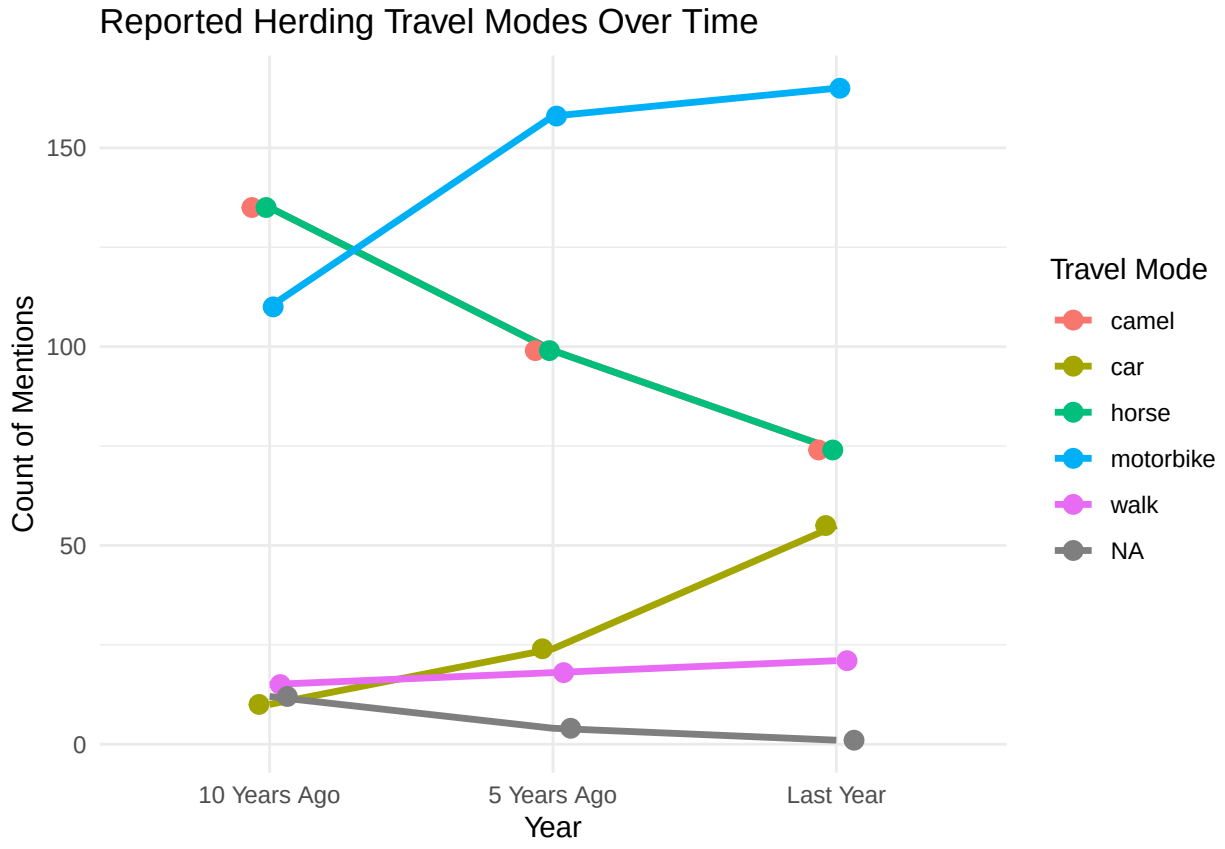
Columns: herdMgmt_sumDailyDist/herdMgmt_wintDailyDist

```
## Warning: Removed 2 rows containing non-finite outside the scale range
## (`stat_bin()`).
```


Daily Herding Distance by Season
Summer
Winter
Count
Distance (km)
0
10
20
30
0
25
50
75
100
125
0
50
100
150

7. Means of Herding Travel, plot:

Columns: herdMgmt_10yrsAgo_herdTravel/herdMgmt_5YrsAgo_herdTravel/herdMgmt_lastYr_herdTravel



8. Distance of Herding Travel, plot:

Columns: herdMgmt_10yrsAgo_dailyDist/herdMgmt_5YrsAgo_dailyDist/herdMgmt_lastYr_dailyDist