```
 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 delete;
24      if Q20 = 9 then delete;
25      if Q21 = 9 then delete;
26      if Q22 = 9 then delete;
27      if Q22 = 5 then delete;
28      if Q23 = 1 then Q23=12;
29      if Q23 = 2 then Q23=12;
30      if Q3a = . then delete;
31      if Q3c=. then delete;
32      if Q4=. then delete;
33      if Q4=7 then delete;
34      if Q15a1=9 then delete;
35      if Q15a2=9 then delete;
36      if Q15a3=9 then delete;
37      if Q15a4=9 then delete;
38      if Q15a5=9 then delete;
39      if Q15a6=9 then delete;
40      if Q15a7=9 then delete;
41      if Q15a8=9 then delete;
42      if Q15a9=9 then delete;
43      if Q15a10=9 then delete;
44      if Q15b= 99 then delete;
45      if Q15ACHEC=9 then delete;
46  run;
47  proc print data=sasintro.dakota15clean;run;
48
49
50  /*question 1*/
51
52  proc format;
53  value operation
54      1='Have been a farm operator'
55      2='less than 10 years as a farm operator'
56      3='10 to 10 years as a farm operator'
57      4='20 to 29 years as a farm operator'
58      5='30 years or more as a farm operator'
59      ;
60  run;
61
62  proc freq data=sasintro.dakota15;
63  label Q1 ='Years as a farm opertor';
64  tables Q1*State /norow nocol nocum;
65  format Q1 operation.;
66  run;
67
68  proc format;
69  value operation
70      1='Have been a farm operator'
71      2='less than 10 years as a farm operator'
72      3='10 to 10 years as a farm operator'
73      4='20 to 29 years as a farm operator'
74      5='30 years or more as a farm operator'
75      ;
```

```sas
 76  run;
 77
 78  proc freq data=sasintro.dakota15;
 79  label Q1 ='Years as a farm opertor';
 80  tables Q1*Region /norow nocol nocum;
 81  format Q1 operation.;
 82  run;
 83
 84
 85  /** Summary Statistics on 3a with Means**/
 86
 87  proc format;
 88  value Farmland 10-259='1 to 259 acres'
 89                 260-499='260 to 499 acres'
 90                 500-999='500 to 999 acres'
 91                 1000-1999='1000 to 1999 acres'
 92                 2000-4999='2000 to 4999 acres'
 93                 5000-high ='5000 acres and above';
 94  run;
 95
 96  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
 97  class State;
 98  var Q3a;
 99  label CaseID='State'
100        Q3a ='Total Farmland acres';
101  format CaseID State.;
102  run;
103
104
105  proc format;
106  value Farmland 10-259='1 to 259 acres'
107                 260-499='260 to 499 acres'
108                 500-999='500 to 999 acres'
109                 1000-1999='1000 to 1999 acres'
110                 2000-4999='2000 to 4999 acres'
111                 5000-high ='5000 acres and above';
112  run;
113
114  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
115  class Region;
116  var Q3a;
117  label  Q3a ='Total Farmland acres';
118  run;
119
120  /** Summary Statistics on 3a, frequency with chisq**/
121
122  proc format;
123  value Farmland 10-259='1 to 259 acres'
124                 260-499='260 to 499 acres'
125                 500-999='500 to 999 acres'
126                 1000-1999='1000 to 1999 acres'
127                 2000-4999='2000 to 4999 acres'
128                 5000-high ='5000 acres and above';
129  run;
130
131  proc freq data=sasintro.dakota15;
132  tables Q3a*State /chisq;
133  format Q3a Farmland. ;
134  run;
135
136  proc format;
137  value Farmland 10-259='1 to 259 acres'
138                 260-499='260 to 499 acres'
139                 500-999='500 to 999 acres'
140                 1000-1999='1000 to 1999 acres'
141                 2000-4999='2000 to 4999 acres'
142                 5000-high ='5000 acres and above';
143  run;
144
145  proc freq data=sasintro.dakota15;
146  tables Q3a*Region /chisq;
147  format Q3a Farmland.;
148  run;
149
150
151  /** question 10 **/
```

```
152  proc format;
153  value Impact
154        1='No Impact'
155        2='Slight Impact'
156        3='Some Impact'
157        4='Quite a bit of Impact'
158        5='Great Impact';
159  run;
160  proc freq data=sasintro.dakota15;
161  label CaseID='State'
162        Q10a1='Changing crop prices'
163        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
164        Q10a3='Availability of crop and revenue insurance policies'
165        Q10a4='Availability of drought-tolerant seed'
166        Q10a5='Developments in pest management practices, including pest management seed traits'
167        Q10a6='Improved crop yields (other than seed related traits)'
168        Q10a7='Development of more efficient cropping equipment'
169        Q10a8='Labor availability problems'
170        Q10a9='Improving wildlife habitat'
171        Q10a10='Changing weather /climate patterns';
172  tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*CaseID/norow;
173  format CaseID State. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
174  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
175  run;
176
177  *question 10b;
178
179  proc format;
180  value State
181        1001-2182,9002='North Dakota'
182        2183-4000,9001='South Dakota';
183  value gimpact
184        01 = 'Changing crop prices'
185        02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
186        03 = 'Availability of crop and revenue insurance policies'
187        04= 'Availability of drought-tolerant seed'
188        05= 'Developments in pest management practices, including pest management seed traits'
189        06= 'Improved crop yields (other than seed related traits) '
190        07 = 'Development of more efficient cropping equipment'
191        08 = 'Labor availability problems'
192        09 = 'Improving wildlife habitat'
193        10 = 'Changing weather /climate patterns';
194  proc tabulate data=sasintro.dakota15;
195  class CaseID Q10b;
196  label CaseID='State';
197  tables Q10b,CaseID;
198  format CaseID State. Q10b gimpact.;
199  run;
200
201  /*my data anyalysis start */
202
203  /* region and state based means analysis question 10a */
204
205  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
206  class region;
207  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
208  label CaseID='State'
209        Q10a1='Changing crop prices'
210        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
211        Q10a3='Availability of crop and revenue insurance policies'
212        Q10a4='Availability of drought-tolerant seed'
213        Q10a5='Developments in pest management practices, including pest management seed traits'
214        Q10a6='Improved crop yields (other than seed related traits)'
215        Q10a7='Development of more efficient cropping equipment'
216        Q10a8='Labor availability problems'
217        Q10a9='Improving wildlife habitat'
218        Q10a10='Changing weather /climate patterns';
219  run;
220
221
222  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
223  class state;
224  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
225  label CaseID='State'
226        Q10a1='Changing crop prices'
227        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
```

```
228          Q10a3='Availability of crop and revenue insurance policies'
229          Q10a4='Availability of drought-tolerant seed'
230          Q10a5='Developments in pest management practices, including pest management seed traits'
231          Q10a6='Improved crop yields (other than seed related traits)'
232          Q10a7='Development of more efficient cropping equipment'
233          Q10a8='Labor availability problems'
234          Q10a9='Improving wildlife habitat'
235          Q10a10='Changing weather /climate patterns';
236 run;
237
238
239 /*region and State based frequency analysis question 10a */
240
241
242 proc format;
243 value Impact
244        1='No Impact'
245        2='Slight Impact'
246        3='Some Impact'
247        4='Quite a bit of Impact'
248        5='Great Impact';
249 run;
250 proc freq data=sasintro.dakota15;
251 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Region / norow nocum;
252 format CaseID region. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
253 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
254 run;
255
256
257 proc format;
258 value Impact
259        1='No Impact'
260        2='Slight Impact'
261        3='Some Impact'
262        4='Quite a bit of Impact'
263        5='Great Impact';
264 run;
265 proc freq data=sasintro.dakota15;
266 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*State / norow nocum;
267 format CaseID State. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
268 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
269 run;
270
271 /*region and State based frequency question 10a with chisq*/
272
273 proc format;
274 value Impact
275        1='No Impact'
276        2='Slight Impact'
277        3='Some Impact'
278        4='Quite a bit of Impact'
279        5='Great Impact';
280 run;
281 proc freq data=sasintro.dakota15;
282 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Region /chisq;
283 format CaseID region. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
284 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
285 run;
286
287
288 proc format;
289 value Impact
290        1='No Impact'
291        2='Slight Impact'
292        3='Some Impact'
293        4='Quite a bit of Impact'
294        5='Great Impact';
295 run;
296 proc freq data=sasintro.dakota15;
297 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*State / chisq;
298 format CaseID State. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
299 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
300 run;
301
302
303 /* proc tabulute region and state based 10a*/
```

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

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

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

```
532
533   /* Q10a and means by selected farm operator 19-23 plus 1, 3a and 4*/
534
535   proc format;
536   value Age
537         1='19 to 34 years'
538         2='35 to 49 years'
539         3='50 to 59 years'
540         4='60 to 69 years'
541         5='70 years and over';
542
543   value Gender
544         1='Male'
545         2='Female';
546
547
548   value Education
549         1='Less than high school'
550         2='High school'
551         3='Some college/technical school'
552         4='4-year college degree'
553         5='Advanced degree (Masters, etc.)';
554
555
556   value Occupation
557         1='Farming or Ranching'
558         2='Employment in off-farm job'
559         3='Own/operate a non-farm business'
560         4='Retired';
561
562   value Sales
563
564         12='Less than $99,999'
565         3='From $100,000 up to $249,999'
566         4='From $250,000 up to $499,999'
567         5='From $500,000 up to $999,999'
568         6='$1 million or more';
569   run;
570
571
572   proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
573   class Q19;
574   var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
575   label Q19='Respondent Age'
576         Q10a1='Changing crop prices'
577         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
578         Q10a3='Availability of crop and revenue insurance policies'
579         Q10a4='Availability of drought-tolerant seed'
580         Q10a5='Developments in pest management practices, including pest management seed traits'
581         Q10a6='Improved crop yields (other than seed related traits)'
582         Q10a7='Development of more efficient cropping equipment'
583         Q10a8='Labor availability problems'
584         Q10a9='Improving wildlife habitat'
585         Q10a10='Changing weather /climate patterns';
586   format Q19 Age.;
587   run;
588
589
590   proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
591   class Q20;
592   var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
593   label Q20='Respondent Gender'
594         Q10a1='Changing crop prices'
595         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
596         Q10a3='Availability of crop and revenue insurance policies'
597         Q10a4='Availability of drought-tolerant seed'
598         Q10a5='Developments in pest management practices, including pest management seed traits'
599         Q10a6='Improved crop yields (other than seed related traits)'
600         Q10a7='Development of more efficient cropping equipment'
601         Q10a8='Labor availability problems'
602         Q10a9='Improving wildlife habitat'
603         Q10a10='Changing weather /climate patterns';
604   format Q20 Gender.;
605   run;
606
607   proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
```

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

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684  run;
685
686  proc format;
687  value Farmland 10-259='1 to 259 acres'
688                 260-499='260 to 499 acres'
689                 500-999='500 to 999 acres'
690                 1000-1999='1000 to 1999 acres'
691                 2000-4999='2000 to 4999 acres'
692                 5000-high ='5000 acres and above';
693  run;
694
695  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
696  class Q3a;
697  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
698  label Q3a ='Farmland acres operated in 2014'
699        Q10a1='Changing crop prices'
700        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
701        Q10a3='Availability of crop and revenue insurance policies'
702        Q10a4='Availability of drought-tolerant seed'
703        Q10a5='Developments in pest management practices, including pest management seed traits'
704        Q10a6='Improved crop yields (other than seed related traits)'
705        Q10a7='Development of more efficient cropping equipment'
706        Q10a8='Labor availability problems'
707        Q10a9='Improving wildlife habitat'
708        Q10a10='Changing weather /climate patterns';
709  format Q3a Farmland.;
710  run;
711
712  proc format;
713  value Ownership
714        1='Own all acres farmed'
715        2='Own most acres farmed, rented the remainder'
716        3='Own and rent roughly equal number of farmland acres'
717        4='Rented most of the acres farmed,owned the remainder'
718        5='Rented all acres farmland'
719        6='Professional farm manager';
720  run;
721
722  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
723  class Q4;
724  var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
725  label Q4 ='Best Ownership Status in 2014'
726        Q10a1='Changing crop prices'
727        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
728        Q10a3='Availability of crop and revenue insurance policies'
729        Q10a4='Availability of drought-tolerant seed'
730        Q10a5='Developments in pest management practices, including pest management seed traits'
731        Q10a6='Improved crop yields (other than seed related traits)'
732        Q10a7='Development of more efficient cropping equipment'
733        Q10a8='Labor availability problems'
734        Q10a9='Improving wildlife habitat'
735        Q10a10='Changing weather /climate patterns';
736  format Q4 Ownership.;
737  run;
738
739
740  /* Q10a and frequency distribution by selected farm operator 19-23 plus 1, 3a and 4*/
741
742  proc format;
743  value Age
744        1='19 to 34 years'
745        2='35 to 49 years'
746        3='50 to 59 years'
747        4='60 to 69 years'
748        5='70 years and over';
749
750  value Gender
751        1='Male'
752        2='Female';
753
754  value Education
755        1='Less than high school'
756        2='High school'
757        3='Some college/technical school'
758        4='4-year college degree'
759        5='Advanced degree (Masters, etc.)';
```

```
760
761 value Occupation
762         1='Farming or Ranching'
763         2='Employment in off-farm job'
764         3='Own/operate a non-farm business'
765         4='Retired';
766
767 value Sales
768
769         12='Less than $99,999'
770         3='From $100,000 up to $249,999'
771         4='From $250,000 up to $499,999'
772         5='From $500,000 up to $999,999'
773         6='$1 million or more'
774
775 proc format;
776 value Impact
777         1='No Impact'
778         2='Slight Impact'
779         3='Some Impact'
780         4='Quite a bit of Impact'
781         5='Great Impact';
782 run;
783
784
785 proc freq data=sasintro.dakota15clean;
786 label Q19='Respondent Age'
787         Q10a1='Changing crop prices'
788         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
789         Q10a3='Availability of crop and revenue insurance policies'
790         Q10a4='Availability of drought-tolerant seed'
791         Q10a5='Developments in pest management practices, including pest management seed traits'
792         Q10a6='Improved crop yields (other than seed related traits)'
793         Q10a7='Development of more efficient cropping equipment'
794         Q10a8='Labor availability problems'
795         Q10a9='Improving wildlife habitat'
796         Q10a10='Changing weather /climate patterns';
797 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q19/norow;
798 format Q19 Age. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
799 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
800 run;
801
802 proc freq data=sasintro.dakota15clean;
803 label Q20='Respondent Gender'
804         Q10a1='Changing crop prices'
805         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
806         Q10a3='Availability of crop and revenue insurance policies'
807         Q10a4='Availability of drought-tolerant seed'
808         Q10a5='Developments in pest management practices, including pest management seed traits'
809         Q10a6='Improved crop yields (other than seed related traits)'
810         Q10a7='Development of more efficient cropping equipment'
811         Q10a8='Labor availability problems'
812         Q10a9='Improving wildlife habitat'
813         Q10a10='Changing weather /climate patterns';
814 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q20/norow;
815 format Q20 Gender. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
816 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
817 run;
818
819 proc freq data=sasintro.dakota15clean;
820 label Q21='Respondent Level of Education'
821         Q10a1='Changing crop prices'
822         Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
823         Q10a3='Availability of crop and revenue insurance policies'
824         Q10a4='Availability of drought-tolerant seed'
825         Q10a5='Developments in pest management practices, including pest management seed traits'
826         Q10a6='Improved crop yields (other than seed related traits)'
827         Q10a7='Development of more efficient cropping equipment'
828         Q10a8='Labor availability problems'
829         Q10a9='Improving wildlife habitat'
830         Q10a10='Changing weather /climate patterns';
831 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q21/norow;
832 format Q21 Education. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
833 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
834 run;
835
```

```sas
836  proc freq data=sasintro.dakota15clean;
837  label Q22='Principal Occupation'
838        Q10a1='Changing crop prices'
839        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
840        Q10a3='Availability of crop and revenue insurance policies'
841        Q10a4='Availability of drought-tolerant seed'
842        Q10a5='Developments in pest management practices, including pest management seed traits'
843        Q10a6='Improved crop yields (other than seed related traits)'
844        Q10a7='Development of more efficient cropping equipment'
845        Q10a8='Labor availability problems'
846        Q10a9='Improving wildlife habitat'
847        Q10a10='Changing weather /climate patterns';
848  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q22/norow;
849  format Q22 Occupation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
850  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
851  run;
852
853  proc freq data=sasintro.dakota15clean;
854  label Q23='Gross farm/ranch sales'
855        Q10a1='Changing crop prices'
856        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
857        Q10a3='Availability of crop and revenue insurance policies'
858        Q10a4='Availability of drought-tolerant seed'
859        Q10a5='Developments in pest management practices, including pest management seed traits'
860        Q10a6='Improved crop yields (other than seed related traits)'
861        Q10a7='Development of more efficient cropping equipment'
862        Q10a8='Labor availability problems'
863        Q10a9='Improving wildlife habitat'
864        Q10a10='Changing weather /climate patterns';
865  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q23/norow;
866  format Q23 Sales. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
867  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
868  run;
869
870
871  proc format;
872  value operation
873        1='Have been a farm operator'
874        2='less than 10 years as a farm operator'
875        3='10 to 10 years as a farm operator'
876        4='20 to 29 years as a farm operator'
877        5='30 years or more as a farm operator'
878        ;
879  run;
880
881  proc freq data=sasintro.dakota15clean;
882  label Q1 ='Years as a farm opertor'
883        Q10a1='Changing crop prices'
884        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
885        Q10a3='Availability of crop and revenue insurance policies'
886        Q10a4='Availability of drought-tolerant seed'
887        Q10a5='Developments in pest management practices, including pest management seed traits'
888        Q10a6='Improved crop yields (other than seed related traits)'
889        Q10a7='Development of more efficient cropping equipment'
890        Q10a8='Labor availability problems'
891        Q10a9='Improving wildlife habitat'
892        Q10a10='Changing weather /climate patterns';
893  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q1/norow;
894  format Q1 Operation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
895  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
896  run;
897
898  proc format;
899  value Farmland 10-259='1 to 259 acres'
900                 260-499='260 to 499 acres'
901                 500-999='500 to 999 acres'
902                 1000-1999='1000 to 1999 acres'
903                 2000-4999='2000 to 4999 acres'
904                 5000-high ='5000 acres and above';
905  run;
906
907  proc freq data=sasintro.dakota15clean;
908  label Q3a ='Farmland Acres Operated in 2014'
909        Q10a1='Changing crop prices'
910        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
911        Q10a3='Availability of crop and revenue insurance policies'
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912        Q10a4='Availability of drought-tolerant seed'
913        Q10a5='Developments in pest management practices, including pest management seed traits'
914        Q10a6='Improved crop yields (other than seed related traits)'
915        Q10a7='Development of more efficient cropping equipment'
916        Q10a8='Labor availability problems'
917        Q10a9='Improving wildlife habitat'
918        Q10a10='Changing weather /climate patterns';
919 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q3a/norow;
920 format Q3a Farmland. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
921 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
922 run;
923
924
925 proc format;
926 value Ownership
927        1='Own all acres farmed'
928        2='Own most acres farmed, rented the remainder'
929        3='Own and rent roughly equal number of farmland acres'
930        4='Rented most of the acres farmed,owned the remainder'
931        5='Rented all acres farmland'
932        6='Professional farm manager';
933 run;
934
935 proc freq data=sasintro.dakota15clean;
936 label Q4 ='Best Ownersip Status in 2014'
937        Q10a1='Changing crop prices'
938        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
939        Q10a3='Availability of crop and revenue insurance policies'
940        Q10a4='Availability of drought-tolerant seed'
941        Q10a5='Developments in pest management practices, including pest management seed traits'
942        Q10a6='Improved crop yields (other than seed related traits)'
943        Q10a7='Development of more efficient cropping equipment'
944        Q10a8='Labor availability problems'
945        Q10a9='Improving wildlife habitat'
946        Q10a10='Changing weather /climate patterns';
947 tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q4/norow;
948 format Q4 Ownership. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
949 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
950 run;
951
952 /* 10a frequency distribution by Selected Farm operator(19-23, 1,3a and 4 with chisqu*/
953
954 proc format;
955 value Age
956        1='19 to 34 years'
957        2='35 to 49 years'
958        3='50 to 59 years'
959        4='60 to 69 years'
960        5='70 years and over';
961
962 value Gender
963        1='Male'
964        2='Female';
965
966 value Education
967        1='Less than high school'
968        2='High school'
969        3='Some college/technical school'
970        4='4-year college degree'
971        5='Advanced degree (Masters, etc.)';
972
973 value Occupation
974        1='Farming or Ranching'
975        2='Employment in off-farm job'
976        3='Own/operate a non-farm business'
977        4='Retired';
978
979 value Sales
980
981        12='Less than $99,999'
982        3='From $100,000 up to $249,999'
983        4='From $250,000 up to $499,999'
984        5='From $500,000 up to $999,999'
985        6='$1 million or more';
986
987
```

```
 988  proc format;
 989  value Impact
 990        1='No Impact'
 991        2='Slight Impact'
 992        3='Some Impact'
 993        4='Quite a bit of Impact'
 994        5='Great Impact';
 995  run;
 996
 997  proc freq data=sasintro.dakota15clean;
 998  label Q19='Respondent Age'
 999        Q10a1='Changing crop prices'
1000        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1001        Q10a3='Availability of crop and revenue insurance policies'
1002        Q10a4='Availability of drought-tolerant seed'
1003        Q10a5='Developments in pest management practices, including pest management seed traits'
1004        Q10a6='Improved crop yields (other than seed related traits)'
1005        Q10a7='Development of more efficient cropping equipment'
1006        Q10a8='Labor availability problems'
1007        Q10a9='Improving wildlife habitat'
1008        Q10a10='Changing weather /climate patterns';
1009  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q19/chisq;
1010  format Q19 Age. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1011  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1012  run;
1013
1014  proc freq data=sasintro.dakota15clean;
1015  label Q20='Respondent Gender'
1016        Q10a1='Changing crop prices'
1017        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1018        Q10a3='Availability of crop and revenue insurance policies'
1019        Q10a4='Availability of drought-tolerant seed'
1020        Q10a5='Developments in pest management practices, including pest management seed traits'
1021        Q10a6='Improved crop yields (other than seed related traits)'
1022        Q10a7='Development of more efficient cropping equipment'
1023        Q10a8='Labor availability problems'
1024        Q10a9='Improving wildlife habitat'
1025        Q10a10='Changing weather /climate patterns';
1026  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q20/chisq;
1027  format Q20 Gender. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1028  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1029  run;
1030
1031  proc freq data=sasintro.dakota15clean;
1032  label Q21='Respondent Level of Education'
1033        Q10a1='Changing crop prices'
1034        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1035        Q10a3='Availability of crop and revenue insurance policies'
1036        Q10a4='Availability of drought-tolerant seed'
1037        Q10a5='Developments in pest management practices, including pest management seed traits'
1038        Q10a6='Improved crop yields (other than seed related traits)'
1039        Q10a7='Development of more efficient cropping equipment'
1040        Q10a8='Labor availability problems'
1041        Q10a9='Improving wildlife habitat'
1042        Q10a10='Changing weather /climate patterns';
1043  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q21/chisq;
1044  format Q21 Education. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1045  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1046  run;
1047
1048  proc freq data=sasintro.dakota15clean;
1049  label Q22='Principal Occupation'
1050        Q10a1='Changing crop prices'
1051        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1052        Q10a3='Availability of crop and revenue insurance policies'
1053        Q10a4='Availability of drought-tolerant seed'
1054        Q10a5='Developments in pest management practices, including pest management seed traits'
1055        Q10a6='Improved crop yields (other than seed related traits)'
1056        Q10a7='Development of more efficient cropping equipment'
1057        Q10a8='Labor availability problems'
1058        Q10a9='Improving wildlife habitat'
1059        Q10a10='Changing weather /climate patterns';
1060  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q22/chisq;
1061  format Q22 Occupation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1062  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1063  run;
```

```sas
1064
1065  proc freq data=sasintro.dakota15clean;
1066  label Q23='Gross farm/ranch sales'
1067        Q10a1='Changing crop prices'
1068        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1069        Q10a3='Availability of crop and revenue insurance policies'
1070        Q10a4='Availability of drought-tolerant seed'
1071        Q10a5='Developments in pest management practices, including pest management seed traits'
1072        Q10a6='Improved crop yields (other than seed related traits)'
1073        Q10a7='Development of more efficient cropping equipment'
1074        Q10a8='Labor availability problems'
1075        Q10a9='Improving wildlife habitat'
1076        Q10a10='Changing weather /climate patterns';
1077  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q23/chisq;
1078  format Q23 Sales. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1079  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1080  run;
1081
1082
1083  proc format;
1084  value operation
1085        1='Have been a farm operator'
1086        2='less than 10 years as a farm operator'
1087        3='10 to 10 years as a farm operator'
1088        4='20 to 29 years as a farm operator'
1089        5='30 years or more as a farm operator'
1090        ;
1091  run;
1092
1093  proc freq data=sasintro.dakota15clean;
1094  label Q1 ='Years as a farm opertor'
1095        Q10a1='Changing crop prices'
1096        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1097        Q10a3='Availability of crop and revenue insurance policies'
1098        Q10a4='Availability of drought-tolerant seed'
1099        Q10a5='Developments in pest management practices, including pest management seed traits'
1100        Q10a6='Improved crop yields (other than seed related traits)'
1101        Q10a7='Development of more efficient cropping equipment'
1102        Q10a8='Labor availability problems'
1103        Q10a9='Improving wildlife habitat'
1104        Q10a10='Changing weather /climate patterns';
1105  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q1/chisq;
1106  format Q1 Operation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1107  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1108  run;
1109
1110  proc format;
1111  value Farmland 10-259='1 to 259 acres'
1112                 260-499='260 to 499 acres'
1113                 500-999='500 to 999 acres'
1114                 1000-1999='1000 to 1999 acres'
1115                 2000-4999='2000 to 4999 acres'
1116                 5000-high ='5000 acres and above';
1117  run;
1118
1119  proc freq data=sasintro.dakota15clean;
1120  label Q3a ='Farmland Acres Operated in 2014'
1121        Q10a1='Changing crop prices'
1122        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1123        Q10a3='Availability of crop and revenue insurance policies'
1124        Q10a4='Availability of drought-tolerant seed'
1125        Q10a5='Developments in pest management practices, including pest management seed traits'
1126        Q10a6='Improved crop yields (other than seed related traits)'
1127        Q10a7='Development of more efficient cropping equipment'
1128        Q10a8='Labor availability problems'
1129        Q10a9='Improving wildlife habitat'
1130        Q10a10='Changing weather /climate patterns';
1131  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q3a/chisq;
1132  format Q3a Farmland. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1133  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1134  run;
1135
1136
1137  proc format;
1138  value Ownership
1139        1='Own all acres farmed'
```

```
1140        2='Own most acres farmed, rented the remainder'
1141        3='Own and rent roughly equal number of farmland acres'
1142        4='Rented most of the acres farmed,owned the remainder'
1143        5='Rented all acres farmland'
1144        6='Professional farm manager';
1145 run;
1146
1147 proc freq data=sasintro.dakota15clean;
1148 label Q4 ='Best Ownersip Status in 2014'
1149       Q10a1='Changing crop prices'
1150       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1151       Q10a3='Availability of crop and revenue insurance policies'
1152       Q10a4='Availability of drought-tolerant seed'
1153       Q10a5='Developments in pest management practices, including pest management seed traits'
1154       Q10a6='Improved crop yields (other than seed related traits)'
1155       Q10a7='Development of more efficient cropping equipment'
1156       Q10a8='Labor availability problems'
1157       Q10a9='Improving wildlife habitat'
1158       Q10a10='Changing weather /climate patterns';
1159 tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q4/chisq;
1160 format Q4 Ownership. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1161 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1162 run;
1163
1164
1165 /*Qestion 3, More complete analysis of land use conversiob decisions (Q9 iteams)
1166  and land use conversion intentions (Q11 items) */
1167
1168 /*part one Q9 analysis with means*/
1169
1170
1171 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1172 class CaseID State;
1173 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN ;
1174 label CaseID='State'
1175       Q9aYN='Conversion of native grass to cropland'
1176       Q9bYN='Conversion of tamend grassland to cropland'
1177       Q9cYN='Conversion of CRP land to cropland'
1178       Q9dYN='Conversion of CRP land to pasture/hay'
1179       Q9eYN='Enrollment of farmland acres to CRP'
1180       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1181 format CaseID State. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1182 Q9eYN Response. Q9fYN Response.;
1183 run;
1184
1185 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1186 class Region;
1187 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN ;
1188 label
1189       Q9aYN='Conversion of native grass to cropland'
1190       Q9bYN='Conversion of tamend grassland to cropland'
1191       Q9cYN='Conversion of CRP land to cropland'
1192       Q9dYN='Conversion of CRP land to pasture/hay'
1193       Q9eYN='Enrollment of farmland acres to CRP'
1194       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1195 format  Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1196 Q9eYN Response. Q9fYN Response.;
1197 run;
1198
1199
1200 /*part one Q9 analysis with frequency*/
1201
1202 proc format;
1203 value Response
1204       1='Yes'
1205       2='No';
1206 run;
1207 proc freq data=sasintro.dakota15clean;
1208 label CaseID='State'
1209       Q9aYN='Conversion of native grass to cropland'
1210       Q9bYN='Conversion of tamend grassland to cropland'
1211       Q9cYN='Conversion of CRP land to cropland'
1212       Q9dYN='Conversion of CRP land to pasture/hay'
1213       Q9eYN='Enrollment of farmland acres to CRP'
1214       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1215 table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*CaseID/norow;
```

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

```
1292  run;
1293
1294
1295  proc tabulate data=sasintro.dakota15clean format=6.;
1296  class Region;
1297  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1298  label
1299       Q9aYN='Conversion of native grass to cropland'
1300       Q9bYN='Conversion of tamend grassland to cropland'
1301       Q9cYN='Conversion of CRP land to cropland'
1302       Q9dYN='Conversion of CRP land to pasture/hay'
1303       Q9eYN='Enrollment of farmland acres to CRP'
1304       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1305  table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN), Region;
1306  run;
1307
1308
1309  /*part two Q9 state and region based analysis with means*/
1310
1311  proc format;
1312  value Farmacres  0 ='0 acres'
1313                   1-99 = '1 to 99 acres'
1314                   100-179 ='100 to 179 acres'
1315                   180-259 ='180 to 259 acres'
1316                   260-499 ='260 to 499 acres'
1317                   500-high ='500 acrsa and above';
1318  run;
1319  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
1320  class CaseID;
1321  var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC ;
1322  label CaseID='State'
1323       Q9aAC='Conversion of native grass to cropland'
1324       Q9bAC='Conversion of tamend grassland to cropland'
1325       Q9cAC='Conversion of CRP land to cropland'
1326       Q9dAC='Conversion of CRP land to pasture/hay'
1327       Q9eAC='Enrollment of farmland acres to CRP'
1328       Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1329  format CaseID State.;
1330  run;
1331
1332  proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
1333  class Region;
1334  var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC ;
1335  label
1336       Q9aAC='Conversion of native grass to cropland'
1337       Q9bAC='Conversion of tamend grassland to cropland'
1338       Q9cAC='Conversion of CRP land to cropland'
1339       Q9dAC='Conversion of CRP land to pasture/hay'
1340       Q9eAC='Enrollment of farmland acres to CRP'
1341       Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1342  run;
1343
1344  /*part two, Q9 state and region based analysis with frequency*/
1345
1346  proc format;
1347  value Farmacres  0 ='0 acres'
1348                   1-99 = '1 to 99 acres'
1349                   100-179 ='100 to 179 acres'
1350                   180-259 ='180 to 259 acres'
1351                   260-499 ='260 to 499 acres'
1352                   500-high ='500 acres and above';
1353  run;
1354  proc freq data=sasintro.dakota15;
1355  label CaseID='State'
1356       Q9aAC='Conversion of native grass to cropland'
1357       Q9bAC='Conversion of tamend grassland to cropland'
1358       Q9cAC='Conversion of CRP land to cropland'
1359       Q9dAC='Conversion of CRP land to pasture/hay'
1360       Q9eAC='Enrollment of farmland acres to CRP'
1361       Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1362  table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*CaseID/norow;
1363  format CaseID State. Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
1364  Q9eAC Farmacres. Q9fAC Farmacres.;
1365  run;
1366
1367
```

```sas
1368  proc freq data=sasintro.dakota15;
1369  label
1370        Q9aAC='Conversion of native grass to cropland'
1371        Q9bAC='Conversion of tamend grassland to cropland'
1372        Q9cAC='Conversion of CRP land to cropland'
1373        Q9dAC='Conversion of CRP land to pasture/hay'
1374        Q9eAC='Enrollment of farmland acres to CRP'
1375        Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1376  table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*Region/norow;
1377  format Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
1378  Q9eAC Farmacres. Q9fAC Farmacres.;
1379  run;
1380
1381  /*part two, Q9 state and region based analysis with frequency with chisq*/
1382
1383  proc format;
1384  value Farmacres  0 ='0 acres'
1385                   1-99 = '1 to 99 acres'
1386                   100-179 ='100 to 179 acres'
1387                   180-259 ='180 to 259 acres'
1388                   260-499 ='260 to 499 acres'
1389                   500-high ='500 acrsa and above';
1390  run;
1391  proc freq data=sasintro.dakota15;
1392  label CaseID='State'
1393        Q9aAC='Conversion of native grass to cropland'
1394        Q9bAC='Conversion of tamend grassland to cropland'
1395        Q9cAC='Conversion of CRP land to cropland'
1396        Q9dAC='Conversion of CRP land to pasture/hay'
1397        Q9eAC='Enrollment of farmland acres to CRP'
1398        Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1399  table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*CaseID/chisq;
1400  format CaseID State. Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
1401  Q9eAC Farmacres. Q9fAC Farmacres.;
1402  run;
1403
1404
1405  proc freq data=sasintro.dakota15;
1406  label
1407        Q9aAC='Conversion of native grass to cropland'
1408        Q9bAC='Conversion of tamend grassland to cropland'
1409        Q9cAC='Conversion of CRP land to cropland'
1410        Q9dAC='Conversion of CRP land to pasture/hay'
1411        Q9eAC='Enrollment of farmland acres to CRP'
1412        Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1413  table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*Region/chisq;
1414  format Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
1415  Q9eAC Farmacres. Q9fAC Farmacres.;
1416  run;
1417
1418
1419  /*part two, state and region Q9 analysis with tabulate*/
1420
1421  proc tabulate data=sasintro.dakota15 format=6.;
1422  class CaseID;
1423  var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC;
1424  label CaseID='State'
1425        Q9aAC='Conversion of native grass to cropland'
1426        Q9bAC='Conversion of tamend grassland to cropland'
1427        Q9cAC='Conversion of CRP land to cropland'
1428        Q9dAC='Conversion of CRP land to pasture/hay'
1429        Q9eAC='Enrollment of farmland acres to CRP'
1430        Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1431  table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC),CaseID;
1432  format CaseID State.;
1433  run;
1434
1435
1436  proc tabulate data=sasintro.dakota15 format=6.;
1437  class Region;
1438  var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC;
1439  label
1440        Q9aAC='Conversion of native grass to cropland'
1441        Q9bAC='Conversion of tamend grassland to cropland'
1442        Q9cAC='Conversion of CRP land to cropland'
1443        Q9dAC='Conversion of CRP land to pasture/hay'
```

```
1444        Q9eAC='Enrollment of farmland acres to CRP'
1445        Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
1446 table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC), Region;
1447 run;
1448
1449
1450 /* Q9 part three state and region based analysis tabulate*/
1451
1452 proc format;
1453 value response
1454        0='No'
1455        1='Yes';
1456 proc tabulate data=sasintro.dakota15;
1457 class CaseID Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth;
1458 label CaseID='State'
1459        Q9aCorn='Conversion of native grass to Corn land'
1460        Q9aSoy='Conversion of native grass to Soybean land'
1461        Q9aWht='Conversion of native grass to Wheat land'
1462        Q9aOth='Conversion of native grass to Other use'
1463        Q9bCorn='Conversion of tamend grassland to Corn land'
1464        Q9bSoy='Conversion of tamend grassland to Soy land'
1465        Q9bWht='Conversion of tamend grassland to Wheat land'
1466        Q9bOth='Conversion of tamend grassland to Other use'
1467        Q9cCorn='Conversion of CRP land to Corn land'
1468        Q9cSoy='Conversion of CRP land to Soy land'
1469        Q9cWht='Conversion of CRP land to Wheat land'
1470        Q9cOth='Conversion of CRP land to Other use' ;
1471 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth),CaseID;
1472 format CaseID State. Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1473        Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1474        Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1475 run;
1476
1477 proc format;
1478 value response
1479        0='No'
1480        1='Yes';
1481 proc tabulate data=sasintro.dakota15;
1482 class Region Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth;
1483 label
1484        Q9aCorn='Conversion of native grass to Corn land'
1485        Q9aSoy='Conversion of native grass to Soybean land'
1486        Q9aWht='Conversion of native grass to Wheat land'
1487        Q9aOth='Conversion of native grass to Other use'
1488        Q9bCorn='Conversion of tamend grassland to Corn land'
1489        Q9bSoy='Conversion of tamend grassland to Soy land'
1490        Q9bWht='Conversion of tamend grassland to Wheat land'
1491        Q9bOth='Conversion of tamend grassland to Other use'
1492        Q9cCorn='Conversion of CRP land to Corn land'
1493        Q9cSoy='Conversion of CRP land to Soy land'
1494        Q9cWht='Conversion of CRP land to Wheat land'
1495        Q9cOth='Conversion of CRP land to Other use' ;
1496 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth),Region;
1497 format Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1498        Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1499        Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1500 run;
1501
1502 /* Q9 part three state and region based analysis frequency*/
1503
1504 proc format;
1505 value Response
1506        1='Yes'
1507        0 ='No';
1508 run;
1509 proc freq data=sasintro.dakota15;
1510 label CaseID='State'
1511        Q9aCorn='Conversion of native grass to Corn land'
1512        Q9aSoy='Conversion of native grass to Soybean land'
1513        Q9aWht='Conversion of native grass to Wheat land'
1514        Q9aOth='Conversion of native grass to Other use'
1515        Q9bCorn='Conversion of tamend grassland to Corn land'
1516        Q9bSoy='Conversion of tamend grassland to Soy land'
1517        Q9bWht='Conversion of tamend grassland to Wheat land'
1518        Q9bOth='Conversion of tamend grassland to Other use'
1519        Q9cCorn='Conversion of CRP land to Corn land'
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1520        Q9cSoy='Conversion of CRP land to Soy land'
1521        Q9cWht='Conversion of CRP land to Wheat land'
1522        Q9cOth='Conversion of CRP land to Other use' ;
1523 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*CaseID/norow;
1524 format CaseID State. Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1525        Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1526        Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1527 run;
1528
1529 proc format;
1530 value Response
1531        1='Yes'
1532        0 ='No';
1533 run;
1534 proc freq data=sasintro.dakota15;
1535 label
1536        Q9aCorn='Conversion of native grass to Corn land'
1537        Q9aSoy='Conversion of native grass to Soybean land'
1538        Q9aWht='Conversion of native grass to Wheat land'
1539        Q9aOth='Conversion of native grass to Other use'
1540        Q9bCorn='Conversion of tamend grassland to Corn land'
1541        Q9bSoy='Conversion of tamend grassland to Soy land'
1542        Q9bWht='Conversion of tamend grassland to Wheat land'
1543        Q9bOth='Conversion of tamend grassland to Other use'
1544        Q9cCorn='Conversion of CRP land to Corn land'
1545        Q9cSoy='Conversion of CRP land to Soy land'
1546        Q9cWht='Conversion of CRP land to Wheat land'
1547        Q9cOth='Conversion of CRP land to Other use' ;
1548 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*Region/norow;
1549 format  Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1550        Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1551        Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1552 run;
1553
1554
1555 /* Q9 part three state and region based analysis frequency with chisq*/
1556
1557 proc format;
1558 value Response
1559        1='Yes'
1560        0 ='No';
1561 run;
1562 proc freq data=sasintro.dakota15;
1563 label CaseID='State'
1564        Q9aCorn='Conversion of native grass to Corn land'
1565        Q9aSoy='Conversion of native grass to Soybean land'
1566        Q9aWht='Conversion of native grass to Wheat land'
1567        Q9aOth='Conversion of native grass to Other use'
1568        Q9bCorn='Conversion of tamend grassland to Corn land'
1569        Q9bSoy='Conversion of tamend grassland to Soy land'
1570        Q9bWht='Conversion of tamend grassland to Wheat land'
1571        Q9bOth='Conversion of tamend grassland to Other use'
1572        Q9cCorn='Conversion of CRP land to Corn land'
1573        Q9cSoy='Conversion of CRP land to Soy land'
1574        Q9cWht='Conversion of CRP land to Wheat land'
1575        Q9cOth='Conversion of CRP land to Other use' ;
1576 table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*CaseID/chisq;
1577 format CaseID State. Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
1578        Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
1579        Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
1580 run;
1581
1582 proc format;
1583 value Response
1584        1='Yes'
1585        0 ='No';
1586 run;
1587 proc freq data=sasintro.dakota15;
1588 label
1589        Q9aCorn='Conversion of native grass to Corn land'
1590        Q9aSoy='Conversion of native grass to Soybean land'
1591        Q9aWht='Conversion of native grass to Wheat land'
1592        Q9aOth='Conversion of native grass to Other use'
1593        Q9bCorn='Conversion of tamend grassland to Corn land'
1594        Q9bSoy='Conversion of tamend grassland to Soy land'
1595        Q9bWht='Conversion of tamend grassland to Wheat land'
```

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

```sas
1672        3='Own/operate a non-farm business'
1673        4='Retired';
1674
1675 value Sales
1676
1677        12='Less than $99,999'
1678        3='From $100,000 up to $249,999'
1679        4='From $250,000 up to $499,999'
1680        5='From $500,000 up to $999,999'
1681        6='$1 million or more';
1682 run;
1683
1684
1685 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1686 class Q19;
1687 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1688 label Q19='Respondent Age'
1689        Q9aYN='Conversion of native grass to cropland'
1690        Q9bYN='Conversion of tamend grassland to cropland'
1691        Q9cYN='Conversion of CRP land to cropland'
1692        Q9dYN='Conversion of CRP land to pasture/hay'
1693        Q9eYN='Enrollment of farmland acres to CRP'
1694        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1695 format Q19 Age.;
1696 run;
1697
1698 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1699 class Q20;
1700 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1701 label Q20='Respondent Gender'
1702        Q9aYN='Conversion of native grass to cropland'
1703        Q9bYN='Conversion of tamend grassland to cropland'
1704        Q9cYN='Conversion of CRP land to cropland'
1705        Q9dYN='Conversion of CRP land to pasture/hay'
1706        Q9eYN='Enrollment of farmland acres to CRP'
1707        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1708 format Q20 Gender.;
1709 run;
1710
1711 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1712 class Q21;
1713 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1714 label Q21='Respondent Level of Education'
1715        Q9aYN='Conversion of native grass to cropland'
1716        Q9bYN='Conversion of tamend grassland to cropland'
1717        Q9cYN='Conversion of CRP land to cropland'
1718        Q9dYN='Conversion of CRP land to pasture/hay'
1719        Q9eYN='Enrollment of farmland acres to CRP'
1720        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1721 format Q21 Education.;
1722 run;
1723
1724 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1725 class Q22;
1726 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1727 label Q22='Principal Occupation'
1728        Q9aYN='Conversion of native grass to cropland'
1729        Q9bYN='Conversion of tamend grassland to cropland'
1730        Q9cYN='Conversion of CRP land to cropland'
1731        Q9dYN='Conversion of CRP land to pasture/hay'
1732        Q9eYN='Enrollment of farmland acres to CRP'
1733        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1734 format Q22 Occupation.;
1735 run;
1736
1737
1738 proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1739 class Q23;
1740 var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1741 label Q23='Gross farm/ranch sales'
1742        Q9aYN='Conversion of native grass to cropland'
1743        Q9bYN='Conversion of tamend grassland to cropland'
1744        Q9cYN='Conversion of CRP land to cropland'
1745        Q9dYN='Conversion of CRP land to pasture/hay'
1746        Q9eYN='Enrollment of farmland acres to CRP'
1747        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
```

```
1748  format Q23 Sales.;
1749  run;
1750
1751  proc format;
1752  value operation
1753        1='Have been a farm operator'
1754        2='less than 10 years as a farm operator'
1755        3='10 to 10 years as a farm operator'
1756        4='20 to 29 years as a farm operator'
1757        5='30 years or more as a farm operator'
1758        ;
1759  run;
1760
1761  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1762  class Q1;
1763  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1764  label Q1 ='Years as a farm opertor'
1765        Q23='Gross farm/ranch sales'
1766        Q9aYN='Conversion of native grass to cropland'
1767        Q9bYN='Conversion of tamend grassland to cropland'
1768        Q9cYN='Conversion of CRP land to cropland'
1769        Q9dYN='Conversion of CRP land to pasture/hay'
1770        Q9eYN='Enrollment of farmland acres to CRP'
1771        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1772  format Q1 operation.;
1773  run;
1774
1775  proc format;
1776  value Farmland 10-259='1 to 259 acres'
1777                 260-499='260 to 499 acres'
1778                 500-999='500 to 999 acres'
1779                 1000-1999='1000 to 1999 acres'
1780                 2000-4999='2000 to 4999 acres'
1781                 5000-high ='5000 acres and above';
1782  run;
1783
1784  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1785  class Q3A;
1786  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1787  label Q3A ='Farmland Acres Operated in 2014'
1788        Q9aYN='Conversion of native grass to cropland'
1789        Q9bYN='Conversion of tamend grassland to cropland'
1790        Q9cYN='Conversion of CRP land to cropland'
1791        Q9dYN='Conversion of CRP land to pasture/hay'
1792        Q9eYN='Enrollment of farmland acres to CRP'
1793        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1794  format Q3A Farmland.;
1795  run;
1796
1797  proc format;
1798  value Ownership
1799        1='Own all acres farmed'
1800        2='Own most acres farmed, rented the remainder'
1801        3='Own and rent roughly equal number of farmland acres'
1802        4='Rented most of the acres farmed,owned the remainder'
1803        5='Rented all acres farmland'
1804        6='Professional farm manager';
1805  run;
1806
1807  proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
1808  class Q4;
1809  var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
1810  label Q4 ='Best Ownership Status in 2014'
1811        Q9aYN='Conversion of native grass to cropland'
1812        Q9bYN='Conversion of tamend grassland to cropland'
1813        Q9cYN='Conversion of CRP land to cropland'
1814        Q9dYN='Conversion of CRP land to pasture/hay'
1815        Q9eYN='Enrollment of farmland acres to CRP'
1816        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1817  format Q4 Ownership.;
1818  run;
1819
1820
1821  /* cross tab chi square test, Q9 part one region and state based, 19, 20, 21, 22, 23, */
1822  proc format;
1823  value Age
```

```
1824          1='19 to 34 years'
1825          2='35 to 49 years'
1826          3='50 to 59 years'
1827          4='60 to 69 years'
1828          5='70 years and over';
1829
1830 value Gender
1831          1='Male'
1832          2='Female';
1833
1834 value Education
1835          1='Less than high school'
1836          2='High school'
1837          3='Some college/technical school'
1838          4='4-year college degree'
1839          5='Advanced degree (Masters, etc.)';
1840
1841 value Occupation
1842          1='Farming or Ranching'
1843          2='Employment in off-farm job'
1844          3='Own/operate a non-farm business'
1845          4='Retired';
1846
1847 value Sales
1848
1849          12='Less than $99,999'
1850          3='From $100,000 up to $249,999'
1851          4='From $250,000 up to $499,999'
1852          5='From $500,000 up to $999,999'
1853          6='$1 million or more';
1854 run;
1855
1856 proc format;
1857 value Response
1858          1='Yes'
1859          2='No';
1860 run;
1861 proc freq data=sasintro.dakota15clean;
1862 label Q19='Respondent Age'
1863          Q9aYN='Conversion of native grass to cropland'
1864          Q9bYN='Conversion of tamend grassland to cropland'
1865          Q9cYN='Conversion of CRP land to cropland'
1866          Q9dYN='Conversion of CRP land to pasture/hay'
1867          Q9eYN='Enrollment of farmland acres to CRP'
1868          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1869 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q19/chisq;
1870 format Q19 Age. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1871 Q9eYN Response. Q9fYN Response. ;
1872 run;
1873
1874 proc format;
1875 value Response
1876          1='Yes'
1877          2='No';
1878 run;
1879 proc freq data=sasintro.dakota15clean;
1880 label Q20='Respondent Gender'
1881          Q9aYN='Conversion of native grass to cropland'
1882          Q9bYN='Conversion of tamend grassland to cropland'
1883          Q9cYN='Conversion of CRP land to cropland'
1884          Q9dYN='Conversion of CRP land to pasture/hay'
1885          Q9eYN='Enrollment of farmland acres to CRP'
1886          Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1887 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q20/chisq;
1888 format Q20 Gender. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1889 Q9eYN Response. Q9fYN Response. ;
1890 run;
1891
1892 proc format;
1893 value Response
1894          1='Yes'
1895          2='No';
1896 run;
1897 proc freq data=sasintro.dakota15clean;
1898 label Q21='Respondent Level of Education'
1899          Q9aYN='Conversion of native grass to cropland'
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```sas
1900        Q9bYN='Conversion of tamend grassland to cropland'
1901        Q9cYN='Conversion of CRP land to cropland'
1902        Q9dYN='Conversion of CRP land to pasture/hay'
1903        Q9eYN='Enrollment of farmland acres to CRP'
1904        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1905 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q21/chisq;
1906 format Q21 Education. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1907 Q9eYN Response. Q9fYN Response. ;
1908 run;
1909
1910 proc format;
1911 value Response
1912        1='Yes'
1913        2='No';
1914 run;
1915 proc freq data=sasintro.dakota15clean;
1916 label Q22='Principal Occupation'
1917        Q9aYN='Conversion of native grass to cropland'
1918        Q9bYN='Conversion of tamend grassland to cropland'
1919        Q9cYN='Conversion of CRP land to cropland'
1920        Q9dYN='Conversion of CRP land to pasture/hay'
1921        Q9eYN='Enrollment of farmland acres to CRP'
1922        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1923 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q22/chisq;
1924 format Q22 Occupation. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1925 Q9eYN Response. Q9fYN Response. ;
1926 run;
1927
1928 proc format;
1929 value Response
1930        1='Yes'
1931        2='No';
1932 run;
1933 proc freq data=sasintro.dakota15clean;
1934 label Q23= 'Gross farm/ranch sales'
1935        Q9aYN='Conversion of native grass to cropland'
1936        Q9bYN='Conversion of tamend grassland to cropland'
1937        Q9cYN='Conversion of CRP land to cropland'
1938        Q9dYN='Conversion of CRP land to pasture/hay'
1939        Q9eYN='Enrollment of farmland acres to CRP'
1940        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1941 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q23/chisq;
1942 format Q23 Sales. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1943 Q9eYN Response. Q9fYN Response. ;
1944 run;
1945
1946
1947 proc format;
1948 value Response
1949        1='Yes'
1950        2='No';
1951 run;
1952 proc format;
1953 value operation
1954        1='Have been a farm operator'
1955        2='less than 10 years as a farm operator'
1956        3='10 to 10 years as a farm operator'
1957        4='20 to 29 years as a farm operator'
1958        5='30 years or more as a farm operator'
1959        ;
1960 run;
1961
1962 proc freq data=sasintro.dakota15clean;
1963 label Q1= 'Year As a Farm Operator'
1964        Q9aYN='Conversion of native grass to cropland'
1965        Q9bYN='Conversion of tamend grassland to cropland'
1966        Q9cYN='Conversion of CRP land to cropland'
1967        Q9dYN='Conversion of CRP land to pasture/hay'
1968        Q9eYN='Enrollment of farmland acres to CRP'
1969        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1970 tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q1/chisq;
1971 format Q1 Operation. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1972 Q9eYN Response. Q9fYN Response. ;
1973 run;
1974
1975 proc format;
```

```sas
1976   value Response
1977         1='Yes'
1978         2='No';
1979   run;
1980   proc format;
1981   value Farmland 10-259='1 to 259 acres'
1982                   260-499='260 to 499 acres'
1983                   500-999='500 to 999 acres'
1984                   1000-1999='1000 to 1999 acres'
1985                   2000-4999='2000 to 4999 acres'
1986                   5000-high ='5000 acres and above';
1987   run;
1988
1989   proc freq data=sasintro.dakota15clean;
1990   label Q3A= 'Farmland Acres Operated in 2014'
1991         Q9aYN='Conversion of native grass to cropland'
1992         Q9bYN='Conversion of tamend grassland to cropland'
1993         Q9cYN='Conversion of CRP land to cropland'
1994         Q9dYN='Conversion of CRP land to pasture/hay'
1995         Q9eYN='Enrollment of farmland acres to CRP'
1996         Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
1997   tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q3A/chisq;
1998   format Q3A Farmland. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
1999   Q9eYN Response. Q9fYN Response. ;
2000   run;
2001
2002   proc format;
2003   value Ownership
2004         1='Own all acres farmed'
2005         2='Own most acres farmed, rented the remainder'
2006         3='Own and rent roughly equal number of farmland acres'
2007         4='Rented most of the acres farmed,owned the remainder'
2008         5='Rented all acres farmland'
2009         6='Professional farm manager';
2010
2011   run;
2012
2013   proc freq data=sasintro.dakota15clean;
2014   label Q4= 'Best Ownership Status in 2014'
2015         Q9aYN='Conversion of native grass to cropland'
2016         Q9bYN='Conversion of tamend grassland to cropland'
2017         Q9cYN='Conversion of CRP land to cropland'
2018         Q9dYN='Conversion of CRP land to pasture/hay'
2019         Q9eYN='Enrollment of farmland acres to CRP'
2020         Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
2021   tables (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*Q4/chisq;
2022   format Q4 Ownership. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
2023   Q9eYN Response. Q9fYN Response. ;
2024   run;
2025
2026
2027   /** question 11 frequency analysis State and Region Based**/
2028
2029   proc format;
2030   value Future
2031         1='Yes'
2032         2='No'
2033         3='Dont Know';
2034   run;
2035   proc freq data=sasintro.dakota15;
2036   label CaseID='State'
2037         Q11a='Plan to convert native grassland to cropland in next 10 years'
2038         Q11b='Plan to convert tame grassland to cropland in next 10 years'
2039         Q11c='Plan to convert cropland to grassland in next 10 years';
2040   tables (Q11a Q11b Q11c)*CaseID/norow;
2041   format CaseID State. Q11a Future. Q11b Future. Q11c Future.;
2042   run;
2043
2044   proc format;
2045   value Future
2046         1='Yes'
2047         2='No'
2048         3='Dont Know';
2049   run;
2050   proc freq data=sasintro.dakota15;
2051   label
```

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

```
2128 run;
2129
2130
2131 proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=0;
2132 class Region;
2133 var Q11a Q11b Q11c;
2134 label
2135        Q11a='Plan to convert native grassland to cropland in next 10 years'
2136        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2137        Q11c='Plan to convert cropland to grassland in next 10 years';
2138 format Q11a Future. Q11b Future. Q11c Future.;
2139 run;
2140
2141 /* Q11 selected farm operator/business characteristics of responses plus 1, 3a and 4*/
2142
2143 proc format;
2144 value Age
2145        1='19 to 34 years'
2146        2='35 to 49 years'
2147        3='50 to 59 years'
2148        4='60 to 69 years'
2149        5='70 years and over'
2150
2151 value Gender
2152        1='Male'
2153        2='Female'
2154
2155 value Education
2156        1='Less than high school'
2157        2='High school'
2158        3='Some college/technical school'
2159        4='4-year college degree'
2160        5='Advanced degree (Masters, etc.)'
2161
2162 value Occupation
2163        1='Farming or Ranching'
2164        2='Employment in off-farm job'
2165        3='Own/operate a non-farm business'
2166        4='Retired'
2167
2168 value Sales
2169
2170        12='Less than $99,999'
2171        3='From $100,000 up to $249,999'
2172        4='From $250,000 up to $499,999'
2173        5='From $500,000 up to $999,999'
2174        6='$1 million or more';
2175
2176 run;
2177
2178 proc format;
2179 value Future
2180        1='Yes'
2181        2='No'
2182        3='Dont Know';
2183 run;
2184
2185 proc freq data=sasintro.dakota15clean;
2186 label Q19='Respondent Age'
2187        Q11a='Plan to convert native grassland to cropland in next 10 years'
2188        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2189        Q11c='Plan to convert cropland to grassland in next 10 years';
2190 tables (Q11a Q11b Q11c)*Q19/chisq;
2191 format Q19 Age. Q11a Future. Q11b Future. Q11c Future.;
2192 run;
2193
2194 proc freq data=sasintro.dakota15clean;
2195 label Q20='Respondent Gender'
2196        Q11a='Plan to convert native grassland to cropland in next 10 years'
2197        Q11b='Plan to convert tame grassland to cropland in next 10 years'
2198        Q11c='Plan to convert cropland to grassland in next 10 years';
2199 tables (Q11a Q11b Q11c)*Q20/chisq;
2200 format Q20 Gender. Q11a Future. Q11b Future. Q11c Future.;
2201 run;
2202
2203 proc freq data=sasintro.dakota15clean;
```

```
2204 label Q21='Respondent Level of Education'
2205       Q11a='Plan to convert native grassland to cropland in next 10 years'
2206       Q11b='Plan to convert tame grassland to cropland in next 10 years'
2207       Q11c='Plan to convert cropland to grassland in next 10 years';
2208 tables (Q11a Q11b Q11c)*Q21/chisq;
2209 format Q21 Education. Q11a Future. Q11b Future. Q11c Future.;
2210 run;
2211
2212 proc freq data=sasintro.dakota15clean;
2213 label Q22='Principal Occupation'
2214       Q11a='Plan to convert native grassland to cropland in next 10 years'
2215       Q11b='Plan to convert tame grassland to cropland in next 10 years'
2216       Q11c='Plan to convert cropland to grassland in next 10 years';
2217 tables (Q11a Q11b Q11c)*Q22/chisq;
2218 format Q22 Occupation. Q11a Future. Q11b Future. Q11c Future.;
2219 run;
2220
2221 proc freq data=sasintro.dakota15clean;
2222 label Q23='Gross farm/ranch sales'
2223       Q11a='Plan to convert native grassland to cropland in next 10 years'
2224       Q11b='Plan to convert tame grassland to cropland in next 10 years'
2225       Q11c='Plan to convert cropland to grassland in next 10 years';
2226 tables (Q11a Q11b Q11c)*Q23/chisq;
2227 format Q23 Sales. Q11a Future. Q11b Future. Q11c Future.;
2228 run;
2229
2230 proc format;
2231 value operation
2232       1='Have been a farm operator'
2233       2='less than 10 years as a farm operator'
2234       3='10 to 10 years as a farm operator'
2235       4='20 to 29 years as a farm operator'
2236       5='30 years or more as a farm operator'
2237       ;
2238 run;
2239
2240 proc freq data=sasintro.dakota15clean;
2241 label Q1='Years as a farm opertor'
2242       Q11a='Plan to convert native grassland to cropland in next 10 years'
2243       Q11b='Plan to convert tame grassland to cropland in next 10 years'
2244       Q11c='Plan to convert cropland to grassland in next 10 years';
2245 tables (Q11a Q11b Q11c)*Q1/chisq;
2246 format Q1 Operation. Q11a Future. Q11b Future. Q11c Future.;
2247 run;
2248
2249
2250 proc format;
2251 value Farmland 10-259='1 to 259 acres'
2252                260-499='260 to 499 acres'
2253                500-999='500 to 999 acres'
2254                1000-1999='1000 to 1999 acres'
2255                2000-4999='2000 to 4999 acres'
2256                5000-high ='5000 acres and above';
2257 run;
2258
2259 proc freq data=sasintro.dakota15clean;
2260 label Q3A='Farmland Acres Operated in 2014'
2261       Q11a='Plan to convert native grassland to cropland in next 10 years'
2262       Q11b='Plan to convert tame grassland to cropland in next 10 years'
2263       Q11c='Plan to convert cropland to grassland in next 10 years';
2264 tables (Q11a Q11b Q11c)*Q3A/chisq;
2265 format Q3A Farmland. Q11a Future. Q11b Future. Q11c Future.;
2266 run;
2267
2268
2269 proc format;
2270 value Ownership
2271       1='Own all acres farmed'
2272       2='Own most acres farmed, rented the remainder'
2273       3='Own and rent roughly equal number of farmland acres'
2274       4='Rented most of the acres farmed,owned the remainder'
2275       5='Rented all acres farmland'
2276       6='Professional farm manager';
2277 run;
2278
2279 proc freq data=sasintro.dakota15clean;
```

```
2280 label Q4='Ownership Status in 2014'
2281       Q11a='Plan to convert native grassland to cropland in next 10 years'
2282       Q11b='Plan to convert tame grassland to cropland in next 10 years'
2283       Q11c='Plan to convert cropland to grassland in next 10 years';
2284 tables (Q11a Q11b Q11c)*Q4/chisq;
2285 format Q4 Ownership. Q11a Future. Q11b Future. Q11c Future.;
2286 run;
2287
2288
2289
2290 /*** Chi square analysis Q10a vs Q9 **/
2291 /** 9dYN,9eYN,9fYN versus 10a1**/
2292 proc format;
2293 value Response
2294       1='Yes'
2295       2='No';
2296 run;
2297
2298 proc freq data=sasintro.dakota15;
2299 label
2300       Q9dYN='Conversion of CRP land to pasture/hay'
2301       Q10a1='Changing of crop prices';
2302 tables Q10a1* Q9dYN / chisq;
2303 format Q10a1 Impact. Q9dYN Response.;
2304 run;
2305
2306 proc freq data=sasintro.dakota15;
2307 label
2308       Q9eYN='Enrollment of farmland acres to CRP'
2309       Q10a1='Changing of crop prices';
2310 tables Q10a1*Q9eYN / chisq;
2311 format Q10a1 Impact. Q9eYN Response.;
2312 run;
2313
2314 proc freq data=sasintro.dakota15;
2315 label
2316       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2317       Q10a1='Changing of crop prices';
2318 tables Q10a1*Q9fYN / chisq;
2319 format Q10a1 Impact. Q9fYN Response.;
2320 run;
2321
2322 /** 9dYN,9eYN,9fYN versus 10a2**/
2323 proc format;
2324 value Response
2325       1='Yes'
2326       2='No';
2327 run;
2328
2329 proc freq data=sasintro.dakota15;
2330 label
2331       Q9dYN='Conversion of CRP land to pasture/hay'
2332       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
2333 tables Q10a2* Q9dYN / chisq;
2334 format Q10a2 Impact. Q9dYN Response.;
2335 run;
2336
2337 proc freq data=sasintro.dakota15;
2338 label
2339       Q9eYN='Enrollment of farmland acres to CRP'
2340       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
2341 tables Q10a2*Q9eYN / chisq;
2342 format Q10a2 Impact. Q9eYN Response.;
2343 run;
2344
2345 proc freq data=sasintro.dakota15;
2346 label
2347       Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2348       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
2349 tables Q10a2*Q9fYN / chisq;
2350 format Q10a2 Impact. Q9fYN Response.;
2351 run;
2352
2353 /** 9dYN,9eYN,9fYN versus 10a3**/
2354 proc format;
2355 value Response
```

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

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

```
2508  format Q10a7 Impact. Q9fYN Response.;
2509  run;
2510
2511
2512
2513  /** 9dYN,9eYN,9fYN versus 10a8**/
2514  proc format;
2515  value Response
2516      1='Yes'
2517      2='No';
2518  run;
2519
2520  proc freq data=sasintro.dakota15;
2521  label
2522      Q9dYN='Conversion of CRP land to pasture/hay'
2523      Q10a8='Labor availability problems';
2524  tables Q10a8* Q9dYN / chisq;
2525  format Q10a8 Impact. Q9dYN Response.;
2526  run;
2527
2528  proc freq data=sasintro.dakota15;
2529  label
2530      Q9eYN='Enrollment of farmland acres to CRP'
2531      Q10a8='Labor availability problems';
2532  tables Q10a8*Q9eYN / chisq;
2533  format Q10a8 Impact. Q9eYN Response.;
2534  run;
2535
2536  proc freq data=sasintro.dakota15;
2537  label
2538      Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2539      Q10a8='Labor availability problems';
2540  tables Q10a8*Q9fYN / chisq;
2541  format Q10a8 Impact. Q9fYN Response.;
2542  run;
2543
2544
2545  /** 9aYN,9bYN,9cYN versus 10a9**/
2546  proc format;
2547  value Response
2548      1='Yes'
2549      2='No';
2550  run;
2551
2552  proc freq data=sasintro.dakota15;
2553  label
2554      Q9dYN='Conversion of CRP land to pasture/hay'
2555      Q10a9='Improving wildlife habitat';
2556  tables Q10a9* Q9dYN / chisq;
2557  format Q10a9 Impact. Q9dYN Response.;
2558  run;
2559
2560  proc freq data=sasintro.dakota15;
2561  label
2562      Q9eYN='Enrollment of farmland acres to CRP'
2563      Q10a9='Improving wildlife habitat';
2564  tables Q10a9*Q9eYN / chisq;
2565  format Q10a9 Impact. Q9eYN Response.;
2566  run;
2567
2568  proc freq data=sasintro.dakota15;
2569  label
2570      Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
2571      Q10a9='Improving wildlife habitat';
2572  tables Q10a9*Q9fYN / chisq;
2573  format Q10a9 Impact. Q9fYN Response.;
2574  run;
2575
2576  /** 9aYN,9bYN,9cYN versus 10a10**/
2577  proc format;
2578  value Response
2579      1='Yes'
2580      2='No';
2581  run;
2582
2583  proc freq data=sasintro.dakota15;
```

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

```
2660        3='From $100,000 up to $249,999'
2661        4='From $250,000 up to $499,999'
2662        5='From $500,000 up to $999,999'
2663        6='$1 million or more';
2664 run;
2665
2666 proc format;
2667 value operation
2668        1='Have been a farm operator'
2669        2='less than 10 years as a farm operator'
2670        3='10 to 10 years as a farm operator'
2671        4='20 to 29 years as a farm operator'
2672        5='30 years or more as a farm operator'
2673        ;
2674 run;
2675
2676
2677 proc format;
2678 value Farmland 10-259='1 to 259 acres'
2679               260-499='260 to 499 acres'
2680               500-999='500 to 999 acres'
2681               1000-1999='1000 to 1999 acres'
2682               2000-4999='2000 to 4999 acres'
2683               5000-high ='5000 acres and above';
2684 run;
2685
2686 proc format;
2687 value Ownership
2688        1='Own all acres farmed'
2689        2='Own most acres farmed, rented the remainder'
2690        3='Own and rent roughly equal number of farmland acres'
2691        4='Rented most of the acres farmed,owned the remainder'
2692        5='Rented all acres farmland'
2693        6='Professional farm manager';
2694 run;
2695
2696
2697 proc format;
2698 value Regroup
2699        0='Yes'
2700        1='No';
2701 run;
2702 proc logistic data=sasintro.dakota15reg;
2703 label CaseID='State'
2704        Q19='Respondent Age'
2705        Q20='Respondent Gender'
2706        Q21='Respondent Level of Education'
2707        Q22='Principal Ocupation'
2708        Q23='Gross farm/ranch sales'
2709        Q1=' Years as a farm operator'
2710        Q3A='Farmland acres operated in 2014'
2711        Q4='Ownership Status in 2014'
2712        NQ9aYN='Conversion of native grass to cropland';
2713 class NQ9aYN  CaseID / param=ref;
2714 model NQ9aYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 CaseID /rsquare;
2715 format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2716       Q3A Farmland. Q4 Ownership. NQ9aYN Regroup. CaseID State.;
2717 run;
2718
2719
2720 proc format;
2721 value Regroup
2722        0='Yes'
2723        1='No';
2724 run;
2725 proc logistic data=sasintro.dakota15reg;
2726 label CaseID='State'
2727        Q19='Respondent Age'
2728        Q20='Respondent Gender'
2729        Q21='Respondent Level of Education'
2730        Q22='Principal Ocupation'
2731        Q23='Gross farm/ranch sales'
2732        Q1=' Years as a farm operator'
2733        Q3A='Farmland acres operated in 2014'
2734        Q4='Ownership Status in 2014'
2735        NQ9bYN='Conversion of tame grassland to cropland';
```

```sas
2736  class NQ9bYN  CaseID / param=ref;
2737  model NQ9bYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 CaseID /rsquare;
2738  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2739         Q3A Farmland. Q4 Ownership. NQ9bYN Regroup. CaseID State.;
2740  run;
2741
2742  proc format;
2743  value Regroup
2744        0='Yes'
2745        1='No';
2746  run;
2747  proc logistic data=sasintro.dakota15reg;
2748  label CaseID='State'
2749        Q19='Respondent Age'
2750        Q20='Respondent Gender'
2751        Q21='Respondent Level of Education'
2752        Q22='Principal Ocupation'
2753        Q23='Gross farm/ranch sales'
2754        Q1=' Years as a farm operator'
2755        Q3A='Farmland acres operated in 2014'
2756        Q4='Ownership Status in 2014'
2757        NQ9cYN='Conversion of CRP land to cropland';
2758  class NQ9cYN  CaseID / param=ref;
2759  model NQ9cYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 CaseID /rsquare;
2760  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2761         Q3A Farmland. Q4 Ownership. NQ9cYN Regroup. CaseID State.;
2762  run;
2763
2764  proc format;
2765  value Regroup
2766        0='Yes'
2767        1='No';
2768  run;
2769  proc logistic data=sasintro.dakota15reg;
2770  label CaseID='State'
2771        Q19='Respondent Age'
2772        Q20='Respondent Gender'
2773        Q21='Respondent Level of Education'
2774        Q22='Principal Ocupation'
2775        Q23='Gross farm/ranch sales'
2776        Q1=' Years as a farm operator'
2777        Q3A='Farmland acres operated in 2014'
2778        Q4='Ownership Status in 2014'
2779        NQ9dYN='Conversion of CRP land to pasture/hay';
2780  class NQ9dYN  CaseID / param=ref;
2781  model NQ9dYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 CaseID /rsquare;
2782  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2783         Q3A Farmland. Q4 Ownership. NQ9dYN Regroup. CaseID State.;
2784  run;
2785
2786  proc format;
2787  value Regroup
2788        0='Yes'
2789        1='No';
2790  run;
2791  proc logistic data=sasintro.dakota15reg;
2792  label CaseID='State'
2793        Q19='Respondent Age'
2794        Q20='Respondent Gender'
2795        Q21='Respondent Level of Education'
2796        Q22='Principal Ocupation'
2797        Q23='Gross farm/ranch sales'
2798        Q1=' Years as a farm operator'
2799        Q3A='Farmland acres operated in 2014'
2800        Q4='Ownership Status in 2014'
2801        NQ9eYN='Enrollment of farmland acres into CRP';
2802  class NQ9eYN  CaseID / param=ref;
2803  model NQ9eYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 CaseID /rsquare;
2804  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2805         Q3A Farmland. Q4 Ownership. NQ9eYN Regroup. CaseID State.;
2806  run;
2807
2808  proc format;
2809  value Regroup
2810        0='Yes'
2811        1='No';
```

```
2812  run;
2813  proc logistic data=sasintro.dakota15reg;
2814  label CaseID='State'
2815        Q19='Respondent Age'
2816        Q20='Respondent Gender'
2817        Q21='Respondent Level of Education'
2818        Q22='Principal Ocupation'
2819        Q23='Gross farm/ranch sales'
2820        Q1=' Years as a farm operator'
2821        Q3A='Farmland acres operated in 2014'
2822        Q4='Ownership Status in 2014'
2823        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
2824  class NQ9fYN  CaseID / param=ref;
2825  model NQ9fYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 CaseID /rsquare;
2826  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2827          Q3A Farmland. Q4 Ownership. NQ9fYN Regroup. CaseID State.;
2828  run;
2829
2830
2831  /*Region based Regression*/
2832
2833  proc format;
2834  value Age
2835        1='19 to 34 years'
2836        2='35 to 49 years'
2837        3='50 to 59 years'
2838        4='60 to 69 years'
2839        5='70 years and over';
2840
2841  value Gender
2842        1='Male'
2843        2='Female';
2844
2845  value Education
2846        1='Less than high school'
2847        2='High school'
2848        3='Some college/technical school'
2849        4='4-year college degree'
2850        5='Advanced degree (Masters, etc.)';
2851
2852  value Occupation
2853        1='Farming or Ranching'
2854        2='Employment in off-farm job'
2855        3='Own/operate a non-farm business'
2856        4='Retired';
2857
2858  value Sales
2859
2860        12='Less than $99,999'
2861        3='From $100,000 up to $249,999'
2862        4='From $250,000 up to $499,999'
2863        5='From $500,000 up to $999,999'
2864        6='$1 million or more';
2865  run;
2866
2867  proc format;
2868  value operation
2869        1='Have been a farm operator'
2870        2='less than 10 years as a farm operator'
2871        3='10 to 10 years as a farm operator'
2872        4='20 to 29 years as a farm operator'
2873        5='30 years or more as a farm operator'
2874        ;
2875  run;
2876
2877
2878  proc format;
2879  value Farmland 10-259='1 to 259 acres'
2880                 260-499='260 to 499 acres'
2881                 500-999='500 to 999 acres'
2882                 1000-1999='1000 to 1999 acres'
2883                 2000-4999='2000 to 4999 acres'
2884                 5000-high ='5000 acres and above';
2885  run;
2886
2887  proc format;
```

```
2888  value Ownership
2889        1='Own all acres farmed'
2890        2='Own most acres farmed, rented the remainder'
2891        3='Own and rent roughly equal number of farmland acres'
2892        4='Rented most of the acres farmed,owned the remainder'
2893        5='Rented all acres farmland'
2894        6='Professional farm manager';
2895  run;
2896
2897
2898  proc format;
2899  value Regroup
2900        0='Yes'
2901        1='No';
2902  run;
2903  proc logistic data=sasintro.dakota15reg;
2904  label
2905        Q19='Respondent Age'
2906        Q20='Respondent Gender'
2907        Q21='Respondent Level of Education'
2908        Q22='Principal Ocupation'
2909        Q23='Gross farm/ranch sales'
2910        Q1=' Years as a farm operator'
2911        Q3A='Farmland acres operated in 2014'
2912        Q4='Ownership Status in 2014'
2913        NQ9aYN='Conversion of native grass to cropland';
2914  class NQ9aYN Region / param=ref;
2915  model NQ9aYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2916  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2917         Q3A Farmland. Q4 Ownership. NQ9aYN Regroup.;
2918  run;
2919
2920
2921  proc format;
2922  value Regroup
2923        0='Yes'
2924        1='No';
2925  run;
2926  proc logistic data=sasintro.dakota15reg;
2927  label
2928        Q19='Respondent Age'
2929        Q20='Respondent Gender'
2930        Q21='Respondent Level of Education'
2931        Q22='Principal Ocupation'
2932        Q23='Gross farm/ranch sales'
2933        Q1=' Years as a farm operator'
2934        Q3A='Farmland acres operated in 2014'
2935        Q4='Ownership Status in 2014'
2936        NQ9bYN='Conversion of tame grassland to cropland';
2937  class NQ9bYN Region/ param=ref;
2938  model NQ9bYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2939  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2940         Q3A Farmland. Q4 Ownership. NQ9bYN Regroup.;
2941  run;
2942
2943  proc format;
2944  value Regroup
2945        0='Yes'
2946        1='No';
2947  run;
2948  proc logistic data=sasintro.dakota15reg;
2949  label
2950        Q19='Respondent Age'
2951        Q20='Respondent Gender'
2952        Q21='Respondent Level of Education'
2953        Q22='Principal Ocupation'
2954        Q23='Gross farm/ranch sales'
2955        Q1=' Years as a farm operator'
2956        Q3A='Farmland acres operated in 2014'
2957        Q4='Ownership Status in 2014'
2958        NQ9cYN='Conversion of CRP land to cropland';
2959  class NQ9cYN Region/ param=ref;
2960  model NQ9cYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
2961  format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
2962         Q3A Farmland. Q4 Ownership. NQ9cYN Regroup.;
2963  run;
```

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

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

```
3116        NQ9aYN='Conversion of native grass to cropland'
3117        NQ9bYN='Conversion of tamend grassland to cropland'
3118        NQ9cYN='Conversion of CRP land to cropland'
3119        NQ9dYN='Conversion of CRP land to pasture/hay'
3120        NQ9eYN='Enrollment of farmland acres to CRP'
3121        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3122 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3123 model Q21 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3124 format Q21 Education. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regro
3125 run;
3126
3127
3128 proc logistic data=sasintro.dakota15reg;
3129 label CaseID='State'
3130        Q22='Principal Occupation'
3131        NQ9aYN='Conversion of native grass to cropland'
3132        NQ9bYN='Conversion of tamend grassland to cropland'
3133        NQ9cYN='Conversion of CRP land to cropland'
3134        NQ9dYN='Conversion of CRP land to pasture/hay'
3135        NQ9eYN='Enrollment of farmland acres to CRP'
3136        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3137 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3138 model Q22 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3139 format Q22 Occupation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regr
3140 run;
3141
3142
3143 proc logistic data=sasintro.dakota15reg;
3144 label
3145        Q22='Principal Occupation'
3146        NQ9aYN='Conversion of native grass to cropland'
3147        NQ9bYN='Conversion of tamend grassland to cropland'
3148        NQ9cYN='Conversion of CRP land to cropland'
3149        NQ9dYN='Conversion of CRP land to pasture/hay'
3150        NQ9eYN='Enrollment of farmland acres to CRP'
3151        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3152 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3153 model Q22 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3154 format Q22 Occupation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regr
3155 run;
3156
3157 proc logistic data=sasintro.dakota15reg;
3158 label CaseID='State'
3159        Q23='Gross farm/ranch sales'
3160        NQ9aYN='Conversion of native grass to cropland'
3161        NQ9bYN='Conversion of tamend grassland to cropland'
3162        NQ9cYN='Conversion of CRP land to cropland'
3163        NQ9dYN='Conversion of CRP land to pasture/hay'
3164        NQ9eYN='Enrollment of farmland acres to CRP'
3165        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3166 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3167 model Q23 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3168 format Q23 Sales. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup.
3169 run;
3170
3171
3172 proc logistic data=sasintro.dakota15reg;
3173 label
3174        Q23='Gross farm/ranch sales'
3175        NQ9aYN='Conversion of native grass to cropland'
3176        NQ9bYN='Conversion of tamend grassland to cropland'
3177        NQ9cYN='Conversion of CRP land to cropland'
3178        NQ9dYN='Conversion of CRP land to pasture/hay'
3179        NQ9eYN='Enrollment of farmland acres to CRP'
3180        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3181 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3182 model Q23 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3183 format Q23 Sales. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regroup.;
3184 run;
3185
3186 proc logistic data=sasintro.dakota15reg;
3187 label CaseID='State'
3188        Q1='Years as a farm opertor'
3189        NQ9aYN='Conversion of native grass to cropland'
3190        NQ9bYN='Conversion of tamend grassland to cropland'
3191        NQ9cYN='Conversion of CRP land to cropland'
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3192        NQ9dYN='Conversion of CRP land to pasture/hay'
3193        NQ9eYN='Enrollment of farmland acres to CRP'
3194        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3195 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3196 model Q1 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3197 format Q1 Operation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3198 run;


3200
3201 proc logistic data=sasintro.dakota15reg;
3202 label
3203        Q1='Years as a farm opertor'
3204        NQ9aYN='Conversion of native grass to cropland'
3205        NQ9bYN='Conversion of tamend grassland to cropland'
3206        NQ9cYN='Conversion of CRP land to cropland'
3207        NQ9dYN='Conversion of CRP land to pasture/hay'
3208        NQ9eYN='Enrollment of farmland acres to CRP'
3209        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3210 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3211 model Q1 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3212 format Q1 Operation. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3213 run;


3216 proc format;
3217 value Farmland 10-259='1 to 259 acres'
3218                260-499='260 to 499 acres'
3219                500-999='500 to 999 acres'
3220                1000-1999='1000 to 1999 acres'
3221                2000-4999='2000 to 4999 acres'
3222                5000-high ='5000 acres and above';
3223 run;

3225 proc logistic data=sasintro.dakota15reg;
3226 label CaseID='State'
3227        Q3a='Farmland acres operated in 2014'
3228        NQ9aYN='Conversion of native grass to cropland'
3229        NQ9bYN='Conversion of tamend grassland to cropland'
3230        NQ9cYN='Conversion of CRP land to cropland'
3231        NQ9dYN='Conversion of CRP land to pasture/hay'
3232        NQ9eYN='Enrollment of farmland acres to CRP'
3233        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3234 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3235 model Q3a = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3236 format Q3a Farmland. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3237 run;


3240 proc logistic data=sasintro.dakota15reg;
3241 label
3242        Q3a='Farmland acres operated in 2014'
3243        NQ9aYN='Conversion of native grass to cropland'
3244        NQ9bYN='Conversion of tamend grassland to cropland'
3245        NQ9cYN='Conversion of CRP land to cropland'
3246        NQ9dYN='Conversion of CRP land to pasture/hay'
3247        NQ9eYN='Enrollment of farmland acres to CRP'
3248        NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3249 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3250 model Q3a = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3251 format Q3a Farmland. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3252 run;


3255 proc format;
3256 value Ownership
3257        1='Own all acres farmed'
3258        2='Own most acres farmed, rented the remainder'
3259        3='Own and rent roughly equal number of farmland acres'
3260        4='Rented most of the acres farmed,owned the remainder'
3261        5='Rented all acres farmland'
3262        6='Professional farm manager';
3263 run;

3265 proc logistic data=sasintro.dakota15reg;
3266 label CaseID='State'
3267        Q4='Ownersip Status in 2014'
```

```sas
3268         NQ9aYN='Conversion of native grass to cropland'
3269         NQ9bYN='Conversion of tamend grassland to cropland'
3270         NQ9cYN='Conversion of CRP land to cropland'
3271         NQ9dYN='Conversion of CRP land to pasture/hay'
3272         NQ9eYN='Enrollment of farmland acres to CRP'
3273         NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3274 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID / param=ref;
3275 model Q4 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN CaseID /rsquare;
3276 format Q4 Ownership. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3277 run;
3278
3279
3280 proc logistic data=sasintro.dakota15reg;
3281 label
3282         Q4='Ownersip Status in 2014'
3283         NQ9aYN='Conversion of native grass to cropland'
3284         NQ9bYN='Conversion of tamend grassland to cropland'
3285         NQ9cYN='Conversion of CRP land to cropland'
3286         NQ9dYN='Conversion of CRP land to pasture/hay'
3287         NQ9eYN='Enrollment of farmland acres to CRP'
3288         NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
3289 class NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region / param=ref;
3290 model Q4 = NQ9aYN NQ9bYN NQ9cYN NQ9dYN NQ9eYN NQ9fYN Region /rsquare;
3291 format Q4 Ownership. NQ9aYN regroup. NQ9bYN regroup. NQ9cYN regroup. NQ9dYN regroup. NQ9eYN regroup. NQ9fYN regrou
3292 run;
3293
3294 /*extra analysis end */
3295
3296 /* Q10 related regression analysis start */
3297
3298 data sasintro.dakota15regQ10a;
3299      set sasintro.dakota15clean;
3300  if  (Q10a1=1) then NQ10a1=0;
3301  if  (Q10a1=2) or (Q10a1=3) then NQ10a1=1;
3302  if  (Q10a1=4) or (Q10a1=5) then NQ10a1=2;
3303
3304  if  (Q10a2=1) then NQ10a2=0;
3305  if  (Q10a2=2) or (Q10a2=3) then NQ10a2=1;
3306  if  (Q10a2=4) or (Q10a2=5) then NQ10a2=2;
3307
3308  if  (Q10a10=1) then NQ10a10=0;
3309  if  (Q10a10=2) or (Q10a10=3) then NQ10a10=1;
3310  if  (Q10a10=4) or (Q10a10=5) then NQ10a10=2;
3311
3312  if  (Q10a7=1) then NQ10a7=0;
3313  if  (Q10a7=2) or (Q10a7=3) then NQ10a7=1;
3314  if  (Q10a7=4) or (Q10a7=5) then NQ10a7=2;
3315
3316  if  (Q10a6=1) then NQ10a6=0;
3317  if  (Q10a6=2) or (Q10a6=3) then NQ10a6=1;
3318  if  (Q10a6=4) or (Q10a6=5) then NQ10a6=2;
3319
3320  if  (Q10a3=1) then NQ10a3=0;
3321  if  (Q10a3=2) or (Q10a3=3) then NQ10a3=1;
3322  if  (Q10a3=4) or (Q10a3=5) then NQ10a3=2;
3323
3324  if  (Q10a5=1) then NQ10a5=0;
3325  if  (Q10a5=2) or (Q10a5=3) then NQ10a5=1;
3326  if  (Q10a5=4) or (Q10a5=5) then NQ10a5=2;
3327
3328  if  (Q10a8=1) then NQ10a8=0;
3329  if  (Q10a8=2) or (Q10a8=3) then NQ10a8=1;
3330  if  (Q10a8=4) or (Q10a8=5) then NQ10a8=2;
3331
3332  if  (Q10a9=1) then NQ10a9=0;
3333  if  (Q10a9=2) or (Q10a9=3) then NQ10a9=1;
3334  if  (Q10a9=4) or (Q10a9=5) then NQ10a9=2;
3335
3336  if  (Q10a4=1) then NQ10a4=0;
3337  if  (Q10a4=2) or (Q10a4=3) then NQ10a4=1;
3338  if  (Q10a4=4) or (Q10a4=5) then NQ10a4=2;
3339 run;
3340 proc print data=sasintro.dakota15regQ10a;
3341 run;
3342
3343 proc format;
```

```sas
3344 value Reformat
3345      0='No Impact'
3346      1='Some Impact'
3347      2='Great Impact';
3348 run;
3349
3350 proc GLM data=sasintro.dakota15regQ10a;
3351 class NQ10a1 region;
3352 level NQ10a1='Changing crop prices';
3353 model NQ10a1=region;
3354 format  NQ10a1 reformat.;
3355 run;
3356
3357 proc GLM data=sasintro.dakota15regQ10a;
3358 class NQ10a2 region;
3359 Level Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
3360 model NQ10a2=region;
3361 format  NQ10a2 reformat.;
3362 run;
3363
3364 proc GLM data=sasintro.dakota15regQ10a;
3365 class NQ10a3 region;
3366 Level Q10a3='Availability of crop and revenue insurance policies';
3367 model NQ10a3=region;
3368 format  NQ10a3 reformat.;
3369 run;
3370
3371 proc GLM data=sasintro.dakota15regQ10a;
3372 class NQ10a4 region;
3373 Level NQ10a4='Availability of drought-tolerant seed';
3374 model NQ10a4=region;
3375 format  NQ10a4 reformat.;
3376 run;
3377
3378 proc GLM data=sasintro.dakota15regQ10a;
3379 class NQ10a5 region;
3380 Level NQ10a5='Developments in pest management practices, including pest management seed traits';
3381 model NQ10a5=region;
3382 format  NQ10a5 reformat.;
3383 run;
3384
3385 proc GLM data=sasintro.dakota15regQ10a;
3386 class NQ10a6 region;
3387 Level NQ10a6='Improved crop yields (other than seed related traits)';
3388 model NQ10a6=region;
3389 format  NQ10a6 reformat.;
3390 run;
3391
3392 proc GLM data=sasintro.dakota15regQ10a;
3393 class NQ10a7 region;
3394 Level NQ10a7='Development of more efficient cropping equipment';
3395 model NQ10a7=region;
3396 format  NQ10a7 reformat.;
3397 run;
3398
3399 proc GLM data=sasintro.dakota15regQ10a;
3400 class NQ10a7 region;
3401 Level NQ10a7='Development of more efficient cropping equipment';
3402 model NQ10a7=region;
3403 format  NQ10a7 reformat.;
3404 run;
3405
3406 proc GLM data=sasintro.dakota15regQ10a;
3407 class NQ10a8 region;
3408 Level NQ10a8='Labor availability problems';
3409 model NQ10a8=region;
3410 format  NQ10a8 reformat.;
3411 run;
3412
3413 proc GLM data=sasintro.dakota15regQ10a;
3414 class NQ10a9 region;
3415 Level NQ10a9='Improving wildlife habitat';
3416 model NQ10a9=region;
3417 format  NQ10a9 reformat.;
3418 run;
3419
```

```sas
3420 proc GLM data=sasintro.dakota15regQ10a;
3421 class NQ10a10 region;
3422 Level NQ10a10='Changing weather /climate patterns';
3423 model NQ10a10=region;
3424 format  NQ10a10 reformat.;
3425 run;
3426
3427 /* Q10a related latest regression */
3428
3429 proc format;
3430 value Impact
3431        1='No Impact'
3432        2='Slight Impact'
3433        3='Some Impact'
3434        4='Quite a bit of Impact'
3435        5='Great Impact';
3436 run;
3437
3438 proc GLM data=sasintro.dakota15clean;
3439 class Q10a1 region;
3440 level Q10a1='Changing crop prices';
3441 model Q10a1=region;
3442 format  Q10a1 impact.;
3443 run;
3444
3445 proc GLM data=sasintro.dakota15clean;
3446 class Q10a2 region;
3447 Level Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)';
3448 model Q10a2=region;
3449 format Q10a2 impact.;
3450 run;
3451
3452 proc GLM data=sasintro.dakota15clean;
3453 class Q10a3 region;
3454 Level Q10a3='Availability of crop and revenue insurance policies';
3455 model Q10a3=region;
3456 format Q10a3 impact.;
3457 run;
3458
3459 proc GLM data=sasintro.dakota15clean;
3460 class NQ10a4 region;
3461 Level Q10a4='Availability of drought-tolerant seed';
3462 model Q10a4=region;
3463 format Q10a4 impact.;
3464 run;
3465
3466 proc GLM data=sasintro.dakota15clean;
3467 class Q10a5 region;
3468 Level Q10a5='Developments in pest management practices, including pest management seed traits';
3469 model Q10a5=region;
3470 format Q10a5 impact.;
3471 run;
3472
3473 proc GLM data=sasintro.dakota15clean;
3474 class Q10a6 region;
3475 Level Q10a6='Improved crop yields (other than seed related traits)';
3476 model Q10a6=region;
3477 format Q10a6 impact.;
3478 run;
3479
3480 proc GLM data=sasintro.dakota15clean;
3481 class Q10a7 region;
3482 Level Q10a7='Development of more efficient cropping equipment';
3483 model Q10a7=region;
3484 format Q10a7 impact.;
3485 run;
3486
3487 proc GLM data=sasintro.dakota15clean;
3488 class Q10a7 region;
3489 Level Q10a7='Development of more efficient cropping equipment';
3490 model Q10a7=region;
3491 format Q10a7 impact.;
3492 run;
3493
3494 proc GLM data=sasintro.dakota15clean;
3495 class Q10a8 region;
```

```sas
3496  Level Q10a8='Labor availability problems';
3497  model Q10a8=region;
3498  format Q10a8 impact.;
3499  run;
3500
3501  proc GLM data=sasintro.dakota15clean;
3502  class Q10a9 region;
3503  Level Q10a9='Improving wildlife habitat';
3504  model Q10a9=region;
3505  format Q10a9 impact.;
3506  run;
3507
3508  proc GLM data=sasintro.dakota15clean;
3509  class Q10a10 region;
3510  Level Q10a10='Changing weather /climate patterns';
3511  model Q10a10=region;
3512  format Q10a10 impact.;
3513  run;
3514
3515
3516
3517  /* Q10a related regression analysis extra not related */
3518
3519  /*creating region numeric*/
3520
3521  data sasintro.dakota15num;
3522      set sasintro.dakota15;
3523   if  Region='East North Dakota' then Region=1;
3524   if  Region='Central North Dakota' then Region=2;
3525   if  Region='North Central South Dakota' then Region=3;
3526   if  Region='Central South Dakota' then Region=4;
3527   if  Region='East Central South Dakota' then Region=5;
3528   if  Region='North East South Dakota' then Region=6;
3529
3530   if  (Q10a1=1) then NQ10a1=0;
3531   if  (Q10a1=2) or (Q10a1=3) then NQ10a1=1;
3532   if  (Q10a1=4) or (Q10a1=5) then NQ10a1=2;
3533
3534   if  (Q10a2=1) then NQ10a2=0;
3535   if  (Q10a2=2) or (Q10a2=3) then NQ10a2=1;
3536   if  (Q10a2=4) or (Q10a2=5) then NQ10a2=2;
3537
3538   if  (Q10a10=1) then NQ10a10=0;
3539   if  (Q10a10=2) or (Q10a10=3) then NQ10a10=1;
3540   if  (Q10a10=4) or (Q10a10=5) then NQ10a10=2;
3541
3542   if  (Q10a7=1) then NQ10a7=0;
3543   if  (Q10a7=2) or (Q10a7=3) then NQ10a7=1;
3544   if  (Q10a7=4) or (Q10a7=5) then NQ10a7=2;
3545
3546   if  (Q10a6=1) then NQ10a6=0;
3547   if  (Q10a6=2) or (Q10a6=3) then NQ10a6=1;
3548   if  (Q10a6=4) or (Q10a6=5) then NQ10a6=2;
3549
3550   if  (Q10a3=1) then NQ10a3=0;
3551   if  (Q10a3=2) or (Q10a3=3) then NQ10a3=1;
3552   if  (Q10a3=4) or (Q10a3=5) then NQ10a3=2;
3553
3554   if  (Q10a5=1) then NQ10a5=0;
3555   if  (Q10a5=2) or (Q10a5=3) then NQ10a5=1;
3556   if  (Q10a5=4) or (Q10a5=5) then NQ10a5=2;
3557
3558   if  (Q10a8=1) then NQ10a8=0;
3559   if  (Q10a8=2) or (Q10a8=3) then NQ10a8=1;
3560   if  (Q10a8=4) or (Q10a8=5) then NQ10a8=2;
3561
3562   if  (Q10a9=1) then NQ10a9=0;
3563   if  (Q10a9=2) or (Q10a9=3) then NQ10a9=1;
3564   if  (Q10a9=4) or (Q10a9=5) then NQ10a9=2;
3565
3566   if  (Q10a4=1) then NQ10a4=0;
3567   if  (Q10a4=2) or (Q10a4=3) then NQ10a4=1;
3568   if  (Q10a4=4) or (Q10a4=5) then NQ10a4=2;
3569  run;
3570
3571  proc print data=sasintro.dakota15num;
```

```
3572  run;
3573
3574  proc format;
3575  value regroup
3576        0='No Impact'
3577        1='Some Impact'
3578        2='Great Impact';
3579  run;
3580  /*proc format;
3581  value geografic
3582        1 ='East North Dakota'
3583        2='Central North Dakota'
3584        3='North Central South Dakota'
3585        4='Central South Dakota'
3586        5='East Central South Dakota'
3587        6='North East South Dakota';
3588  run; */
3589
3590  proc logistic data=sasintro.dakota15num;
3591  label
3592        Q10a1='Changing crop prices'
3593        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
3594        Q10a3='Availability of crop and revenue insurance policies'
3595        Q10a4='Availability of drought-tolerant seed'
3596        Q10a5='Developments in pest management practices, including pest management seed traits'
3597        Q10a6='Improved crop yields (other than seed related traits)'
3598        Q10a7='Development of more efficient cropping equipment'
3599        Q10a8='Labor availability problems'
3600        Q10a9='Improving wildlife habitat'
3601        Q10a10='Changing weather /climate patterns';
3602  class NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 region / param=ref;
3603  model Region = NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 /rsquare;
3604  format  NQ10a1 regroup. NQ10a2 regroup. NQ10a3 regroup. NQ10a4 regroup. NQ10a5 regroup. NQ10a6 regroup.
3605        NQ10a7 regroup. NQ10a8 regroup.  NQ10a9 regroup. NQ10a10 regroup.;
3606  run;
3607
3608
3609  proc logistic data=sasintro.dakota15num;
3610  label CaseID='State'
3611        Q10a1='Changing crop prices'
3612        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
3613        Q10a3='Availability of crop and revenue insurance policies'
3614        Q10a4='Availability of drought-tolerant seed'
3615        Q10a5='Developments in pest management practices, including pest management seed traits'
3616        Q10a6='Improved crop yields (other than seed related traits)'
3617        Q10a7='Development of more efficient cropping equipment'
3618        Q10a8='Labor availability problems'
3619        Q10a9='Improving wildlife habitat'
3620        Q10a10='Changing weather /climate patterns';
3621  class NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 CaseID / param=ref;
3622  model CaseID = NQ10a1 NQ10a2 NQ10a3 NQ10a4 NQ10a5 NQ10a6 NQ10a7 NQ10a8 NQ10a9 NQ10a10 /rsquare;
3623  format NQ10a1 regroup. NQ10a2 regroup. NQ10a3 regroup. NQ10a4 regroup. NQ10a5 regroup. NQ10a6 regroup.
3624        NQ10a7 regroup. NQ10a8 regroup.  NQ10a9 regroup. NQ10a10 regroup. CaseID State.;
3625  run;
3626
3627
3628
3629  /* Are there land use changes reported by farmers during the past 10 year
3630  in the context of farmers expanding, contracting, or remaining the same size
3631  (in terms of acres operated) during the past 10 yeras?*/
3632
3633  /** question 5a**/
3634
3635  proc format;
3636  value Currentacres
3637        1 = 'Fewer acres than 10 years ago (by over 10%)'
3638        2 = 'No change or a minor change'
3639        3 = 'More acres than 10 years ago (by over 10%)';
3640  proc freq data=sasintro.dakota15;
3641  label CaseID='State'
3642         Q5a ='Cropland acres operated';
3643  tables Q5a*CaseID / norow nocum;
3644  format Q5a Currentacres. CaseID State.;
3645  run;
3646
3647  /** question 5b**/
```

```sas
3648  proc format;
3649  value Currentacres
3650        1 = 'Fewer acres than 10 years ago (by over 10%)'
3651        2 = 'No change or a minor change'
3652        3 = 'More acres than 10 years ago (by over 10%)';
3653  proc freq data=sasintro.dakota15;
3654  label CaseID='State'
3655        Q5b ='Pasture/rangeland acres operated';
3656  tables Q5b*CaseID / norow nocum;
3657  format Q5b Currentacres. CaseID State.;
3658  run;
3659
3660
3661  /* develop a composite variable GRASCROP to include any respondent that
3662  made a grass/CRP conversion to cropland decison:
3663  yes respondent answered yes or code=1 to convert native grassland to cropland */
3664
3665
3666  data sasintro.dakota15reg1;
3667        set sasintro.dakota15clean;
3668   if   (Q9aYN=1) then GRASCROP=0;
3669   if   (Q9aYN=2) then GRASCROP=1;
3670
3671   if   (Q9bYN=1) then GRASCROP=0;
3672   if   (Q9bYN=2) then GRASCROP=1;
3673
3674   if   (Q9cYN=1) then GRASCROP=0;
3675   if   (Q9cYN=2) then GRASCROP=1;
3676
3677   if   (Q9CYN=1) then CRPUSE=0;
3678   if   (Q9CYN=2) then CRPUSE=1;
3679
3680   if   (Q9DYN=1) then CRPUSE=0;
3681   if   (Q9DYN=2) then CRPUSE=1;
3682
3683   if   (Q9EYN=1) then CRPUSE=0;
3684   if   (Q9EYN=2) then CRPUSE=1;
3685  RUN;
3686
3687  proc print data=sasintro.dakota15reg1;run;
3688
3689  /* cross tab chi square test, Q9 part one GRASCROP region and state based, 19, 20, 21, 22, 23, */
3690  proc format;
3691  value Age
3692        1='19 to 34 years'
3693        2='35 to 49 years'
3694        3='50 to 59 years'
3695        4='60 to 69 years'
3696        5='70 years and over';
3697
3698  value Gender
3699        1='Male'
3700        2='Female';
3701
3702  value Education
3703        1='Less than high school'
3704        2='High school'
3705        3='Some college/technical school'
3706        4='4-year college degree'
3707        5='Advanced degree (Masters, etc.)';
3708
3709  value Occupation
3710        1='Farming or Ranching'
3711        2='Employment in off-farm job'
3712        3='Own/operate a non-farm business'
3713        4='Retired';
3714
3715  value Sales
3716
3717        12='Less than $99,999'
3718        3='From $100,000 up to $249,999'
3719        4='From $250,000 up to $499,999'
3720        5='From $500,000 up to $999,999'
3721        6='$1 million or more';
3722  run;
3723
```

```sas
3724  proc format;
3725  value Reresponse
3726        0='Yes'
3727        1='No';
3728  run;
3729  proc freq data=sasintro.dakota15reg1;
3730  label Q19='Respondent Age'
3731        GRASCROP='grass/CRP conversion to cropland decison:';
3732  tables GRASCROP*Q19/chisq;
3733  format Q19 Age. GRASCROP Reresponse. ;
3734  run;
3735
3736  proc format;
3737  value Reresponse
3738        0='Yes'
3739        1='No';
3740  run;
3741
3742  proc freq data=sasintro.dakota15reg1;
3743  label Q20='Respondent Gender'
3744        GRASCROP='grass/CRP conversion to cropland decison:';
3745  tables GRASScrop*Q20/chisq;
3746  format Q20 Gender. GRASCROP Reresponse. ;
3747  run;
3748
3749  proc format;
3750  value Reresponse
3751        0='Yes'
3752        1='No';
3753  run;
3754
3755  proc freq data=sasintro.dakota15reg1;
3756  label Q21='Respondent Level of Education'
3757        GRASCROP='grass/CRP conversion to cropland decison:';
3758  tables GRASCROP*Q21/chisq;
3759  format Q21 Education.  GRASCROP Reresponse.;
3760  run;
3761
3762
3763  proc format;
3764  value Reresponse
3765        0='Yes'
3766        1='No';
3767  run;
3768
3769  proc freq data=sasintro.dakota15reg1;
3770  label Q22='Principal Occupation'
3771        GRASCROP='grass/CRP conversion to cropland decison:';
3772  tables GRASCROP*Q22/chisq;
3773  format Q22 Occupation. GRASCROP Reresponse.;
3774  run;
3775
3776  proc format;
3777  value Reresponse
3778        0='Yes'
3779        1='No';
3780  run;
3781
3782  proc freq data=sasintro.dakota15reg1;
3783  label Q23= 'Gross farm/ranch sales'
3784        GRASCROP='grass/CRP conversion to cropland decison:';
3785  tables GRASCROP*Q23/chisq;
3786  format Q23 Sales. GRASCROP Reresponse.;
3787  run;
3788
3789
3790  proc format;
3791  value Reresponse
3792        0='Yes'
3793        1='No';
3794  run;
3795
3796  proc format;
3797  value operation
3798        1='Have been a farm operator'
3799        2='less than 10 years as a farm operator'
```

```
3800          3='10 to 10 years as a farm operator'
3801          4='20 to 29 years as a farm operator'
3802          5='30 years or more as a farm operator'
3803          ;
3804 run;
3805
3806 proc freq data=sasintro.dakota15reg1;
3807 label Q1= 'Year As a Farm Operator'
3808          GRASCROP='grass/CRP conversion to cropland decison:';
3809 tables GRASCROP*Q1/chisq;
3810 format Q1 Operation. GRASCROP Reresponse.;
3811 run;
3812
3813 proc format;
3814 value Reresponse
3815          0='Yes'
3816          1='No';
3817 run;
3818
3819 proc format;
3820 value Farmland 10-259='10 to 259 acres'
3821                260-499='260 to 499 acres'
3822                500-999='500 to 999 acres'
3823                1000-1999='1000 to 1999 acres'
3824                2000-4999='2000 to 4999 acres'
3825                5000-high ='5000 acres and above';
3826 run;
3827
3828 proc freq data=sasintro.dakota15reg1;
3829 label Q3A= 'Farmland Acres Operated in 2014'
3830          GRASCROP='grass/CRP conversion to cropland decison:';
3831 tables GRASCROP*Q3A/chisq;
3832 format Q3A Farmland. GRASCROP Reresponse.;
3833 run;
3834
3835 proc format;
3836 value Ownership
3837          1='Own all acres farmed'
3838          2='Own most acres farmed, rented the remainder'
3839          3='Own and rent roughly equal number of farmland acres'
3840          4='Rented most of the acres farmed,owned the remainder'
3841          5='Rented all acres farmland'
3842          6='Professional farm manager';
3843 run;
3844
3845 proc freq data=sasintro.dakota15reg1;
3846 label Q4= 'Best Ownership Status in 2014'
3847          GRASCROP='grass/CRP conversion to cropland decison:';
3848 tables GRASCROP*Q4/chisq;
3849 format Q4 Ownership. GRASCROP Reresponse.;
3850 run;
3851
3852
3853 proc format;
3854 value Reresponse
3855          0='Yes'
3856          1='No';
3857 run;
3858 proc freq data=sasintro.dakota15reg1;
3859 label
3860          GRASCROP='grass/CRP conversion to cropland decison:';
3861 table GRASCROP*State/chisq;
3862 format  GRASCROP Reresponse.;
3863 run;
3864
3865 proc format;
3866 value Reresponse
3867          0='Yes'
3868          1='No';
3869 run;
3870
3871 proc freq data=sasintro.dakota15reg1;
3872 label GRASCROP='grass/CRP conversion to cropland decison:';
3873 table GRASCROP*Region/chisq;
3874 format  Q9aCorn response. GRASCROP Reresponse.;
3875 run;
```

```sas
3876
3877  /*cross tab chi square test, Q9 part one CRPUSE
3878  AND  region and state based, 19, 20, 21, 22, 23, */
3879
3880  proc format;
3881  value Age
3882        1='19 to 34 years'
3883        2='35 to 49 years'
3884        3='50 to 59 years'
3885        4='60 to 69 years'
3886        5='70 years and over';
3887
3888  value Gender
3889        1='Male'
3890        2='Female';
3891
3892  value Education
3893        1='Less than high school'
3894        2='High school'
3895        3='Some college/technical school'
3896        4='4-year college degree'
3897        5='Advanced degree (Masters, etc.)';
3898
3899  value Occupation
3900        1='Farming or Ranching'
3901        2='Employment in off-farm job'
3902        3='Own/operate a non-farm business'
3903        4='Retired';
3904
3905  value Sales
3906
3907        12='Less than $99,999'
3908        3='From $100,000 up to $249,999'
3909        4='From $250,000 up to $499,999'
3910        5='From $500,000 up to $999,999'
3911        6='$1 million or more';
3912  run;
3913
3914  proc format;
3915  value Reresponse
3916        0='Yes'
3917        1='No';
3918  run;
3919  proc freq data=sasintro.dakota15reg1;
3920  label Q19='Respondent Age'
3921        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3922  tables CRPUSE*Q19/chisq;
3923  format Q19 Age. CRPUSE Reresponse. ;
3924  run;
3925
3926  proc format;
3927  value Reresponse
3928        0='Yes'
3929        1='No';
3930  run;
3931
3932  proc freq data=sasintro.dakota15reg1;
3933  label Q20='Respondent Gender'
3934        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3935  tables CRPUSE*Q20/chisq;
3936  format Q20 Gender. CRPUSE Reresponse. ;
3937  run;
3938
3939  proc format;
3940  value Reresponse
3941        0='Yes'
3942        1='No';
3943  run;
3944
3945  proc freq data=sasintro.dakota15reg1;
3946  label Q21='Respondent Level of Education'
3947        CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3948  tables CRPUSE*Q21/chisq;
3949  format Q21 Education.  CRPUSE Reresponse.;
3950  run;
3951
```

```sas
3952
3953 proc format;
3954 value Reresponse
3955       0='Yes'
3956       1='No';
3957 run;
3958
3959 proc freq data=sasintro.dakota15reg1;
3960 label Q22='Principal Occupation'
3961       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3962 tables CRPUSE*Q22/chisq;
3963 format Q22 Occupation. CRPUSE Reresponse.;
3964 run;
3965
3966 proc format;
3967 value Reresponse
3968       0='Yes'
3969       1='No';
3970 run;
3971
3972 proc freq data=sasintro.dakota15reg1;
3973 label Q23= 'Gross farm/ranch sales'
3974       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3975 tables CRPUSE*Q23/chisq;
3976 format Q23 Sales. CRPUSE Reresponse.;
3977 run;
3978
3979
3980 proc format;
3981 value Reresponse
3982       0='Yes'
3983       1='No';
3984 run;
3985
3986 proc format;
3987 value operation
3988       1='Have been a farm operator'
3989       2='less than 10 years as a farm operator'
3990       3='10 to 10 years as a farm operator'
3991       4='20 to 29 years as a farm operator'
3992       5='30 years or more as a farm operator'
3993       ;
3994 run;
3995
3996 proc freq data=sasintro.dakota15reg1;
3997 label Q1= 'Year As a Farm Operator'
3998       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
3999 tables CRPUSE*Q1/chisq;
4000 format Q1 Operation. CRPUSE Reresponse.;
4001 run;
4002
4003 proc format;
4004 value Reresponse
4005       0='Yes'
4006       1='No';
4007 run;
4008
4009 proc format;
4010 value Farmland 10-259='10 to 259 acres'
4011               260-499='260 to 499 acres'
4012               500-999='500 to 999 acres'
4013               1000-1999='1000 to 1999 acres'
4014               2000-4999='2000 to 4999 acres'
4015               5000-high ='5000 acres and above';
4016 run;
4017
4018 proc freq data=sasintro.dakota15reg1;
4019 label Q3A= 'Farmland Acres Operated in 2014'
4020       CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
4021 tables CRPUSE*Q3A/chisq;
4022 format Q3A Farmland. CRPUSE Reresponse.;
4023 run;
4024
4025 proc format;
4026 value Ownership
4027       1='Own all acres farmed'
```

```
4028          2='Own most acres farmed, rented the remainder'
4029          3='Own and rent roughly equal number of farmland acres'
4030          4='Rented most of the acres farmed,owned the remainder'
4031          5='Rented all acres farmland'
4032          6='Professional farm manager';
4033 run;
4034
4035 proc freq data=sasintro.dakota15reg1;
4036 label Q4= 'Best Ownership Status in 2014'
4037          CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
4038 tables CRPUSE*Q4/chisq;
4039 format Q4 Ownership. CRPUSE Reresponse.;
4040 run;
4041
4042
4043 proc format;
4044 value Reresponse
4045          0='Yes'
4046          1='No';
4047 run;
4048 proc freq data=sasintro.dakota15reg1;
4049 label
4050          CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
4051 table CRPUSE*State/chisq;
4052 format CRPUSE Reresponse.;
4053 run;
4054
4055 proc format;
4056 value Reresponse
4057          0='Yes'
4058          1='No';
4059 run;
4060
4061 proc freq data=sasintro.dakota15reg1;
4062 label CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
4063 table CRPUSE*Region/chisq;
4064 format  Q9aCorn response. CRPUSE Reresponse.;
4065 run;
4066
4067
4068 proc format;
4069 value CRPLand  0 ='0 acres'
4070                1-9 = '1 to 9 acres'
4071                10-49 ='10 to 49 acres'
4072                50-69 ='50 to 69 acres'
4073                70-99 ='70 to 99 acres'
4074                100-139 ='100 to 139 acres'
4075                140-179 ='140 to 179 acres'
4076                180-219 ='180 to 219 acres'
4077                220-259 ='220 to 259 acres'
4078                260-499 ='260 to 499 acres'
4079                500-999 ='500 to 999 acres'
4080                1000-1999 ='1,000 to 1,999 acres'
4081                2000-4999 ='2,000 to 4,999 acres'
4082                5000-high ='5000 acres and above';
4083 run;
4084
4085 proc freq data=sasintro.dakota15reg1;
4086 label Q3C= 'CRP acres in 2014'
4087          CRPUSE='Some changes CRP during past 10 years vs no changes in CRP use';
4088 tables CRPUSE*Q3C/chisq;
4089 format Q3C CRPLand. CRPUSE Reresponse.;
4090 run;
4091
4092
4093 /* depending on your findingsrelated to (2) on farm-related issues afftecting
4094 their own decisons, we may further investigating the farm related issues
4095 (Q15a and 15b) that impact changes in their local area. */
4096
4097 /** question 15a **/
4098 proc format;
4099 value Areaimpact
4100          0='Not applicable (No change)'
4101          1='No Impact'
4102          2='Slight Impact'
4103          3='Some Impact'
```

```
4104          4='Quite a bit of Impact'
4105          5='Great Impact';
4106
4107 run;
4108 proc freq data=sasintro.dakota15reg1;
4109 label
4110          Q15a1='Changing crop prices'
4111          Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4112          Q15a3='Availability of crop and revenue insurance policies'
4113          Q15a4='Availability of drought-tolerant seed'
4114          Q15a5='Developments in pest management practices, including pest management seed traits'
4115          Q15a6='Improved crop yields (other than seed related traits)'
4116          Q15a7='Development of more efficient cropping equipment'
4117          Q15a8='Labor availability problems'
4118          Q15a9='Improving wildlife habitat'
4119          Q15a10='Changing weather /climate patterns';
4120 tables(Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*State/chisq;
4121 format  Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact. Q15a4 Areaimpact. Q15a5 Areaimpact.
4122 Q15a6 Areaimpact. Q15a7 Areaimpact. Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4123 run;
4124
4125 proc format;
4126 value Areaimpact
4127          0='Not applicable (No change)'
4128          1='No Impact'
4129          2='Slight Impact'
4130          3='Some Impact'
4131          4='Quite a bit of Impact'
4132          5='Great Impact';
4133
4134 run;
4135 proc freq data=sasintro.dakota15reg1;
4136 label
4137          Q15a1='Changing crop prices'
4138          Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4139          Q15a3='Availability of crop and revenue insurance policies'
4140          Q15a4='Availability of drought-tolerant seed'
4141          Q15a5='Developments in pest management practices, including pest management seed traits'
4142          Q15a6='Improved crop yields (other than seed related traits)'
4143          Q15a7='Development of more efficient cropping equipment'
4144          Q15a8='Labor availability problems'
4145          Q15a9='Improving wildlife habitat'
4146          Q15a10='Changing weather /climate patterns';
4147 tables(Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Region/chisq;
4148 format  Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact. Q15a4 Areaimpact. Q15a5 Areaimpact.
4149 Q15a6 Areaimpact. Q15a7 Areaimpact. Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4150 run;
4151
4152
4153
4154 *question 15b;
4155
4156 proc format;
4157 value State
4158          1001-2182,9002='North Dakota'
4159          2183-4000,9001='South Dakota';
4160 value biggestimpact
4161          0 = 'No applicable (No change)'
4162          01 = 'Changing crop prices'
4163          02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
4164          03 = 'Availability of crop and revenue insurance policies'
4165          04= 'Availability of drought-tolerant seed'
4166          05= 'Developments in pest management practices, including pest management seed traits'
4167          06= 'Improved crop yields (other than seed related traits) '
4168          07 = 'Development of more efficient cropping equipment'
4169          08 = 'Labor availability problems'
4170          09 = 'Improving wildlife habitat'
4171          10 = 'Changing weather /climate patterns';
4172 run;
4173 proc freq data=sasintro.dakota15reg1;
4174 label
4175          Q15b='Which one issue had the greatest impact on changes in land use in your local area?';
4176 tables Q15b*State/Chisq;
4177 format  Q15b biggestimpact.;
4178 run;
4179
```

```sas
4180
4181  proc format;
4182  value State
4183        1001-2182,9002='North Dakota'
4184        2183-4000,9001='South Dakota';
4185  value biggestimpact
4186        0 = 'No applicable (No change)'
4187        01 = 'Changing crop prices'
4188        02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
4189        03 = 'Availability of crop and revenue insurance policies'
4190        04= 'Availability of drought-tolerant seed'
4191        05= 'Developments in pest management practices, including pest management seed traits'
4192        06= 'Improved crop yields (other than seed related traits) '
4193        07 = 'Development of more efficient cropping equipment'
4194        08 = 'Labor availability problems'
4195        09 = 'Improving wildlife habitat'
4196        10 = 'Changing weather /climate patterns';
4197
4198  run;
4199  proc freq data=sasintro.dakota15reg1;
4200  label
4201        Q15b='Which one issue had the greatest impact on changes in land use in your local area?';
4202  tables Q15b*Region/Chisq;
4203  format  Q15b biggestimpact.;
4204  run;
4205
4206  /* 15a iteam and operators characteristcs */
4207
4208  proc format;
4209  value Age
4210        1='19 to 34 years'
4211        2='35 to 49 years'
4212        3='50 to 59 years'
4213        4='60 to 69 years'
4214        5='70 years and over'
4215
4216  value Gender
4217        1='Male'
4218        2='Female'
4219
4220  value Education
4221        1='Less than high school'
4222        2='High school'
4223        3='Some college/technical school'
4224        4='4-year college degree'
4225        5='Advanced degree (Masters, etc.)'
4226
4227  value Occupation
4228        1='Farming or Ranching'
4229        2='Employment in off-farm job'
4230        3='Own/operate a non-farm business'
4231        4='Retired'
4232
4233  value Sales
4234
4235        12='Less than $99,999'
4236        3='From $100,000 up to $249,999'
4237        4='From $250,000 up to $499,999'
4238        5='From $500,000 up to $999,999'
4239        6='$1 million or more';
4240
4241  run;
4242
4243  proc format;
4244  value Areaimpact
4245        0='Not applicable (No change)'
4246        1='No Impact'
4247        2='Slight Impact'
4248        3='Some Impact'
4249        4='Quite a bit of Impact'
4250        5='Great Impact';
4251
4252  run;
4253
4254  proc freq data=sasintro.dakota15reg1;
4255  label Q19='Respondent Age'
```

```
4256        Q15a1='Changing crop prices'
4257        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4258        Q15a3='Availability of crop and revenue insurance policies'
4259        Q15a4='Availability of drought-tolerant seed'
4260        Q15a5='Developments in pest management practices, including pest management seed traits'
4261        Q15a6='Improved crop yields (other than seed related traits)'
4262        Q15a7='Development of more efficient cropping equipment'
4263        Q15a8='Labor availability problems'
4264        Q15a9='Improving wildlife habitat'
4265        Q15a10='Changing weather /climate patterns';
4266 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q19/chisq;
4267 format Q19 Age. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact. Q15a4 Areaimpact. Q15a5 Areaimpact.
4268 Q15a6 Areaimpact. Q15a7 Areaimpact. Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;;
4269 run;
4270
4271 proc freq data=sasintro.dakota15reg1;
4272 label Q20='Respondent Gender'
4273        Q15a1='Changing crop prices'
4274        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4275        Q15a3='Availability of crop and revenue insurance policies'
4276        Q15a4='Availability of drought-tolerant seed'
4277        Q15a5='Developments in pest management practices, including pest management seed traits'
4278        Q15a6='Improved crop yields (other than seed related traits)'
4279        Q15a7='Development of more efficient cropping equipment'
4280        Q15a8='Labor availability problems'
4281        Q15a9='Improving wildlife habitat'
4282        Q15a10='Changing weather /climate patterns';
4283 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q20/chisq;
4284 format Q20 Gender. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4285        Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4286        Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4287 run;
4288
4289 proc freq data=sasintro.dakota15reg1;
4290 label Q21='Respondent Level of Education'
4291        Q15a1='Changing crop prices'
4292        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4293        Q15a3='Availability of crop and revenue insurance policies'
4294        Q15a4='Availability of drought-tolerant seed'
4295        Q15a5='Developments in pest management practices, including pest management seed traits'
4296        Q15a6='Improved crop yields (other than seed related traits)'
4297        Q15a7='Development of more efficient cropping equipment'
4298        Q15a8='Labor availability problems'
4299        Q15a9='Improving wildlife habitat'
4300        Q15a10='Changing weather /climate patterns';
4301 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q21/chisq;
4302 format Q21 Education. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4303        Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4304        Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4305 run;
4306
4307 proc freq data=sasintro.dakota15reg1;
4308 label Q22='Principal Occupation'
4309        Q15a1='Changing crop prices'
4310        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4311        Q15a3='Availability of crop and revenue insurance policies'
4312        Q15a4='Availability of drought-tolerant seed'
4313        Q15a5='Developments in pest management practices, including pest management seed traits'
4314        Q15a6='Improved crop yields (other than seed related traits)'
4315        Q15a7='Development of more efficient cropping equipment'
4316        Q15a8='Labor availability problems'
4317        Q15a9='Improving wildlife habitat'
4318        Q15a10='Changing weather /climate patterns';
4319 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q22/chisq;
4320 format Q22 Occupation. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4321        Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4322        Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4323 run;
4324
4325 proc freq data=sasintro.dakota15reg1;
4326 label Q23='Gross farm/ranch sales'
4327        Q15a1='Changing crop prices'
4328        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4329        Q15a3='Availability of crop and revenue insurance policies'
4330        Q15a4='Availability of drought-tolerant seed'
4331        Q15a5='Developments in pest management practices, including pest management seed traits'
```

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4332            Q15a6='Improved crop yields (other than seed related traits)'
4333            Q15a7='Development of more efficient cropping equipment'
4334            Q15a8='Labor availability problems'
4335            Q15a9='Improving wildlife habitat'
4336            Q15a10='Changing weather /climate patterns';
4337  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q23/chisq;
4338  format Q23 Sales. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4339         Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4340         Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4341  run;
4342
4343  proc format;
4344  value operation
4345        1='Have been a farm operator'
4346        2='less than 10 years as a farm operator'
4347        3='10 to 10 years as a farm operator'
4348        4='20 to 29 years as a farm operator'
4349        5='30 years or more as a farm operator'
4350        ;
4351  run;
4352
4353  proc freq data=sasintro.dakota15reg1;
4354  label Q1='Years as a farm operator'
4355        Q15a1='Changing crop prices'
4356        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4357        Q15a3='Availability of crop and revenue insurance policies'
4358        Q15a4='Availability of drought-tolerant seed'
4359        Q15a5='Developments in pest management practices, including pest management seed traits'
4360        Q15a6='Improved crop yields (other than seed related traits)'
4361        Q15a7='Development of more efficient cropping equipment'
4362        Q15a8='Labor availability problems'
4363        Q15a9='Improving wildlife habitat'
4364        Q15a10='Changing weather /climate patterns';
4365  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q1/chisq;
4366  format Q1 Operation. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4367         Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4368         Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4369  run;
4370
4371  proc format;
4372  value Farmland 10-259='1 to 259 acres'
4373                 260-499='260 to 499 acres'
4374                 500-999='500 to 999 acres'
4375                 1000-1999='1000 to 1999 acres'
4376                 2000-4999='2000 to 4999 acres'
4377                 5000-high ='5000 acres and above';
4378  run;
4379
4380  proc freq data=sasintro.dakota15reg1;
4381  label Q3A='Farmland Acres Operated in 2014'
4382        Q15a1='Changing crop prices'
4383        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4384        Q15a3='Availability of crop and revenue insurance policies'
4385        Q15a4='Availability of drought-tolerant seed'
4386        Q15a5='Developments in pest management practices, including pest management seed traits'
4387        Q15a6='Improved crop yields (other than seed related traits)'
4388        Q15a7='Development of more efficient cropping equipment'
4389        Q15a8='Labor availability problems'
4390        Q15a9='Improving wildlife habitat'
4391        Q15a10='Changing weather /climate patterns';
4392  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q3A/chisq;
4393  format Q3A Farmland. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4394         Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4395         Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4396  run;
4397
4398
4399  proc format;
4400  value Ownership
4401        1='Own all acres farmed'
4402        2='Own most acres farmed, rented the remainder'
4403        3='Own and rent roughly equal number of farmland acres'
4404        4='Rented most of the acres farmed,owned the remainder'
4405        5='Rented all acres farmland'
4406        6='Professional farm manager';
4407  run;
```

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4408
4409  proc freq data=sasintro.dakota15reg1;
4410  label Q4='Ownership Status in 2014'
4411        Q15a1='Changing crop prices'
4412        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4413        Q15a3='Availability of crop and revenue insurance policies'
4414        Q15a4='Availability of drought-tolerant seed'
4415        Q15a5='Developments in pest management practices, including pest management seed traits'
4416        Q15a6='Improved crop yields (other than seed related traits)'
4417        Q15a7='Development of more efficient cropping equipment'
4418        Q15a8='Labor availability problems'
4419        Q15a9='Improving wildlife habitat'
4420        Q15a10='Changing weather /climate patterns';
4421  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q4/chisq;
4422  format Q4 Ownership. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4423         Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4424         Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4425  run;
4426
4427  proc format;
4428  value CRPLand  0 ='0 acres'
4429                 1-9 = '1 to 9 acres'
4430                 10-49 ='10 to 49 acres'
4431                 50-69 ='50 to 69 acres'
4432                 70-99 ='70 to 99 acres'
4433                 100-139 ='100 to 139 acres'
4434                 140-179 ='140 to 179 acres'
4435                 180-219 ='180 to 219 acres'
4436                 220-259 ='220 to 259 acres'
4437                 260-499 ='260 to 499 acres'
4438                 500-999 ='500 to 999 acres'
4439                 1000-1999 ='1,000 to 1,999 acres'
4440                 2000-4999 ='2,000 to 4,999 acres'
4441                 5000-high ='5000 acres and above';
4442  run;
4443
4444  proc freq data=sasintro.dakota15reg1;
4445  label Q3C='CRP acres in 2014'
4446        Q15a1='Changing crop prices'
4447        Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4448        Q15a3='Availability of crop and revenue insurance policies'
4449        Q15a4='Availability of drought-tolerant seed'
4450        Q15a5='Developments in pest management practices, including pest management seed traits'
4451        Q15a6='Improved crop yields (other than seed related traits)'
4452        Q15a7='Development of more efficient cropping equipment'
4453        Q15a8='Labor availability problems'
4454        Q15a9='Improving wildlife habitat'
4455        Q15a10='Changing weather /climate patterns';
4456  tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q3c/chisq;
4457  format Q3c CRPLand. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4458         Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4459         Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4460  run;
4461
4462  /* 15A CHEC, STATE VS REGION  and operator characteristics*/
4463
4464  Proc format;
4465  value Chec
4466        0='no changes in Ag-land use in my area over the past 10 years'
4467        1='there have been changes in Ag-land use in my area over the past 10 years';
4468
4469  run;
4470  proc freq data=sasintro.dakota15reg1;
4471  label
4472        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4473  tables (Q15aChec)*STATE/chisq;
4474  format Q15aChec Chec.;
4475  run;
4476
4477  Proc format;
4478  value Chec
4479        0='no changes in Ag-land use in my area over the past 10 years'
4480        1='there have been changes in Ag-land use in my area over the past 10 years';
4481
4482  run;
4483  proc freq data=sasintro.dakota15reg1;
```

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4484 label
4485       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4486 tables (Q15aChec)*Region/chisq;
4487 format Q15aChec Chec.;
4488 run;
4489
4490
4491 proc format;
4492 value Age
4493       1='19 to 34 years'
4494       2='35 to 49 years'
4495       3='50 to 59 years'
4496       4='60 to 69 years'
4497       5='70 years and over'
4498
4499 value Gender
4500       1='Male'
4501       2='Female'
4502
4503 value Education
4504       1='Less than high school'
4505       2='High school'
4506       3='Some college/technical school'
4507       4='4-year college degree'
4508       5='Advanced degree (Masters, etc.)'
4509
4510 value Occupation
4511       1='Farming or Ranching'
4512       2='Employment in off-farm job'
4513       3='Own/operate a non-farm business'
4514       4='Retired'
4515
4516 value Sales
4517
4518       12='Less than $99,999'
4519       3='From $100,000 up to $249,999'
4520       4='From $250,000 up to $499,999'
4521       5='From $500,000 up to $999,999'
4522       6='$1 million or more';
4523
4524 run;
4525
4526 proc freq data=sasintro.dakota15reg1;
4527 label Q19='Respondent Age'
4528       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4529 tables Q15ACHEC*Q19/chisq;
4530 format Q19 Age. Q15achec chec.;
4531 run;
4532
4533 proc freq data=sasintro.dakota15reg1;
4534 label Q20='Respondent Genger'
4535       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4536 tables Q15ACHEC*Q20/chisq;
4537 format Q20 Gender. Q15achec chec.;
4538 run;
4539
4540 proc freq data=sasintro.dakota15reg1;
4541 label Q21='Respondent Level of Education'
4542       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4543 tables Q15ACHEC*Q21/chisq;
4544 format Q21 Education. Q15achec chec.;
4545 run;
4546
4547 proc freq data=sasintro.dakota15reg1;
4548 label Q22='Principal Occupation'
4549       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4550 tables Q15ACHEC*Q22/chisq;
4551 format Q22 Occupation. Q15achec chec.;
4552 run;
4553
4554 proc freq data=sasintro.dakota15reg1;
4555 label Q23='Gross farm/ranch Sales'
4556       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4557 tables Q15ACHEC*Q23/chisq;
4558 format Q23 Sales. Q15achec chec.;
4559 run;
```

```
4560
4561 proc format;
4562 value operation
4563        1='Have been a farm operator'
4564        2='less than 10 years as a farm operator'
4565        3='10 to 10 years as a farm operator'
4566        4='20 to 29 years as a farm operator'
4567        5='30 years or more as a farm operator';
4568 run;
4569
4570 proc freq data=sasintro.dakota15reg1;
4571 label Q1='Principal Occupation'
4572        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4573 tables Q15ACHEC*Q1/chisq;
4574 format Q1 Operation. Q15achec chec.;
4575 run;
4576
4577 proc format;
4578 value Farmland 10-259='1 to 259 acres'
4579                260-499='260 to 499 acres'
4580                500-999='500 to 999 acres'
4581                1000-1999='1000 to 1999 acres'
4582                2000-4999='2000 to 4999 acres'
4583                5000-high ='5000 acres and above';
4584 run;
4585
4586 proc freq data=sasintro.dakota15reg1;
4587 label Q3a='Farmland acres operated in 2014'
4588        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4589 tables Q15ACHEC*Q3a/chisq;
4590 format Q3a Farmland. Q15achec chec.;
4591 run;
4592
4593 proc format;
4594 value CRPLand  0 ='0 acres'
4595                1-9 = '1 to 9 acres'
4596                10-49 ='10 to 49 acres'
4597                50-69 ='50 to 69 acres'
4598                70-99 ='70 to 99 acres'
4599                100-139 ='100 to 139 acres'
4600                140-179 ='140 to 179 acres'
4601                180-219 ='180 to 219 acres'
4602                220-259 ='220 to 259 acres'
4603                260-499 ='260 to 499 acres'
4604                500-999 ='500 to 999 acres'
4605                1000-1999 ='1,000 to 1,999 acres'
4606                2000-4999 ='2,000 to 4,999 acres'
4607                5000-high ='5000 acres and above';
4608 run;
4609
4610 proc freq data=sasintro.dakota15reg1;
4611 label Q3c='CRP acres in 2014'
4612        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4613 tables Q15ACHEC*Q3c/chisq;
4614 format Q3c CRPLand. Q15achec chec.;
4615 run;
4616
4617 proc format;
4618 value Ownership
4619        1='Own all acres farmed'
4620        2='Own most acres farmed, rented the remainder'
4621        3='Own and rent roughly equal number of farmland acres'
4622        4='Rented most of the acres farmed,owned the remainder'
4623        5='Rented all acres farmland'
4624        6='Professional farm manager';
4625 run;
4626
4627 proc freq data=sasintro.dakota15reg1;
4628 label Q4='Ownership Status in 2014'
4629        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4630 tables Q15ACHEC*Q4/chisq;
4631 format Q4 Ownership. Q15achec chec.;
4632 run;
4633
4634
4635 /*6 Moses did not examine anything about Question 18 on cropland Characteristics*/
```

```
4636
4637 proc format;
4638 value Percentage  0 ='0 percent'
4639                 1-25 = '1 to 25 percent'
4640                 26-49 ='26 to 49 percent'
4641                 50-75 ='50 to 75 percent'
4642                 76-100 ='70 to 99 acres';
4643 run;
4644
4645 proc freq data=sasintro.dakota15reg1;
4646 label
4647       Q18A ='Highly erodable land'
4648       Q18B='Heavy Soil'
4649       Q18C='Slow draining soil(Perdominantly clay'
4650       Q18D='Sandy Soil';
4651 tables (Q18A Q18B Q18C Q18D)*Region/chisq;
4652 format Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
4653 run;
4654
4655
4656 proc freq data=sasintro.dakota15reg1;
4657 label
4658       Q18A ='Highly erodable land'
4659       Q18B='Heavy Soil'
4660       Q18C='Slow draining soil(Perdominantly clay'
4661       Q18D='Sandy Soil';
4662 tables (Q18A Q18B Q18C Q18D)*State/chisq;
4663 format Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
4664 run;
4665
4666
4667 proc format;
4668 value Ownership
4669       1='Own all acres farmed'
4670       2='Own most acres farmed, rented the remainder'
4671       3='Own and rent roughly equal number of farmland acres'
4672       4='Rented most of the acres farmed,owned the remainder'
4673       5='Rented all acres farmland'
4674       6='Professional farm manager';
4675 run;
4676
4677 proc freq data=sasintro.dakota15reg1;
4678 class State;
4679 label Q4= 'Ownership Status in 2014'
4680       Q18A ='Highly erodable land'
4681       Q18B='Heavy Soil'
4682       Q18C='Slow draining soil(Perdominantly clay'
4683       Q18D='Sandy Soil';
4684 tables (Q18A Q18B Q18C Q18D)*State/chisq;
4685 format Q4 Ownership. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
4686 run;
4687
4688
4689
4690
4691
4692
4693
4694
4695
4696
4697
4698
```