```sas
1  PROC SQL;
2  CREATE TABLE WORK.query AS
3  SELECT CASEID , Q1 , STATE , REGION , Q2C1 , Q2C1T1 , Q2C1T2 , Q2C2 , Q2C2T1 , Q2C2T2 , Q3A , Q3B , Q3C , Q3D , Q4
4  RUN;
5  QUIT;
6
7  PROC DATASETS NOLIST NODETAILS;
8  CONTENTS DATA=WORK.query OUT=WORK.details;
9  RUN;
10
11 PROC PRINT DATA=WORK.details;
12 RUN;
13 /*thesis */
14
15 libname sasintro "/folders/myfolders/";
16 proc print data =sasintro.dakota15;
17 run;
18
19 /*data cleaning proceess, delete missing variable*/
20
21 data sasintro.dakota15clean;
22     set sasintro.dakota15;
23     if Q19 = 9 then Q19=.;
24     if Q20 = 9 then Q20=.;
25     if Q21 = 9 then Q21=.;
26     if Q22 = 9 then Q22=.;
27     if Q22 = 5 then Q22=.;
28     if Q23 = 1 then Q23=12;
29     if Q23 = 2 then Q23=12;
30     if Q4=7 then Q4=.;
31     if Q15a1=9 then Q15a1=.;
32     if Q15a2=9 then Q15a2=.;
33     if Q15a3=9 then Q15a3=.;
34     if Q15a4=9 then Q15a4=.;
35     if Q15a5=9 then Q15a5=.;
36     if Q15a6=9 then Q15a6=.;
37     if Q15a7=9 then Q15a7=.;
38     if Q15a8=9 then Q15a8=.;
39     if Q15a9=9 then Q15a9=.;
40     if Q15a10=9 then Q15a10=.;
41     if Q15b= 99 then Q15b=.;
42     if Q15ACHEC=9 then Q15ACHEC=.;
43 run;
44 proc print data=sasintro.dakota15clean;run;
45
46
47 /*question 1*/
48
49 proc format;
50 value operation
51     1='Have been a farm operator'
52     2='less than 10 years as a farm operator'
53     3='10 to 10 years as a farm operator'
54     4='20 to 29 years as a farm operator'
55     5='30 years or more as a farm operator'
56     ;
57 run;
58
59 proc freq data=sasintro.dakota15;
60 label Q1 ='Years as a farm opertor';
61 tables Q1*State /norow nocol nocum;
62 format Q1 operation.;
63 run;
64
65 proc format;
66 value operation
67     1='Have been a farm operator'
68     2='less than 10 years as a farm operator'
69     3='10 to 10 years as a farm operator'
70     4='20 to 29 years as a farm operator'
71     5='30 years or more as a farm operator'
72     ;
73 run;
74
75 proc freq data=sasintro.dakota15;
```

```
76  label Q1 ='Years as a farm opertor';
77  tables Q1*Region /norow nocol nocum;
78  format Q1 operation.;
79  run;
80
81
82  /** Summary Statistics on 3a with Means**/
83
84  proc format;
85  value Farmland 10-259='1 to 259 acres'
86                 260-499='260 to 499 acres'
87                 500-999='500 to 999 acres'
88                 1000-1999='1000 to 1999 acres'
89                 2000-4999='2000 to 4999 acres'
90                 5000-high ='5000 acres and above';
91  run;
92
93  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
94  class State;
95  var Q3a;
96  label CaseID='State'
97        Q3a ='Total Farmland acres';
98  format CaseID State.;
99  run;
100
101
102 proc format;
103 value Farmland 10-259='1 to 259 acres'
104                260-499='260 to 499 acres'
105                500-999='500 to 999 acres'
106                1000-1999='1000 to 1999 acres'
107                2000-4999='2000 to 4999 acres'
108                5000-high ='5000 acres and above';
109 run;
110
111 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
112 class Region;
113 var Q3a;
114 label  Q3a ='Total Farmland acres';
115 run;
116
117 /** Summary Statistics on 3a, frequency with chisq**/
118
119 proc format;
120 value Farmland 10-259='1 to 259 acres'
121                260-499='260 to 499 acres'
122                500-999='500 to 999 acres'
123                1000-1999='1000 to 1999 acres'
124                2000-4999='2000 to 4999 acres'
125                5000-high ='5000 acres and above';
126 run;
127
128 proc freq data=sasintro.dakota15;
129 tables Q3a*State /chisq;
130 format Q3a Farmland. ;
131 run;
132
133 proc format;
134 value Farmland 10-259='1 to 259 acres'
135                260-499='260 to 499 acres'
136                500-999='500 to 999 acres'
137                1000-1999='1000 to 1999 acres'
138                2000-4999='2000 to 4999 acres'
139                5000-high ='5000 acres and above';
140 run;
141
142 proc freq data=sasintro.dakota15;
143 tables Q3a*Region /chisq;
144 format Q3a Farmland.;
145 run;
146
147
148 /** question 10 **/
149 proc format;
150 value Impact
151       1='No Impact'
```

```sas
152         2='Slight Impact'
153         3='Some Impact'
154         4='Quite a bit of Impact'
155         5='Great Impact';
156 run;
157 proc freq data=sasintro.dakota15;
158 label
159         Q10a1='Changing crop prices'
160         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
161         Q10a3='Availability of crop and revenue insurance policies'
162         Q10a4='Availability of drought-tolerant seed'
163         Q10a5='Developments in pest management practices, including pest management seed traits'
164         Q10a6='Improved crop yields (other than seed related traits)'
165         Q10a7='Development of more efficient cropping equipment'
166         Q10a8='Labor availability problems'
167         Q10a9='Improving wildlife habitat'
168         Q10a10='Changing weather /climate patterns';
169 tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*STATE/norow;
170 format  Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
171 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
172 run;
173
174 *question 10b;
175
176 proc format;
177 value State
178         1001-2182,9002='North Dakota'
179         2183-4000,9001='South Dakota';
180 value gimpact
181         01 = 'Changing crop prices'
182         02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
183         03 = 'Availability of crop and revenue insurance policies'
184         04= 'Availability of drought-tolerant seed'
185         05= 'Developments in pest management practices, including pest management seed traits'
186         06= 'Improved crop yields (other than seed related traits) '
187         07 = 'Development of more efficient cropping equipment'
188         08 = 'Labor availability problems'
189         09 = 'Improving wildlife habitat'
190         10 = 'Changing weather /climate patterns';
191 proc tabulate data=sasintro.dakota15;
192 class STATE Q10b;
193 tables Q10b,STATE;
194 format Q10b gimpact.;
195 run;
196
197 /*my data anyalysis start */
198
199 /* region and state based means analysis question 10a */
200
201 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
202 class region;
203 var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
204 label
205         Q10a1='Changing crop prices'
206         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
207         Q10a3='Availability of crop and revenue insurance policies'
208         Q10a4='Availability of drought-tolerant seed'
209         Q10a5='Developments in pest management practices, including pest management seed traits'
210         Q10a6='Improved crop yields (other than seed related traits)'
211         Q10a7='Development of more efficient cropping equipment'
212         Q10a8='Labor availability problems'
213         Q10a9='Improving wildlife habitat'
214         Q10a10='Changing weather /climate patterns';
215 run;
216
217
218 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
219 class state;
220 var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
221 label
222         Q10a1='Changing crop prices'
223         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
224         Q10a3='Availability of crop and revenue insurance policies'
225         Q10a4='Availability of drought-tolerant seed'
226         Q10a5='Developments in pest management practices, including pest management seed traits'
227         Q10a6='Improved crop yields (other than seed related traits)'
```

```sas
228          Q10a7='Development of more efficient cropping equipment'
229          Q10a8='Labor availability problems'
230          Q10a9='Improving wildlife habitat'
231          Q10a10='Changing weather /climate patterns';
232  run;
233
234
235  /*region and State based frequency analysis question 10a */
236
237
238  proc format;
239  value Impact
240          1='No Impact'
241          2='Slight Impact'
242          3='Some Impact'
243          4='Quite a bit of Impact'
244          5='Great Impact';
245  run;
246  proc freq data=sasintro.dakota15;
247  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Region / norow nocum;
248  format CaseID region. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
249  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
250  run;
251
252
253  proc format;
254  value Impact
255          1='No Impact'
256          2='Slight Impact'
257          3='Some Impact'
258          4='Quite a bit of Impact'
259          5='Great Impact';
260  run;
261  proc freq data=sasintro.dakota15;
262  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*State / norow nocum;
263  format CaseID State. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
264  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
265  run;
266
267  /*region and State based frequency question 10a with chisq*/
268
269  proc format;
270  value Impact
271          1='No Impact'
272          2='Slight Impact'
273          3='Some Impact'
274          4='Quite a bit of Impact'
275          5='Great Impact';
276  run;
277  proc freq data=sasintro.dakota15;
278  tables (Q10A1 Q10A2 Q10A3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Region /chisq;
279  format CaseID region. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
280  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
281  run;
282
283
284  proc format;
285  value Impact
286          1='No Impact'
287          2='Slight Impact'
288          3='Some Impact'
289          4='Quite a bit of Impact'
290          5='Great Impact';
291  run;
292  proc freq data=sasintro.dakota15;
293  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*State / chisq;
294  format CaseID State. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
295  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
296  run;
297
298
299  /* proc tabulute region and state based 10a*/
300
301  proc tabulate data=sasintro.dakota15 format=6.;
302  class Region;
303  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
```

```sas
304  label
305          Q10a1='Changing crop prices'
306          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
307          Q10a3='Availability of crop and revenue insurance policies'
308          Q10a4='Availability of drought-tolerant seed'
309          Q10a5='Developments in pest management practices, including pest management seed traits'
310          Q10a6='Improved crop yields (other than seed related traits)'
311          Q10a7='Development of more efficient cropping equipment'
312          Q10a8='Labor availability problems'
313          Q10a9='Improving wildlife habitat'
314          Q10a10='Changing weather /climate patterns';
315  table (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10),Region;
316  run;
317
318
319  proc tabulate data=sasintro.dakota15 format=6.;
320  class State;
321  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
322  label
323          Q10a1='Changing crop prices'
324          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
325          Q10a3='Availability of crop and revenue insurance policies'
326          Q10a4='Availability of drought-tolerant seed'
327          Q10a5='Developments in pest management practices, including pest management seed traits'
328          Q10a6='Improved crop yields (other than seed related traits)'
329          Q10a7='Development of more efficient cropping equipment'
330          Q10a8='Labor availability problems'
331          Q10a9='Improving wildlife habitat'
332          Q10a10='Changing weather /climate patterns';
333  table (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10),State;
334  run;
335
336
337  /* 10b tabulate analysis region and state based */
338
339  proc format;
340  value State
341          1001-2182,9002='North Dakota'
342          2183-4000,9001='South Dakota';
343  value gimpact
344          01 = 'Changing crop prices'
345          02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
346          03 = 'Availability of crop and revenue insurance policies'
347          04= 'Availability of drought-tolerant seed'
348          05= 'Developments in pest management practices, including pest management seed traits'
349          06= 'Improved crop yields (other than seed related traits) '
350          07 = 'Development of more efficient cropping equipment'
351          08 = 'Labor availability problems'
352          09 = 'Improving wildlife habitat'
353          10 = 'Changing weather /climate patterns';
354  proc tabulate data=sasintro.dakota15;
355  class STATE Q10b;
356  tables Q10b,STATE;
357  format  Q10b gimpact.;
358  run;
359
360  proc format;
361  value State
362          1001-2182,9002='North Dakota'
363          2183-4000,9001='South Dakota';
364  value gimpact
365          01 = 'Changing crop prices'
366          02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
367          03 = 'Availability of crop and revenue insurance policies'
368          04= 'Availability of drought-tolerant seed'
369          05= 'Developments in pest management practices, including pest management seed traits'
370          06= 'Improved crop yields (other than seed related traits) '
371          07 = 'Development of more efficient cropping equipment'
372          08 = 'Labor availability problems'
373          09 = 'Improving wildlife habitat'
374          10 = 'Changing weather /climate patterns';
375  run;
376  proc tabulate data=sasintro.dakota15;
377  class region;
378  tables Q10b, Region;
379  format Q10b gimpact.;
```

```sas
380 run;
381
382
383 /* 10b means analysis region and state based */
384
385 proc format;
386 value State
387      1001-2182,9002='North Dakota'
388      2183-4000,9001='South Dakota';
389 value gimpact
390      01 = 'Changing crop prices'
391      02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
392      03 = 'Availability of crop and revenue insurance policies'
393      04= 'Availability of drought-tolerant seed'
394      05= 'Developments in pest management practices, including pest management seed traits'
395      06= 'Improved crop yields (other than seed related traits) '
396      07 = 'Development of more efficient cropping equipment'
397      08 = 'Labor availability problems'
398      09 = 'Improving wildlife habitat'
399      10 = 'Changing weather /climate patterns';
400 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
401 class State;
402 var Q10B;
403 format Q10b gimpact.;
404 run;
405
406
407
408 proc format;
409 value State
410      1001-2182,9002='North Dakota'
411      2183-4000,9001='South Dakota';
412 value gimpact
413      01 = 'Changing crop prices'
414      02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
415      03 = 'Availability of crop and revenue insurance policies'
416      04= 'Availability of drought-tolerant seed'
417      05= 'Developments in pest management practices, including pest management seed traits'
418      06= 'Improved crop yields (other than seed related traits) '
419      07 = 'Development of more efficient cropping equipment'
420      08 = 'Labor availability problems'
421      09 = 'Improving wildlife habitat'
422      10 = 'Changing weather /climate patterns';
423 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
424 class Region;
425 var Q10B;
426 format Q10b gimpact.;
427 run;
428
429 /* 10b frequency distribution analysis region and state based */
430
431 proc format;
432 value State
433      1001-2182,9002='North Dakota'
434      2183-4000,9001='South Dakota';
435 value gimpact
436      01 = 'Changing crop prices'
437      02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
438      03 = 'Availability of crop and revenue insurance policies'
439      04= 'Availability of drought-tolerant seed'
440      05= 'Developments in pest management practices, including pest management seed traits'
441      06= 'Improved crop yields (other than seed related traits) '
442      07 = 'Development of more efficient cropping equipment'
443      08 = 'Labor availability problems'
444      09 = 'Improving wildlife habitat'
445      10 = 'Changing weather /climate patterns';
446 run;
447 proc  freq data=sasintro.dakota15;
448 label
449      Q10B ='Greatest Impact on Changes in Land Use';
450 tables Q10B *Region / nocum;
451 format Q10B gimpact.;
452 run;
453
454
455 proc format;
```

```
456 value State
457       1001-2182,9002='North Dakota'
458       2183-4000,9001='South Dakota';
459 value gimpact
460       01 = 'Changing crop prices'
461       02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
462       03 = 'Availability of crop and revenue insurance policies'
463       04= 'Availability of drought-tolerant seed'
464       05= 'Developments in pest management practices, including pest management seed traits'
465       06= 'Improved crop yields (other than seed related traits) '
466       07 = 'Development of more efficient cropping equipment'
467       08 = 'Labor availability problems'
468       09 = 'Improving wildlife habitat'
469       10 = 'Changing weather /climate patterns';
470 proc  freq data=sasintro.dakota15;
471 label
472         Q10B ='Greatest Impact on Changes in Land Use';
473 tables Q10B *STATE/ norow nocum;
474 format Q10B gimpact. ;
475 run;
476
477 /* 10b frequency distribution analysis region and state based with chisq  */
478
479 proc format;
480 value State
481       1001-2182,9002='North Dakota'
482       2183-4000,9001='South Dakota';
483 value gimpact
484       01 = 'Changing crop prices'
485       02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
486       03 = 'Availability of crop and revenue insurance policies'
487       04= 'Availability of drought-tolerant seed'
488       05= 'Developments in pest management practices, including pest management seed traits'
489       06= 'Improved crop yields (other than seed related traits) '
490       07 = 'Development of more efficient cropping equipment'
491       08 = 'Labor availability problems'
492       09 = 'Improving wildlife habitat'
493       10 = 'Changing weather /climate patterns';
494 run;
495 proc  freq data=sasintro.dakota15;
496 label
497         Q10B ='Greatest Impact on Changes in Land Use';
498 tables Q10B *Region / chisq;
499 format Q10B gimpact.;
500 run;
501
502
503 proc format;
504 value State
505       1001-2182,9002='North Dakota'
506       2183-4000,9001='South Dakota';
507 value gimpact
508       01 = 'Changing crop prices'
509       02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
510       03 = 'Availability of crop and revenue insurance policies'
511       04= 'Availability of drought-tolerant seed'
512       05= 'Developments in pest management practices, including pest management seed traits'
513       06= 'Improved crop yields (other than seed related traits) '
514       07 = 'Development of more efficient cropping equipment'
515       08 = 'Labor availability problems'
516       09 = 'Improving wildlife habitat'
517       10 = 'Changing weather /climate patterns';
518 proc  freq data=sasintro.dakota15;
519 label
520         Q10B ='Greatest Impact on Changes in Land Use';
521 tables Q10B *STATE / chisq;
522 format Q10B gimpact.;
523 run;
524
525
526 /* Q10a and means by selected farm operator 19-23 plus 1, 3a and 4*/
527
528 proc format;
529 value Age
530       1='19 to 34 years'
531       2='35 to 49 years'
```

```
532        3='50 to 59 years'
533        4='60 to 69 years'
534        5='70 years and over';
535
536 value Gender
537        1='Male'
538        2='Female';
539
540
541 value Education
542        1='Less than high school'
543        2='High school'
544        3='Some college/technical school'
545        4='4-year college degree'
546        5='Advanced degree (Masters, etc.)';
547
548
549 value Occupation
550        1='Farming or Ranching'
551        2='Employment in off-farm job'
552        3='Own/operate a non-farm business'
553        4='Retired';
554
555 value Sales
556
557        12='Less than $99,999'
558        3='From $100,000 up to $249,999'
559        4='From $250,000 up to $499,999'
560        5='From $500,000 up to $999,999'
561        6='$1 million or more';
562 run;
563
564
565 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
566 class Q19;
567 var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
568 label Q19='Respondent Age'
569        Q10a1='Changing crop prices'
570        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
571        Q10a3='Availability of crop and revenue insurance policies'
572        Q10a4='Availability of drought-tolerant seed'
573        Q10a5='Developments in pest management practices, including pest management seed traits'
574        Q10a6='Improved crop yields (other than seed related traits)'
575        Q10a7='Development of more efficient cropping equipment'
576        Q10a8='Labor availability problems'
577        Q10a9='Improving wildlife habitat'
578        Q10a10='Changing weather /climate patterns';
579 format Q19 Age.;
580 run;
581
582
583 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
584 class Q20;
585 var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
586 label Q20='Respondent Gender'
587        Q10a1='Changing crop prices'
588        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
589        Q10a3='Availability of crop and revenue insurance policies'
590        Q10a4='Availability of drought-tolerant seed'
591        Q10a5='Developments in pest management practices, including pest management seed traits'
592        Q10a6='Improved crop yields (other than seed related traits)'
593        Q10a7='Development of more efficient cropping equipment'
594        Q10a8='Labor availability problems'
595        Q10a9='Improving wildlife habitat'
596        Q10a10='Changing weather /climate patterns';
597 format Q20 Gender.;
598 run;
599
600 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
601 class Q21;
602 var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
603 label Q21='Respondent Level of Education'
604        Q10a1='Changing crop prices'
605        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
606        Q10a3='Availability of crop and revenue insurance policies'
607        Q10a4='Availability of drought-tolerant seed'
```

```
608          Q10a5='Developments in pest management practices, including pest management seed traits'
609          Q10a6='Improved crop yields (other than seed related traits)'
610          Q10a7='Development of more efficient cropping equipment'
611          Q10a8='Labor availability problems'
612          Q10a9='Improving wildlife habitat'
613          Q10a10='Changing weather /climate patterns';
614   format Q21 Education.;
615   run;
616
617   proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
618   class Q22;
619   var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
620   label Q22='Principal Occupation'
621          Q10a1='Changing crop prices'
622          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
623          Q10a3='Availability of crop and revenue insurance policies'
624          Q10a4='Availability of drought-tolerant seed'
625          Q10a5='Developments in pest management practices, including pest management seed traits'
626          Q10a6='Improved crop yields (other than seed related traits)'
627          Q10a7='Development of more efficient cropping equipment'
628          Q10a8='Labor availability problems'
629          Q10a9='Improving wildlife habitat'
630          Q10a10='Changing weather /climate patterns';
631   format Q22 Occupation.;
632   run;
633
634   proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
635   class Q23;
636   var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
637   label Q23='Gross farm/ranch sales'
638          Q10a1='Changing crop prices'
639          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
640          Q10a3='Availability of crop and revenue insurance policies'
641          Q10a4='Availability of drought-tolerant seed'
642          Q10a5='Developments in pest management practices, including pest management seed traits'
643          Q10a6='Improved crop yields (other than seed related traits)'
644          Q10a7='Development of more efficient cropping equipment'
645          Q10a8='Labor availability problems'
646          Q10a9='Improving wildlife habitat'
647          Q10a10='Changing weather /climate patterns';
648   format Q23 Sales.;
649   run;
650
651
652   proc format;
653   value operation
654          1='Have been a farm operator'
655          2='less than 10 years as a farm operator'
656          3='10 to 10 years as a farm operator'
657          4='20 to 29 years as a farm operator'
658          5='30 years or more as a farm operator'
659          ;
660   run;
661
662   proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
663   class Q1;
664   var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
665   label Q1 ='Years as a farm opertor'
666          Q10a1='Changing crop prices'
667          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
668          Q10a3='Availability of crop and revenue insurance policies'
669          Q10a4='Availability of drought-tolerant seed'
670          Q10a5='Developments in pest management practices, including pest management seed traits'
671          Q10a6='Improved crop yields (other than seed related traits)'
672          Q10a7='Development of more efficient cropping equipment'
673          Q10a8='Labor availability problems'
674          Q10a9='Improving wildlife habitat'
675          Q10a10='Changing weather /climate patterns';
676   format Q1 operation.;
677   run;
678
679   proc format;
680   value Farmland 10-259='1 to 259 acres'
681                  260-499='260 to 499 acres'
682                  500-999='500 to 999 acres'
683                  1000-1999='1000 to 1999 acres'
```

```
684                  2000-4999='2000 to 4999 acres'
685                  5000-high ='5000 acres and above';
686  run;
687
688  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
689  class Q3a;
690  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
691  label Q3a ='Farmland acres operated in 2014'
692        Q10a1='Changing crop prices'
693        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
694        Q10a3='Availability of crop and revenue insurance policies'
695        Q10a4='Availability of drought-tolerant seed'
696        Q10a5='Developments in pest management practices, including pest management seed traits'
697        Q10a6='Improved crop yields (other than seed related traits)'
698        Q10a7='Development of more efficient cropping equipment'
699        Q10a8='Labor availability problems'
700        Q10a9='Improving wildlife habitat'
701        Q10a10='Changing weather /climate patterns';
702  format Q3a Farmland.;
703  run;
704
705  proc format;
706  value Ownership
707        1='Own all acres farmed'
708        2='Own most acres farmed, rented the remainder'
709        3='Own and rent roughly equal number of farmland acres'
710        4='Rented most of the acres farmed,owned the remainder'
711        5='Rented all acres farmland'
712        6='Professional farm manager';
713  run;
714
715  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
716  class Q4;
717  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
718  label Q4 ='Best Ownership Status in 2014'
719        Q10a1='Changing crop prices'
720        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
721        Q10a3='Availability of crop and revenue insurance policies'
722        Q10a4='Availability of drought-tolerant seed'
723        Q10a5='Developments in pest management practices, including pest management seed traits'
724        Q10a6='Improved crop yields (other than seed related traits)'
725        Q10a7='Development of more efficient cropping equipment'
726        Q10a8='Labor availability problems'
727        Q10a9='Improving wildlife habitat'
728        Q10a10='Changing weather /climate patterns';
729  format Q4 Ownership.;
730  run;
731
732
733  /* Q10a and frequency distribution by selected farm operator 19-23 plus 1, 3a and 4*/
734
735  proc format;
736  value Age
737        1='19 to 34 years'
738        2='35 to 49 years'
739        3='50 to 59 years'
740        4='60 to 69 years'
741        5='70 years and over';
742
743  value Gender
744        1='Male'
745        2='Female';
746
747  value Education
748        1='Less than high school'
749        2='High school'
750        3='Some college/technical school'
751        4='4-year college degree'
752        5='Advanced degree (Masters, etc.)';
753
754  value Occupation
755        1='Farming or Ranching'
756        2='Employment in off-farm job'
757        3='Own/operate a non-farm business'
758        4='Retired';
759
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760  value Sales
761
762          12='Less than $99,999'
763          3='From $100,000 up to $249,999'
764          4='From $250,000 up to $499,999'
765          5='From $500,000 up to $999,999'
766          6='$1 million or more'
767
768  proc format;
769  value Impact
770          1='No Impact'
771          2='Slight Impact'
772          3='Some Impact'
773          4='Quite a bit of Impact'
774          5='Great Impact';
775  run;
776
777
778  proc freq data=sasintro.dakota15clean;
779  label Q19='Respondent Age'
780          Q10a1='Changing crop prices'
781          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
782          Q10a3='Availability of crop and revenue insurance policies'
783          Q10a4='Availability of drought-tolerant seed'
784          Q10a5='Developments in pest management practices, including pest management seed traits'
785          Q10a6='Improved crop yields (other than seed related traits)'
786          Q10a7='Development of more efficient cropping equipment'
787          Q10a8='Labor availability problems'
788          Q10a9='Improving wildlife habitat'
789          Q10a10='Changing weather /climate patterns';
790  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q19/norow;
791  format Q19 Age. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
792  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
793  run;
794
795  proc freq data=sasintro.dakota15clean;
796  label Q20='Respondent Gender'
797          Q10a1='Changing crop prices'
798          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
799          Q10a3='Availability of crop and revenue insurance policies'
800          Q10a4='Availability of drought-tolerant seed'
801          Q10a5='Developments in pest management practices, including pest management seed traits'
802          Q10a6='Improved crop yields (other than seed related traits)'
803          Q10a7='Development of more efficient cropping equipment'
804          Q10a8='Labor availability problems'
805          Q10a9='Improving wildlife habitat'
806          Q10a10='Changing weather /climate patterns';
807  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q20/norow;
808  format Q20 Gender. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
809  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
810  run;
811
812  proc freq data=sasintro.dakota15clean;
813  label Q21='Respondent Level of Education'
814          Q10a1='Changing crop prices'
815          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
816          Q10a3='Availability of crop and revenue insurance policies'
817          Q10a4='Availability of drought-tolerant seed'
818          Q10a5='Developments in pest management practices, including pest management seed traits'
819          Q10a6='Improved crop yields (other than seed related traits)'
820          Q10a7='Development of more efficient cropping equipment'
821          Q10a8='Labor availability problems'
822          Q10a9='Improving wildlife habitat'
823          Q10a10='Changing weather /climate patterns';
824  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q21/norow;
825  format Q21 Education. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
826  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
827  run;
828
829  proc freq data=sasintro.dakota15clean;
830  label Q22='Principal Occupation'
831          Q10a1='Changing crop prices'
832          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
833          Q10a3='Availability of crop and revenue insurance policies'
834          Q10a4='Availability of drought-tolerant seed'
835          Q10a5='Developments in pest management practices, including pest management seed traits'
```

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836          Q10a6='Improved crop yields (other than seed related traits)'
837          Q10a7='Development of more efficient cropping equipment'
838          Q10a8='Labor availability problems'
839          Q10a9='Improving wildlife habitat'
840          Q10a10='Changing weather /climate patterns';
841 tables  (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q22/norow;
842 format  Q22 Occupation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
843 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
844 run;
845
846 proc freq data=sasintro.dakota15clean;
847 label Q23='Gross farm/ranch sales'
848          Q10a1='Changing crop prices'
849          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
850          Q10a3='Availability of crop and revenue insurance policies'
851          Q10a4='Availability of drought-tolerant seed'
852          Q10a5='Developments in pest management practices, including pest management seed traits'
853          Q10a6='Improved crop yields (other than seed related traits)'
854          Q10a7='Development of more efficient cropping equipment'
855          Q10a8='Labor availability problems'
856          Q10a9='Improving wildlife habitat'
857          Q10a10='Changing weather /climate patterns';
858 tables  (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q23/norow;
859 format  Q23 Sales. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
860 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
861 run;
862
863
864 proc format;
865 value operation
866          1='Have been a farm operator'
867          2='less than 10 years as a farm operator'
868          3='10 to 10 years as a farm operator'
869          4='20 to 29 years as a farm operator'
870          5='30 years or more as a farm operator'
871          ;
872 run;
873
874 proc freq data=sasintro.dakota15clean;
875 label Q1 ='Years as a farm opertor'
876          Q10a1='Changing crop prices'
877          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
878          Q10a3='Availability of crop and revenue insurance policies'
879          Q10a4='Availability of drought-tolerant seed'
880          Q10a5='Developments in pest management practices, including pest management seed traits'
881          Q10a6='Improved crop yields (other than seed related traits)'
882          Q10a7='Development of more efficient cropping equipment'
883          Q10a8='Labor availability problems'
884          Q10a9='Improving wildlife habitat'
885          Q10a10='Changing weather /climate patterns';
886 tables  (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q1/norow;
887 format  Q1 Operation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
888 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
889 run;
890
891 proc format;
892 value Farmland 10-259='1 to 259 acres'
893                 260-499='260 to 499 acres'
894                 500-999='500 to 999 acres'
895                 1000-1999='1000 to 1999 acres'
896                 2000-4999='2000 to 4999 acres'
897                 5000-high ='5000 acres and above';
898 run;
899
900 proc freq data=sasintro.dakota15clean;
901 label Q3a ='Farmland Acres Operated in 2014'
902          Q10a1='Changing crop prices'
903          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
904          Q10a3='Availability of crop and revenue insurance policies'
905          Q10a4='Availability of drought-tolerant seed'
906          Q10a5='Developments in pest management practices, including pest management seed traits'
907          Q10a6='Improved crop yields (other than seed related traits)'
908          Q10a7='Development of more efficient cropping equipment'
909          Q10a8='Labor availability problems'
910          Q10a9='Improving wildlife habitat'
911          Q10a10='Changing weather /climate patterns';
```

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912  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q3a/norow;
913  format Q3a Farmland. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
914  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
915  run;
916
917
918  proc format;
919  value Ownership
920        1='Own all acres farmed'
921        2='Own most acres farmed, rented the remainder'
922        3='Own and rent roughly equal number of farmland acres'
923        4='Rented most of the acres farmed,owned the remainder'
924        5='Rented all acres farmland'
925        6='Professional farm manager';
926  run;
927
928  proc freq data=sasintro.dakota15clean;
929  label Q4 ='Best Ownersip Status in 2014'
930        Q10a1='Changing crop prices'
931        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
932        Q10a3='Availability of crop and revenue insurance policies'
933        Q10a4='Availability of drought-tolerant seed'
934        Q10a5='Developments in pest management practices, including pest management seed traits'
935        Q10a6='Improved crop yields (other than seed related traits)'
936        Q10a7='Development of more efficient cropping equipment'
937        Q10a8='Labor availability problems'
938        Q10a9='Improving wildlife habitat'
939        Q10a10='Changing weather /climate patterns';
940  tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q4/norow;
941  format Q4 Ownership. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
942  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
943  run;
944
945  /* 10a frequency distribution by Selected Farm operator(19-23, 1,3a and 4 with chisqu*/
946
947  proc format;
948  value Age
949        1='19 to 34 years'
950        2='35 to 49 years'
951        3='50 to 59 years'
952        4='60 to 69 years'
953        5='70 years and over';
954
955  value Gender
956        1='Male'
957        2='Female';
958
959  value Education
960        1='Less than high school'
961        2='High school'
962        3='Some college/technical school'
963        4='4-year college degree'
964        5='Advanced degree (Masters, etc.)';
965
966  value Occupation
967        1='Farming or Ranching'
968        2='Employment in off-farm job'
969        3='Own/operate a non-farm business'
970        4='Retired';
971
972  value Sales
973
974        12='Less than $99,999'
975        3='From $100,000 up to $249,999'
976        4='From $250,000 up to $499,999'
977        5='From $500,000 up to $999,999'
978        6='$1 million or more';
979
980
981  proc format;
982  value Impact
983        1='No Impact'
984        2='Slight Impact'
985        3='Some Impact'
986        4='Quite a bit of Impact'
987        5='Great Impact';
```

```
 988  run;
 989
 990  proc freq data=sasintro.dakota15clean;
 991  label Q19='Respondent Age'
 992        Q10a1='Changing crop prices'
 993        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
 994        Q10a3='Availability of crop and revenue insurance policies'
 995        Q10a4='Availability of drought-tolerant seed'
 996        Q10a5='Developments in pest management practices, including pest management seed traits'
 997        Q10a6='Improved crop yields (other than seed related traits)'
 998        Q10a7='Development of more efficient cropping equipment'
 999        Q10a8='Labor availability problems'
1000        Q10a9='Improving wildlife habitat'
1001        Q10a10='Changing weather /climate patterns';
1002  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q19/chisq;
1003  format Q19 Age. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1004  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1005  run;
1006
1007  proc freq data=sasintro.dakota15clean;
1008  label Q20='Respondent Gender'
1009        Q10a1='Changing crop prices'
1010        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1011        Q10a3='Availability of crop and revenue insurance policies'
1012        Q10a4='Availability of drought-tolerant seed'
1013        Q10a5='Developments in pest management practices, including pest management seed traits'
1014        Q10a6='Improved crop yields (other than seed related traits)'
1015        Q10a7='Development of more efficient cropping equipment'
1016        Q10a8='Labor availability problems'
1017        Q10a9='Improving wildlife habitat'
1018        Q10a10='Changing weather /climate patterns';
1019  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q20/chisq;
1020  format Q20 Gender. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1021  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1022  run;
1023
1024  proc freq data=sasintro.dakota15clean;
1025  label Q21='Respondent Level of Education'
1026        Q10a1='Changing crop prices'
1027        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1028        Q10a3='Availability of crop and revenue insurance policies'
1029        Q10a4='Availability of drought-tolerant seed'
1030        Q10a5='Developments in pest management practices, including pest management seed traits'
1031        Q10a6='Improved crop yields (other than seed related traits)'
1032        Q10a7='Development of more efficient cropping equipment'
1033        Q10a8='Labor availability problems'
1034        Q10a9='Improving wildlife habitat'
1035        Q10a10='Changing weather /climate patterns';
1036  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q21/chisq;
1037  format Q21 Education. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1038  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1039  run;
1040
1041  proc freq data=sasintro.dakota15clean;
1042  label Q22='Principal Occupation'
1043        Q10a1='Changing crop prices'
1044        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1045        Q10a3='Availability of crop and revenue insurance policies'
1046        Q10a4='Availability of drought-tolerant seed'
1047        Q10a5='Developments in pest management practices, including pest management seed traits'
1048        Q10a6='Improved crop yields (other than seed related traits)'
1049        Q10a7='Development of more efficient cropping equipment'
1050        Q10a8='Labor availability problems'
1051        Q10a9='Improving wildlife habitat'
1052        Q10a10='Changing weather /climate patterns';
1053  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q22/chisq;
1054  format Q22 Occupation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1055  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1056  run;
1057
1058  proc freq data=sasintro.dakota15clean;
1059  label Q23='Gross farm/ranch sales'
1060        Q10a1='Changing crop prices'
1061        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1062        Q10a3='Availability of crop and revenue insurance policies'
1063        Q10a4='Availability of drought-tolerant seed'
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1064          Q10a5='Developments in pest management practices, including pest management seed traits'
1065          Q10a6='Improved crop yields (other than seed related traits)'
1066          Q10a7='Development of more efficient cropping equipment'
1067          Q10a8='Labor availability problems'
1068          Q10a9='Improving wildlife habitat'
1069          Q10a10='Changing weather /climate patterns';
1070 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q23/chisq;
1071 format Q23 Sales. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1072 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1073 run;
1074
1075
1076 proc format;
1077 value operation
1078          1='Have been a farm operator'
1079          2='less than 10 years as a farm operator'
1080          3='10 to 10 years as a farm operator'
1081          4='20 to 29 years as a farm operator'
1082          5='30 years or more as a farm operator'
1083          ;
1084 run;
1085
1086 proc freq data=sasintro.dakota15clean;
1087 label Q1 ='Years as a farm opertor'
1088          Q10a1='Changing crop prices'
1089          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1090          Q10a3='Availability of crop and revenue insurance policies'
1091          Q10a4='Availability of drought-tolerant seed'
1092          Q10a5='Developments in pest management practices, including pest management seed traits'
1093          Q10a6='Improved crop yields (other than seed related traits)'
1094          Q10a7='Development of more efficient cropping equipment'
1095          Q10a8='Labor availability problems'
1096          Q10a9='Improving wildlife habitat'
1097          Q10a10='Changing weather /climate patterns';
1098 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q1/chisq;
1099 format Q1 Operation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1100 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1101 run;
1102
1103 proc format;
1104 value Farmland 10-259='1 to 259 acres'
1105                260-499='260 to 499 acres'
1106                500-999='500 to 999 acres'
1107                1000-1999='1000 to 1999 acres'
1108                2000-4999='2000 to 4999 acres'
1109                5000-high ='5000 acres and above';
1110 run;
1111
1112 proc freq data=sasintro.dakota15clean;
1113 label Q3a ='Farmland Acres Operated in 2014'
1114          Q10a1='Changing crop prices'
1115          Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1116          Q10a3='Availability of crop and revenue insurance policies'
1117          Q10a4='Availability of drought-tolerant seed'
1118          Q10a5='Developments in pest management practices, including pest management seed traits'
1119          Q10a6='Improved crop yields (other than seed related traits)'
1120          Q10a7='Development of more efficient cropping equipment'
1121          Q10a8='Labor availability problems'
1122          Q10a9='Improving wildlife habitat'
1123          Q10a10='Changing weather /climate patterns';
1124 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q3a/chisq;
1125 format Q3a Farmland. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1126 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1127 run;
1128
1129
1130 proc format;
1131 value Ownership
1132          1='Own all acres farmed'
1133          2='Own most acres farmed, rented the remainder'
1134          3='Own and rent roughly equal number of farmland acres'
1135          4='Rented most of the acres farmed,owned the remainder'
1136          5='Rented all acres farmland'
1137          6='Professional farm manager';
1138 run;
1139
```

```sas
1140  proc freq data=sasintro.dakota15clean;
1141  label Q4 ='Best Ownersip Status in 2014'
1142        Q10a1='Changing crop prices'
1143        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1144        Q10a3='Availability of crop and revenue insurance policies'
1145        Q10a4='Availability of drought-tolerant seed'
1146        Q10a5='Developments in pest management practices, including pest management seed traits'
1147        Q10a6='Improved crop yields (other than seed related traits)'
1148        Q10a7='Development of more efficient cropping equipment'
1149        Q10a8='Labor availability problems'
1150        Q10a9='Improving wildlife habitat'
1151        Q10a10='Changing weather /climate patterns';
1152  tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q4/chisq;
1153  format Q4 Ownership. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1154  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1155  run;
1156
1157
1158  /*Qestion 3, More complete analysis of land use conversiob decisions (Q9 iteams)
1159   and land use conversion intentions (Q11 items) */
1160
1161  /*part one Q9 analysis with means*/
1162
1163
1164  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1165  class State;
1166  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN ;
1167  label
1168        Q9aYN='Conversion of native grass to cropland'
1169        Q9bYN='Conversion of tamend grassland to cropland'
1170        Q9cYN='Conversion of CRP land to cropland'
1171        Q9dYN='Conversion of CRP land to pasture/hay'
1172        Q9eYN='Enrollment of farmland acres to CRP'
1173        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1174  format Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1175  Q9eYN Response. Q9fYN Response.;
1176  run;
1177
1178  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1179  class Region;
1180  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN ;
1181  label
1182        Q9aYN='Conversion of native grass to cropland'
1183        Q9bYN='Conversion of tamend grassland to cropland'
1184        Q9cYN='Conversion of CRP land to cropland'
1185        Q9dYN='Conversion of CRP land to pasture/hay'
1186        Q9eYN='Enrollment of farmland acres to CRP'
1187        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1188  format  Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1189  Q9eYN Response. Q9fYN Response.;
1190  run;
1191
1192
1193  /*part one Q9 analysis with frequency*/
1194
1195  proc format;
1196  value Response
1197        1='Yes'
1198        2='No';
1199  run;
1200  proc freq data=sasintro.dakota15clean;
1201  label
1202        Q9aYN='Conversion of native grass to cropland'
1203        Q9bYN='Conversion of tamend grassland to cropland'
1204        Q9cYN='Conversion of CRP land to cropland'
1205        Q9dYN='Conversion of CRP land to pasture/hay'
1206        Q9eYN='Enrollment of farmland acres to CRP'
1207        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1208  table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*State/norow;
1209  format  Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1210  Q9eYN Response. Q9fYN Response.;
1211  run;
1212
1213
1214  proc format;
1215  value Response
```

```sas
1216            1='Yes'
1217            2='No';
1218  run;
1219  proc freq data=sasintro.dakota15clean;
1220  label
1221          Q9aYN='Conversion of native grass to cropland'
1222          Q9bYN='Conversion of tamend grassland to cropland'
1223          Q9cYN='Conversion of CRP land to cropland'
1224          Q9dYN='Conversion of CRP land to pasture/hay'
1225          Q9eYN='Enrollment of farmland acres to CRP'
1226          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1227  table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)* Region/norow;
1228  format  Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1229  Q9eYN Response. Q9fYN Response.;
1230  run;
1231
1232  /*part one Q9 analysis with frequency chisq */
1233
1234  proc format;
1235  value Response
1236          1='Yes'
1237          2='No';
1238  run;
1239  proc freq data=sasintro.dakota15clean;
1240  label
1241          Q9aYN='Conversion of native grass to cropland'
1242          Q9bYN='Conversion of tamend grassland to cropland'
1243          Q9cYN='Conversion of CRP land to cropland'
1244          Q9dYN='Conversion of CRP land to pasture/hay'
1245          Q9eYN='Enrollment of farmland acres to CRP'
1246          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1247  table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*state/chisq;
1248  format  Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1249  Q9eYN Response. Q9fYN Response.;
1250  run;
1251
1252
1253  proc format;
1254  value Response
1255          1='Yes'
1256          2='No';
1257  run;
1258  proc freq data=sasintro.dakota15clean;
1259  label
1260          Q9aYN='Conversion of native grass to cropland'
1261          Q9bYN='Conversion of tamend grassland to cropland'
1262          Q9cYN='Conversion of CRP land to cropland'
1263          Q9dYN='Conversion of CRP land to pasture/hay'
1264          Q9eYN='Enrollment of farmland acres to CRP'
1265          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1266  table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)* Region/chisq;
1267  format  Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1268  Q9eYN Response. Q9fYN Response.;
1269  run;
1270
1271  /*part one Q9 analysis with tabulate*/
1272
1273  proc tabulate data=sasintro.dakota15clean format=6.;
1274  class state;
1275  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1276  label
1277          Q9aYN='Conversion of native grass to cropland'
1278          Q9bYN='Conversion of tamend grassland to cropland'
1279          Q9cYN='Conversion of CRP land to cropland'
1280          Q9dYN='Conversion of CRP land to pasture/hay'
1281          Q9eYN='Enrollment of farmland acres to CRP'
1282          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1283  table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN), state;
1284  run;
1285
1286
1287  proc tabulate data=sasintro.dakota15clean format=6.;
1288  class Region;
1289  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1290  label
1291          Q9aYN='Conversion of native grass to cropland'
```

```
1292          Q9bYN='Conversion of tamend grassland to cropland'
1293          Q9cYN='Conversion of CRP land to cropland'
1294          Q9dYN='Conversion of CRP land to pasture/hay'
1295          Q9eYN='Enrollment of farmland acres to CRP'
1296          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1297 table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN), Region;
1298 run;
1299
1300
1301 /*part two Q9 state and region based analysis with means*/
1302
1303 proc format;
1304 value Farmacres  0 ='0 acres'
1305                  1-99 = '1 to 99 acres'
1306                  100-179 ='100 to 179 acres'
1307                  180-259 ='180 to 259 acres'
1308                  260-499 ='260 to 499 acres'
1309                  500-high ='500 acrsa and above';
1310 run;
1311 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
1312 var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC ;
1313 label
1314      Q9aAC='Conversion of native grass to cropland'
1315      Q9bAC='Conversion of tamend grassland to cropland'
1316      Q9cAC='Conversion of CRP land to cropland'
1317      Q9dAC='Conversion of CRP land to pasture/hay'
1318      Q9eAC='Enrollment of farmland acres to CRP'
1319      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1320 run;
1321
1322 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
1323 class Region;
1324 var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC ;
1325 label
1326      Q9aAC='Conversion of native grass to cropland'
1327      Q9bAC='Conversion of tamend grassland to cropland'
1328      Q9cAC='Conversion of CRP land to cropland'
1329      Q9dAC='Conversion of CRP land to pasture/hay'
1330      Q9eAC='Enrollment of farmland acres to CRP'
1331      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1332 run;
1333
1334 /*part two, Q9 state and region based analysis with frequency*/
1335
1336 proc format;
1337 value Farmacres  0 ='0 acres'
1338                  1-99 = '1 to 99 acres'
1339                  100-179 ='100 to 179 acres'
1340                  180-259 ='180 to 259 acres'
1341                  260-499 ='260 to 499 acres'
1342                  500-high ='500 acres and above';
1343 run;
1344 proc freq data=sasintro.dakota15;
1345 label
1346      Q9aAC='Conversion of native grass to cropland'
1347      Q9bAC='Conversion of tamend grassland to cropland'
1348      Q9cAC='Conversion of CRP land to cropland'
1349      Q9dAC='Conversion of CRP land to pasture/hay'
1350      Q9eAC='Enrollment of farmland acres to CRP'
1351      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1352 table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*state/norow;
1353 format  Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
1354 Q9eAC Farmacres. Q9fAC Farmacres.;
1355 run;
1356
1357
1358 proc freq data=sasintro.dakota15;
1359 label
1360      Q9aAC='Conversion of native grass to cropland'
1361      Q9bAC='Conversion of tamend grassland to cropland'
1362      Q9cAC='Conversion of CRP land to cropland'
1363      Q9dAC='Conversion of CRP land to pasture/hay'
1364      Q9eAC='Enrollment of farmland acres to CRP'
1365      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1366 table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*Region/norow;
1367 format Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
```

```sas
1368 Q9eAC Farmacres. Q9fAC Farmacres.;
1369 run;
1370
1371 /*part two, Q9 state and region based analysis with frequency with chisq*/
1372
1373 proc format;
1374 value Farmacres   0 ='0 acres'
1375                   1-99 = '1 to 99 acres'
1376                   100-179 ='100 to 179 acres'
1377                   180-259 ='180 to 259 acres'
1378                   260-499 ='260 to 499 acres'
1379                   500-high ='500 acrsa and above';
1380 run;
1381 proc freq data=sasintro.dakota15;
1382 label
1383       Q9aAC='Conversion of native grass to cropland'
1384       Q9bAC='Conversion of tamend grassland to cropland'
1385       Q9cAC='Conversion of CRP land to cropland'
1386       Q9dAC='Conversion of CRP land to pasture/hay'
1387       Q9eAC='Enrollment of farmland acres to CRP'
1388       Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1389 table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*state/chisq;
1390 format  Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
1391 Q9eAC Farmacres. Q9fAC Farmacres.;
1392 run;
1393
1394
1395 proc freq data=sasintro.dakota15;
1396 label
1397       Q9aAC='Conversion of native grass to cropland'
1398       Q9bAC='Conversion of tamend grassland to cropland'
1399       Q9cAC='Conversion of CRP land to cropland'
1400       Q9dAC='Conversion of CRP land to pasture/hay'
1401       Q9eAC='Enrollment of farmland acres to CRP'
1402       Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1403 table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*Region/chisq;
1404 format Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
1405 Q9eAC Farmacres. Q9fAC Farmacres.;
1406 run;
1407
1408
1409 /*part two, state and region Q9 analysis with tabulate*/
1410
1411 proc tabulate data=sasintro.dakota15 format=6.;
1412 class state;
1413 var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC;
1414 label
1415       Q9aAC='Conversion of native grass to cropland'
1416       Q9bAC='Conversion of tamend grassland to cropland'
1417       Q9cAC='Conversion of CRP land to cropland'
1418       Q9dAC='Conversion of CRP land to pasture/hay'
1419       Q9eAC='Enrollment of farmland acres to CRP'
1420       Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1421 table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC),state;
1422 run;
1423
1424
1425 proc tabulate data=sasintro.dakota15 format=6.;
1426 class Region;
1427 var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC;
1428 label
1429       Q9aAC='Conversion of native grass to cropland'
1430       Q9bAC='Conversion of tamend grassland to cropland'
1431       Q9cAC='Conversion of CRP land to cropland'
1432       Q9dAC='Conversion of CRP land to pasture/hay'
1433       Q9eAC='Enrollment of farmland acres to CRP'
1434       Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1435 table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC), Region;
1436 run;
1437
1438
1439 /* Q9 part three state and region based analysis tabulate*/
1440
1441 proc format;
1442 value response
1443       0='No'
```

```sas
1444        1='Yes';
1445 proc tabulate data=sasintro.dakota15;
1446 class state Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth;
1447 label
1448        Q9aCorn='Conversion of native grass to Corn land'
1449        Q9aSoy='Conversion of native grass to Soybean land'
1450        Q9aWht='Conversion of native grass to Wheat land'
1451        Q9aOth='Conversion of native grass to Other use'
1452        Q9bCorn='Conversion of tamend grassland to Corn land'
1453        Q9bSoy='Conversion of tamend grassland to Soy land'
1454        Q9bWht='Conversion of tamend grassland to Wheat land'
1455        Q9bOth='Conversion of tamend grassland to Other use'
1456        Q9cCorn='Conversion of CRP land to Corn land'
1457        Q9cSoy='Conversion of CRP land to Soy land'
1458        Q9cWht='Conversion of CRP land to Wheat land'
1459        Q9cOth='Conversion of CRP land to Other use' ;
1460 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth),state;
1461 format Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1462         Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1463         Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1464 run;
1465
1466 proc format;
1467 value response
1468        0='No'
1469        1='Yes';
1470 proc tabulate data=sasintro.dakota15;
1471 class Region Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth;
1472 label
1473        Q9aCorn='Conversion of native grass to Corn land'
1474        Q9aSoy='Conversion of native grass to Soybean land'
1475        Q9aWht='Conversion of native grass to Wheat land'
1476        Q9aOth='Conversion of native grass to Other use'
1477        Q9bCorn='Conversion of tamend grassland to Corn land'
1478        Q9bSoy='Conversion of tamend grassland to Soy land'
1479        Q9bWht='Conversion of tamend grassland to Wheat land'
1480        Q9bOth='Conversion of tamend grassland to Other use'
1481        Q9cCorn='Conversion of CRP land to Corn land'
1482        Q9cSoy='Conversion of CRP land to Soy land'
1483        Q9cWht='Conversion of CRP land to Wheat land'
1484        Q9cOth='Conversion of CRP land to Other use' ;
1485 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth),Region;
1486 format Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1487         Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1488         Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1489 run;
1490
1491 /* Q9 part three state and region based analysis frequency*/
1492
1493 proc format;
1494 value Response
1495        1='Yes'
1496        0 ='No';
1497 run;
1498 proc freq data=sasintro.dakota15;
1499 label
1500        Q9aCorn='Conversion of native grass to Corn land'
1501        Q9aSoy='Conversion of native grass to Soybean land'
1502        Q9aWht='Conversion of native grass to Wheat land'
1503        Q9aOth='Conversion of native grass to Other use'
1504        Q9bCorn='Conversion of tamend grassland to Corn land'
1505        Q9bSoy='Conversion of tamend grassland to Soy land'
1506        Q9bWht='Conversion of tamend grassland to Wheat land'
1507        Q9bOth='Conversion of tamend grassland to Other use'
1508        Q9cCorn='Conversion of CRP land to Corn land'
1509        Q9cSoy='Conversion of CRP land to Soy land'
1510        Q9cWht='Conversion of CRP land to Wheat land'
1511        Q9cOth='Conversion of CRP land to Other use' ;
1512 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*state/norow;
1513 format Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1514         Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1515         Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1516 run;
1517
1518 proc format;
1519 value Response
```

```
1520          1='Yes'
1521          0 ='No';
1522 run;
1523 proc freq data=sasintro.dakota15;
1524 label
1525          Q9aCorn='Conversion of native grass to Corn land'
1526          Q9aSoy='Conversion of native grass to Soybean land'
1527          Q9aWht='Conversion of native grass to Wheat land'
1528          Q9aOth='Conversion of native grass to Other use'
1529          Q9bCorn='Conversion of tamend grassland to Corn land'
1530          Q9bSoy='Conversion of tamend grassland to Soy land'
1531          Q9bWht='Conversion of tamend grassland to Wheat land'
1532          Q9bOth='Conversion of tamend grassland to Other use'
1533          Q9cCorn='Conversion of CRP land to Corn land'
1534          Q9cSoy='Conversion of CRP land to Soy land'
1535          Q9cWht='Conversion of CRP land to Wheat land'
1536          Q9cOth='Conversion of CRP land to Other use' ;
1537 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*Region/norow;
1538 format  Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1539          Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1540          Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1541 run;
1542
1543
1544 /* Q9 part three state and region based analysis frequency with chisq*/
1545
1546 proc format;
1547 value Response
1548          1='Yes'
1549          0 ='No';
1550 run;
1551 proc freq data=sasintro.dakota15;
1552 label
1553          Q9aCorn='Conversion of native grass to Corn land'
1554          Q9aSoy='Conversion of native grass to Soybean land'
1555          Q9aWht='Conversion of native grass to Wheat land'
1556          Q9aOth='Conversion of native grass to Other use'
1557          Q9bCorn='Conversion of tamend grassland to Corn land'
1558          Q9bSoy='Conversion of tamend grassland to Soy land'
1559          Q9bWht='Conversion of tamend grassland to Wheat land'
1560          Q9bOth='Conversion of tamend grassland to Other use'
1561          Q9cCorn='Conversion of CRP land to Corn land'
1562          Q9cSoy='Conversion of CRP land to Soy land'
1563          Q9cWht='Conversion of CRP land to Wheat land'
1564          Q9cOth='Conversion of CRP land to Other use' ;
1565 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*state/chisq;
1566 format Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1567          Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1568          Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1569 run;
1570
1571 proc format;
1572 value Response
1573          1='Yes'
1574          0 ='No';
1575 run;
1576 proc freq data=sasintro.dakota15;
1577 label
1578          Q9aCorn='Conversion of native grass to Corn land'
1579          Q9aSoy='Conversion of native grass to Soybean land'
1580          Q9aWht='Conversion of native grass to Wheat land'
1581          Q9aOth='Conversion of native grass to Other use'
1582          Q9bCorn='Conversion of tamend grassland to Corn land'
1583          Q9bSoy='Conversion of tamend grassland to Soy land'
1584          Q9bWht='Conversion of tamend grassland to Wheat land'
1585          Q9bOth='Conversion of tamend grassland to Other use'
1586          Q9cCorn='Conversion of CRP land to Corn land'
1587          Q9cSoy='Conversion of CRP land to Soy land'
1588          Q9cWht='Conversion of CRP land to Wheat land'
1589          Q9cOth='Conversion of CRP land to Other use' ;
1590 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*Region/chisq;
1591 format  Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1592          Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1593          Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1594 run;
1595
```

```
1596
1597  /* Q9 part three state and region based analysis with means*/
1598
1599  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
1600  class State;
1601  var Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth ;
1602  label
1603          Q9aCorn='Conversion of native grass to Corn land'
1604          Q9aSoy='Conversion of native grass to Soybean land'
1605          Q9aWht='Conversion of native grass to Wheat land'
1606          Q9aOth='Conversion of native grass to Other use'
1607          Q9bCorn='Conversion of tamend grassland to Corn land'
1608          Q9bSoy='Conversion of tamend grassland to Soy land'
1609          Q9bWht='Conversion of tamend grassland to Wheat land'
1610          Q9bOth='Conversion of tamend grassland to Other use'
1611          Q9cCorn='Conversion of CRP land to Corn land'
1612          Q9cSoy='Conversion of CRP land to Soy land'
1613          Q9cWht='Conversion of CRP land to Wheat land'
1614          Q9cOth='Conversion of CRP land to Other use' ;
1615  run;
1616
1617  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
1618  class Region;
1619  var Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth ;
1620  label
1621          Q9aCorn='Conversion of native grass to Corn land'
1622          Q9aSoy='Conversion of native grass to Soybean land'
1623          Q9aWht='Conversion of native grass to Wheat land'
1624          Q9aOth='Conversion of native grass to Other use'
1625          Q9bCorn='Conversion of tamend grassland to Corn land'
1626          Q9bSoy='Conversion of tamend grassland to Soy land'
1627          Q9bWht='Conversion of tamend grassland to Wheat land'
1628          Q9bOth='Conversion of tamend grassland to Other use'
1629          Q9cCorn='Conversion of CRP land to Corn land'
1630          Q9cSoy='Conversion of CRP land to Soy land'
1631          Q9cWht='Conversion of CRP land to Wheat land'
1632          Q9cOth='Conversion of CRP land to Other use' ;
1633  run;
1634
1635
1636  /* means by selected farm operator Q9 part one *19, 20,21, 22, 23 plus 1, 3a and 4  */
1637
1638  proc format;
1639  value Age
1640          1='19 to 34 years'
1641          2='35 to 49 years'
1642          3='50 to 59 years'
1643          4='60 to 69 years'
1644          5='70 years and over';
1645
1646  value Gender
1647          1='Male'
1648          2='Female';
1649
1650  value Education
1651          1='Less than high school'
1652          2='High school'
1653          3='Some college/technical school'
1654          4='4-year college degree'
1655          5='Advanced degree (Masters, etc.)';
1656
1657  value Occupation
1658          1='Farming or Ranching'
1659          2='Employment in off-farm job'
1660          3='Own/operate a non-farm business'
1661          4='Retired';
1662
1663  value Sales
1664
1665          12='Less than $99,999'
1666          3='From $100,000 up to $249,999'
1667          4='From $250,000 up to $499,999'
1668          5='From $500,000 up to $999,999'
1669          6='$1 million or more';
1670  run;
1671
```

```
1672
1673 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1674 class Q19;
1675 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1676 label Q19='Respondent Age'
1677       Q9aYN='Conversion of native grass to cropland'
1678       Q9bYN='Conversion of tamend grassland to cropland'
1679       Q9cYN='Conversion of CRP land to cropland'
1680       Q9dYN='Conversion of CRP land to pasture/hay'
1681       Q9eYN='Enrollment of farmland acres to CRP'
1682       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1683 format Q19 Age.;
1684 run;
1685
1686 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1687 class Q20;
1688 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1689 label Q20='Respondent Gender'
1690       Q9aYN='Conversion of native grass to cropland'
1691       Q9bYN='Conversion of tamend grassland to cropland'
1692       Q9cYN='Conversion of CRP land to cropland'
1693       Q9dYN='Conversion of CRP land to pasture/hay'
1694       Q9eYN='Enrollment of farmland acres to CRP'
1695       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1696 format Q20 Gender.;
1697 run;
1698
1699 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1700 class Q21;
1701 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1702 label Q21='Respondent Level of Education'
1703       Q9aYN='Conversion of native grass to cropland'
1704       Q9bYN='Conversion of tamend grassland to cropland'
1705       Q9cYN='Conversion of CRP land to cropland'
1706       Q9dYN='Conversion of CRP land to pasture/hay'
1707       Q9eYN='Enrollment of farmland acres to CRP'
1708       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1709 format Q21 Education.;
1710 run;
1711
1712 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1713 class Q22;
1714 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1715 label Q22='Principal Occupation'
1716       Q9aYN='Conversion of native grass to cropland'
1717       Q9bYN='Conversion of tamend grassland to cropland'
1718       Q9cYN='Conversion of CRP land to cropland'
1719       Q9dYN='Conversion of CRP land to pasture/hay'
1720       Q9eYN='Enrollment of farmland acres to CRP'
1721       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1722 format Q22 Occupation.;
1723 run;
1724
1725
1726 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1727 class Q23;
1728 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1729 label Q23='Gross farm/ranch sales'
1730       Q9aYN='Conversion of native grass to cropland'
1731       Q9bYN='Conversion of tamend grassland to cropland'
1732       Q9cYN='Conversion of CRP land to cropland'
1733       Q9dYN='Conversion of CRP land to pasture/hay'
1734       Q9eYN='Enrollment of farmland acres to CRP'
1735       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1736 format Q23 Sales.;
1737 run;
1738
1739 proc format;
1740 value operation
1741       1='Have been a farm operator'
1742       2='less than 10 years as a farm operator'
1743       3='10 to 10 years as a farm operator'
1744       4='20 to 29 years as a farm operator'
1745       5='30 years or more as a farm operator'
1746       ;
1747 run;
```

```sas
1748
1749 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1750 class Q1;
1751 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1752 label Q1 ='Years as a farm opertor'
1753       Q23='Gross farm/ranch sales'
1754       Q9aYN='Conversion of native grass to cropland'
1755       Q9bYN='Conversion of tamend grassland to cropland'
1756       Q9cYN='Conversion of CRP land to cropland'
1757       Q9dYN='Conversion of CRP land to pasture/hay'
1758       Q9eYN='Enrollment of farmland acres to CRP'
1759       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1760 format Q1 operation.;
1761 run;
1762
1763 proc format;
1764 value Farmland 10-259='1 to 259 acres'
1765               260-499='260 to 499 acres'
1766               500-999='500 to 999 acres'
1767               1000-1999='1000 to 1999 acres'
1768               2000-4999='2000 to 4999 acres'
1769               5000-high ='5000 acres and above';
1770 run;
1771
1772 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1773 class Q3A;
1774 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1775 label Q3A ='Farmland Acres Operated in 2014'
1776       Q9aYN='Conversion of native grass to cropland'
1777       Q9bYN='Conversion of tamend grassland to cropland'
1778       Q9cYN='Conversion of CRP land to cropland'
1779       Q9dYN='Conversion of CRP land to pasture/hay'
1780       Q9eYN='Enrollment of farmland acres to CRP'
1781       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1782 format Q3A Farmland.;
1783 run;
1784
1785 proc format;
1786 value Ownership
1787       1='Own all acres farmed'
1788       2='Own most acres farmed, rented the remainder'
1789       3='Own and rent roughly equal number of farmland acres'
1790       4='Rented most of the acres farmed,owned the remainder'
1791       5='Rented all acres farmland'
1792       6='Professional farm manager';
1793 run;
1794
1795 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1796 class Q4;
1797 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1798 label Q4 ='Best Ownership Status in 2014'
1799       Q9aYN='Conversion of native grass to cropland'
1800       Q9bYN='Conversion of tamend grassland to cropland'
1801       Q9cYN='Conversion of CRP land to cropland'
1802       Q9dYN='Conversion of CRP land to pasture/hay'
1803       Q9eYN='Enrollment of farmland acres to CRP'
1804       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1805 format Q4 Ownership.;
1806 run;
1807
1808
1809 /* cross tab chi square test, Q9 part one region and state based, 19, 20, 21, 22, 23, */
1810 proc format;
1811 value Age
1812       1='19 to 34 years'
1813       2='35 to 49 years'
1814       3='50 to 59 years'
1815       4='60 to 69 years'
1816       5='70 years and over';
1817
1818 value Gender
1819       1='Male'
1820       2='Female';
1821
1822 value Education
1823       1='Less than high school'
```

```
1824          2='High school'
1825          3='Some college/technical school'
1826          4='4-year college degree'
1827          5='Advanced degree (Masters, etc.)';
1828
1829 value Occupation
1830          1='Farming or Ranching'
1831          2='Employment in off-farm job'
1832          3='Own/operate a non-farm business'
1833          4='Retired';
1834
1835 value Sales
1836
1837          12='Less than $99,999'
1838          3='From $100,000 up to $249,999'
1839          4='From $250,000 up to $499,999'
1840          5='From $500,000 up to $999,999'
1841          6='$1 million or more';
1842 run;
1843
1844 proc format;
1845 value Response
1846          1='Yes'
1847          2='No';
1848 run;
1849 proc freq data=sasintro.dakota15clean;
1850 label Q19='Respondent Age'
1851          Q9aYN='Conversion of native grass to cropland'
1852          Q9bYN='Conversion of tamend grassland to cropland'
1853          Q9cYN='Conversion of CRP land to cropland'
1854          Q9dYN='Conversion of CRP land to pasture/hay'
1855          Q9eYN='Enrollment of farmland acres to CRP'
1856          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1857 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q19/chisq;
1858 format Q19 Age. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1859 Q9eYN Response. Q9fYN Response. ;
1860 run;
1861
1862 proc format;
1863 value Response
1864          1='Yes'
1865          2='No';
1866 run;
1867 proc freq data=sasintro.dakota15clean;
1868 label Q20='Respondent Gender'
1869          Q9aYN='Conversion of native grass to cropland'
1870          Q9bYN='Conversion of tamend grassland to cropland'
1871          Q9cYN='Conversion of CRP land to cropland'
1872          Q9dYN='Conversion of CRP land to pasture/hay'
1873          Q9eYN='Enrollment of farmland acres to CRP'
1874          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1875 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q20/chisq;
1876 format Q20 Gender. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1877 Q9eYN Response. Q9fYN Response. ;
1878 run;
1879
1880 proc format;
1881 value Response
1882          1='Yes'
1883          2='No';
1884 run;
1885 proc freq data=sasintro.dakota15clean;
1886 label Q21='Respondent Level of Education'
1887          Q9aYN='Conversion of native grass to cropland'
1888          Q9bYN='Conversion of tamend grassland to cropland'
1889          Q9cYN='Conversion of CRP land to cropland'
1890          Q9dYN='Conversion of CRP land to pasture/hay'
1891          Q9eYN='Enrollment of farmland acres to CRP'
1892          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1893 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q21/chisq;
1894 format Q21 Education. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1895 Q9eYN Response. Q9fYN Response. ;
1896 run;
1897
1898 proc format;
1899 value Response
```

```sas
1900        1='Yes'
1901        2='No';
1902 run;
1903 proc freq data=sasintro.dakota15clean;
1904 label Q22='Principal Occupation'
1905        Q9aYN='Conversion of native grass to cropland'
1906        Q9bYN='Conversion of tamend grassland to cropland'
1907        Q9cYN='Conversion of CRP land to cropland'
1908        Q9dYN='Conversion of CRP land to pasture/hay'
1909        Q9eYN='Enrollment of farmland acres to CRP'
1910        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1911 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q22/chisq;
1912 format Q22 Occupation. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1913 Q9eYN Response. Q9fYN Response. ;
1914 run;
1915
1916 proc format;
1917 value Response
1918        1='Yes'
1919        2='No';
1920 run;
1921 proc freq data=sasintro.dakota15clean;
1922 label Q23= 'Gross farm/ranch sales'
1923        Q9aYN='Conversion of native grass to cropland'
1924        Q9bYN='Conversion of tamend grassland to cropland'
1925        Q9cYN='Conversion of CRP land to cropland'
1926        Q9dYN='Conversion of CRP land to pasture/hay'
1927        Q9eYN='Enrollment of farmland acres to CRP'
1928        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1929 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q23/chisq;
1930 format Q23 Sales. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1931 Q9eYN Response. Q9fYN Response. ;
1932 run;
1933
1934
1935 proc format;
1936 value Response
1937        1='Yes'
1938        2='No';
1939 run;
1940 proc format;
1941 value operation
1942        1='Have been a farm operator'
1943        2='less than 10 years as a farm operator'
1944        3='10 to 10 years as a farm operator'
1945        4='20 to 29 years as a farm operator'
1946        5='30 years or more as a farm operator'
1947        ;
1948 run;
1949
1950 proc freq data=sasintro.dakota15clean;
1951 label Q1= 'Year As a Farm Operator'
1952        Q9aYN='Conversion of native grass to cropland'
1953        Q9bYN='Conversion of tamend grassland to cropland'
1954        Q9cYN='Conversion of CRP land to cropland'
1955        Q9dYN='Conversion of CRP land to pasture/hay'
1956        Q9eYN='Enrollment of farmland acres to CRP'
1957        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1958 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q1/chisq;
1959 format Q1 Operation. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1960 Q9eYN Response. Q9fYN Response. ;
1961 run;
1962
1963 proc format;
1964 value Response
1965        1='Yes'
1966        2='No';
1967 run;
1968 proc format;
1969 value Farmland 10-259='1 to 259 acres'
1970                260-499='260 to 499 acres'
1971                500-999='500 to 999 acres'
1972                1000-1999='1000 to 1999 acres'
1973                2000-4999='2000 to 4999 acres'
1974                5000-high ='5000 acres and above';
1975 run;
```

```
1976
1977  proc freq data=sasintro.dakota15clean;
1978  label Q3A= 'Farmland Acres Operated in 2014'
1979        Q9aYN='Conversion of native grass to cropland'
1980        Q9bYN='Conversion of tamend grassland to cropland'
1981        Q9cYN='Conversion of CRP land to cropland'
1982        Q9dYN='Conversion of CRP land to pasture/hay'
1983        Q9eYN='Enrollment of farmland acres to CRP'
1984        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1985  tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q3A/chisq;
1986  format Q3A Farmland. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1987  Q9eYN Response. Q9fYN Response. ;
1988  run;
1989
1990  proc format;
1991  value Ownership
1992        1='Own all acres farmed'
1993        2='Own most acres farmed, rented the remainder'
1994        3='Own and rent roughly equal number of farmland acres'
1995        4='Rented most of the acres farmed,owned the remainder'
1996        5='Rented all acres farmland'
1997        6='Professional farm manager';
1998
1999  run;
2000
2001  proc freq data=sasintro.dakota15clean;
2002  label Q4= 'Best Ownership Status in 2014'
2003        Q9aYN='Conversion of native grass to cropland'
2004        Q9bYN='Conversion of tamend grassland to cropland'
2005        Q9cYN='Conversion of CRP land to cropland'
2006        Q9dYN='Conversion of CRP land to pasture/hay'
2007        Q9eYN='Enrollment of farmland acres to CRP'
2008        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
2009  tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q4/chisq;
2010  format Q4 Ownership. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
2011  Q9eYN Response. Q9fYN Response. ;
2012  run;
2013
2014
2015  /** question 11 frequency analysis State and Region Based**/
2016
2017  proc format;
2018  value Future
2019        1='Yes'
2020        2='No'
2021        3='Dont Know';
2022  run;
2023  proc freq data=sasintro.dakota15;
2024  label
2025        Q11a='Plan to convert native grassland to cropland in next 10 years'
2026        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2027        Q11c='Plan to convert cropland to grassland in next 10 years';
2028  tables (Q11a Q11b Q11c)*state/norow;
2029  format  Q11a Future. Q11b Future. Q11c Future.;
2030  run;
2031
2032  proc format;
2033  value Future
2034        1='Yes'
2035        2='No'
2036        3='Dont Know';
2037  run;
2038  proc freq data=sasintro.dakota15;
2039  label
2040        Q11a='Plan to convert native grassland to cropland in next 10 years'
2041        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2042        Q11c='Plan to convert cropland to grassland in next 10 years';
2043  tables (Q11a Q11b Q11c)* Region/norow;
2044  format  Q11a Future. Q11b Future. Q11c Future.;
2045  run;
2046
2047  /** question 11 frequency analysis State and Region Based with chisq **/
2048
2049  proc format;
2050  value Future
2051        1='Yes'
```

```sas
2052          2='No'
2053          3='Dont Know';
2054 run;
2055 proc freq data=sasintro.dakota15;
2056 label
2057          Q11a='Plan to convert native grassland to cropland in next 10 years'
2058          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2059          Q11c='Plan to convert cropland to grassland in next 10 years';
2060 tables (Q11a Q11b Q11c)*state/chisq;
2061 format Q11a Future. Q11b Future. Q11c Future.;
2062 run;
2063
2064 proc format;
2065 value Future
2066          1='Yes'
2067          2='No'
2068          3='Dont Know';
2069 run;
2070 proc freq data=sasintro.dakota15;
2071 label
2072          Q11a='Plan to convert native grassland to cropland in next 10 years'
2073          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2074          Q11c='Plan to convert cropland to grassland in next 10 years';
2075 tables (Q11a Q11b Q11c)* Region/chisq;
2076 format  Q11a Future. Q11b Future. Q11c Future.;
2077 run;
2078
2079 /** question 11 Tabulate  analysis State and Region Based**/
2080
2081
2082 proc tabulate data=sasintro.dakota15 format=10.;
2083 class State;
2084 var Q11a Q11b Q11c;
2085 label
2086          Q11a='Plan to convert native grassland to cropland in next 10 years'
2087          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2088          Q11c='Plan to convert cropland to grassland in next 10 years';
2089 table  (state),(Q11a Q11b Q11c);
2090 format Q11a Future. Q11b Future. Q11c Future.;
2091 run;
2092
2093
2094 proc tabulate data=sasintro.dakota15 format=10.;
2095 class Region;
2096 var Q11a Q11b Q11c;
2097 label
2098          Q11a='Plan to convert native grassland to cropland in next 10 years'
2099          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2100          Q11c='Plan to convert cropland to grassland in next 10 years';
2101 table  (Region),(Q11a Q11b Q11c);
2102 format  Q11a Future. Q11b Future. Q11c Future.;
2103 run;
2104
2105 /** question 11 means  analysis State and Region Based**/
2106
2107
2108 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=0;
2109 class State;
2110 var Q11a Q11b Q11c;
2111 label
2112          Q11a='Plan to convert native grassland to cropland in next 10 years'
2113          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2114          Q11c='Plan to convert cropland to grassland in next 10 years';
2115 format Q11a Future. Q11b Future. Q11c Future.;
2116 run;
2117
2118
2119 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=0;
2120 class Region;
2121 var Q11a Q11b Q11c;
2122 label
2123          Q11a='Plan to convert native grassland to cropland in next 10 years'
2124          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2125          Q11c='Plan to convert cropland to grassland in next 10 years';
2126 format Q11a Future. Q11b Future. Q11c Future.;
2127 run;
```

```sas
2128
2129  /* Q11 selected farm operator/business characteristics of responses plus 1, 3a and 4*/
2130
2131  proc format;
2132  value Age
2133        1='19 to 34 years'
2134        2='35 to 49 years'
2135        3='50 to 59 years'
2136        4='60 to 69 years'
2137        5='70 years and over'
2138
2139  value Gender
2140        1='Male'
2141        2='Female'
2142
2143  value Education
2144        1='Less than high school'
2145        2='High school'
2146        3='Some college/technical school'
2147        4='4-year college degree'
2148        5='Advanced degree (Masters, etc.)'
2149
2150  value Occupation
2151        1='Farming or Ranching'
2152        2='Employment in off-farm job'
2153        3='Own/operate a non-farm business'
2154        4='Retired'
2155
2156  value Sales
2157
2158        12='Less than $99,999'
2159        3='From $100,000 up to $249,999'
2160        4='From $250,000 up to $499,999'
2161        5='From $500,000 up to $999,999'
2162        6='$1 million or more';
2163
2164  run;
2165
2166  proc format;
2167  value Future
2168        1='Yes'
2169        2='No'
2170        3='Dont Know';
2171  run;
2172
2173  proc freq data=sasintro.dakota15clean;
2174  label Q19='Respondent Age'
2175        Q11a='Plan to convert native grassland to cropland in next 10 years'
2176        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2177        Q11c='Plan to convert cropland to grassland in next 10 years';
2178  tables (Q11a Q11b Q11c)*Q19/chisq;
2179  format Q19 Age. Q11a Future. Q11b Future. Q11c Future.;
2180  run;
2181
2182  proc freq data=sasintro.dakota15clean;
2183  label Q20='Respondent Gender'
2184        Q11a='Plan to convert native grassland to cropland in next 10 years'
2185        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2186        Q11c='Plan to convert cropland to grassland in next 10 years';
2187  tables (Q11a Q11b Q11c)*Q20/chisq;
2188  format Q20 Gender. Q11a Future. Q11b Future. Q11c Future.;
2189  run;
2190
2191  proc freq data=sasintro.dakota15clean;
2192  label Q21='Respondent Level of Education'
2193        Q11a='Plan to convert native grassland to cropland in next 10 years'
2194        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2195        Q11c='Plan to convert cropland to grassland in next 10 years';
2196  tables (Q11a Q11b Q11c)*Q21/chisq;
2197  format Q21 Education. Q11a Future. Q11b Future. Q11c Future.;
2198  run;
2199
2200  proc freq data=sasintro.dakota15clean;
2201  label Q22='Principal Occupation'
2202        Q11a='Plan to convert native grassland to cropland in next 10 years'
2203        Q11b='Plan to convert tame grassland to cropland in next 10 years'
```

```
2204          Q11c='Plan to convert cropland to grassland in next 10 years';
2205 tables (Q11a Q11b Q11c)*Q22/chisq;
2206 format Q22 Occupation. Q11a Future. Q11b Future. Q11c Future.;
2207 run;
2208
2209 proc freq data=sasintro.dakota15clean;
2210 label Q23='Gross farm/ranch sales'
2211          Q11a='Plan to convert native grassland to cropland in next 10 years'
2212          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2213          Q11c='Plan to convert cropland to grassland in next 10 years';
2214 tables (Q11a Q11b Q11c)*Q23/chisq;
2215 format Q23 Sales. Q11a Future. Q11b Future. Q11c Future.;
2216 run;
2217
2218 proc format;
2219 value operation
2220          1='Have been a farm operator'
2221          2='less than 10 years as a farm operator'
2222          3='10 to 10 years as a farm operator'
2223          4='20 to 29 years as a farm operator'
2224          5='30 years or more as a farm operator'
2225          ;
2226 run;
2227
2228 proc freq data=sasintro.dakota15clean;
2229 label Q1='Years as a farm opertor'
2230          Q11a='Plan to convert native grassland to cropland in next 10 years'
2231          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2232          Q11c='Plan to convert cropland to grassland in next 10 years';
2233 tables (Q11a Q11b Q11c)*Q1/chisq;
2234 format Q1 Operation. Q11a Future. Q11b Future. Q11c Future.;
2235 run;
2236
2237
2238 proc format;
2239 value Farmland 10-259='1 to 259 acres'
2240                260-499='260 to 499 acres'
2241                500-999='500 to 999 acres'
2242                1000-1999='1000 to 1999 acres'
2243                2000-4999='2000 to 4999 acres'
2244                5000-high ='5000 acres and above';
2245 run;
2246
2247 proc freq data=sasintro.dakota15clean;
2248 label Q3A='Farmland Acres Operated in 2014'
2249          Q11a='Plan to convert native grassland to cropland in next 10 years'
2250          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2251          Q11c='Plan to convert cropland to grassland in next 10 years';
2252 tables (Q11a Q11b Q11c)*Q3A/chisq;
2253 format Q3A Farmland. Q11a Future. Q11b Future. Q11c Future.;
2254 run;
2255
2256
2257 proc format;
2258 value Ownership
2259          1='Own all acres farmed'
2260          2='Own most acres farmed, rented the remainder'
2261          3='Own and rent roughly equal number of farmland acres'
2262          4='Rented most of the acres farmed,owned the remainder'
2263          5='Rented all acres farmland'
2264          6='Professional farm manager';
2265 run;
2266
2267 proc freq data=sasintro.dakota15clean;
2268 label Q4='Ownership Status in 2014'
2269          Q11a='Plan to convert native grassland to cropland in next 10 years'
2270          Q11b='Plan to convert tame grassland to cropland in next 10 years'
2271          Q11c='Plan to convert cropland to grassland in next 10 years';
2272 tables (Q11a Q11b Q11c)*Q4/chisq;
2273 format Q4 Ownership. Q11a Future. Q11b Future. Q11c Future.;
2274 run;
2275
2276
2277
2278 /*** Chi square analysis Q10a vs Q9 **/
2279 /** 9dYN,9eYN,9fYN versus 10a1**/
```

```sas
2280  proc format;
2281  value Response
2282        1='Yes'
2283        2='No';
2284  run;
2285
2286  proc freq data=sasintro.dakota15;
2287  label
2288        Q9dYN='Conversion of CRP land to pasture/hay'
2289        Q10a1='Changing of crop prices';
2290  tables Q10a1* Q9dYN / chisq;
2291  format Q10a1 Impact. Q9dYN Response.;
2292  run;
2293
2294  proc freq data=sasintro.dakota15;
2295  label
2296        Q9eYN='Enrollment of farmland acres to CRP'
2297        Q10a1='Changing of crop prices';
2298  tables Q10a1*Q9eYN / chisq;
2299  format Q10a1 Impact. Q9eYN Response.;
2300  run;
2301
2302  proc freq data=sasintro.dakota15;
2303  label
2304        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2305        Q10a1='Changing of crop prices';
2306  tables Q10a1*Q9fYN / chisq;
2307  format Q10a1 Impact. Q9fYN Response.;
2308  run;
2309
2310  /** 9dYN,9eYN,9fYN versus 10a2**/
2311  proc format;
2312  value Response
2313        1='Yes'
2314        2='No';
2315  run;
2316
2317  proc freq data=sasintro.dakota15;
2318  label
2319        Q9dYN='Conversion of CRP land to pasture/hay'
2320        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
2321  tables Q10a2* Q9dYN / chisq;
2322  format Q10a2 Impact. Q9dYN Response.;
2323  run;
2324
2325  proc freq data=sasintro.dakota15;
2326  label
2327        Q9eYN='Enrollment of farmland acres to CRP'
2328        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
2329  tables Q10a2*Q9eYN / chisq;
2330  format Q10a2 Impact. Q9eYN Response.;
2331  run;
2332
2333  proc freq data=sasintro.dakota15;
2334  label
2335        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2336        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
2337  tables Q10a2*Q9fYN / chisq;
2338  format Q10a2 Impact. Q9fYN Response.;
2339  run;
2340
2341  /** 9dYN,9eYN,9fYN versus 10a3**/
2342  proc format;
2343  value Response
2344        1='Yes'
2345        2='No';
2346  run;
2347
2348  proc freq data=sasintro.dakota15;
2349  label
2350        Q9dYN='Conversion of CRP land to pasture/hay'
2351        Q10a3='Availability of crop and revenue insurance policies';
2352  tables Q10a3* Q9dYN / chisq;
2353  format Q10a3 Impact. Q9dYN Response.;
2354  run;
2355
```

```sas
2356  proc freq data=sasintro.dakota15;
2357  label
2358        Q9eYN='Enrollment of farmland acres to CRP'
2359        Q10a3='Availability of crop and revenue insurance policies';
2360  tables Q10a3*Q9eYN / chisq;
2361  format Q10a3 Impact. Q9eYN Response.;
2362  run;
2363
2364  proc freq data=sasintro.dakota15;
2365  label
2366        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2367        Q10a3='Availability of crop and revenue insurance policies';
2368  tables Q10a3*Q9fYN / chisq;
2369  format Q10a3 Impact. Q9fYN Response.;
2370  run;
2371
2372
2373  /** 9dYN,9eYN,9fYN versus 10a4**/
2374  proc format;
2375  value Response
2376        1='Yes'
2377        2='No';
2378  run;
2379
2380  proc freq data=sasintro.dakota15;
2381  label
2382        Q9dYN='Conversion of CRP land to pasture/hay'
2383        Q10a4='Availability of drought-tolerant seed';
2384  tables Q10a4* Q9dYN / chisq;
2385  format Q10a4 Impact. Q9dYN Response.;
2386  run;
2387
2388  proc freq data=sasintro.dakota15;
2389  label
2390        Q9eYN='Enrollment of farmland acres to CRP'
2391        Q10a4='Availability of drought-tolerant seed';
2392  tables Q10a4*Q9eYN / chisq;
2393  format Q10a4 Impact. Q9eYN Response.;
2394  run;
2395
2396
2397  proc freq data=sasintro.dakota15;
2398  label
2399        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2400        Q10a4='Availability of drought-tolerant seed';
2401  tables Q10a4*Q9fYN / chisq;
2402  format Q10a4 Impact. Q9fYN Response.;
2403  run;
2404
2405  /** 9dYN,9eYN,9fYN versus 10a5**/
2406  proc format;
2407  value Response
2408        1='Yes'
2409        2='No';
2410  run;
2411
2412  proc freq data=sasintro.dakota15;
2413  label
2414        Q9dYN='Conversion of CRP land to pasture/hay'
2415        Q10a5='Developments in pest management practices, including pest management seed traits';
2416  tables Q10a5* Q9dYN / chisq;
2417  format Q10a5 Impact. Q9dYN Response.;
2418  run;
2419
2420  proc freq data=sasintro.dakota15;
2421  label
2422        Q9eYN='Enrollment of farmland acres to CRP'
2423        Q10a5='Developments in pest management practices, including pest management seed traits';
2424  tables Q10a5*Q9eYN / chisq;
2425  format Q10a5 Impact. Q9eYN Response.;
2426  run;
2427  proc freq data=sasintro.dakota15;
2428  label
2429        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2430        Q10a5='Developments in pest management practices, including pest management seed traits';
2431  tables Q10a5*Q9fYN / chisq;
```

```sas
2432  format Q10a5 Impact. Q9fYN Response.;
2433  run;
2434
2435  /** 9dYN,9eYN,9fYN versus 10a6**/
2436  proc format;
2437  value Response
2438        1='Yes'
2439        2='No';
2440  run;
2441
2442  proc freq data=sasintro.dakota15;
2443  label
2444        Q9dYN='Conversion of CRP land to pasture/hay'
2445        Q10a6='Improved crop yields (other than seed related traits)';
2446  tables Q10a6* Q9dYN / chisq;
2447  format Q10a6 Impact. Q9dYN Response.;
2448  run;
2449
2450  proc freq data=sasintro.dakota15;
2451  label
2452        Q9eYN='Enrollment of farmland acres to CRP'
2453        Q10a6='Improved crop yields (other than seed related traits)';
2454  tables Q10a6*Q9eYN / chisq;
2455  format Q10a6 Impact. Q9eYN Response.;
2456  run;
2457
2458
2459  proc freq data=sasintro.dakota15;
2460  label
2461        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2462        Q10a6='Improved crop yields (other than seed related traits';
2463  tables Q10a6*Q9fYN / chisq;
2464  format Q10a6 Impact. Q9fYN Response.;
2465  run;
2466
2467  /** 9dYN,9eYN,9fYN versus 10a7**/
2468  proc format;
2469  value Response
2470        1='Yes'
2471        2='No';
2472  run;
2473
2474  proc freq data=sasintro.dakota15;
2475  label
2476        Q9dYN='Conversion of CRP land to pasture/hay'
2477        Q10a7='Development of more efficient cropping equipment';
2478  tables Q10a7* Q9dYN / chisq;
2479  format Q10a7 Impact. Q9dYN Response.;
2480  run;
2481
2482  proc freq data=sasintro.dakota15;
2483  label
2484        Q9eYN='Enrollment of farmland acres to CRP'
2485        Q10a7='Development of more efficient cropping equipment';
2486  tables Q10a7*Q9eYN / chisq;
2487  format Q10a7 Impact. Q9eYN Response.;
2488  run;
2489
2490
2491  proc freq data=sasintro.dakota15;
2492  label
2493        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2494        Q10a7='Development of more efficient cropping equipment';
2495  tables Q10a7*Q9fYN / chisq;
2496  format Q10a7 Impact. Q9fYN Response.;
2497  run;
2498
2499
2500
2501  /** 9dYN,9eYN,9fYN versus 10a8**/
2502  proc format;
2503  value Response
2504        1='Yes'
2505        2='No';
2506  run;
2507
```

```
2508  proc freq data=sasintro.dakota15;
2509  label
2510        Q9dYN='Conversion of CRP land to pasture/hay'
2511        Q10a8='Labor availability problems';
2512  tables Q10a8* Q9dYN / chisq;
2513  format Q10a8 Impact. Q9dYN Response.;
2514  run;
2515
2516  proc freq data=sasintro.dakota15;
2517  label
2518        Q9eYN='Enrollment of farmland acres to CRP'
2519        Q10a8='Labor availability problems';
2520  tables Q10a8*Q9eYN / chisq;
2521  format Q10a8 Impact. Q9eYN Response.;
2522  run;
2523
2524  proc freq data=sasintro.dakota15;
2525  label
2526        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2527        Q10a8='Labor availability problems';
2528  tables Q10a8*Q9fYN / chisq;
2529  format Q10a8 Impact. Q9fYN Response.;
2530  run;
2531
2532
2533  /** 9aYN,9bYN,9cYN versus 10a9**/
2534  proc format;
2535  value Response
2536        1='Yes'
2537        2='No';
2538  run;
2539
2540  proc freq data=sasintro.dakota15;
2541  label
2542        Q9dYN='Conversion of CRP land to pasture/hay'
2543        Q10a9='Improving wildlife habitat';
2544  tables Q10a9* Q9dYN / chisq;
2545  format Q10a9 Impact. Q9dYN Response.;
2546  run;
2547
2548  proc freq data=sasintro.dakota15;
2549  label
2550        Q9eYN='Enrollment of farmland acres to CRP'
2551        Q10a9='Improving wildlife habitat';
2552  tables Q10a9*Q9eYN / chisq;
2553  format Q10a9 Impact. Q9eYN Response.;
2554  run;
2555
2556  proc freq data=sasintro.dakota15;
2557  label
2558        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2559        Q10a9='Improving wildlife habitat';
2560  tables Q10a9*Q9fYN / chisq;
2561  format Q10a9 Impact. Q9fYN Response.;
2562  run;
2563
2564  /** 9aYN,9bYN,9cYN versus 10a10**/
2565  proc format;
2566  value Response
2567        1='Yes'
2568        2='No';
2569  run;
2570
2571  proc freq data=sasintro.dakota15;
2572  label
2573        Q9dYN='Conversion of CRP land to pasture/hay'
2574        Q10a10='Changing weather /climate patterns';
2575  tables Q10a10* Q9dYN / chisq;
2576  format Q10a10 Impact. Q9dYN Response.;
2577  run;
2578
2579  proc freq data=sasintro.dakota15;
2580  label
2581        Q9eYN='Enrollment of farmland acres into CRP'
2582        Q10a10='Changing weather /climate patterns';
2583  tables Q10a10*Q9eYN / chisq;
```

```
2584  format Q10a10 Impact. Q9eYN Response.;
2585  run;
2586
2587  proc freq data=sasintro.dakota15;
2588  label
2589          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2590          Q10a10='Changing weather /climate patterns';
2591  tables Q10a10*Q9fYN / chisq;
2592  format Q10a10 Impact. Q9fYN Response.;
2593  run;
2594
2595  /**logistic regression**/
2596  data sasintro.dakota15reg;
2597      set sasintro.dakota15clean;
2598   if  (Q9aYN=1) then NQ9aYN=0;
2599   if  (Q9aYN=2)  then NQ9aYN=1;
2600
2601   if  (Q9bYN=1) then NQ9bYN=0;
2602   if  (Q9bYN=2)  then NQ9bYN=1;
2603
2604   if  (Q9cYN=1) then NQ9cYN=0;
2605   if  (Q9cYN=2)  then NQ9cYN=1;
2606
2607   if  (Q9dYN=1) then NQ9dYN=0;
2608   if  (Q9dYN=2)  then NQ9dYN=1;
2609
2610   if  (Q9eYN=1) then NQ9eYN=0;
2611   if  (Q9eYN=2)  then NQ9eYN=1;
2612
2613   if  (Q9fYN=1) then NQ9fYN=0;
2614   if  (Q9fYN=2)  then NQ9fYN=1;
2615   run;
2616  proc print data=sasintro.dakota15reg;
2617  run;
2618
2619
2620  proc format;
2621  value Age
2622          1='19 to 34 years'
2623          2='35 to 49 years'
2624          3='50 to 59 years'
2625          4='60 to 69 years'
2626          5='70 years and over';
2627
2628  value Gender
2629          1='Male'
2630          2='Female';
2631
2632  value Education
2633          1='Less than high school'
2634          2='High school'
2635          3='Some college/technical school'
2636          4='4-year college degree'
2637          5='Advanced degree (Masters, etc.)';
2638
2639  value Occupation
2640          1='Farming or Ranching'
2641          2='Employment in off-farm job'
2642          3='Own/operate a non-farm business'
2643          4='Retired';
2644
2645  value Sales
2646
2647          12='Less than $99,999'
2648          3='From $100,000 up to $249,999'
2649          4='From $250,000 up to $499,999'
2650          5='From $500,000 up to $999,999'
2651          6='$1 million or more';
2652  run;
2653
2654  proc format;
2655  value operation
2656          1='Have been a farm operator'
2657          2='less than 10 years as a farm operator'
2658          3='10 to 10 years as a farm operator'
2659          4='20 to 29 years as a farm operator'
```

```
2660        5='30 years or more as a farm operator'
2661        ;
2662 run;
2663
2664
2665 proc format;
2666 value Farmland 10-259='1 to 259 acres'
2667                260-499='260 to 499 acres'
2668                500-999='500 to 999 acres'
2669                1000-1999='1000 to 1999 acres'
2670                2000-4999='2000 to 4999 acres'
2671                5000-high ='5000 acres and above';
2672 run;
2673
2674 proc format;
2675 value Ownership
2676        1='Own all acres farmed'
2677        2='Own most acres farmed, rented the remainder'
2678        3='Own and rent roughly equal number of farmland acres'
2679        4='Rented most of the acres farmed,owned the remainder'
2680        5='Rented all acres farmland'
2681        6='Professional farm manager';
2682 run;
2683
2684
2685 proc format;
2686 value Regroup
2687        0='Yes'
2688        1='No';
2689 run;
2690 proc logistic data=sasintro.dakota15reg;
2691 label
2692        Q19='Respondent Age'
2693        Q20='Respondent Gender'
2694        Q21='Respondent Level of Education'
2695        Q22='Principal Ocupation'
2696        Q23='Gross farm/ranch sales'
2697        Q1=' Years as a farm operator'
2698        Q3A='Farmland acres operated in 2014'
2699        Q4='Ownership Status in 2014'
2700        NQ9aYN='Conversion of native grass to cropland';
2701 class NQ9aYN  state/ param=ref;
2702 model NQ9aYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state /rsquare;
2703 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2704        Q3A Farmland. Q4 Ownership. NQ9aYN Regroup. ;
2705 run;
2706
2707
2708 proc format;
2709 value Regroup
2710        0='Yes'
2711        1='No';
2712 run;
2713 proc logistic data=sasintro.dakota15reg;
2714 label
2715        Q19='Respondent Age'
2716        Q20='Respondent Gender'
2717        Q21='Respondent Level of Education'
2718        Q22='Principal Ocupation'
2719        Q23='Gross farm/ranch sales'
2720        Q1=' Years as a farm operator'
2721        Q3A='Farmland acres operated in 2014'
2722        Q4='Ownership Status in 2014'
2723        NQ9bYN='Conversion of tame grassland to cropland';
2724 class NQ9bYN state / param=ref;
2725 model NQ9bYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state/rsquare;
2726 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2727        Q3A Farmland. Q4 Ownership. NQ9bYN Regroup.;
2728 run;
2729
2730 proc format;
2731 value Regroup
2732        0='Yes'
2733        1='No';
2734 run;
2735 proc logistic data=sasintro.dakota15reg;
```

```
2736  label
2737       Q19='Respondent Age'
2738       Q20='Respondent Gender'
2739       Q21='Respondent Level of Education'
2740       Q22='Principal Ocupation'
2741       Q23='Gross farm/ranch sales'
2742       Q1=' Years as a farm operator'
2743       Q3A='Farmland acres operated in 2014'
2744       Q4='Ownership Status in 2014'
2745       NQ9cYN='Conversion of CRP land to cropland';
2746  class NQ9cYN  state / param=ref;
2747  model NQ9cYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state /rsquare;
2748  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2749         Q3A Farmland. Q4 Ownership. NQ9cYN Regroup.;
2750  run;
2751
2752  proc format;
2753  value Regroup
2754       0='Yes'
2755       1='No';
2756  run;
2757  proc logistic data=sasintro.dakota15reg;
2758  label
2759       Q19='Respondent Age'
2760       Q20='Respondent Gender'
2761       Q21='Respondent Level of Education'
2762       Q22='Principal Ocupation'
2763       Q23='Gross farm/ranch sales'
2764       Q1=' Years as a farm operator'
2765       Q3A='Farmland acres operated in 2014'
2766       Q4='Ownership Status in 2014'
2767       NQ9dYN='Conversion of CRP land to pasture/hay';
2768  class NQ9dYN  state / param=ref;
2769  model NQ9dYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state /rsquare;
2770  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2771         Q3A Farmland. Q4 Ownership. NQ9dYN Regroup.;
2772  run;
2773
2774  proc format;
2775  value Regroup
2776       0='Yes'
2777       1='No';
2778  run;
2779  proc logistic data=sasintro.dakota15reg;
2780  label
2781       Q19='Respondent Age'
2782       Q20='Respondent Gender'
2783       Q21='Respondent Level of Education'
2784       Q22='Principal Ocupation'
2785       Q23='Gross farm/ranch sales'
2786       Q1=' Years as a farm operator'
2787       Q3A='Farmland acres operated in 2014'
2788       Q4='Ownership Status in 2014'
2789       NQ9eYN='Enrollment of farmland acres into CRP';
2790  class NQ9eYN  state / param=ref;
2791  model NQ9eYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state /rsquare;
2792  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2793         Q3A Farmland. Q4 Ownership. NQ9eYN Regroup.;
2794  run;
2795
2796  proc format;
2797  value Regroup
2798       0='Yes'
2799       1='No';
2800  run;
2801  proc logistic data=sasintro.dakota15reg;
2802  label
2803       Q19='Respondent Age'
2804       Q20='Respondent Gender'
2805       Q21='Respondent Level of Education'
2806       Q22='Principal Ocupation'
2807       Q23='Gross farm/ranch sales'
2808       Q1=' Years as a farm operator'
2809       Q3A='Farmland acres operated in 2014'
2810       Q4='Ownership Status in 2014'
2811       NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
```

```
2812  class NQ9fYN  state / param=ref;
2813  model NQ9fYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state/rsquare;
2814  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2815         Q3A Farmland. Q4 Ownership. NQ9fYN Regroup.;
2816  run;
2817
2818
2819  /*Region based Regression*/
2820
2821  proc format;
2822  value Age
2823        1='19 to 34 years'
2824        2='35 to 49 years'
2825        3='50 to 59 years'
2826        4='60 to 69 years'
2827        5='70 years and over';
2828
2829  value Gender
2830        1='Male'
2831        2='Female';
2832
2833  value Education
2834        1='Less than high school'
2835        2='High school'
2836        3='Some college/technical school'
2837        4='4-year college degree'
2838        5='Advanced degree (Masters, etc.)';
2839
2840  value Occupation
2841        1='Farming or Ranching'
2842        2='Employment in off-farm job'
2843        3='Own/operate a non-farm business'
2844        4='Retired';
2845
2846  value Sales
2847
2848        12='Less than $99,999'
2849        3='From $100,000 up to $249,999'
2850        4='From $250,000 up to $499,999'
2851        5='From $500,000 up to $999,999'
2852        6='$1 million or more';
2853  run;
2854
2855  proc format;
2856  value operation
2857        1='Have been a farm operator'
2858        2='less than 10 years as a farm operator'
2859        3='10 to 10 years as a farm operator'
2860        4='20 to 29 years as a farm operator'
2861        5='30 years or more as a farm operator'
2862        ;
2863  run;
2864
2865
2866  proc format;
2867  value Farmland 10-259='1 to 259 acres'
2868                 260-499='260 to 499 acres'
2869                 500-999='500 to 999 acres'
2870                 1000-1999='1000 to 1999 acres'
2871                 2000-4999='2000 to 4999 acres'
2872                 5000-high ='5000 acres and above';
2873  run;
2874
2875  proc format;
2876  value Ownership
2877        1='Own all acres farmed'
2878        2='Own most acres farmed, rented the remainder'
2879        3='Own and rent roughly equal number of farmland acres'
2880        4='Rented most of the acres farmed,owned the remainder'
2881        5='Rented all acres farmland'
2882        6='Professional farm manager';
2883  run;
2884
2885
2886  proc format;
2887  value Regroup
```

```
2888          0='Yes'
2889          1='No';
2890 run;
2891 proc logistic data=sasintro.dakota15reg;
2892 label
2893          Q19='Respondent Age'
2894          Q20='Respondent Gender'
2895          Q21='Respondent Level of Education'
2896          Q22='Principal Ocupation'
2897          Q23='Gross farm/ranch sales'
2898          Q1=' Years as a farm operator'
2899          Q3A='Farmland acres operated in 2014'
2900          Q4='Ownership Status in 2014'
2901          NQ9aYN='Conversion of native grass to cropland';
2902 class NQ9aYN Region / param=ref;
2903 model NQ9aYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2904 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2905         Q3A Farmland. Q4 Ownership. NQ9aYN Regroup.;
2906 run;
2907
2908
2909 proc format;
2910 value Regroup
2911          0='Yes'
2912          1='No';
2913 run;
2914 proc logistic data=sasintro.dakota15reg;
2915 label
2916          Q19='Respondent Age'
2917          Q20='Respondent Gender'
2918          Q21='Respondent Level of Education'
2919          Q22='Principal Ocupation'
2920          Q23='Gross farm/ranch sales'
2921          Q1=' Years as a farm operator'
2922          Q3A='Farmland acres operated in 2014'
2923          Q4='Ownership Status in 2014'
2924          NQ9bYN='Conversion of tame grassland to cropland';
2925 class NQ9bYN Region/ param=ref;
2926 model NQ9bYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2927 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2928         Q3A Farmland. Q4 Ownership. NQ9bYN Regroup.;
2929 run;
2930
2931 proc format;
2932 value Regroup
2933          0='Yes'
2934          1='No';
2935 run;
2936 proc logistic data=sasintro.dakota15reg;
2937 label
2938          Q19='Respondent Age'
2939          Q20='Respondent Gender'
2940          Q21='Respondent Level of Education'
2941          Q22='Principal Ocupation'
2942          Q23='Gross farm/ranch sales'
2943          Q1=' Years as a farm operator'
2944          Q3A='Farmland acres operated in 2014'
2945          Q4='Ownership Status in 2014'
2946          NQ9cYN='Conversion of CRP land to cropland';
2947 class NQ9cYN Region/ param=ref;
2948 model NQ9cYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2949 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2950         Q3A Farmland. Q4 Ownership. NQ9cYN Regroup.;
2951 run;
2952
2953 proc format;
2954 value Regroup
2955          0='Yes'
2956          1='No';
2957 run;
2958 proc logistic data=sasintro.dakota15reg;
2959 label
2960          Q19='Respondent Age'
2961          Q20='Respondent Gender'
2962          Q21='Respondent Level of Education'
2963          Q22='Principal Ocupation'
```

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2964         Q23='Gross farm/ranch sales'
2965         Q1='Years as a farm operator'
2966         Q3A='Farmland acres operated in 2014'
2967         Q4='Ownership Status in 2014'
2968         NQ9dYN='Conversion of CRP land to pasture/hay';
2969 class NQ9dYN Region / param=ref;
2970 model NQ9dYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2971 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2972         Q3A Farmland. Q4 Ownership. NQ9dYN Regroup.;
2973 run;
2974
2975 proc format;
2976 value Regroup
2977         0='Yes'
2978         1='No';
2979 run;
2980 proc logistic data=sasintro.dakota15reg;
2981 label
2982         Q19='Respondent Age'
2983         Q20='Respondent Gender'
2984         Q21='Respondent Level of Education'
2985         Q22='Principal Ocupation'
2986         Q23='Gross farm/ranch sales'
2987         Q1=' Years as a farm operator'
2988         Q3A='Farmland acres operated in 2014'
2989         Q4='Ownership Status in 2014'
2990         NQ9eYN='Enrollment of farmland acres into CRP';
2991 class NQ9eYN Region / param=ref;
2992 model NQ9eYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2993 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2994         Q3A Farmland. Q4 Ownership. NQ9eYN Regroup.;
2995 run;
2996
2997 proc format;
2998 value Regroup
2999         0='Yes'
3000         1='No';
3001 run;
3002 proc logistic data=sasintro.dakota15reg;
3003 label
3004         Q19='Respondent Age'
3005         Q20='Respondent Gender'
3006         Q21='Respondent Level of Education'
3007         Q22='Principal Ocupation'
3008         Q23='Gross farm/ranch sales'
3009         Q1=' Years as a farm operator'
3010         Q3A='Farmland acres operated in 2014'
3011         Q4='Ownership Status in 2014'
3012         NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3013 class NQ9fYN  Region / param=ref;
3014 model NQ9fYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
3015 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
3016         Q3A Farmland. Q4 Ownership. NQ9fYN Regroup.;
3017 run;
3018
3019
3020 /*extra analysis start*/
3021
3022 proc format;
3023 value Regroup
3024         0='Yes'
3025         1='No';
3026 run;
3027 proc logistic data=sasintro.dakota15reg;
3028 label CaseID='State'
3029         Q19='Respondent Age'
3030         NQ9aYN='Conversion of native grass to cropland'
3031         NQ9bYN='Conversion of tamend grassland to cropland'
3032         NQ9cYN='Conversion of CRP land to cropland'
3033         NQ9dYN='Conversion of CRP land to pasture/hay'
3034         NQ9eYN='Enrollment of farmland acres to CRP'
3035         NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3036 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3037 model Q19 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3038 format Q19 Age. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup. Ca
3039 run;
```

```
3040
3041
3042  proc logistic data=sasintro.dakota15reg;
3043  label
3044        Q19='Respondent Age'
3045        NQ9aYN='Conversion of native grass to cropland'
3046        NQ9bYN='Conversion of tamend grassland to cropland'
3047        NQ9cYN='Conversion of CRP land to cropland'
3048        NQ9dYN='Conversion of CRP land to pasture/hay'
3049        NQ9eYN='Enrollment of farmland acres to CRP'
3050        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3051  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3052  model Q19 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3053  format Q19 Age. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup.;
3054  run;
3055
3056  proc logistic data=sasintro.dakota15reg;
3057  label CaseID='State'
3058        Q20='Respondent Gender'
3059        NQ9aYN='Conversion of native grass to cropland'
3060        NQ9bYN='Conversion of tamend grassland to cropland'
3061        NQ9cYN='Conversion of CRP land to cropland'
3062        NQ9dYN='Conversion of CRP land to pasture/hay'
3063        NQ9eYN='Enrollment of farmland acres to CRP'
3064        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3065  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3066  model Q20 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3067  format Q20 Gender. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup.
3068  run;
3069
3070
3071  proc logistic data=sasintro.dakota15reg;
3072  label
3073        Q20='Respondent Gender'
3074        NQ9aYN='Conversion of native grass to cropland'
3075        NQ9bYN='Conversion of tamend grassland to cropland'
3076        NQ9cYN='Conversion of CRP land to cropland'
3077        NQ9dYN='Conversion of CRP land to pasture/hay'
3078        NQ9eYN='Enrollment of farmland acres to CRP'
3079        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3080  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3081  model Q20 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3082  format Q20 Gender. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup.
3083  run;
3084
3085
3086  proc logistic data=sasintro.dakota15reg;
3087  label CaseID='State'
3088        Q21='Respondent Level of Education'
3089        NQ9aYN='Conversion of native grass to cropland'
3090        NQ9bYN='Conversion of tamend grassland to cropland'
3091        NQ9cYN='Conversion of CRP land to cropland'
3092        NQ9dYN='Conversion of CRP land to pasture/hay'
3093        NQ9eYN='Enrollment of farmland acres to CRP'
3094        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3095  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3096  model Q21 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3097  format Q21 Education. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regro
3098  run;
3099
3100
3101  proc logistic data=sasintro.dakota15reg;
3102  label
3103        Q21='Respondent Level of Education'
3104        NQ9aYN='Conversion of native grass to cropland'
3105        NQ9bYN='Conversion of tamend grassland to cropland'
3106        NQ9cYN='Conversion of CRP land to cropland'
3107        NQ9dYN='Conversion of CRP land to pasture/hay'
3108        NQ9eYN='Enrollment of farmland acres to CRP'
3109        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3110  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3111  model Q21 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3112  format Q21 Education. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regro
3113  run;
3114
3115
```

```
3116  proc logistic data=sasintro.dakota15reg;
3117  label CaseID='State'
3118        Q22='Principal Occupation'
3119        NQ9aYN='Conversion of native grass to cropland'
3120        NQ9bYN='Conversion of tamend grassland to cropland'
3121        NQ9cYN='Conversion of CRP land to cropland'
3122        NQ9dYN='Conversion of CRP land to pasture/hay'
3123        NQ9eYN='Enrollment of farmland acres to CRP'
3124        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3125  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3126  model Q22 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3127  format Q22 Occupation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regr
3128  run;
3129
3130
3131  proc logistic data=sasintro.dakota15reg;
3132  label
3133        Q22='Principal Occupation'
3134        NQ9aYN='Conversion of native grass to cropland'
3135        NQ9bYN='Conversion of tamend grassland to cropland'
3136        NQ9cYN='Conversion of CRP land to cropland'
3137        NQ9dYN='Conversion of CRP land to pasture/hay'
3138        NQ9eYN='Enrollment of farmland acres to CRP'
3139        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3140  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3141  model Q22 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3142  format Q22 Occupation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regr
3143  run;
3144
3145  proc logistic data=sasintro.dakota15reg;
3146  label CaseID='State'
3147        Q23='Gross farm/ranch sales'
3148        NQ9aYN='Conversion of native grass to cropland'
3149        NQ9bYN='Conversion of tamend grassland to cropland'
3150        NQ9cYN='Conversion of CRP land to cropland'
3151        NQ9dYN='Conversion of CRP land to pasture/hay'
3152        NQ9eYN='Enrollment of farmland acres to CRP'
3153        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3154  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3155  model Q23 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3156  format Q23 Sales. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup.
3157  run;
3158
3159
3160  proc logistic data=sasintro.dakota15reg;
3161  label
3162        Q23='Gross farm/ranch sales'
3163        NQ9aYN='Conversion of native grass to cropland'
3164        NQ9bYN='Conversion of tamend grassland to cropland'
3165        NQ9cYN='Conversion of CRP land to cropland'
3166        NQ9dYN='Conversion of CRP land to pasture/hay'
3167        NQ9eYN='Enrollment of farmland acres to CRP'
3168        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3169  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3170  model Q23 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3171  format Q23 Sales. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup.;
3172  run;
3173
3174  proc logistic data=sasintro.dakota15reg;
3175  label CaseID='State'
3176        Q1='Years as a farm opertor'
3177        NQ9aYN='Conversion of native grass to cropland'
3178        NQ9bYN='Conversion of tamend grassland to cropland'
3179        NQ9cYN='Conversion of CRP land to cropland'
3180        NQ9dYN='Conversion of CRP land to pasture/hay'
3181        NQ9eYN='Enrollment of farmland acres to CRP'
3182        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3183  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3184  model Q1 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3185  format Q1 Operation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3186  run;
3187
3188
3189  proc logistic data=sasintro.dakota15reg;
3190  label
3191        Q1='Years as a farm opertor'
```

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3192          NQ9aYN='Conversion of native grass to cropland'
3193          NQ9bYN='Conversion of tamend grassland to cropland'
3194          NQ9cYN='Conversion of CRP land to cropland'
3195          NQ9dYN='Conversion of CRP land to pasture/hay'
3196          NQ9eYN='Enrollment of farmland acres to CRP'
3197          NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3198 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3199 model Q1 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3200 format Q1 Operation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3201 run;
3202
3203
3204 proc format;
3205 value Farmland 10-259='1 to 259 acres'
3206                260-499='260 to 499 acres'
3207                500-999='500 to 999 acres'
3208                1000-1999='1000 to 1999 acres'
3209                2000-4999='2000 to 4999 acres'
3210                5000-high ='5000 acres and above';
3211 run;
3212
3213 proc logistic data=sasintro.dakota15reg;
3214 label CaseID='State'
3215          Q3a='Farmland acres operated in 2014'
3216          NQ9aYN='Conversion of native grass to cropland'
3217          NQ9bYN='Conversion of tamend grassland to cropland'
3218          NQ9cYN='Conversion of CRP land to cropland'
3219          NQ9dYN='Conversion of CRP land to pasture/hay'
3220          NQ9eYN='Enrollment of farmland acres to CRP'
3221          NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3222 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3223 model Q3a = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3224 format Q3a Farmland. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3225 run;
3226
3227
3228 proc logistic data=sasintro.dakota15reg;
3229 label
3230          Q3a='Farmland acres operated in 2014'
3231          NQ9aYN='Conversion of native grass to cropland'
3232          NQ9bYN='Conversion of tamend grassland to cropland'
3233          NQ9cYN='Conversion of CRP land to cropland'
3234          NQ9dYN='Conversion of CRP land to pasture/hay'
3235          NQ9eYN='Enrollment of farmland acres to CRP'
3236          NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3237 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3238 model Q3a = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3239 format Q3a Farmland. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3240 run;
3241
3242
3243 proc format;
3244 value Ownership
3245          1='Own all acres farmed'
3246          2='Own most acres farmed, rented the remainder'
3247          3='Own and rent roughly equal number of farmland acres'
3248          4='Rented most of the acres farmed,owned the remainder'
3249          5='Rented all acres farmland'
3250          6='Professional farm manager';
3251 run;
3252
3253 proc logistic data=sasintro.dakota15reg;
3254 label CaseID='State'
3255          Q4='Ownersip Status in 2014'
3256          NQ9aYN='Conversion of native grass to cropland'
3257          NQ9bYN='Conversion of tamend grassland to cropland'
3258          NQ9cYN='Conversion of CRP land to cropland'
3259          NQ9dYN='Conversion of CRP land to pasture/hay'
3260          NQ9eYN='Enrollment of farmland acres to CRP'
3261          NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3262 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3263 model Q4 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3264 format Q4 Ownership. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3265 run;
3266
3267
```

```sas
3268  proc logistic data=sasintro.dakota15reg;
3269  label
3270        Q4='Ownersip Status in 2014'
3271        NQ9aYN='Conversion of native grass to cropland'
3272        NQ9bYN='Conversion of tamend grassland to cropland'
3273        NQ9cYN='Conversion of CRP land to cropland'
3274        NQ9dYN='Conversion of CRP land to pasture/hay'
3275        NQ9eYN='Enrollment of farmland acres to CRP'
3276        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3277  class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3278  model Q4 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3279  format Q4 Ownership. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3280  run;
3281
3282  /*extra analysis end */
3283
3284
3285  /* Q10 related regression analysis start */
3286
3287  data sasintro.dakota15regQ10a;
3288        set sasintro.dakota15clean;
3289  if  (Q10a1=1) then NQ10a1=0;
3290  if  (Q10a1=2) or (Q10a1=3) then NQ10a1=1;
3291  if  (Q10a1=4) or (Q10a1=5) then NQ10a1=2;
3292
3293  if  (Q10a2=1) then NQ10a2=0;
3294  if  (Q10a2=2) or (Q10a2=3) then NQ10a2=1;
3295  if  (Q10a2=4) or (Q10a2=5) then NQ10a2=2;
3296
3297  if  (Q10a10=1) then NQ10a10=0;
3298  if  (Q10a10=2) or (Q10a10=3) then NQ10a10=1;
3299  if  (Q10a10=4) or (Q10a10=5) then NQ10a10=2;
3300
3301  if  (Q10a7=1) then NQ10a7=0;
3302  if  (Q10a7=2) or (Q10a7=3) then NQ10a7=1;
3303  if  (Q10a7=4) or (Q10a7=5) then NQ10a7=2;
3304
3305  if  (Q10a6=1) then NQ10a6=0;
3306  if  (Q10a6=2) or (Q10a6=3) then NQ10a6=1;
3307  if  (Q10a6=4) or (Q10a6=5) then NQ10a6=2;
3308
3309  if  (Q10a3=1) then NQ10a3=0;
3310  if  (Q10a3=2) or (Q10a3=3) then NQ10a3=1;
3311  if  (Q10a3=4) or (Q10a3=5) then NQ10a3=2;
3312
3313  if  (Q10a5=1) then NQ10a5=0;
3314  if  (Q10a5=2) or (Q10a5=3) then NQ10a5=1;
3315  if  (Q10a5=4) or (Q10a5=5) then NQ10a5=2;
3316
3317  if  (Q10a8=1) then NQ10a8=0;
3318  if  (Q10a8=2) or (Q10a8=3) then NQ10a8=1;
3319  if  (Q10a8=4) or (Q10a8=5) then NQ10a8=2;
3320
3321  if  (Q10a9=1) then NQ10a9=0;
3322  if  (Q10a9=2) or (Q10a9=3) then NQ10a9=1;
3323  if  (Q10a9=4) or (Q10a9=5) then NQ10a9=2;
3324
3325  if  (Q10a4=1) then NQ10a4=0;
3326  if  (Q10a4=2) or (Q10a4=3) then NQ10a4=1;
3327  if  (Q10a4=4) or (Q10a4=5) then NQ10a4=2;
3328  run;
3329  proc print data=sasintro.dakota15regQ10a;
3330  run;
3331
3332  proc format;
3333  value Reformat
3334        0='No Impact'
3335        1='Some Impact'
3336        2='Great Impact';
3337  run;
3338
3339  proc GLM data=sasintro.dakota15regQ10a;
3340  class NQ10a1 region;
3341  level NQ10a1='Changing crop prices';
3342  model NQ10a1=region;
3343  format  NQ10a1 reformat.;
```

```sas
3344 run;
3345
3346 proc GLM data=sasintro.dakota15regQ10a;
3347 class NQ10a2 region;
3348 Level Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
3349 model NQ10a2=region;
3350 format  NQ10a2 reformat.;
3351 run;
3352
3353 proc GLM data=sasintro.dakota15regQ10a;
3354 class NQ10a3 region;
3355 Level Q10a3='Availability of crop and revenue insurance policies';
3356 model NQ10a3=region;
3357 format  NQ10a3 reformat.;
3358 run;
3359
3360 proc GLM data=sasintro.dakota15regQ10a;
3361 class NQ10a4 region;
3362 Level NQ10a4='Availability of drought-tolerant seed';
3363 model NQ10a4=region;
3364 format  NQ10a4 reformat.;
3365 run;
3366
3367 proc GLM data=sasintro.dakota15regQ10a;
3368 class NQ10a5 region;
3369 Level NQ10a5='Developments in pest management practices, including pest management seed traits';
3370 model NQ10a5=region;
3371 format  NQ10a5 reformat.;
3372 run;
3373
3374 proc GLM data=sasintro.dakota15regQ10a;
3375 class NQ10a6 region;
3376 Level NQ10a6='Improved crop yields (other than seed related traits)';
3377 model NQ10a6=region;
3378 format  NQ10a6 reformat.;
3379 run;
3380
3381 proc GLM data=sasintro.dakota15regQ10a;
3382 class NQ10a7 region;
3383 Level NQ10a7='Development of more efficient cropping equipment';
3384 model NQ10a7=region;
3385 format  NQ10a7 reformat.;
3386 run;
3387
3388 proc GLM data=sasintro.dakota15regQ10a;
3389 class NQ10a7 region;
3390 Level NQ10a7='Development of more efficient cropping equipment';
3391 model NQ10a7=region;
3392 format  NQ10a7 reformat.;
3393 run;
3394
3395 proc GLM data=sasintro.dakota15regQ10a;
3396 class NQ10a8 region;
3397 Level NQ10a8='Labor availability problems';
3398 model NQ10a8=region;
3399 format  NQ10a8 reformat.;
3400 run;
3401
3402 proc GLM data=sasintro.dakota15regQ10a;
3403 class NQ10a9 region;
3404 Level NQ10a9='Improving wildlife habitat';
3405 model NQ10a9=region;
3406 format  NQ10a9 reformat.;
3407 run;
3408
3409 proc GLM data=sasintro.dakota15regQ10a;
3410 class NQ10a10 region;
3411 Level NQ10a10='Changing weather /climate patterns';
3412 model NQ10a10=region;
3413 format  NQ10a10 reformat.;
3414 run;
3415
3416 /* Q10a related latest regression */
3417
3418 proc format;
3419 value Impact
```

```sas
3420         1='No Impact'
3421         2='Slight Impact'
3422         3='Some Impact'
3423         4='Quite a bit of Impact'
3424         5='Great Impact';
3425 run;
3426
3427 proc GLM data=sasintro.dakota15clean;
3428 class Q10a1 region;
3429 level Q10a1='Changing crop prices';
3430 model Q10a1=region;
3431 format  Q10a1 impact.;
3432 run;
3433
3434 proc GLM data=sasintro.dakota15clean;
3435 class Q10a2 region;
3436 Level Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
3437 model Q10a2=region;
3438 format Q10a2 impact.;
3439 run;
3440
3441 proc GLM data=sasintro.dakota15clean;
3442 class Q10a3 region;
3443 Level Q10a3='Availability of crop and revenue insurance policies';
3444 model Q10a3=region;
3445 format Q10a3 impact.;
3446 run;
3447
3448 proc GLM data=sasintro.dakota15clean;
3449 class NQ10a4 region;
3450 Level Q10a4='Availability of drought-tolerant seed';
3451 model Q10a4=region;
3452 format Q10a4 impact.;
3453 run;
3454
3455 proc GLM data=sasintro.dakota15clean;
3456 class Q10a5 region;
3457 Level Q10a5='Developments in pest management practices, including pest management seed traits';
3458 model Q10a5=region;
3459 format Q10a5 impact.;
3460 run;
3461
3462 proc GLM data=sasintro.dakota15clean;
3463 class Q10a6 region;
3464 Level Q10a6='Improved crop yields (other than seed related traits)';
3465 model Q10a6=region;
3466 format Q10a6 impact.;
3467 run;
3468
3469 proc GLM data=sasintro.dakota15clean;
3470 class Q10a7 region;
3471 Level Q10a7='Development of more efficient cropping equipment';
3472 model Q10a7=region;
3473 format Q10a7 impact.;
3474 run;
3475
3476 proc GLM data=sasintro.dakota15clean;
3477 class Q10a7 region;
3478 Level Q10a7='Development of more efficient cropping equipment';
3479 model Q10a7=region;
3480 format Q10a7 impact.;
3481 run;
3482
3483 proc GLM data=sasintro.dakota15clean;
3484 class Q10a8 region;
3485 Level Q10a8='Labor availability problems';
3486 model Q10a8=region;
3487 format Q10a8 impact.;
3488 run;
3489
3490 proc GLM data=sasintro.dakota15clean;
3491 class Q10a9 region;
3492 Level Q10a9='Improving wildlife habitat';
3493 model Q10a9=region;
3494 format Q10a9 impact.;
3495 run;
```

```
3496
3497  proc GLM data=sasintro.dakota15clean;
3498  class Q10a10 region;
3499  Level Q10a10='Changing weather /climate patterns';
3500  model Q10a10=region;
3501  format Q10a10 impact.;
3502  run;
3503
3504
3505
3506  /* Q10a related regression analysis extra not related */
3507
3508  /*creating region numeric*/
3509
3510  data sasintro.dakota15num;
3511       set sasintro.dakota15;
3512   if  Region='East North Dakota' then Region=1;
3513   if  Region='Central North Dakota' then Region=2;
3514   if  Region='North Central South Dakota' then Region=3;
3515   if  Region='Central South Dakota' then Region=4;
3516   if  Region='East Central South Dakota' then Region=5;
3517   if  Region='North East South Dakota' then Region=6;
3518
3519   if  (Q10a1=1) then NQ10a1=0;
3520   if  (Q10a1=2) or (Q10a1=3) then NQ10a1=1;
3521   if  (Q10a1=4) or (Q10a1=5) then NQ10a1=2;
3522
3523   if  (Q10a2=1) then NQ10a2=0;
3524   if  (Q10a2=2) or (Q10a2=3) then NQ10a2=1;
3525   if  (Q10a2=4) or (Q10a2=5) then NQ10a2=2;
3526
3527   if  (Q10a10=1) then NQ10a10=0;
3528   if  (Q10a10=2) or (Q10a10=3) then NQ10a10=1;
3529   if  (Q10a10=4) or (Q10a10=5) then NQ10a10=2;
3530
3531   if  (Q10a7=1) then NQ10a7=0;
3532   if  (Q10a7=2) or (Q10a7=3) then NQ10a7=1;
3533   if  (Q10a7=4) or (Q10a7=5) then NQ10a7=2;
3534
3535   if  (Q10a6=1) then NQ10a6=0;
3536   if  (Q10a6=2) or (Q10a6=3) then NQ10a6=1;
3537   if  (Q10a6=4) or (Q10a6=5) then NQ10a6=2;
3538
3539   if  (Q10a3=1) then NQ10a3=0;
3540   if  (Q10a3=2) or (Q10a3=3) then NQ10a3=1;
3541   if  (Q10a3=4) or (Q10a3=5) then NQ10a3=2;
3542
3543   if  (Q10a5=1) then NQ10a5=0;
3544   if  (Q10a5=2) or (Q10a5=3) then NQ10a5=1;
3545   if  (Q10a5=4) or (Q10a5=5) then NQ10a5=2;
3546
3547   if  (Q10a8=1) then NQ10a8=0;
3548   if  (Q10a8=2) or (Q10a8=3) then NQ10a8=1;
3549   if  (Q10a8=4) or (Q10a8=5) then NQ10a8=2;
3550
3551   if  (Q10a9=1) then NQ10a9=0;
3552   if  (Q10a9=2) or (Q10a9=3) then NQ10a9=1;
3553   if  (Q10a9=4) or (Q10a9=5) then NQ10a9=2;
3554
3555   if  (Q10a4=1) then NQ10a4=0;
3556   if  (Q10a4=2) or (Q10a4=3) then NQ10a4=1;
3557   if  (Q10a4=4) or (Q10a4=5) then NQ10a4=2;
3558  run;
3559
3560  proc print data=sasintro.dakota15num;
3561  run;
3562
3563  proc format;
3564  value regroup
3565        0='No Impact'
3566        1='Some Impact'
3567        2='Great Impact';
3568  run;
3569  /*proc format;
3570  value geografic
3571        1 ='East North Dakota'
```

```sas
3572          2='Central North Dakota'
3573          3='North Central South Dakota'
3574          4='Central South Dakota'
3575          5='East Central South Dakota'
3576          6='North East South Dakota';
3577 run; */
3578
3579 proc logistic data=sasintro.dakota15num;
3580 label
3581        Q10a1='Changing crop prices'
3582        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
3583        Q10a3='Availability of crop and revenue insurance policies'
3584        Q10a4='Availability of drought-tolerant seed'
3585        Q10a5='Developments in pest management practices, including pest management seed traits'
3586        Q10a6='Improved crop yields (other than seed related traits)'
3587        Q10a7='Development of more efficient cropping equipment'
3588        Q10a8='Labor availability problems'
3589        Q10a9='Improving wildlife habitat'
3590        Q10a10='Changing weather /climate patterns';
3591 class NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 region / param=ref;
3592 model Region = NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 /rsquare;
3593 format  NQ10a1 regroup. NQ10a2 regroup. NQ10a3 regroup. NQ10a4 regroup. NQ10a5 regroup. NQ10a6 regroup.
3594          NQ10a7 regroup. NQ10a8 regroup.  NQ10a9 regroup. NQ10a10 regroup.;
3595 run;
3596
3597
3598 proc logistic data=sasintro.dakota15num;
3599 label CaseID='State'
3600        Q10a1='Changing crop prices'
3601        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
3602        Q10a3='Availability of crop and revenue insurance policies'
3603        Q10a4='Availability of drought-tolerant seed'
3604        Q10a5='Developments in pest management practices, including pest management seed traits'
3605        Q10a6='Improved crop yields (other than seed related traits)'
3606        Q10a7='Development of more efficient cropping equipment'
3607        Q10a8='Labor availability problems'
3608        Q10a9='Improving wildlife habitat'
3609        Q10a10='Changing weather /climate patterns';
3610 class NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 CaseID / param=ref;
3611 model CaseID = NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 /rsquare;
3612 format  NQ10a1 regroup. NQ10a2 regroup. NQ10a3 regroup. NQ10a4 regroup. NQ10a5 regroup. NQ10a6 regroup.
3613          NQ10a7 regroup. NQ10a8 regroup.  NQ10a9 regroup. NQ10a10 regroup. CaseID State.;
3614 run;
3615
3616
3617
3618 /* Are there land use changes reported by farmers during the past 10 year
3619 in the context of farmers expanding, contracting, or remaining the same size
3620 (in terms of acres operated) during the past 10 yeras?*/
3621
3622 /** question 5a**/
3623
3624 proc format;
3625 value Currentacres
3626        1 = 'Fewer acres than 10 years ago (by over 10%)'
3627        2 = 'No change or a minor change'
3628        3 = 'More acres than 10 years ago (by over 10%)';
3629 proc freq data=sasintro.dakota15;
3630 label CaseID='State'
3631        Q5a ='Cropland acres operated';
3632 tables Q5a*CaseID / norow nocum;
3633 format Q5a Currentacres. CaseID State.;
3634 run;
3635
3636 /** question 5b**/
3637 proc format;
3638 value Currentacres
3639        1 = 'Fewer acres than 10 years ago (by over 10%)'
3640        2 = 'No change or a minor change'
3641        3 = 'More acres than 10 years ago (by over 10%)';
3642 proc freq data=sasintro.dakota15;
3643 label CaseID='State'
3644        Q5b ='Pasture/rangeland acres operated';
3645 tables Q5b*CaseID / norow nocum;
3646 format Q5b Currentacres. CaseID State.;
3647 run;
```

```
3648
3649
3650  /* develop a composite variable GRASCROP to include any respondent that
3651  made a grass/CRP conversion to cropland decison:
3652  yes respondent answered yes or code=1 to convert native grassland to cropland */
3653
3654  data sasintro.dakota15reg1;
3655       set sasintro.dakota15clean;
3656
3657  GRASCROP=0;
3658       if  (Q9aYN=1) or (Q9bYN=1) or (Q9CYN=1) then GRASCROP=1;
3659       if  (Q9aYN=.) or (Q9bYN=.) or (Q9CYN=.) then GRASCROP=.;
3660
3661  CRPUSE=0;
3662       if  (Q9cYN=1) or (Q9dYN=1) or (Q9eYN=1) then CRPUSE=1;
3663       if  (Q9cYN=.) or (Q9dYN=.) or (Q9eYN=.) then CRPUSE=.;
3664
3665  RUN;
3666
3667  proc print data=sasintro.dakota15reg1;run;
3668
3669  /*data sasintro.dakota15reg2;
3670       set sasintro.dakota15reg1;
3671  GCROP=.;
3672  GCROP= (Q9AYN*100)+(Q9BYN*10)+Q9CYN;
3673  RUN;
3674  proc print data=sasintro.dakota15reg2;run;
3675
3676  data sasintro.dakota15reg3;
3677       set sasintro.dakota15reg2;
3678
3679  GRASCROP=.;
3680   if GCROP=1 then GRASCROP=1;
3681  proc print data=sasintro.dakota15reg3;run;*/
3682
3683
3684  /*data sasintro.dakota15reg1;
3685       set sasintro.dakota15clean;
3686    if  (Q9aYN=1) or (Q9bYN=1) or (Q9CYN=1) then GRASCROP=0;
3687    if  (Q9aYN=2) or (Q9bYN=2) or (Q9CYN=2) then GRASCROP=1;
3688
3689    if  (Q9cYN=1) or (Q9dYN=1) or (Q9eYN=1) then CRPUSE=0;
3690    if  (Q9cYN=2) or (Q9dYN=2) or (Q9eYN=2) then CRPUSE=1;
3691
3692  RUN;
3693  proc print data=sasintro.dakota15reg1;run; */
3694
3695
3696
3697  /* cross tab chi square test, Q9 part one GRASCROP region and state based, 19, 20, 21, 22, 23, */
3698
3699  proc format;
3700  value Response
3701       1='Yes'
3702       2='No';
3703  run;
3704
3705  proc freq data=sasintro.dakota15reg1;
3706  label Q9AYN='Conversion of native grassland to cropland'
3707       Q9BYN='Conversion of tame grassland to cropland'
3708       Q9CYN='Conversion of CRP land to cropland'
3709       GRASCROP='grass/CRP conversion to cropland decison:';
3710
3711  tables (Q9AYN Q9BYN Q9CYN)* GRASCROP/chisq;
3712  format Q9aYN Response. Q9bYN Response. Q9cYN Response. ;
3713  run;
3714
3715  proc freq data=sasintro.dakota15reg1;
3716  label Q9CYN='Conversion of CRP land to cropland'
3717       Q9DYN='Conversion of CRP land to pasture/hay'
3718       Q9EYN='Enrollment of farm acres into CRP'
3719       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3720
3721  tables (Q9CYN Q9DYN Q9EYN)* CRPUSE/chisq;
3722  format Q9CYN Response. Q9DYN Response. Q9EYN Response. ;
3723  run;
```

```
3724
3725
3726  proc format;
3727  value Age
3728        1='19 to 34 years'
3729        2='35 to 49 years'
3730        3='50 to 59 years'
3731        4='60 to 69 years'
3732        5='70 years and over';
3733
3734  value Gender
3735        1='Male'
3736        2='Female';
3737
3738  value Education
3739        1='Less than high school'
3740        2='High school'
3741        3='Some college/technical school'
3742        4='4-year college degree'
3743        5='Advanced degree (Masters, etc.)';
3744
3745  value Occupation
3746        1='Farming or Ranching'
3747        2='Employment in off-farm job'
3748        3='Own/operate a non-farm business'
3749        4='Retired';
3750
3751  value Sales
3752
3753        12='Less than $99,999'
3754        3='From $100,000 up to $249,999'
3755        4='From $250,000 up to $499,999'
3756        5='From $500,000 up to $999,999'
3757        6='$1 million or more';
3758  run;
3759
3760
3761  proc freq data=sasintro.dakota15reg1;
3762  label Q19='Respondent Age'
3763        GRASCROP='grass/CRP conversion to cropland decison:';
3764  tables GRASCROP*Q19/chisq;
3765  format Q19 Age. ;
3766  run;
3767
3768
3769  proc freq data=sasintro.dakota15reg1;
3770  label Q20='Respondent Gender'
3771        GRASCROP='grass/CRP conversion to cropland decison:';
3772  tables GRASCROP*Q20/chisq;
3773  format Q20 Gender.  ;
3774  run;
3775
3776
3777  proc freq data=sasintro.dakota15reg1;
3778  label Q21='Respondent Level of Education'
3779        GRASCROP='grass/CRP conversion to cropland decison:';
3780  tables GRASCROP*Q21/chisq;
3781  format Q21 Education. ;
3782  run;
3783
3784
3785  proc freq data=sasintro.dakota15reg1;
3786  label Q22='Principal Occupation'
3787        GRASCROP='grass/CRP conversion to cropland decison:';
3788  tables GRASCROP*Q22/chisq;
3789  format Q22 Occupation. ;
3790  run;
3791
3792
3793  proc freq data=sasintro.dakota15reg1;
3794  label Q23= 'Gross farm/ranch sales'
3795        GRASCROP='grass/CRP conversion to cropland decison:';
3796  tables GRASCROP*Q23/chisq;
3797  format Q23 Sales. ;
3798  run;
3799
```

```sas
3800
3801
3802  proc format;
3803  value operation
3804        1='Have been a farm operator'
3805        2='less than 10 years as a farm operator'
3806        3='10 to 10 years as a farm operator'
3807        4='20 to 29 years as a farm operator'
3808        5='30 years or more as a farm operator';
3809
3810  run;
3811
3812  proc freq data=sasintro.dakota15reg1;
3813  label Q1= 'Year As a Farm Operator'
3814        GRASCROP='grass/CRP conversion to cropland decison:';
3815  tables GRASCROP*Q1/chisq;
3816  format Q1 Operation. ;
3817  run;
3818
3819
3820  proc format;
3821  value Farmland 10-259='10 to 259 acres'
3822                 260-499='260 to 499 acres'
3823                 500-999='500 to 999 acres'
3824                 1000-1999='1000 to 1999 acres'
3825                 2000-4999='2000 to 4999 acres'
3826                 5000-high ='5000 acres and above';
3827  run;
3828
3829  proc freq data=sasintro.dakota15reg1;
3830  label Q3A= 'Farmland Acres Operated in 2014'
3831        GRASCROP='grass/CRP conversion to cropland decison:';
3832  tables GRASCROP*Q3A/chisq;
3833  format Q3A Farmland.;
3834  run;
3835
3836  proc format;
3837  value Ownership
3838        1='Own all acres farmed'
3839        2='Own most acres farmed, rented the remainder'
3840        3='Own and rent roughly equal number of farmland acres'
3841        4='Rented most of the acres farmed,owned the remainder'
3842        5='Rented all acres farmland'
3843        6='Professional farm manager';
3844  run;
3845
3846  proc freq data=sasintro.dakota15reg1;
3847  label Q4= 'Best Ownership Status in 2014'
3848        GRASCROP='grass/CRP conversion to cropland decison:';
3849  tables GRASCROP*Q4/chisq;
3850  format Q4 Ownership. GRASCROP Reresponse.;
3851  run;
3852
3853  proc freq data=sasintro.dakota15reg1;
3854  label
3855        GRASCROP='grass/CRP conversion to cropland decison:';
3856  table GRASCROP*State/chisq;
3857  run;
3858
3859
3860  proc freq data=sasintro.dakota15reg1;
3861  label GRASCROP='grass/CRP conversion to cropland decison:';
3862  table GRASCROP*Region/chisq;
3863  run;
3864
3865  /*cross tab chi square test, Q9 part one CRPUSE
3866  AND  region and state based, 19, 20, 21, 22, 23, */
3867
3868  proc format;
3869  value Age
3870        1='19 to 34 years'
3871        2='35 to 49 years'
3872        3='50 to 59 years'
3873        4='60 to 69 years'
3874        5='70 years and over';
3875
```

```
3876  value Gender
3877        1='Male'
3878        2='Female';
3879
3880  value Education
3881        1='Less than high school'
3882        2='High school'
3883        3='Some college/technical school'
3884        4='4-year college degree'
3885        5='Advanced degree (Masters, etc.)';
3886
3887  value Occupation
3888        1='Farming or Ranching'
3889        2='Employment in off-farm job'
3890        3='Own/operate a non-farm business'
3891        4='Retired';
3892
3893  value Sales
3894
3895        12='Less than $99,999'
3896        3='From $100,000 up to $249,999'
3897        4='From $250,000 up to $499,999'
3898        5='From $500,000 up to $999,999'
3899        6='$1 million or more';
3900  run;
3901
3902  proc freq data=sasintro.dakota15reg1;
3903  label Q19='Respondent Age'
3904        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3905  tables CRPUSE*Q19/chisq;
3906  format Q19 Age. ;
3907  run;
3908
3909
3910  proc freq data=sasintro.dakota15reg1;
3911  label Q20='Respondent Gender'
3912        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3913  tables CRPUSE*Q20/chisq;
3914  format Q20 Gender. ;
3915  run;
3916
3917
3918  proc freq data=sasintro.dakota15reg1;
3919  label Q21='Respondent Level of Education'
3920        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3921  tables CRPUSE*Q21/chisq;
3922  format Q21 Education. ;
3923  run;
3924
3925
3926  proc freq data=sasintro.dakota15reg1;
3927  label Q22='Principal Occupation'
3928        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3929  tables CRPUSE*Q22/chisq;
3930  format Q22 Occupation.;
3931  run;
3932
3933
3934  proc freq data=sasintro.dakota15reg1;
3935  label Q23= 'Gross farm/ranch sales'
3936        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3937  tables CRPUSE*Q23/chisq;
3938  format Q23 Sales.;
3939  run;
3940
3941
3942
3943  proc format;
3944  value operation
3945        1='Have been a farm operator'
3946        2='less than 10 years as a farm operator'
3947        3='10 to 10 years as a farm operator'
3948        4='20 to 29 years as a farm operator'
3949        5='30 years or more as a farm operator';
3950
3951  run;
```

```
3952
3953  proc freq data=sasintro.dakota15reg1;
3954  label Q1= 'Year As a Farm Operator'
3955       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3956  tables CRPUSE*Q1/chisq;
3957  format Q1 Operation.;
3958  run;
3959
3960
3961  proc format;
3962  value Farmland 10-259='10 to 259 acres'
3963                 260-499='260 to 499 acres'
3964                 500-999='500 to 999 acres'
3965                 1000-1999='1000 to 1999 acres'
3966                 2000-4999='2000 to 4999 acres'
3967                 5000-high ='5000 acres and above';
3968  run;
3969
3970  proc freq data=sasintro.dakota15reg1;
3971  label Q3A= 'Farmland Acres Operated in 2014'
3972       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3973  tables CRPUSE*Q3A/chisq;
3974  format Q3A Farmland. ;
3975  run;
3976
3977  proc format;
3978  value Ownership
3979       1='Own all acres farmed'
3980       2='Own most acres farmed, rented the remainder'
3981       3='Own and rent roughly equal number of farmland acres'
3982       4='Rented most of the acres farmed,owned the remainder'
3983       5='Rented all acres farmland'
3984       6='Professional farm manager';
3985  run;
3986
3987  proc freq data=sasintro.dakota15reg1;
3988  label Q4= 'Best Ownership Status in 2014'
3989       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3990  tables CRPUSE*Q4/chisq;
3991  format Q4 Ownership.;
3992  run;
3993
3994  proc freq data=sasintro.dakota15reg1;
3995  label
3996       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3997  table CRPUSE*State/chisq;
3998  run;
3999
4000
4001  proc freq data=sasintro.dakota15reg1;
4002  label CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
4003  table CRPUSE*Region/chisq;
4004  run;
4005
4006  proc format;
4007  value CRPLand  0 ='0 acres'
4008                 1-9 = '1 to 9 acres'
4009                 10-49 ='10 to 49 acres'
4010                 50-69 ='50 to 69 acres'
4011                 70-99 ='70 to 99 acres'
4012                 100-139 ='100 to 139 acres'
4013                 140-179 ='140 to 179 acres'
4014                 180-219 ='180 to 219 acres'
4015                 220-259 ='220 to 259 acres'
4016                 260-499 ='260 to 499 acres'
4017                 500-999 ='500 to 999 acres'
4018                 1000-1999 ='1,000 to 1,999 acres'
4019                 2000-4999 ='2,000 to 4,999 acres'
4020                 5000-high ='5000 acres and above';
4021  run;
4022
4023  proc freq data=sasintro.dakota15reg1;
4024  label Q3C= 'CRP acres in 2014'
4025       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
4026  tables CRPUSE*Q3C/chisq;
4027  format Q3C CRPLand.;
```

```sas
4028  run;
4029
4030
4031  /* depending on your findingsrelated to (2) on farm-related issues afftecting
4032  their own decisons, we may further investigating the farm related issues
4033  (Q15a and 15b) that impact changes in their local area. */
4034
4035  /** question 15a **/
4036  proc format;
4037  value Areaimpact
4038        0='Not applicable (No change)'
4039        1='No Impact'
4040        2='Slight Impact'
4041        3='Some Impact'
4042        4='Quite a bit of Impact'
4043        5='Great Impact';
4044
4045  run;
4046  proc freq data=sasintro.dakota15reg1;
4047  label
4048        Q15a1='Changing crop prices'
4049        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4050        Q15a3='Availability of crop and revenue insurance policies'
4051        Q15a4='Availability of drought-tolerant seed'
4052        Q15a5='Developments in pest management practices, including pest management seed traits'
4053        Q15a6='Improved crop yields (other than seed related traits)'
4054        Q15a7='Development of more efficient cropping equipment'
4055        Q15a8='Labor availability problems'
4056        Q15a9='Improving wildlife habitat'
4057        Q15a10='Changing weather /climate patterns';
4058  tables(Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*State/chisq;
4059  format  Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact. Q15a4 Areaimpact. Q15a5 Areaimpact.
4060  Q15a6 Areaimpact. Q15a7 Areaimpact. Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4061  run;
4062
4063  proc format;
4064  value Areaimpact
4065        0='Not applicable (No change)'
4066        1='No Impact'
4067        2='Slight Impact'
4068        3='Some Impact'
4069        4='Quite a bit of Impact'
4070        5='Great Impact';
4071
4072  run;
4073  proc freq data=sasintro.dakota15reg1;
4074  label
4075        Q15a1='Changing crop prices'
4076        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4077        Q15a3='Availability of crop and revenue insurance policies'
4078        Q15a4='Availability of drought-tolerant seed'
4079        Q15a5='Developments in pest management practices, including pest management seed traits'
4080        Q15a6='Improved crop yields (other than seed related traits)'
4081        Q15a7='Development of more efficient cropping equipment'
4082        Q15a8='Labor availability problems'
4083        Q15a9='Improving wildlife habitat'
4084        Q15a10='Changing weather /climate patterns';
4085  tables(Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Region/chisq;
4086  format  Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact. Q15a4 Areaimpact. Q15a5 Areaimpact.
4087  Q15a6 Areaimpact. Q15a7 Areaimpact. Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4088  run;
4089
4090
4091
4092  *question 15b;
4093
4094  proc format;
4095  value State
4096        1001-2182,9002='North Dakota'
4097        2183-4000,9001='South Dakota';
4098  value biggestimpact
4099        0 = 'No applicable (No change)'
4100        01 = 'Changing crop prices'
4101        02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
4102        03 = 'Availability of crop and revenue insurance policies'
4103        04= 'Availability of drought-tolerant seed'
```

```sas
4104          05= 'Developments in pest management practices, including pest management seed traits'
4105          06= 'Improved crop yields (other than seed related traits) '
4106          07 = 'Development of more efficient cropping equipment'
4107          08 = 'Labor availability problems'
4108          09 = 'Improving wildlife habitat'
4109          10 = 'Changing weather /climate patterns';
4110 run;
4111 proc freq data=sasintro.dakota15reg1;
4112 label
4113         Q15b='Which one issue had the greatest impact on changes in land use in your local area?';
4114 tables Q15b*State/Chisq;
4115 format  Q15b biggestimpact.;
4116 run;
4117
4118
4119 proc format;
4120 value State
4121       1001-2182,9002='North Dakota'
4122       2183-4000,9001='South Dakota';
4123 value biggestimpact
4124       0 = 'No applicable (No change)'
4125       01 = 'Changing crop prices'
4126       02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
4127       03 = 'Availability of crop and revenue insurance policies'
4128       04= 'Availability of drought-tolerant seed'
4129       05= 'Developments in pest management practices, including pest management seed traits'
4130       06= 'Improved crop yields (other than seed related traits) '
4131       07 = 'Development of more efficient cropping equipment'
4132       08 = 'Labor availability problems'
4133       09 = 'Improving wildlife habitat'
4134       10 = 'Changing weather /climate patterns';
4135
4136 run;
4137 proc freq data=sasintro.dakota15reg1;
4138 label
4139         Q15b='Which one issue had the greatest impact on changes in land use in your local area?';
4140 tables Q15b*Region/Chisq;
4141 format  Q15b biggestimpact.;
4142 run;
4143
4144 /* 15a iteam and operators characteristcs */
4145
4146 proc format;
4147 value Age
4148       1='19 to 34 years'
4149       2='35 to 49 years'
4150       3='50 to 59 years'
4151       4='60 to 69 years'
4152       5='70 years and over'
4153
4154 value Gender
4155       1='Male'
4156       2='Female'
4157
4158 value Education
4159       1='Less than high school'
4160       2='High school'
4161       3='Some college/technical school'
4162       4='4-year college degree'
4163       5='Advanced degree (Masters, etc.)'
4164
4165 value Occupation
4166       1='Farming or Ranching'
4167       2='Employment in off-farm job'
4168       3='Own/operate a non-farm business'
4169       4='Retired'
4170
4171 value Sales
4172
4173       12='Less than $99,999'
4174       3='From $100,000 up to $249,999'
4175       4='From $250,000 up to $499,999'
4176       5='From $500,000 up to $999,999'
4177       6='$1 million or more';
4178
4179 run;
```

```
4180
4181  proc format;
4182  value Areaimpact
4183         0='Not applicable (No change)'
4184         1='No Impact'
4185         2='Slight Impact'
4186         3='Some Impact'
4187         4='Quite a bit of Impact'
4188         5='Great Impact';
4189
4190  run;
4191
4192  proc freq data=sasintro.dakota15reg1;
4193  label Q19='Respondent Age'
4194         Q15a1='Changing crop prices'
4195         Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4196         Q15a3='Availability of crop and revenue insurance policies'
4197         Q15a4='Availability of drought-tolerant seed'
4198         Q15a5='Developments in pest management practices, including pest management seed traits'
4199         Q15a6='Improved crop yields (other than seed related traits)'
4200         Q15a7='Development of more efficient cropping equipment'
4201         Q15a8='Labor availability problems'
4202         Q15a9='Improving wildlife habitat'
4203         Q15a10='Changing weather /climate patterns';
4204  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q19/chisq;
4205  format Q19 Age. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact. Q15a4 Areaimpact. Q15a5 Areaimpact.
4206  Q15a6 Areaimpact. Q15a7 Areaimpact. Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;;
4207  run;
4208
4209  proc freq data=sasintro.dakota15reg1;
4210  label Q20='Respondent Gender'
4211         Q15a1='Changing crop prices'
4212         Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4213         Q15a3='Availability of crop and revenue insurance policies'
4214         Q15a4='Availability of drought-tolerant seed'
4215         Q15a5='Developments in pest management practices, including pest management seed traits'
4216         Q15a6='Improved crop yields (other than seed related traits)'
4217         Q15a7='Development of more efficient cropping equipment'
4218         Q15a8='Labor availability problems'
4219         Q15a9='Improving wildlife habitat'
4220         Q15a10='Changing weather /climate patterns';
4221  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q20/chisq;
4222  format Q20 Gender. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4223         Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4224         Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4225  run;
4226
4227  proc freq data=sasintro.dakota15reg1;
4228  label Q21='Respondent Level of Education'
4229         Q15a1='Changing crop prices'
4230         Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4231         Q15a3='Availability of crop and revenue insurance policies'
4232         Q15a4='Availability of drought-tolerant seed'
4233         Q15a5='Developments in pest management practices, including pest management seed traits'
4234         Q15a6='Improved crop yields (other than seed related traits)'
4235         Q15a7='Development of more efficient cropping equipment'
4236         Q15a8='Labor availability problems'
4237         Q15a9='Improving wildlife habitat'
4238         Q15a10='Changing weather /climate patterns';
4239  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q21/chisq;
4240  format Q21 Education. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4241         Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4242         Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4243  run;
4244
4245  proc freq data=sasintro.dakota15reg1;
4246  label Q22='Principal Occupation'
4247         Q15a1='Changing crop prices'
4248         Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4249         Q15a3='Availability of crop and revenue insurance policies'
4250         Q15a4='Availability of drought-tolerant seed'
4251         Q15a5='Developments in pest management practices, including pest management seed traits'
4252         Q15a6='Improved crop yields (other than seed related traits)'
4253         Q15a7='Development of more efficient cropping equipment'
4254         Q15a8='Labor availability problems'
4255         Q15a9='Improving wildlife habitat'
```

```
4256            Q15a10='Changing weather /climate patterns';
4257  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q22/chisq;
4258  format Q22 Occupation. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4259            Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4260            Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4261  run;
4262
4263  proc freq data=sasintro.dakota15reg1;
4264  label Q23='Gross farm/ranch sales'
4265            Q15a1='Changing crop prices'
4266            Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4267            Q15a3='Availability of crop and revenue insurance policies'
4268            Q15a4='Availability of drought-tolerant seed'
4269            Q15a5='Developments in pest management practices, including pest management seed traits'
4270            Q15a6='Improved crop yields (other than seed related traits)'
4271            Q15a7='Development of more efficient cropping equipment'
4272            Q15a8='Labor availability problems'
4273            Q15a9='Improving wildlife habitat'
4274            Q15a10='Changing weather /climate patterns';
4275  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q23/chisq;
4276  format Q23 Sales. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4277            Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4278            Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4279  run;
4280
4281  proc format;
4282  value operation
4283            1='Have been a farm operator'
4284            2='less than 10 years as a farm operator'
4285            3='10 to 10 years as a farm operator'
4286            4='20 to 29 years as a farm operator'
4287            5='30 years or more as a farm operator'
4288            ;
4289  run;
4290
4291  proc freq data=sasintro.dakota15reg1;
4292  label Q1='Years as a farm operator'
4293            Q15a1='Changing crop prices'
4294            Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4295            Q15a3='Availability of crop and revenue insurance policies'
4296            Q15a4='Availability of drought-tolerant seed'
4297            Q15a5='Developments in pest management practices, including pest management seed traits'
4298            Q15a6='Improved crop yields (other than seed related traits)'
4299            Q15a7='Development of more efficient cropping equipment'
4300            Q15a8='Labor availability problems'
4301            Q15a9='Improving wildlife habitat'
4302            Q15a10='Changing weather /climate patterns';
4303  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q1/chisq;
4304  format Q1 Operation. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4305            Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4306            Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4307  run;
4308
4309  proc format;
4310  value Farmland 10-259='1 to 259 acres'
4311                 260-499='260 to 499 acres'
4312                 500-999='500 to 999 acres'
4313                 1000-1999='1000 to 1999 acres'
4314                 2000-4999='2000 to 4999 acres'
4315                 5000-high ='5000 acres and above';
4316  run;
4317
4318  proc freq data=sasintro.dakota15reg1;
4319  label Q3A='Farmland Acres Operated in 2014'
4320            Q15a1='Changing crop prices'
4321            Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4322            Q15a3='Availability of crop and revenue insurance policies'
4323            Q15a4='Availability of drought-tolerant seed'
4324            Q15a5='Developments in pest management practices, including pest management seed traits'
4325            Q15a6='Improved crop yields (other than seed related traits)'
4326            Q15a7='Development of more efficient cropping equipment'
4327            Q15a8='Labor availability problems'
4328            Q15a9='Improving wildlife habitat'
4329            Q15a10='Changing weather /climate patterns';
4330  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q3A/chisq;
4331  format Q3A Farmland. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
```

```
4332          Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4333          Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4334 run;


4337 proc format;
4338 value Ownership
4339      1='Own all acres farmed'
4340      2='Own most acres farmed, rented the remainder'
4341      3='Own and rent roughly equal number of farmland acres'
4342      4='Rented most of the acres farmed,owned the remainder'
4343      5='Rented all acres farmland'
4344      6='Professional farm manager';
4345 run;

4347 proc freq data=sasintro.dakota15reg1;
4348 label Q4='Ownership Status in 2014'
4349      Q15a1='Changing crop prices'
4350      Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4351      Q15a3='Availability of crop and revenue insurance policies'
4352      Q15a4='Availability of drought-tolerant seed'
4353      Q15a5='Developments in pest management practices, including pest management seed traits'
4354      Q15a6='Improved crop yields (other than seed related traits)'
4355      Q15a7='Development of more efficient cropping equipment'
4356      Q15a8='Labor availability problems'
4357      Q15a9='Improving wildlife habitat'
4358      Q15a10='Changing weather /climate patterns';
4359 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q4/chisq;
4360 format Q4 Ownership. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4361       Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4362       Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4363 run;

4365 proc format;
4366 value CRPLand  0 ='0 acres'
4367                1-9 = '1 to 9 acres'
4368                10-49 ='10 to 49 acres'
4369                50-69 ='50 to 69 acres'
4370                70-99 ='70 to 99 acres'
4371                100-139 ='100 to 139 acres'
4372                140-179 ='140 to 179 acres'
4373                180-219 ='180 to 219 acres'
4374                220-259 ='220 to 259 acres'
4375                260-499 ='260 to 499 acres'
4376                500-999 ='500 to 999 acres'
4377                1000-1999 ='1,000 to 1,999 acres'
4378                2000-4999 ='2,000 to 4,999 acres'
4379                5000-high ='5000 acres and above';
4380 run;

4382 proc freq data=sasintro.dakota15reg1;
4383 label Q3C='CRP acres in 2014'
4384      Q15a1='Changing crop prices'
4385      Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4386      Q15a3='Availability of crop and revenue insurance policies'
4387      Q15a4='Availability of drought-tolerant seed'
4388      Q15a5='Developments in pest management practices, including pest management seed traits'
4389      Q15a6='Improved crop yields (other than seed related traits)'
4390      Q15a7='Development of more efficient cropping equipment'
4391      Q15a8='Labor availability problems'
4392      Q15a9='Improving wildlife habitat'
4393      Q15a10='Changing weather /climate patterns';
4394 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q3c/chisq;
4395 format Q3c CRPLand. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4396       Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4397       Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4398 run;

4400 /* 15A CHEC, STATE VS REGION  and operator characteristics*/

4402 Proc format;
4403 value Chec
4404      0='no changes in Ag-land use in my area over the past 10 years'
4405      1='there have been changes in Ag-land use in my area over the past 10 years';

4407 run;
```

```sas
4408  proc freq data=sasintro.dakota15reg1;
4409  label
4410        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4411  tables (Q15aChec)*STATE/chisq;
4412  format Q15aChec Chec.;
4413  run;
4414
4415  Proc format;
4416  value Chec
4417        0='no changes in Ag-land use in my area over the past 10 years'
4418        1='there have been changes in Ag-land use in my area over the past 10 years';
4419
4420  run;
4421  proc freq data=sasintro.dakota15reg1;
4422  label
4423        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4424  tables (Q15aChec)*Region/chisq;
4425  format Q15aChec Chec.;
4426  run;
4427
4428
4429  proc format;
4430  value Age
4431        1='19 to 34 years'
4432        2='35 to 49 years'
4433        3='50 to 59 years'
4434        4='60 to 69 years'
4435        5='70 years and over'
4436
4437  value Gender
4438        1='Male'
4439        2='Female'
4440
4441  value Education
4442        1='Less than high school'
4443        2='High school'
4444        3='Some college/technical school'
4445        4='4-year college degree'
4446        5='Advanced degree (Masters, etc.)'
4447
4448  value Occupation
4449        1='Farming or Ranching'
4450        2='Employment in off-farm job'
4451        3='Own/operate a non-farm business'
4452        4='Retired'
4453
4454  value Sales
4455
4456        12='Less than $99,999'
4457        3='From $100,000 up to $249,999'
4458        4='From $250,000 up to $499,999'
4459        5='From $500,000 up to $999,999'
4460        6='$1 million or more';
4461
4462  run;
4463
4464  proc freq data=sasintro.dakota15reg1;
4465  label Q19='Respondent Age'
4466        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4467  tables Q15ACHEC*Q19/chisq;
4468  format Q19 Age. Q15achec chec.;
4469  run;
4470
4471  proc freq data=sasintro.dakota15reg1;
4472  label Q20='Respondent Genger'
4473        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4474  tables Q15ACHEC*Q20/chisq;
4475  format Q20 Gender. Q15achec chec.;
4476  run;
4477
4478  proc freq data=sasintro.dakota15reg1;
4479  label Q21='Respondent Level of Education'
4480        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4481  tables Q15ACHEC*Q21/chisq;
4482  format Q21 Education. Q15achec chec.;
4483  run;
```

```sas
4484
4485  proc freq data=sasintro.dakota15reg1;
4486  label Q22='Principal Occupation'
4487        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4488  tables Q15ACHEC*Q22/chisq;
4489  format Q22 Occupation. Q15achec chec.;
4490  run;
4491
4492  proc freq data=sasintro.dakota15reg1;
4493  label Q23='Gross farm/ranch Sales'
4494        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4495  tables Q15ACHEC*Q23/chisq;
4496  format Q23 Sales. Q15achec chec.;
4497  run;
4498
4499  proc format;
4500  value operation
4501        1='Have been a farm operator'
4502        2='less than 10 years as a farm operator'
4503        3='10 to 10 years as a farm operator'
4504        4='20 to 29 years as a farm operator'
4505        5='30 years or more as a farm operator';
4506  run;
4507
4508  proc freq data=sasintro.dakota15reg1;
4509  label Q1='Principal Occupation'
4510        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4511  tables Q15ACHEC*Q1/chisq;
4512  format Q1 Operation. Q15achec chec.;
4513  run;
4514
4515  proc format;
4516  value Farmland  10-259='1 to 259 acres'
4517                  260-499='260 to 499 acres'
4518                  500-999='500 to 999 acres'
4519                  1000-1999='1000 to 1999 acres'
4520                  2000-4999='2000 to 4999 acres'
4521                  5000-high ='5000 acres and above';
4522  run;
4523
4524  proc freq data=sasintro.dakota15reg1;
4525  label Q3a='Farmland acres operated in 2014'
4526        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4527  tables Q15ACHEC*Q3a/chisq;
4528  format Q3a Farmland. Q15achec chec.;
4529  run;
4530
4531  proc format;
4532  value CRPLand  0 ='0 acres'
4533                 1-9 = '1 to 9 acres'
4534                 10-49 ='10 to 49 acres'
4535                 50-69 ='50 to 69 acres'
4536                 70-99 ='70 to 99 acres'
4537                 100-139 ='100 to 139 acres'
4538                 140-179 ='140 to 179 acres'
4539                 180-219 ='180 to 219 acres'
4540                 220-259 ='220 to 259 acres'
4541                 260-499 ='260 to 499 acres'
4542                 500-999 ='500 to 999 acres'
4543                 1000-1999 ='1,000 to 1,999 acres'
4544                 2000-4999 ='2,000 to 4,999 acres'
4545                 5000-high ='5000 acres and above';
4546  run;
4547
4548  proc freq data=sasintro.dakota15reg1;
4549  label Q3c='CRP acres in 2014'
4550        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4551  tables Q15ACHEC*Q3c/chisq;
4552  format Q3c CRPLand. Q15achec chec.;
4553  run;
4554
4555  proc format;
4556  value Ownership
4557        1='Own all acres farmed'
4558        2='Own most acres farmed, rented the remainder'
4559        3='Own and rent roughly equal number of farmland acres'
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4560        4='Rented most of the acres farmed,owned the remainder'
4561        5='Rented all acres farmland'
4562        6='Professional farm manager';
4563 run;
4564
4565 proc freq data=sasintro.dakota15reg1;
4566 label Q4='Ownership Status in 2014'
4567        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4568 tables Q15ACHEC*Q4/chisq;
4569 format Q4 Ownership. Q15achec chec.;
4570 run;
4571
4572
4573 /*6 Moses did not examine anything about Question 18 on cropland Characteristics*/
4574
4575 proc format;
4576 value Percentage  0 ='0 percent'
4577                1-25 = '1 to 25 percent'
4578                26-49 ='26 to 49 percent'
4579                50-75 ='50 to 75 percent'
4580                76-100 ='70 to 99 acres';
4581 run;
4582
4583 proc freq data=sasintro.dakota15reg1;
4584 label
4585        Q18A ='Highly erodable land'
4586        Q18B='Heavy Soil'
4587        Q18C='Slow draining soil(Perdominantly clay'
4588        Q18D='Sandy Soil';
4589 tables (Q18A Q18B Q18C Q18D)*Region/chisq;
4590 format Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
4591 run;
4592
4593
4594 proc freq data=sasintro.dakota15reg1;
4595 label
4596        Q18A ='Highly erodable land'
4597        Q18B='Heavy Soil'
4598        Q18C='Slow draining soil(Perdominantly clay'
4599        Q18D='Sandy Soil';
4600 tables (Q18A Q18B Q18C Q18D)*State/chisq;
4601 format Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
4602 run;
4603
4604
4605 proc format;
4606 value Ownership
4607        1='Own all acres farmed'
4608        2='Own most acres farmed, rented the remainder'
4609        3='Own and rent roughly equal number of farmland acres'
4610        4='Rented most of the acres farmed,owned the remainder'
4611        5='Rented all acres farmland'
4612        6='Professional farm manager';
4613 run;
4614
4615 proc freq data=sasintro.dakota15reg1;
4616 class State;
4617 label Q4= 'Ownership Status in 2014'
4618        Q18A ='Highly erodable land'
4619        Q18B='Heavy Soil'
4620        Q18C='Slow draining soil(Perdominantly clay'
4621        Q18D='Sandy Soil';
4622 tables (Q18A Q18B Q18C Q18D)*State/chisq;
4623 format Q4 Ownership. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
4624 run;
4625
4626
4627
4628
4629
4630
4631
4632
4633
4634
4635
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4636
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