```
PROC SQL;
CREATE TABLE WORK.query AS
SELECT CASEID , Q1 , STATE , REGION , Q2C1 , Q2C1T1 , Q2C1T2 , Q2C2 , Q2C2T1 , Q2C2T2 , Q3A , Q3B , Q3C , Q3D , Q4
RUN;
QUIT;

PROC DATASETS NOLIST NODETAILS;
CONTENTS DATA=WORK.query OUT=WORK.details;
RUN;

PROC PRINT DATA=WORK.details;
RUN;
/*thesis */

libname sasintro "/folders/myfolders/";
proc print data =sasintro.dakota15;
run;

/*data cleaning proceess, delete missing variable*/

data sasintro.dakota15clean;
     set sasintro.dakota15;
     if Q19 = 9 then Q19=.;
     if Q20 = 9 then Q20=.;
     if Q21 = 9 then Q21=.;
     if Q22 = 9 then Q22=.;
     if Q22 = 5 then Q22=.;
     if Q23 = 1 then Q23=12;
     if Q23 = 2 then Q23=12;
     if Q4=7 then Q4=.;
     if Q15a1=9 then Q15a1=.;
     if Q15a2=9 then Q15a2=.;
     if Q15a3=9 then Q15a3=.;
     if Q15a4=9 then Q15a4=.;
     if Q15a5=9 then Q15a5=.;
     if Q15a6=9 then Q15a6=.;
     if Q15a7=9 then Q15a7=.;
     if Q15a8=9 then Q15a8=.;
     if Q15a9=9 then Q15a9=.;
     if Q15a10=9 then Q15a10=.;
     if Q15b= 99 then Q15b=.;
     if Q15ACHEC=9 then Q15ACHEC=.;
run;
proc print data=sasintro.dakota15clean;run;


/*question 1*/

proc format;
value operation
      1='Have been a farm operator'
      2='less than 10 years as a farm operator'
      3='10 to 10 years as a farm operator'
      4='20 to 29 years as a farm operator'
      5='30 years or more as a farm operator'
      ;
run;

proc freq data=sasintro.dakota15;
label Q1 ='Years as a farm opertor';
tables Q1*State /norow nocol nocum;
format Q1 operation.;
run;

proc format;
value operation
      1='Have been a farm operator'
      2='less than 10 years as a farm operator'
      3='10 to 10 years as a farm operator'
      4='20 to 29 years as a farm operator'
      5='30 years or more as a farm operator'
      ;
run;

proc freq data=sasintro.dakota15;
```

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

```
      2='Slight Impact'
      3='Some Impact'
      4='Quite a bit of Impact'
      5='Great Impact';
run;
proc freq data=sasintro.dakota15;
label
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*STATE/norow;
format  Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
run;

*question 10b;

proc format;
value State
      1001-2182,9002='North Dakota'
      2183-4000,9001='South Dakota';
value gimpact
      01 = 'Changing crop prices'
      02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
      03 = 'Availability of crop and revenue insurance policies'
      04= 'Availability of drought-tolerant seed'
      05= 'Developments in pest management practices, including pest management seed traits'
      06= 'Improved crop yields (other than seed related traits) '
      07 = 'Development of more efficient cropping equipment'
      08 = 'Labor availability problems'
      09 = 'Improving wildlife habitat'
      10 = 'Changing weather /climate patterns';
proc tabulate data=sasintro.dakota15;
class STATE Q10b;
tables Q10b,STATE;
format Q10b gimpact.;
run;

/*my data anyalysis start */

/* region and state based means analysis question 10a */

proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
class region;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
run;


proc means data=sasintro.dakota15 n nmiss sum min max mean std maxdec=1;
class state;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
```

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

```
label
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
table (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10),Region;
run;


proc tabulate data=sasintro.dakota15 format=6.;
class State;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
table (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10),State;
run;


/* 10b tabulate analysis region and state based */

proc format;
value State
      1001-2182,9002='North Dakota'
      2183-4000,9001='South Dakota';
value gimpact
      01 = 'Changing crop prices'
      02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
      03 = 'Availability of crop and revenue insurance policies'
      04= 'Availability of drought-tolerant seed'
      05= 'Developments in pest management practices, including pest management seed traits'
      06= 'Improved crop yields (other than seed related traits) '
      07 = 'Development of more efficient cropping equipment'
      08 = 'Labor availability problems'
      09 = 'Improving wildlife habitat'
      10 = 'Changing weather /climate patterns';
proc tabulate data=sasintro.dakota15;
class STATE Q10b;
tables Q10b,STATE;
format  Q10b gimpact.;
run;

proc format;
value State
      1001-2182,9002='North Dakota'
      2183-4000,9001='South Dakota';
value gimpact
      01 = 'Changing crop prices'
      02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
      03 = 'Availability of crop and revenue insurance policies'
      04= 'Availability of drought-tolerant seed'
      05= 'Developments in pest management practices, including pest management seed traits'
      06= 'Improved crop yields (other than seed related traits) '
      07 = 'Development of more efficient cropping equipment'
      08 = 'Labor availability problems'
      09 = 'Improving wildlife habitat'
      10 = 'Changing weather /climate patterns';
run;
proc tabulate data=sasintro.dakota15;
class region;
tables Q10b, Region;
format Q10b gimpact.;
```

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

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

```
      3='50 to 59 years'
      4='60 to 69 years'
      5='70 years and over';

value Gender
      1='Male'
      2='Female';


value Education
      1='Less than high school'
      2='High school'
      3='Some college/technical school'
      4='4-year college degree'
      5='Advanced degree (Masters, etc.)';


value Occupation
      1='Farming or Ranching'
      2='Employment in off-farm job'
      3='Own/operate a non-farm business'
      4='Retired';

value Sales

      12='Less than $99,999'
      3='From $100,000 up to $249,999'
      4='From $250,000 up to $499,999'
      5='From $500,000 up to $999,999'
      6='$1 million or more';
run;


proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
class Q19;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label Q19='Respondent Age'
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
format Q19 Age.;
run;


proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
class Q20;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label Q20='Respondent Gender'
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
format Q20 Gender.;
run;

proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
class Q21;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label Q21='Respondent Level of Education'
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
```

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

```
              2000-4999='2000 to 4999 acres'
              5000-high ='5000 acres and above';
run;

proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
class Q3a;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label Q3a ='Farmland acres operated in 2014'
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
format Q3a Farmland.;
run;

proc format;
value Ownership
      1='Own all acres farmed'
      2='Own most acres farmed, rented the remainder'
      3='Own and rent roughly equal number of farmland acres'
      4='Rented most of the acres farmed,owned the remainder'
      5='Rented all acres farmland'
      6='Professional farm manager';
run;

proc means data=sasintro.dakota15clean n nmiss sum min max mean std maxdec=1;
class Q4;
var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
label Q4 ='Best Ownership Status in 2014'
      Q10a1='Changing crop prices'
      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
      Q10a3='Availability of crop and revenue insurance policies'
      Q10a4='Availability of drought-tolerant seed'
      Q10a5='Developments in pest management practices, including pest management seed traits'
      Q10a6='Improved crop yields (other than seed related traits)'
      Q10a7='Development of more efficient cropping equipment'
      Q10a8='Labor availability problems'
      Q10a9='Improving wildlife habitat'
      Q10a10='Changing weather /climate patterns';
format Q4 Ownership.;
run;


/* Q10a and frequency distribution by selected farm operator 19-23 plus 1, 3a and 4*/

proc format;
value Age
      1='19 to 34 years'
      2='35 to 49 years'
      3='50 to 59 years'
      4='60 to 69 years'
      5='70 years and over';

value Gender
      1='Male'
      2='Female';

value Education
      1='Less than high school'
      2='High school'
      3='Some college/technical school'
      4='4-year college degree'
      5='Advanced degree (Masters, etc.)';

value Occupation
      1='Farming or Ranching'
      2='Employment in off-farm job'
      3='Own/operate a non-farm business'
      4='Retired';

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760 value Sales
761
762       12='Less than $99,999'
763       3='From $100,000 up to $249,999'
764       4='From $250,000 up to $499,999'
765       5='From $500,000 up to $999,999'
766       6='$1 million or more'
767
768 proc format;
769 value Impact
770       1='No Impact'
771       2='Slight Impact'
772       3='Some Impact'
773       4='Quite a bit of Impact'
774       5='Great Impact';
775 run;
776
777
778 proc freq data=sasintro.dakota15clean;
779 label Q19='Respondent Age'
780       Q10a1='Changing crop prices'
781       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
782       Q10a3='Availability of crop and revenue insurance policies'
783       Q10a4='Availability of drought-tolerant seed'
784       Q10a5='Developments in pest management practices, including pest management seed traits'
785       Q10a6='Improved crop yields (other than seed related traits)'
786       Q10a7='Development of more efficient cropping equipment'
787       Q10a8='Labor availability problems'
788       Q10a9='Improving wildlife habitat'
789       Q10a10='Changing weather /climate patterns';
790 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q19/norow;
791 format Q19 Age. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
792 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
793 run;
794
795 proc freq data=sasintro.dakota15clean;
796 label Q20='Respondent Gender'
797       Q10a1='Changing crop prices'
798       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
799       Q10a3='Availability of crop and revenue insurance policies'
800       Q10a4='Availability of drought-tolerant seed'
801       Q10a5='Developments in pest management practices, including pest management seed traits'
802       Q10a6='Improved crop yields (other than seed related traits)'
803       Q10a7='Development of more efficient cropping equipment'
804       Q10a8='Labor availability problems'
805       Q10a9='Improving wildlife habitat'
806       Q10a10='Changing weather /climate patterns';
807 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q20/norow;
808 format Q20 Gender. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
809 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
810 run;
811
812 proc freq data=sasintro.dakota15clean;
813 label Q21='Respondent Level of Education'
814       Q10a1='Changing crop prices'
815       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
816       Q10a3='Availability of crop and revenue insurance policies'
817       Q10a4='Availability of drought-tolerant seed'
818       Q10a5='Developments in pest management practices, including pest management seed traits'
819       Q10a6='Improved crop yields (other than seed related traits)'
820       Q10a7='Development of more efficient cropping equipment'
821       Q10a8='Labor availability problems'
822       Q10a9='Improving wildlife habitat'
823       Q10a10='Changing weather /climate patterns';
824 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q21/norow;
825 format Q21 Education. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
826 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
827 run;
828
829 proc freq data=sasintro.dakota15clean;
830 label Q22='Principal Occupation'
831       Q10a1='Changing crop prices'
832       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
833       Q10a3='Availability of crop and revenue insurance policies'
834       Q10a4='Availability of drought-tolerant seed'
835       Q10a5='Developments in pest management practices, including pest management seed traits'
```

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

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

```
988 run;
989
990 proc freq data=sasintro.dakota15clean;
991 label Q19='Respondent Age'
992       Q10a1='Changing crop prices'
993       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
994       Q10a3='Availability of crop and revenue insurance policies'
995       Q10a4='Availability of drought-tolerant seed'
996       Q10a5='Developments in pest management practices, including pest management seed traits'
997       Q10a6='Improved crop yields (other than seed related traits)'
998       Q10a7='Development of more efficient cropping equipment'
999       Q10a8='Labor availability problems'
1000      Q10a9='Improving wildlife habitat'
1001      Q10a10='Changing weather /climate patterns';
1002 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q19/chisq;
1003 format Q19 Age. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1004 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1005 run;
1006
1007 proc freq data=sasintro.dakota15clean;
1008 label Q20='Respondent Gender'
1009      Q10a1='Changing crop prices'
1010      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1011      Q10a3='Availability of crop and revenue insurance policies'
1012      Q10a4='Availability of drought-tolerant seed'
1013      Q10a5='Developments in pest management practices, including pest management seed traits'
1014      Q10a6='Improved crop yields (other than seed related traits)'
1015      Q10a7='Development of more efficient cropping equipment'
1016      Q10a8='Labor availability problems'
1017      Q10a9='Improving wildlife habitat'
1018      Q10a10='Changing weather /climate patterns';
1019 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q20/chisq;
1020 format Q20 Gender. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1021 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1022 run;
1023
1024 proc freq data=sasintro.dakota15clean;
1025 label Q21='Respondent Level of Education'
1026      Q10a1='Changing crop prices'
1027      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1028      Q10a3='Availability of crop and revenue insurance policies'
1029      Q10a4='Availability of drought-tolerant seed'
1030      Q10a5='Developments in pest management practices, including pest management seed traits'
1031      Q10a6='Improved crop yields (other than seed related traits)'
1032      Q10a7='Development of more efficient cropping equipment'
1033      Q10a8='Labor availability problems'
1034      Q10a9='Improving wildlife habitat'
1035      Q10a10='Changing weather /climate patterns';
1036 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q21/chisq;
1037 format Q21 Education. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1038 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1039 run;
1040
1041 proc freq data=sasintro.dakota15clean;
1042 label Q22='Principal Occupation'
1043      Q10a1='Changing crop prices'
1044      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1045      Q10a3='Availability of crop and revenue insurance policies'
1046      Q10a4='Availability of drought-tolerant seed'
1047      Q10a5='Developments in pest management practices, including pest management seed traits'
1048      Q10a6='Improved crop yields (other than seed related traits)'
1049      Q10a7='Development of more efficient cropping equipment'
1050      Q10a8='Labor availability problems'
1051      Q10a9='Improving wildlife habitat'
1052      Q10a10='Changing weather /climate patterns';
1053 tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q22/chisq;
1054 format Q22 Occupation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1055 Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1056 run;
1057
1058 proc freq data=sasintro.dakota15clean;
1059 label Q23='Gross farm/ranch sales'
1060      Q10a1='Changing crop prices'
1061      Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1062      Q10a3='Availability of crop and revenue insurance policies'
1063      Q10a4='Availability of drought-tolerant seed'
```

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1064        Q10a5='Developments in pest management practices, including pest management seed traits'
1065        Q10a6='Improved crop yields (other than seed related traits)'
1066        Q10a7='Development of more efficient cropping equipment'
1067        Q10a8='Labor availability problems'
1068        Q10a9='Improving wildlife habitat'
1069        Q10a10='Changing weather /climate patterns';
1070  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q23/chisq;
1071  format Q23 Sales. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1072  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1073  run;
1074
1075
1076  proc format;
1077  value operation
1078        1='Have been a farm operator'
1079        2='less than 10 years as a farm operator'
1080        3='10 to 10 years as a farm operator'
1081        4='20 to 29 years as a farm operator'
1082        5='30 years or more as a farm operator'
1083        ;
1084  run;
1085
1086  proc freq data=sasintro.dakota15clean;
1087  label Q1 ='Years as a farm opertor'
1088        Q10a1='Changing crop prices'
1089        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1090        Q10a3='Availability of crop and revenue insurance policies'
1091        Q10a4='Availability of drought-tolerant seed'
1092        Q10a5='Developments in pest management practices, including pest management seed traits'
1093        Q10a6='Improved crop yields (other than seed related traits)'
1094        Q10a7='Development of more efficient cropping equipment'
1095        Q10a8='Labor availability problems'
1096        Q10a9='Improving wildlife habitat'
1097        Q10a10='Changing weather /climate patterns';
1098  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q1/chisq;
1099  format Q1 Operation. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1100  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1101  run;
1102
1103  proc format;
1104  value Farmland 10-259='1 to 259 acres'
1105                 260-499='260 to 499 acres'
1106                 500-999='500 to 999 acres'
1107                 1000-1999='1000 to 1999 acres'
1108                 2000-4999='2000 to 4999 acres'
1109                 5000-high ='5000 acres and above';
1110  run;
1111
1112  proc freq data=sasintro.dakota15clean;
1113  label Q3a ='Farmland Acres Operated in 2014'
1114        Q10a1='Changing crop prices'
1115        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
1116        Q10a3='Availability of crop and revenue insurance policies'
1117        Q10a4='Availability of drought-tolerant seed'
1118        Q10a5='Developments in pest management practices, including pest management seed traits'
1119        Q10a6='Improved crop yields (other than seed related traits)'
1120        Q10a7='Development of more efficient cropping equipment'
1121        Q10a8='Labor availability problems'
1122        Q10a9='Improving wildlife habitat'
1123        Q10a10='Changing weather /climate patterns';
1124  tables (Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*Q3a/chisq;
1125  format Q3a Farmland. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
1126  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
1127  run;
1128
1129
1130  proc format;
1131  value Ownership
1132        1='Own all acres farmed'
1133        2='Own most acres farmed, rented the remainder'
1134        3='Own and rent roughly equal number of farmland acres'
1135        4='Rented most of the acres farmed,owned the remainder'
1136        5='Rented all acres farmland'
1137        6='Professional farm manager';
1138  run;
1139
```

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

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

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

```
Q9eAC Farmacres. Q9fAC Farmacres.;
run;

/*part two, Q9 state and region based analysis with frequency with chisq*/

proc format;
value Farmacres  0 ='0 acres'
                1-99 = '1 to 99 acres'
               100-179 ='100 to 179 acres'
               180-259 ='180 to 259 acres'
               260-499 ='260 to 499 acres'
               500-high ='500 acrsa and above';
run;
proc freq data=sasintro.dakota15;
label
      Q9aAC='Conversion of native grass to cropland'
      Q9bAC='Conversion of tamend grassland to cropland'
      Q9cAC='Conversion of CRP land to cropland'
      Q9dAC='Conversion of CRP land to pasture/hay'
      Q9eAC='Enrollment of farmland acres to CRP'
      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*state/chisq;
format  Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
Q9eAC Farmacres. Q9fAC Farmacres.;
run;


proc freq data=sasintro.dakota15;
label
      Q9aAC='Conversion of native grass to cropland'
      Q9bAC='Conversion of tamend grassland to cropland'
      Q9cAC='Conversion of CRP land to cropland'
      Q9dAC='Conversion of CRP land to pasture/hay'
      Q9eAC='Enrollment of farmland acres to CRP'
      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*Region/chisq;
format Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
Q9eAC Farmacres. Q9fAC Farmacres.;
run;


/*part two, state and region Q9 analysis with tabulate*/

proc tabulate data=sasintro.dakota15 format=6.;
class state;
var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC;
label
      Q9aAC='Conversion of native grass to cropland'
      Q9bAC='Conversion of tamend grassland to cropland'
      Q9cAC='Conversion of CRP land to cropland'
      Q9dAC='Conversion of CRP land to pasture/hay'
      Q9eAC='Enrollment of farmland acres to CRP'
      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC),state;
run;


proc tabulate data=sasintro.dakota15 format=6.;
class Region;
var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC;
label
      Q9aAC='Conversion of native grass to cropland'
      Q9bAC='Conversion of tamend grassland to cropland'
      Q9cAC='Conversion of CRP land to cropland'
      Q9dAC='Conversion of CRP land to pasture/hay'
      Q9eAC='Enrollment of farmland acres to CRP'
      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC), Region;
run;


/* Q9 part three state and region based analysis tabulate*/

proc format;
value response
      0='No'
```

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

```
      1='Yes'
      0 ='No';
run;
proc freq data=sasintro.dakota15;
label
      Q9aCorn='Conversion of native grass to Corn land'
      Q9aSoy='Conversion of native grass to Soybean land'
      Q9aWht='Conversion of native grass to Wheat land'
      Q9aOth='Conversion of native grass to Other use'
      Q9bCorn='Conversion of tamend grassland to Corn land'
      Q9bSoy='Conversion of tamend grassland to Soy land'
      Q9bWht='Conversion of tamend grassland to Wheat land'
      Q9bOth='Conversion of tamend grassland to Other use'
      Q9cCorn='Conversion of CRP land to Corn land'
      Q9cSoy='Conversion of CRP land to Soy land'
      Q9cWht='Conversion of CRP land to Wheat land'
      Q9cOth='Conversion of CRP land to Other use' ;
table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*Region/norow;
format  Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
       Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
       Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
run;


/* Q9 part three state and region based analysis frequency with chisq*/

proc format;
value Response
      1='Yes'
      0 ='No';
run;
proc freq data=sasintro.dakota15;
label
      Q9aCorn='Conversion of native grass to Corn land'
      Q9aSoy='Conversion of native grass to Soybean land'
      Q9aWht='Conversion of native grass to Wheat land'
      Q9aOth='Conversion of native grass to Other use'
      Q9bCorn='Conversion of tamend grassland to Corn land'
      Q9bSoy='Conversion of tamend grassland to Soy land'
      Q9bWht='Conversion of tamend grassland to Wheat land'
      Q9bOth='Conversion of tamend grassland to Other use'
      Q9cCorn='Conversion of CRP land to Corn land'
      Q9cSoy='Conversion of CRP land to Soy land'
      Q9cWht='Conversion of CRP land to Wheat land'
      Q9cOth='Conversion of CRP land to Other use' ;
table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*state/chisq;
format Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
       Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
       Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
run;

proc format;
value Response
      1='Yes'
      0 ='No';
run;
proc freq data=sasintro.dakota15;
label
      Q9aCorn='Conversion of native grass to Corn land'
      Q9aSoy='Conversion of native grass to Soybean land'
      Q9aWht='Conversion of native grass to Wheat land'
      Q9aOth='Conversion of native grass to Other use'
      Q9bCorn='Conversion of tamend grassland to Corn land'
      Q9bSoy='Conversion of tamend grassland to Soy land'
      Q9bWht='Conversion of tamend grassland to Wheat land'
      Q9bOth='Conversion of tamend grassland to Other use'
      Q9cCorn='Conversion of CRP land to Corn land'
      Q9cSoy='Conversion of CRP land to Soy land'
      Q9cWht='Conversion of CRP land to Wheat land'
      Q9cOth='Conversion of CRP land to Other use' ;
table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*Region/chisq;
format  Q9aCorn response. Q9aSoy response. Q9aWht response. Q9aOth response.
       Q9bCorn response. Q9bSoy response. Q9bWht response. Q9bOth response.
       Q9cCorn response. Q9cSoy response. Q9cWht response. Q9cOth response.;
run;

```

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

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

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

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

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

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

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

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

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

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

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

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

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

```
format Q10a10 Impact. Q9eYN Response.;
run;

proc freq data=sasintro.dakota15;
label
      Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program'
      Q10a10='Changing weather /climate patterns';
tables Q10a10*Q9fYN / chisq;
format Q10a10 Impact. Q9fYN Response.;
run;

/**logistic regression**/
data sasintro.dakota15reg;
     set sasintro.dakota15clean;
 if  (Q9aYN=1) then NQ9aYN=0;
 if  (Q9aYN=2)  then NQ9aYN=1;

 if  (Q9bYN=1) then NQ9bYN=0;
 if  (Q9bYN=2)  then NQ9bYN=1;

 if  (Q9cYN=1) then NQ9cYN=0;
 if  (Q9cYN=2)  then NQ9cYN=1;

 if  (Q9dYN=1) then NQ9dYN=0;
 if  (Q9dYN=2)  then NQ9dYN=1;

 if  (Q9eYN=1) then NQ9eYN=0;
 if  (Q9eYN=2)  then NQ9eYN=1;

 if  (Q9fYN=1) then NQ9fYN=0;
 if  (Q9fYN=2)  then NQ9fYN=1;
 run;
proc print data=sasintro.dakota15reg;
run;


proc format;
value Age
      1='19 to 34 years'
      2='35 to 49 years'
      3='50 to 59 years'
      4='60 to 69 years'
      5='70 years and over';

value Gender
      1='Male'
      2='Female';

value Education
      1='Less than high school'
      2='High school'
      3='Some college/technical school'
      4='4-year college degree'
      5='Advanced degree (Masters, etc.)';

value Occupation
      1='Farming or Ranching'
      2='Employment in off-farm job'
      3='Own/operate a non-farm business'
      4='Retired';

value Sales

      12='Less than $99,999'
      3='From $100,000 up to $249,999'
      4='From $250,000 up to $499,999'
      5='From $500,000 up to $999,999'
      6='$1 million or more';
run;

proc format;
value operation
      1='Have been a farm operator'
      2='less than 10 years as a farm operator'
      3='10 to 10 years as a farm operator'
      4='20 to 29 years as a farm operator'
```

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

```
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
      Q23='Gross farm/ranch sales'
      Q1=' Years as a farm operator'
      Q3A='Farmland acres operated in 2014'
      Q4='Ownership Status in 2014'
      NQ9cYN='Conversion of CRP land to cropland';
class NQ9cYN  state / param=ref;
model NQ9cYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state /rsquare;
format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
       Q3A Farmland. Q4 Ownership. NQ9cYN Regroup.;
run;

proc format;
value Regroup
      0='Yes'
      1='No';
run;
proc logistic data=sasintro.dakota15reg;
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
      Q23='Gross farm/ranch sales'
      Q1=' Years as a farm operator'
      Q3A='Farmland acres operated in 2014'
      Q4='Ownership Status in 2014'
      NQ9dYN='Conversion of CRP land to pasture/hay';
class NQ9dYN  state / param=ref;
model NQ9dYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state /rsquare;
format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
       Q3A Farmland. Q4 Ownership. NQ9dYN Regroup.;
run;

proc format;
value Regroup
      0='Yes'
      1='No';
run;
proc logistic data=sasintro.dakota15reg;
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
      Q23='Gross farm/ranch sales'
      Q1=' Years as a farm operator'
      Q3A='Farmland acres operated in 2014'
      Q4='Ownership Status in 2014'
      NQ9eYN='Enrollment of farmland acres into CRP';
class NQ9eYN  state / param=ref;
model NQ9eYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 state /rsquare;
format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
       Q3A Farmland. Q4 Ownership. NQ9eYN Regroup.;
run;

proc format;
value Regroup
      0='Yes'
      1='No';
run;
proc logistic data=sasintro.dakota15reg;
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
      Q23='Gross farm/ranch sales'
      Q1=' Years as a farm operator'
      Q3A='Farmland acres operated in 2014'
      Q4='Ownership Status in 2014'
      NQ9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
```

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

```
      0='Yes'
      1='No';
run;
proc logistic data=sasintro.dakota15reg;
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
      Q23='Gross farm/ranch sales'
      Q1=' Years as a farm operator'
      Q3A='Farmland acres operated in 2014'
      Q4='Ownership Status in 2014'
      NQ9aYN='Conversion of native grass to cropland';
class NQ9aYN Region / param=ref;
model NQ9aYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
       Q3A Farmland. Q4 Ownership. NQ9aYN Regroup.;
run;


proc format;
value Regroup
      0='Yes'
      1='No';
run;
proc logistic data=sasintro.dakota15reg;
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
      Q23='Gross farm/ranch sales'
      Q1=' Years as a farm operator'
      Q3A='Farmland acres operated in 2014'
      Q4='Ownership Status in 2014'
      NQ9bYN='Conversion of tame grassland to cropland';
class NQ9bYN Region/ param=ref;
model NQ9bYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
       Q3A Farmland. Q4 Ownership. NQ9bYN Regroup.;
run;

proc format;
value Regroup
      0='Yes'
      1='No';
run;
proc logistic data=sasintro.dakota15reg;
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
      Q23='Gross farm/ranch sales'
      Q1=' Years as a farm operator'
      Q3A='Farmland acres operated in 2014'
      Q4='Ownership Status in 2014'
      NQ9cYN='Conversion of CRP land to cropland';
class NQ9cYN Region/ param=ref;
model NQ9cYN = Q19 Q20 Q21 Q22 Q23 Q1 Q3A Q4 Region /rsquare;
format Q19 Age. Q20 Gender. Q21 Education. Q22 Occupation. Q23 Sales. Q1 Operation.
       Q3A Farmland. Q4 Ownership. NQ9cYN Regroup.;
run;

proc format;
value Regroup
      0='Yes'
      1='No';
run;
proc logistic data=sasintro.dakota15reg;
label
      Q19='Respondent Age'
      Q20='Respondent Gender'
      Q21='Respondent Level of Education'
      Q22='Principal Ocupation'
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
4332 format Q3A Farmland. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4333        Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4334        Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4335 run;
4336
4337
4338 proc format;
4339 value Ownership
4340       1='Own all acres farmed'
4341       2='Own most acres farmed, rented the remainder'
4342       3='Own and rent roughly equal number of farmland acres'
4343       4='Rented most of the acres farmed,owned the remainder'
4344       5='Rented all acres farmland'
4345       6='Professional farm manager';
4346 run;
4347
4348 proc freq data=sasintro.dakota15reg1;
4349 label Q4='Ownership Status in 2014'
4350       Q15a1='Changing crop prices'
4351       Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4352       Q15a3='Availability of crop and revenue insurance policies'
4353       Q15a4='Availability of drought-tolerant seed'
4354       Q15a5='Developments in pest management practices, including pest management seed traits'
4355       Q15a6='Improved crop yields (other than seed related traits)'
4356       Q15a7='Development of more efficient cropping equipment'
4357       Q15a8='Labor availability problems'
4358       Q15a9='Improving wildlife habitat'
4359       Q15a10='Changing weather /climate patterns';
4360 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q4/chisq;
4361 format Q4 Ownership. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4362        Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4363        Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4364 run;
4365
4366 proc format;
4367 value CRPLand  0 ='0 acres'
4368                1-9 = '1 to 9 acres'
4369                10-49 ='10 to 49 acres'
4370                50-69 ='50 to 69 acres'
4371                70-99 ='70 to 99 acres'
4372                100-139 ='100 to 139 acres'
4373                140-179 ='140 to 179 acres'
4374                180-219 ='180 to 219 acres'
4375                220-259 ='220 to 259 acres'
4376                260-499 ='260 to 499 acres'
4377                500-999 ='500 to 999 acres'
4378                1000-1999 ='1,000 to 1,999 acres'
4379                2000-4999 ='2,000 to 4,999 acres'
4380                5000-high ='5000 acres and above';
4381 run;
4382
4383 proc freq data=sasintro.dakota15reg1;
4384 label Q3C='CRP acres in 2014'
4385       Q15a1='Changing crop prices'
4386       Q15a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
4387       Q15a3='Availability of crop and revenue insurance policies'
4388       Q15a4='Availability of drought-tolerant seed'
4389       Q15a5='Developments in pest management practices, including pest management seed traits'
4390       Q15a6='Improved crop yields (other than seed related traits)'
4391       Q15a7='Development of more efficient cropping equipment'
4392       Q15a8='Labor availability problems'
4393       Q15a9='Improving wildlife habitat'
4394       Q15a10='Changing weather /climate patterns';
4395 tables (Q15a1 Q15a2 Q15a3 Q15a4 Q15a5 Q15a6 Q15a7 Q15a8 Q15a9 Q15a10)*Q3c/chisq;
4396 format Q3c CRPLand. Q15a1 Areaimpact. Q15a2 Areaimpact. Q15a3 Areaimpact.
4397        Q15a4 Areaimpact. Q15a5 Areaimpact. Q15a6 Areaimpact. Q15a7 Areaimpact.
4398        Q15a8 Areaimpact. Q15a9 Areaimpact. Q15a10 Areaimpact.;
4399 run;
4400
4401 /* 15A CHEC, STATE VS REGION  and operator characteristics*/
4402
4403 Proc format;
4404 value Chec
4405       0='no changes in Ag-land use in my area over the past 10 years'
4406       1='there have been changes in Ag-land use in my area over the past 10 years';
4407
```

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

```
4484 run;
4485
4486 proc freq data=sasintro.dakota15reg1;
4487 label Q22='Principal Occupation'
4488       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4489 tables Q15ACHEC*Q22/chisq;
4490 format Q22 Occupation. Q15achec chec.;
4491 run;
4492
4493 proc freq data=sasintro.dakota15reg1;
4494 label Q23='Gross farm/ranch Sales'
4495       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4496 tables Q15ACHEC*Q23/chisq;
4497 format Q23 Sales. Q15achec chec.;
4498 run;
4499
4500 proc format;
4501 value operation
4502       1='Have been a farm operator'
4503       2='less than 10 years as a farm operator'
4504       3='10 to 10 years as a farm operator'
4505       4='20 to 29 years as a farm operator'
4506       5='30 years or more as a farm operator';
4507 run;
4508
4509 proc freq data=sasintro.dakota15reg1;
4510 label Q1='Principal Occupation'
4511       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4512 tables Q15ACHEC*Q1/chisq;
4513 format Q1 Operation. Q15achec chec.;
4514 run;
4515
4516 proc format;
4517 value Farmland 10-259='1 to 259 acres'
4518                260-499='260 to 499 acres'
4519                500-999='500 to 999 acres'
4520                1000-1999='1000 to 1999 acres'
4521                2000-4999='2000 to 4999 acres'
4522                5000-high ='5000 acres and above';
4523 run;
4524
4525 proc freq data=sasintro.dakota15reg1;
4526 label Q3a='Farmland acres operated in 2014'
4527       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4528 tables Q15ACHEC*Q3a/chisq;
4529 format Q3a Farmland. Q15achec chec.;
4530 run;
4531
4532 proc format;
4533 value CRPLand  0 ='0 acres'
4534                1-9 = '1 to 9 acres'
4535                10-49 ='10 to 49 acres'
4536                50-69 ='50 to 69 acres'
4537                70-99 ='70 to 99 acres'
4538                100-139 ='100 to 139 acres'
4539                140-179 ='140 to 179 acres'
4540                180-219 ='180 to 219 acres'
4541                220-259 ='220 to 259 acres'
4542                260-499 ='260 to 499 acres'
4543                500-999 ='500 to 999 acres'
4544                1000-1999 ='1,000 to 1,999 acres'
4545                2000-4999 ='2,000 to 4,999 acres'
4546                5000-high ='5000 acres and above';
4547 run;
4548
4549 proc freq data=sasintro.dakota15reg1;
4550 label Q3c='CRP acres in 2014'
4551       Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4552 tables Q15ACHEC*Q3c/chisq;
4553 format Q3c CRPLand. Q15achec chec.;
4554 run;
4555
4556 proc format;
4557 value Ownership
4558       1='Own all acres farmed'
4559       2='Own most acres farmed, rented the remainder'
```

```
4560        3='Own and rent roughly equal number of farmland acres'
4561        4='Rented most of the acres farmed,owned the remainder'
4562        5='Rented all acres farmland'
4563        6='Professional farm manager';
4564  run;
4565
4566  proc freq data=sasintro.dakota15reg1;
4567  label Q4='Ownership Status in 2014'
4568        Q15aChec='Check the box if there have been no changes in agricultural land use in your area during the past
4569  tables Q15ACHEC*Q4/chisq;
4570  format Q4 Ownership. Q15achec chec.;
4571  run;
4572
4573
4574  /
4575  /*I want to sum of acres converted to cropland for any reason, create new variable*/
4576
4577  data sasintro.dakota15reg11;
4578       set sasintro.dakota15reg1;
4579
4580  CONVERT=.;
4581      CONVERT=(Q9AAC+Q9BAC+Q9CAC);
4582
4583  RUN;
4584
4585  proc print data=sasintro.dakota15reg11;run;
4586
4587  /*I want to sum of acres converted to cropland for any reason, create new variable end*/
4588
4589
4590  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4591  class state;
4592  var CONVERT;
4593  label CONVERT='Sum of Acres Converted';
4594  run;
4595
4596
4597  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4598  class Region;
4599  var CONVERT;
4600  label CONVERT='Sum of Acres Converted';
4601  run;
4602
4603  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4604  class GRASCROP;
4605  var CONVERT;
4606  label CONVERT='Sum of Acres Converted';
4607  run;
4608
4609  proc format;
4610  value Farmland 10-259='1 to 259 acres'
4611                 260-499='260 to 499 acres'
4612                 500-999='500 to 999 acres'
4613                 1000-1999='1000 to 1999 acres'
4614                 2000-4999='2000 to 4999 acres'
4615                 5000-high ='5000 acres and above';
4616  run;
4617
4618  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4619  class Q3A;
4620  var CONVERT;
4621  label CONVERT='Sum of Acres Converted'
4622        Q3A ='Farmland acres operated in 2014';
4623  format Q3A Farmland.;
4624  run;
4625
4626  proc format;
4627  value Cropland 0 ='0 acres'
4628                  1-9 = '1 to 9 acres'
4629                 10-49 ='10 to 49 acres'
4630                 50-69 ='50 to 69 acres'
4631                 70-99 ='70 to 99 acres'
4632                 100-139 ='100 to 139 acres'
4633                 140-179 ='140 to 179 acres'
4634                 180-219 ='180 to 219 acres'
4635                 220-259 ='220 to 259 acres'
```

```
4636                260-499 ='260 to 499 acres'
4637                500-999 ='500 to 999 acres'
4638                1000-1999 ='1,000 to 1,999 acres'
4639                2000-4999 ='2,000 to 4,999 acres'
4640                5000-high ='5000 acres and above';
4641 run;
4642
4643 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4644 class Q3B;
4645 var CONVERT;
4646 label CONVERT='Sum of Acres Converted'
4647       Q3B ='Cropland acres operated in 2014';
4648 format Q3B Cropland.;
4649 run;
4650
4651 proc format;
4652 value CRPLand 0 ='0 acres'
4653                 1-9 = '1 to 9 acres'
4654                10-49 ='10 to 49 acres'
4655                50-69 ='50 to 69 acres'
4656                70-99 ='70 to 99 acres'
4657                100-139 ='100 to 139 acres'
4658                140-179 ='140 to 179 acres'
4659                180-219 ='180 to 219 acres'
4660                220-259 ='220 to 259 acres'
4661                260-499 ='260 to 499 acres'
4662                500-999 ='500 to 999 acres'
4663                1000-1999 ='1,000 to 1,999 acres'
4664                2000-4999 ='2,000 to 4,999 acres'
4665                5000-high ='5000 acres and above';
4666 run;
4667
4668 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4669 class Q3C;
4670 var CONVERT;
4671 label CONVERT='Sum of Acres Converted'
4672       Q3C ='CRP acres in 2014';
4673 format Q3C CRPLand.;
4674 run;
4675
4676 proc format;
4677 value Cornacresnew 0='0 acres'
4678                 1-99 = '1 to 99 acres'
4679                100-139 ='100 to 139 acres'
4680                140-179 ='140 to 179 acres'
4681                180-219 ='180 to 219 acres'
4682                220-499 ='220 to 499 acres'
4683                500-high ='500 acres and above';
4684 run;
4685
4686 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4687 class Q6CornA;
4688 var CONVERT;
4689 label CONVERT='Sum of Acres Converted'
4690       Q6CornA ='Corn acres harvested  on non irrigated land';
4691 format Q6CornA Cornacresnew.;
4692 run;
4693
4694 proc format;
4695 value Soyacres 0='0 acres'
4696                1-99 = '1 to 99 acres'
4697                100-139 ='100 to 139 acres'
4698                140-179 ='140 to 179 acres'
4699                180-219 ='180 to 219 acres'
4700                220-499 ='220 to 499 acres'
4701                500-high ='500 acres and above';
4702 run;
4703
4704 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4705 class Q6SoyA;
4706 var CONVERT;
4707 label CONVERT='Sum of Acres Converted'
4708       Q6SoyA ='Soybeans acres harvested  on non irrigated land';
4709 format Q6SoyA Soyacres.;
4710 run;
4711
```

```
4712
4713 proc format;
4714 value Wheatacres 0='0 acres'
4715                1-99 = '1 to 99 acres'
4716                100-139 ='100 to 139 acres'
4717                140-179 ='140 to 179 acres'
4718                180-219 ='180 to 219 acres'
4719                220-499 ='220 to 499 acres'
4720                500-high ='500 acres and above';
4721 run;
4722
4723 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4724 class Q6WhA;
4725 var CONVERT;
4726 label CONVERT='Sum of Acres Converted'
4727       Q6WhA ='Wheat acres harvested  on non irrigated land';
4728 format Q6WhA Wheatacres.;
4729 run;
4730
4731 proc format;
4732 value Alfalfaacres 0='0 acres'
4733                 1-99 = '1 to 99 acres'
4734                100-139 ='100 to 139 acres'
4735                140-179 ='140 to 179 acres'
4736                180-219 ='180 to 219 acres'
4737                220-499 ='220 to 499 acres'
4738                500-high ='500 acres and above';
4739 run;
4740
4741 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4742 class Q6AlfA;
4743 var CONVERT;
4744 label CONVERT='Sum of Acres Converted'
4745       Q6AlfA ='Alfalfa acres harvested  on non irrigated land';
4746 format Q6AlfA Alfalfaacres.;
4747 run;
4748
4749 proc format;
4750 value Wheatacresnew 0 ='0 acres'
4751                 1-9 = '1 to 9 acres'
4752                10-49 ='10 to 49 acres'
4753                50-69 ='50 to 69 acres'
4754                70-99 ='70 to 99 acres'
4755                100-139 ='100 to 139 acres'
4756                140-179 ='140 to 179 acres'
4757                180-219 ='180 to 219 acres'
4758                220-259 ='220 to 259 acres'
4759                260-499 ='260 to 499 acres'
4760                500-999 ='500 to 999 acres'
4761                1000-1999 ='1,000 to 1,999 acres'
4762                2000-4999 ='2,000 to 4,999 acres'
4763                5000-high ='5000 acres and above';
4764 run;
4765
4766 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4767 class WHTACRE;
4768 var CONVERT;
4769 label CONVERT='Sum of Acres Converted'
4770       WHTACRE ='Wheat acres';
4771 format WHTACRE Wheatacresnew.;
4772 run;
4773
4774 proc format;
4775 value Cornacreslatest 0 ='0 acres'
4776                 1-9 = '1 to 9 acres'
4777                10-49 ='10 to 49 acres'
4778                50-69 ='50 to 69 acres'
4779                70-99 ='70 to 99 acres'
4780                100-139 ='100 to 139 acres'
4781                140-179 ='140 to 179 acres'
4782                180-219 ='180 to 219 acres'
4783                220-259 ='220 to 259 acres'
4784                260-499 ='260 to 499 acres'
4785                500-999 ='500 to 999 acres'
4786                1000-1999 ='1,000 to 1,999 acres'
4787                2000-4999 ='2,000 to 4,999 acres'
```

```
4788                5000-high ='5000 acres and above';
4789 run;
4790
4791 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4792 class CORNACRE;
4793 var CONVERT;
4794 label CONVERT='Sum of Acres Converted'
4795       CORNACRE ='CORN acres';
4796 format CORNACRE Cornacreslatest.;
4797 run;
4798
4799
4800 proc format;
4801 value Soybacresnew 0 ='0 acres'
4802                  1-9 = '1 to 9 acres'
4803                10-49 ='10 to 49 acres'
4804                50-69 ='50 to 69 acres'
4805                70-99 ='70 to 99 acres'
4806                100-139 ='100 to 139 acres'
4807                140-179 ='140 to 179 acres'
4808                180-219 ='180 to 219 acres'
4809                220-259 ='220 to 259 acres'
4810                260-499 ='260 to 499 acres'
4811                500-999 ='500 to 999 acres'
4812                1000-1999 ='1,000 to 1,999 acres'
4813                2000-4999 ='2,000 to 4,999 acres'
4814                5000-high ='5000 acres and above';
4815 run;
4816
4817 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4818 class SOYBACRE;
4819 var CONVERT;
4820 label CONVERT='Sum of Acres Converted'
4821       SOYBACRE ='SOYBEAN acres';
4822 format SOYBACRE Soybacresnew.;
4823 run;
4824
4825 proc format;
4826 value Hayacresnew 0 ='0 acres'
4827                  1-9 = '1 to 9 acres'
4828                10-49 ='10 to 49 acres'
4829                50-69 ='50 to 69 acres'
4830                70-99 ='70 to 99 acres'
4831                100-139 ='100 to 139 acres'
4832                140-179 ='140 to 179 acres'
4833                180-219 ='180 to 219 acres'
4834                220-259 ='220 to 259 acres'
4835                260-499 ='260 to 499 acres'
4836                500-999 ='500 to 999 acres'
4837                1000-1999 ='1,000 to 1,999 acres'
4838                2000-4999 ='2,000 to 4,999 acres'
4839                5000-high ='5000 acres and above';
4840 run;
4841
4842 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4843 class HAYACRE;
4844 var CONVERT;
4845 label CONVERT='Sum of Acres Converted'
4846       HAYACRE ='HAY acres';
4847 format HAYACRE Hayacresnew.;
4848 run;
4849
4850 proc format;
4851 value Plntacresnew 0 ='0 acres'
4852                  1-9 = '1 to 9 acres'
4853                10-49 ='10 to 49 acres'
4854                50-69 ='50 to 69 acres'
4855                70-99 ='70 to 99 acres'
4856                100-139 ='100 to 139 acres'
4857                140-179 ='140 to 179 acres'
4858                180-219 ='180 to 219 acres'
4859                220-259 ='220 to 259 acres'
4860                260-499 ='260 to 499 acres'
4861                500-999 ='500 to 999 acres'
4862                1000-1999 ='1,000 to 1,999 acres'
4863                2000-4999 ='2,000 to 4,999 acres'
```

```
4864                5000-high ='5000 acres and above';
4865 run;
4866
4867 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4868 class PLNTACRE;
4869 var CONVERT;
4870 label CONVERT='Sum of Acres Converted'
4871       PLNTACRE ='PLANTED acres';
4872 format PLNTACRE Plntacresnew.;
4873 run;
4874
4875 proc format;
4876 value Beefherdnew 0 ='0 acres'
4877                  1-9 = '1 to 9 acres'
4878                10-49 ='10 to 49 acres'
4879                50-69 ='50 to 69 acres'
4880                70-99 ='70 to 99 acres'
4881                100-139 ='100 to 139 acres'
4882                140-179 ='140 to 179 acres'
4883                180-219 ='180 to 219 acres'
4884                220-259 ='220 to 259 acres'
4885                260-499 ='260 to 499 acres'
4886                500-999 ='500 to 999 acres'
4887                1000-1999 ='1,000 to 1,999 acres'
4888                2000-4999 ='2,000 to 4,999 acres'
4889                5000-high ='5000 acres and above';
4890 run;
4891
4892 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4893 class BEEFHERD;
4894 var CONVERT;
4895 label CONVERT='Sum of Acres Converted'
4896       BEEFHERD ='BEEF HERD';
4897 format BEEFHERD Beefherdnew.;
4898 run;
4899
4900
4901
4902 /* summary statistis question 9 part 2 related*/
4903
4904
4905 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4906 class State;
4907 var CONVERT Q9AAC Q9BAC Q9CAC;
4908 label CONVERT='Sum of Acres Converted'
4909       Q9aAC='Conversion of native grass to cropland'
4910       Q9bAC='Conversion of tamend grassland to cropland'
4911       Q9cAC='Conversion of CRP land to cropland';
4912 run;
4913
4914 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4915 class REGION;
4916 var CONVERT Q9AAC Q9BAC Q9CAC;
4917 label CONVERT='Sum of Acres Converted'
4918       Q9aAC='Conversion of native grass to cropland'
4919       Q9bAC='Conversion of tamend grassland to cropland'
4920       Q9cAC='Conversion of CRP land to cropland';
4921 run;
4922
4923 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4924 class GRASCROP;
4925 var CONVERT Q9AAC Q9BAC Q9CAC;
4926 label CONVERT='Sum of Acres Converted'
4927       Q9aAC='Conversion of native grass to cropland'
4928       Q9bAC='Conversion of tamend grassland to cropland'
4929       Q9cAC='Conversion of CRP land to cropland';
4930 run;
4931
4932
4933 /* sumamry statistics QUESTION 3 REALTED ANALYSIS*/
4934
4935
4936 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4937 class state;
4938 var Q3a Q3b Q3c Q3d;
4939 label
```

```
4940        Q3a ='Total Farmland acres operated in 2014'
4941        Q3b ='Cropland (excluding CRP) acres'
4942        Q3c ='CRP acres in 2014'
4943        Q3d ='Pasture/Rangeland acres';
4944  run;
4945
4946  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4947  class Region;
4948  var Q3a Q3b Q3c Q3d;
4949  label
4950        Q3a ='Total Farmland acres operated in 2014'
4951        Q3b ='Cropland (excluding CRP) acres'
4952        Q3c ='CRP acres in 2014'
4953        Q3d ='Pasture/Rangeland acres';
4954  run;
4955
4956  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4957  class GRASCROP;
4958  var Q3a Q3b Q3c Q3d;
4959  label
4960        Q3a ='Total Farmland acres operated in 2014'
4961        Q3b ='Cropland (excluding CRP) acres'
4962        Q3c ='CRP acres in 2014'
4963        Q3d ='Pasture/Rangeland acres';
4964  run;
4965
4966  /*summary Statistics Question 6 related */
4967
4968  proc means data=sasintro.dakota15reg11 nn nmiss sum min max mean CV std STDERR maxdec=2;
4969  class State;
4970  var Q6cornA Q6soyA Q6WhA Q6AlfA;
4971  label
4972        Q6cornA='Corn Acres'
4973        Q6soyA='Soybean Acres'
4974        Q6WhA='Wheat Acres'
4975        Q6AlfA='Alfalfa Acres';
4976  run;
4977
4978  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4979  class Region;
4980  var Q6cornA Q6soyA Q6WhA Q6AlfA;
4981  label
4982        Q6cornA='Corn Acres'
4983        Q6soyA='Soybean Acres'
4984        Q6WhA='Wheat Acres'
4985        Q6AlfA='Alfalfa Acres';
4986  run;
4987
4988  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
4989  class GRASCROP;
4990  var Q6cornA Q6soyA Q6WhA Q6AlfA;
4991  label
4992        Q6cornA='Corn Acres'
4993        Q6soyA='Soybean Acres'
4994        Q6WhA='Wheat Acres'
4995        Q6AlfA='Alfalfa Acres';
4996  run;
4997
4998
4999  /* summary statistics related to different acres*/
5000
5001  proc means data=sasintro.dakota15reg11 nn nmiss sum min max mean CV std STDERR maxdec=2;
5002  class State;
5003  var WHTACRE CORNACRE SOYBACRE HAYACRE PLNTACRE BEEFHERD ;
5004  label
5005        WHTACRE='WHEAT Acres'
5006        CORNACRE='CORN Acres'
5007        SOYBACRE='SOYBEAN Acres'
5008        HAYACRE='HAY Acres'
5009        PLNTACRE='PLANTED ACRES'
5010        BEEFHERD='BEEF HERD';
5011  run;
5012
5013  proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
5014  class Region;
5015  var WHTACRE CORNACRE SOYBACRE HAYACRE PLNTACRE BEEFHERD ;
```

```
5016 label
5017       WHTACRE='WHEAT Acres'
5018       CORNACRE='CORN Acres'
5019       SOYBACRE='SOYBEAN Acres'
5020       HAYACRE='HAY Acres'
5021       PLNTACRE='PLANTED ACRES'
5022       BEEFHERD='BEEF HERD';
5023 run;
5024
5025 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
5026 class GRASCROP;
5027 var WHTACRE CORNACRE SOYBACRE HAYACRE PLNTACRE BEEFHERD ;
5028 label
5029       WHTACRE='WHEAT Acres'
5030       CORNACRE='CORN Acres'
5031       SOYBACRE='SOYBEAN Acres'
5032       HAYACRE='HAY Acres'
5033       PLNTACRE='PLANTED ACRES'
5034       BEEFHERD='BEEF HERD';
5035 run;
5036
5037 /* Q14a realated analysis based on state operator characteristics by chisq*/
5038
5039 Proc format;
5040 value Pastchange
5041       1='Decreased Markedly (over 10%)'
5042       2='Decreased Somewhat (5-10%)'
5043       3='Stayed about the same (less than 5%)'
5044       4='Increased Somewhat (5-10%)'
5045       5='Increased Markedly (over 10%)';
5046
5047 run;
5048 proc freq data=sasintro.dakota15reg11;
5049 label
5050       Q14a1='Grassland acres, any type'
5051       Q14a2='Native Grassland acres only'
5052       Q14a3='Soybean or Corn acres';
5053 tables (Q14a1 Q14a2 Q14a3)*State/chisq;
5054 format Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5055 run;
5056
5057 proc freq data=sasintro.dakota15reg11;
5058 label
5059       Q14a1='Grassland acres, any type'
5060       Q14a2='Native Grassland acres only'
5061       Q14a3='Soybean or Corn acres';
5062 tables (Q14a1 Q14a2 Q14a3)*Region/chisq;
5063 format Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5064 run;
5065
5066 proc format;
5067 value Age
5068       1='19 to 34 years'
5069       2='35 to 49 years'
5070       3='50 to 59 years'
5071       4='60 to 69 years'
5072       5='70 years and over';
5073
5074 value Gender
5075       1='Male'
5076       2='Female';
5077
5078 value Education
5079       1='Less than high school'
5080       2='High school'
5081       3='Some college/technical school'
5082       4='4-year college degree'
5083       5='Advanced degree (Masters, etc.)';
5084
5085 value Occupation
5086       1='Farming or Ranching'
5087       2='Employment in off-farm job'
5088       3='Own/operate a non-farm business'
5089       4='Retired';
5090
5091 value Sales
```

```
5092
5093        12='Less than $99,999'
5094        3='From $100,000 up to $249,999'
5095        4='From $250,000 up to $499,999'
5096        5='From $500,000 up to $999,999'
5097        6='$1 million or more';
5098
5099  run;
5100
5101  proc freq data=sasintro.dakota15reg11;
5102  label Q19='Respondent Age'
5103        Q14a1='Grassland acres, any type'
5104        Q14a2='Native Grassland acres only'
5105        Q14a3='Soybean or Corn acres';
5106  tables (Q14a1 Q14a2 Q14a3)*Q19/chisq;
5107  format Q19 Age. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5108  run;
5109
5110  proc freq data=sasintro.dakota15reg11;
5111  label Q20='Respondent Genger'
5112        Q14a1='Grassland acres, any type'
5113        Q14a2='Native Grassland acres only'
5114        Q14a3='Soybean or Corn acres';
5115  tables (Q14a1 Q14a2 Q14a3)*Q20/chisq;
5116  format Q20 Gender. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5117  run;
5118
5119  proc freq data=sasintro.dakota15reg11;
5120  label Q21='Respondent Level of Education'
5121        Q14a1='Grassland acres, any type'
5122        Q14a2='Native Grassland acres only'
5123        Q14a3='Soybean or Corn acres';
5124  tables (Q14a1 Q14a2 Q14a3)*Q21/chisq;
5125  format Q21 Education. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5126  run;
5127
5128  proc freq data=sasintro.dakota15reg11;
5129  label Q22='Principal Occupation'
5130        Q14a1='Grassland acres, any type'
5131        Q14a2='Native Grassland acres only'
5132        Q14a3='Soybean or Corn acres';
5133  tables (Q14a1 Q14a2 Q14a3)*Q22/chisq;
5134  format Q22 Occupation. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5135  run;
5136
5137  proc freq data=sasintro.dakota15reg11;
5138  label Q23='Gross farm/ranch Sales'
5139        Q14a1='Grassland acres, any type'
5140        Q14a2='Native Grassland acres only'
5141        Q14a3='Soybean or Corn acres';
5142  tables (Q14a1 Q14a2 Q14a3)*Q23/chisq;
5143  format Q23 Sales. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5144  run;
5145
5146  proc format;
5147  value operation
5148        1='Have been a farm operator'
5149        2='less than 10 years as a farm operator'
5150        3='10 to 10 years as a farm operator'
5151        4='20 to 29 years as a farm operator'
5152        5='30 years or more as a farm operator';
5153  run;
5154
5155  proc freq data=sasintro.dakota15reg11;
5156  label Q1='Principal Occupation'
5157        Q14a1='Grassland acres, any type'
5158        Q14a2='Native Grassland acres only'
5159        Q14a3='Soybean or Corn acres';
5160  tables (Q14a1 Q14a2 Q14a3)*Q1/chisq;
5161  format Q1 Operation. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5162  run;
5163
5164  proc format;
5165  value Farmland 10-259='1 to 259 acres'
5166                 260-499='260 to 499 acres'
5167                 500-999='500 to 999 acres'
```

```
5168                1000-1999='1000 to 1999 acres'
5169                2000-4999='2000 to 4999 acres'
5170                5000-high ='5000 acres and above';
5171 run;
5172
5173 proc freq data=sasintro.dakota15reg11;
5174 label Q3a='Farmland acres operated in 2014'
5175       Q14a1='Grassland acres, any type'
5176       Q14a2='Native Grassland acres only'
5177       Q14a3='Soybean or Corn acres';
5178 tables (Q14a1 Q14a2 Q14a3)*Q3a/chisq;
5179 format Q3a Farmland. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5180 run;
5181
5182 proc format;
5183 value CRPLand  0 ='0 acres'
5184                1-9 = '1 to 9 acres'
5185                10-49 ='10 to 49 acres'
5186                50-69 ='50 to 69 acres'
5187                70-99 ='70 to 99 acres'
5188                100-139 ='100 to 139 acres'
5189                140-179 ='140 to 179 acres'
5190                180-219 ='180 to 219 acres'
5191                220-259 ='220 to 259 acres'
5192                260-499 ='260 to 499 acres'
5193                500-999 ='500 to 999 acres'
5194                1000-1999 ='1,000 to 1,999 acres'
5195                2000-4999 ='2,000 to 4,999 acres'
5196                5000-high ='5000 acres and above';
5197 run;
5198
5199 proc freq data=sasintro.dakota15reg11;
5200 label Q3c='CRP acres in 2014'
5201       Q14a1='Grassland acres, any type'
5202       Q14a2='Native Grassland acres only'
5203       Q14a3='Soybean or Corn acres';
5204 tables (Q14a1 Q14a2 Q14a3)*Q3c/chisq;
5205 format Q3c CRPLand. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5206 run;
5207
5208 proc format;
5209 value Ownership
5210       1='Own all acres farmed'
5211       2='Own most acres farmed, rented the remainder'
5212       3='Own and rent roughly equal number of farmland acres'
5213       4='Rented most of the acres farmed,owned the remainder'
5214       5='Rented all acres farmland'
5215       6='Professional farm manager';
5216 run;
5217
5218 proc freq data=sasintro.dakota15reg11;
5219 label Q4='Ownership Status in 2014'
5220       Q14a1='Grassland acres, any type'
5221       Q14a2='Native Grassland acres only'
5222       Q14a3='Soybean or Corn acres';
5223 tables (Q14a1 Q14a2 Q14a3)*Q4/chisq;
5224 format Q4 Ownersip. Q14a1 Pastchange. Q14a2 Pastchange. Q14a3 Pastchange.;
5225 run;
5226
5227
5228 /* Q14b realated analysis based on state operator characteristics by chisq*/
5229
5230 Proc format;
5231 value Futurechange
5232       1='Decrease Markedly (over 10%)'
5233       2='Decrease Somewhat (5-10%)'
5234       3='Stayed about the same (less than 5%)'
5235       4='Increase Somewhat (5-10%)'
5236       5='Increase Markedly (over 10%)';
5237 run;
5238
5239 proc freq data=sasintro.dakota15reg11;
5240 label
5241       Q14b1='Grassland acres, any type'
5242       Q14b2='Native Grassland acres only'
5243       Q14b3='Soybean or Corn acres';
```

```
5244 tables (Q14b1 Q14b2 Q14b3)*State/chisq;
5245 format  Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5246 run;
5247
5248 proc freq data=sasintro.dakota15reg11;
5249 label
5250       Q14b1='Grassland acres, any type'
5251       Q14b2='Native Grassland acres only'
5252       Q14b3='Soybean or Corn acres';
5253 tables (Q14b1 Q14b2 Q14b3)*Region/chisq;
5254 format  Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5255 run;
5256
5257 proc format;
5258 value Age
5259       1='19 to 34 years'
5260       2='35 to 49 years'
5261       3='50 to 59 years'
5262       4='60 to 69 years'
5263       5='70 years and over';
5264
5265 value Gender
5266       1='Male'
5267       2='Female';
5268
5269 value Education
5270       1='Less than high school'
5271       2='High school'
5272       3='Some college/technical school'
5273       4='4-year college degree'
5274       5='Advanced degree (Masters, etc.)';
5275
5276 value Occupation
5277       1='Farming or Ranching'
5278       2='Employment in off-farm job'
5279       3='Own/operate a non-farm business'
5280       4='Retired'
5281
5282 value Sales
5283
5284       12='Less than $99,999'
5285       3='From $100,000 up to $249,999'
5286       4='From $250,000 up to $499,999'
5287       5='From $500,000 up to $999,999'
5288       6='$1 million or more';
5289
5290 run;
5291
5292 proc freq data=sasintro.dakota15reg11;
5293 label Q19='Respondent Age'
5294       Q14b1='Grassland acres, any type'
5295       Q14b2='Native Grassland acres only'
5296       Q14b3='Soybean or Corn acres';
5297 tables (Q14b1 Q14b2 Q14b3)*Q19/chisq;
5298 format Q19 Age. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5299 run;
5300
5301 proc freq data=sasintro.dakota15reg11;
5302 label Q20='Respondent Genger'
5303       Q14b1='Grassland acres, any type'
5304       Q14b2='Native Grassland acres only'
5305       Q14b3='Soybean or Corn acres';
5306 tables (Q14b1 Q14b2 Q14b3)*Q20/chisq;
5307 format Q20 Gender. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5308 run;
5309
5310 proc freq data=sasintro.dakota15reg11;
5311 label Q21='Respondent Level of Education'
5312       Q14b1='Grassland acres, any type'
5313       Q14b2='Native Grassland acres only'
5314       Q14b3='Soybean or Corn acres';
5315 tables (Q14b1 Q14b2 Q14b3)*Q21/chisq;
5316 format Q21 Education. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5317 run;
5318
5319 proc freq data=sasintro.dakota15reg11;
```

```
5320 label Q22='Principal Occupation'
5321       Q14b1='Grassland acres, any type'
5322       Q14b2='Native Grassland acres only'
5323       Q14b3='Soybean or Corn acres';
5324 tables (Q14b1 Q14b2 Q14b3)*Q22/chisq;
5325 format Q22 Occupation. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5326 run;
5327
5328 proc freq data=sasintro.dakota15reg11;
5329 label Q23='Gross farm/ranch Sales'
5330       Q14b1='Grassland acres, any type'
5331       Q14b2='Native Grassland acres only'
5332       Q14b3='Soybean or Corn acres';
5333 tables (Q14b1 Q14b2 Q14b3)*Q23/chisq;
5334 format Q23 Sales. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5335 run;
5336
5337 proc format;
5338 value operation
5339       1='Have been a farm operator'
5340       2='less than 10 years as a farm operator'
5341       3='10 to 10 years as a farm operator'
5342       4='20 to 29 years as a farm operator'
5343       5='30 years or more as a farm operator';
5344 run;
5345
5346 proc freq data=sasintro.dakota15reg11;
5347 label Q1='Principal Occupation'
5348       Q14b1='Grassland acres, any type'
5349       Q14b2='Native Grassland acres only'
5350       Q14b3='Soybean or Corn acres';
5351 tables (Q14b1 Q14b2 Q14b3)*Q1/chisq;
5352 format Q1 Operation. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5353 run;
5354
5355 proc format;
5356 value Farmland 10-259='1 to 259 acres'
5357                260-499='260 to 499 acres'
5358                500-999='500 to 999 acres'
5359                1000-1999='1000 to 1999 acres'
5360                2000-4999='2000 to 4999 acres'
5361                5000-high ='5000 acres and above';
5362 run;
5363
5364 proc freq data=sasintro.dakota15reg11;
5365 label Q3a='Farmland acres operated in 2014'
5366       Q14b1='Grassland acres, any type'
5367       Q14b2='Native Grassland acres only'
5368       Q14b3='Soybean or Corn acres';
5369 tables (Q14b1 Q14b2 Q14b3)*Q3a/chisq;
5370 format Q3a farmland. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
5371 run;
5372
5373 proc format;
5374 value CRPLand  0 ='0 acres'
5375                1-9 = '1 to 9 acres'
5376                10-49 ='10 to 49 acres'
5377                50-69 ='50 to 69 acres'
5378                70-99 ='70 to 99 acres'
5379                100-139 ='100 to 139 acres'
5380                140-179 ='140 to 179 acres'
5381                180-219 ='180 to 219 acres'
5382                220-259 ='220 to 259 acres'
5383                260-499 ='260 to 499 acres'
5384                500-999 ='500 to 999 acres'
5385                1000-1999 ='1,000 to 1,999 acres'
5386                2000-4999 ='2,000 to 4,999 acres'
5387                5000-high ='5000 acres and above';
5388 run;
5389
5390 proc freq data=sasintro.dakota15reg11;
5391 label Q3c='CRP acres in 2014'
5392       Q14b1='Grassland acres, any type'
5393       Q14b2='Native Grassland acres only'
5394       Q14b3='Soybean or Corn acres';
5395 tables (Q14b1 Q14b2 Q14b3)*Q3c/chisq;
```

```
format Q3c CRPLand. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
run;

proc format;
value Ownership
      1='Own all acres farmed'
      2='Own most acres farmed, rented the remainder'
      3='Own and rent roughly equal number of farmland acres'
      4='Rented most of the acres farmed,owned the remainder'
      5='Rented all acres farmland'
      6='Professional farm manager';
run;

proc freq data=sasintro.dakota15reg11;
label Q4='Ownership Status in 2014'
      Q14b1='Grassland acres, any type'
      Q14b2='Native Grassland acres only'
      Q14b3='Soybean or Corn acres';
tables (Q14b1 Q14b2 Q14b3)*Q4/chisq;
format Q4 Ownership. Q14b1 Futurechange. Q14b2 Futurechange. Q14b3 Futurechange.;
run;

/* friday august 18 , 2015 CRP Use related analysis and also for CRPUSE */


proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
class CRPUSE;
var CONVERT;
label CONVERT='Sum of Acres Converted';
run;




/* summary statistis question 9 part 2 related*/




proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
class CRPUSE;
var CONVERT Q9AAC Q9BAC Q9CAC;
label CONVERT='Sum of Acres Converted'
      Q9aAC='Conversion of native grass to cropland'
      Q9bAC='Conversion of tamend grassland to cropland'
      Q9cAC='Conversion of CRP land to cropland';
run;


/* sumamry statistics QUESTION 3 REALTED ANALYSIS*/



proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
class CRPUSE;
var Q3a Q3b Q3c Q3d;
label
      Q3a ='Total Farmland acres operated in 2014'
      Q3b ='Cropland (excluding CRP) acres'
      Q3c ='CRP acres in 2014'
      Q3d ='Pasture/Rangeland acres';
run;

/*summary Statistics Question 6 related */


proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
class CRPUSE;
var Q6cornA Q6soyA Q6WhA Q6AlfA;
label
      Q6cornA='Corn Acres'
      Q6soyA='Soybean Acres'
      Q6WhA='Wheat Acres'
      Q6AlfA='Alfalfa Acres';
run;

```

```
5472
5473 /* summary statistics related to different acres*/
5474
5475
5476 proc means data=sasintro.dakota15reg11 n nmiss sum min max mean CV std STDERR maxdec=2;
5477 class CRPUSE;
5478 var WHTACRE CORNACRE SOYBACRE HAYACRE PLNTACRE BEEFHERD ;
5479 label
5480       WHTACRE='WHEAT Acres'
5481       CORNACRE='CORN Acres'
5482       SOYBACRE='SOYBEAN Acres'
5483       HAYACRE='HAY Acres'
5484       PLNTACRE='PLANTED ACRES'
5485       BEEFHERD='BEEF HERD';
5486 run;
5487
5488 /*Friday, 18th GRASCRP=1; , related analysis, add new variable*/
5489
5490 data sasintro.dakota15reg111;
5491      set sasintro.dakota15reg11;
5492
5493 GRASCROPNEW=1;
5494     if  (Q9aYN=1) or (Q9bYN=1) or (Q9CYN=1) then GRASCROPNEW=1;
5495     if  (Q9aYN=.) or (Q9bYN=.) or (Q9CYN=.) then GRASCROPNEW=.;
5496
5497 CRPUSENEW=1;
5498     if  (Q9cYN=1) or (Q9dYN=1) or (Q9eYN=1) then CRPUSENEW=1;
5499     if  (Q9cYN=.) or (Q9dYN=.) or (Q9eYN=.) then CRPUSENEW=.;
5500
5501 RUN;
5502
5503 proc print data=sasintro.dakota15reg111;run;
5504
5505
5506 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5507 class GRASCROPNEW;
5508 var CONVERT;
5509 label CONVERT='Sum of Acres Converted';
5510 run;
5511
5512 /* summary statistis question 9 part 2 related*/
5513
5514 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5515 class GRASCROPNEW;
5516 var CONVERT Q9AAC Q9BAC Q9CAC;
5517 label CONVERT='Sum of Acres Converted'
5518       Q9aAC='Conversion of native grass to cropland'
5519       Q9bAC='Conversion of tamend grassland to cropland'
5520       Q9cAC='Conversion of CRP land to cropland';
5521 run;
5522
5523
5524 /* sumamry statistics QUESTION 3 REALTED ANALYSIS*/
5525
5526 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5527 class GRASCROPNEW;
5528 var Q3a Q3b Q3c Q3d;
5529 label
5530       Q3a ='Total Farmland acres operated in 2014'
5531       Q3b ='Cropland (excluding CRP) acres'
5532       Q3c ='CRP acres in 2014'
5533       Q3d ='Pasture/Rangeland acres';
5534 run;
5535
5536 /*summary Statistics Question 6 related */
5537
5538
5539 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5540 class GRASCROPNEW;
5541 var Q6cornA Q6soyA Q6WhA Q6AlfA;
5542 label
5543       Q6cornA='Corn Acres'
5544       Q6soyA='Soybean Acres'
5545       Q6WhA='Wheat Acres'
5546       Q6AlfA='Alfalfa Acres';
5547 run;
```

```
5548
5549
5550 /* summary statistics related to different acres*/
5551
5552
5553 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5554 class GRASCROPNEW;
5555 var WHTACRE CORNACRE SOYBACRE HAYACRE PLNTACRE BEEFHERD ;
5556 label
5557       WHTACRE='WHEAT Acres'
5558       CORNACRE='CORN Acres'
5559       SOYBACRE='SOYBEAN Acres'
5560       HAYACRE='HAY Acres'
5561       PLNTACRE='PLANTED ACRES'
5562       BEEFHERD='BEEF HERD';
5563 run;
5564
5565
5566 /*CRPUSENEW RELATED ANALYSIS*/
5567
5568 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5569 class CRPUSENEW;
5570 var CONVERT;
5571 label CONVERT='Sum of Acres Converted';
5572 run;
5573
5574
5575
5576 /* summary statistis question 9 part 2 related*/
5577
5578
5579 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5580 class CRPUSENEW;
5581 var CONVERT Q9AAC Q9BAC Q9CAC;
5582 label CONVERT='Sum of Acres Converted'
5583       Q9aAC='Conversion of native grass to cropland'
5584       Q9bAC='Conversion of tamend grassland to cropland'
5585       Q9cAC='Conversion of CRP land to cropland';
5586 run;
5587
5588
5589 /* sumamry statistics QUESTION 3 REALTED ANALYSIS*/
5590
5591
5592 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5593 class CRPUSENEW;
5594 var Q3a Q3b Q3c Q3d;
5595 label
5596       Q3a ='Total Farmland acres operated in 2014'
5597       Q3b ='Cropland (excluding CRP) acres'
5598       Q3c ='CRP acres in 2014'
5599       Q3d ='Pasture/Rangeland acres';
5600 run;
5601
5602 /*summary Statistics Question 6 related */
5603
5604
5605 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5606 class CRPUSENEW;
5607 var Q6cornA Q6soyA Q6WhA Q6AlfA;
5608 label
5609       Q6cornA='Corn Acres'
5610       Q6soyA='Soybean Acres'
5611       Q6WhA='Wheat Acres'
5612       Q6AlfA='Alfalfa Acres';
5613 run;
5614
5615
5616 /* summary statistics related to different acres*/
5617
5618
5619 proc means data=sasintro.dakota15reg111 n nmiss sum min max mean CV std STDERR maxdec=2;
5620 class CRPUSENEW;
5621 var WHTACRE CORNACRE SOYBACRE HAYACRE PLNTACRE BEEFHERD ;
5622 label
5623       WHTACRE='WHEAT Acres'
```

```
5624        CORNACRE='CORN Acres'
5625        SOYBACRE='SOYBEAN Acres'
5626        HAYACRE='HAY Acres'
5627        PLNTACRE='PLANTED ACRES'
5628        BEEFHERD='BEEF HERD';
5629  run;
5630
5631
5632
5633  /*6 Moses did not examine anything about Question 18 on cropland Characteristics */
5634
5635  proc format;
5636  value Percentage 0 = '0 percent'
5637                   1-25 = '1 to 25 percent'
5638                   26-49 ='26 to 49 percent'
5639                   50-75 ='50 to 75 percent'
5640                   76-100 ='70 to 99 acres';
5641  run;
5642
5643  proc freq data=sasintro.dakota15reg1;
5644  label
5645        Q18A ='Highly erodable land'
5646        Q18B='Heavy Soil'
5647        Q18C='Slow draining soil(Perdominantly clay'
5648        Q18D='Sandy Soil';
5649  tables (Q18A Q18B Q18C Q18D)*Region/chisq;
5650  format Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5651  run;
5652
5653
5654  proc freq data=sasintro.dakota15reg1;
5655  label
5656        Q18A ='Highly erodable land'
5657        Q18B='Heavy Soil'
5658        Q18C='Slow draining soil(Perdominantly clay'
5659        Q18D='Sandy Soil';
5660  tables (Q18A Q18B Q18C Q18D)*State/chisq;
5661  format Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5662  run;
5663
5664
5665  proc format;
5666  value Ownership
5667        1='Own all acres farmed'
5668        2='Own most acres farmed, rented the remainder'
5669        3='Own and rent roughly equal number of farmland acres'
5670        4='Rented most of the acres farmed,owned the remainder'
5671        5='Rented all acres farmland'
5672        6='Professional farm manager';
5673  run;
5674
5675  proc freq data=sasintro.dakota15reg1;
5676  label Q4= 'Ownership Status in 2014'
5677        Q18A ='Highly erodable land'
5678        Q18B='Heavy Soil'
5679        Q18C='Slow draining soil(Perdominantly clay'
5680        Q18D='Sandy Soil';
5681  tables (Q18A Q18B Q18C Q18D)*Q4/chisq;
5682  format Q4 Ownership. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5683  run;
5684
5685
5686  proc format;
5687  value Age
5688        1='19 to 34 years'
5689        2='35 to 49 years'
5690        3='50 to 59 years'
5691        4='60 to 69 years'
5692        5='70 years and over';
5693
5694  value Gender
5695        1='Male'
5696        2='Female';
5697
5698  value Education
5699        1='Less than high school'
```

```
5700        2='High school'
5701        3='Some college/technical school'
5702        4='4-year college degree'
5703        5='Advanced degree (Masters, etc.)';
5704
5705  value Occupation
5706        1='Farming or Ranching'
5707        2='Employment in off-farm job'
5708        3='Own/operate a non-farm business'
5709        4='Retired'
5710
5711  value Sales
5712
5713        12='Less than $99,999'
5714        3='From $100,000 up to $249,999'
5715        4='From $250,000 up to $499,999'
5716        5='From $500,000 up to $999,999'
5717        6='$1 million or more';
5718
5719  run;
5720
5721  proc freq data=sasintro.dakota15reg11;
5722  label Q19='Respondent Age'
5723        Q18A ='Highly erodable land'
5724        Q18B='Heavy Soil'
5725        Q18C='Slow draining soil(Perdominantly clay'
5726        Q18D='Sandy Soil';
5727  tables (Q18A Q18B Q18C Q18D)*Q19/chisq;
5728  format Q19 Age. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5729  run;
5730
5731
5732  proc freq data=sasintro.dakota15reg11;
5733  label Q20='Respondent Genger'
5734        Q18A ='Highly erodable land'
5735        Q18B='Heavy Soil'
5736        Q18C='Slow draining soil(Perdominantly clay'
5737        Q18D='Sandy Soil';
5738  tables (Q18A Q18B Q18C Q18D)*Q20/chisq;
5739  format Q20 Gender. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5740  run;
5741
5742
5743  proc freq data=sasintro.dakota15reg11;
5744  label Q21='Respondent Level of Education'
5745        Q18A ='Highly erodable land'
5746        Q18B='Heavy Soil'
5747        Q18C='Slow draining soil(Perdominantly clay'
5748        Q18D='Sandy Soil';
5749  tables (Q18A Q18B Q18C Q18D)*Q21/chisq;
5750  format Q21 Education. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5751  run;
5752
5753
5754  proc freq data=sasintro.dakota15reg11;
5755  label Q22='Principal Occupation'
5756        Q18A ='Highly erodable land'
5757        Q18B='Heavy Soil'
5758        Q18C='Slow draining soil(Perdominantly clay'
5759        Q18D='Sandy Soil';
5760  tables (Q18A Q18B Q18C Q18D)*Q22/chisq;
5761  format Q22 Occupation. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5762  run;
5763
5764
5765  proc freq data=sasintro.dakota15reg11;
5766  label Q23='Gross farm/ranch Sales'
5767        Q18A ='Highly erodable land'
5768        Q18B='Heavy Soil'
5769        Q18C='Slow draining soil(Perdominantly clay'
5770        Q18D='Sandy Soil';
5771  tables (Q18A Q18B Q18C Q18D)*Q23/chisq;
5772  format Q23 Sales. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5773  run;
5774
5775
```

```
5776 proc format;
5777 value operation
5778       1='Have been a farm operator'
5779       2='less than 10 years as a farm operator'
5780       3='10 to 10 years as a farm operator'
5781       4='20 to 29 years as a farm operator'
5782       5='30 years or more as a farm operator';
5783 run;
5784
5785 proc freq data=sasintro.dakota15reg11;
5786 label Q1='farm operator'
5787       Q18A ='Highly erodable land'
5788       Q18B='Heavy Soil'
5789       Q18C='Slow draining soil(Perdominantly clay'
5790       Q18D='Sandy Soil';
5791 tables (Q18A Q18B Q18C Q18D)*Q1/chisq;
5792 format Q1 Operation. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5793 run;
5794
5795
5796 proc format;
5797 value Farmland 10-259='1 to 259 acres'
5798                260-499='260 to 499 acres'
5799                500-999='500 to 999 acres'
5800                1000-1999='1000 to 1999 acres'
5801                2000-4999='2000 to 4999 acres'
5802                5000-high ='5000 acres and above';
5803 run;
5804
5805 proc freq data=sasintro.dakota15reg11;
5806 label Q3a='Farmland acres operated in 2014'
5807       Q18A ='Highly erodable land'
5808       Q18B='Heavy Soil'
5809       Q18C='Slow draining soil(Perdominantly clay'
5810       Q18D='Sandy Soil';
5811 tables (Q18A Q18B Q18C Q18D)*Q3a/chisq;
5812 format Q3a Farmland. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5813 run;
5814
5815 proc format;
5816 value Cropland 0 ='0 acres'
5817                 1-9 = '1 to 9 acres'
5818                10-49 ='10 to 49 acres'
5819                50-69 ='50 to 69 acres'
5820                70-99 ='70 to 99 acres'
5821                100-139 ='100 to 139 acres'
5822                140-179 ='140 to 179 acres'
5823                180-219 ='180 to 219 acres'
5824                220-259 ='220 to 259 acres'
5825                260-499 ='260 to 499 acres'
5826                500-999 ='500 to 999 acres'
5827                1000-1999 ='1,000 to 1,999 acres'
5828                2000-4999 ='2,000 to 4,999 acres'
5829                5000-high ='5000 acres and above';
5830
5831 run;
5832
5833 proc freq data=sasintro.dakota15reg1;
5834 tables Q3B*Region/chisq;
5835 format Q3B Cropland. ;
5836 run;
5837
5838 proc format;
5839 value CRPLand  0 ='0 acres'
5840                1-9 = '1 to 9 acres'
5841                10-49 ='10 to 49 acres'
5842                50-69 ='50 to 69 acres'
5843                70-99 ='70 to 99 acres'
5844                100-139 ='100 to 139 acres'
5845                140-179 ='140 to 179 acres'
5846                180-219 ='180 to 219 acres'
5847                220-259 ='220 to 259 acres'
5848                260-499 ='260 to 499 acres'
5849                500-999 ='500 to 999 acres'
5850                1000-1999 ='1,000 to 1,999 acres'
5851                2000-4999 ='2,000 to 4,999 acres'
```

```
5852                5000-high ='5000 acres and above';
5853 run;
5854
5855 proc freq data=sasintro.dakota15reg11;
5856 label Q3c='CRP acres in 2014'
5857       Q18A ='Highly erodable land'
5858       Q18B='Heavy Soil'
5859       Q18C='Slow draining soil(Perdominantly clay'
5860       Q18D='Sandy Soil';
5861 tables (Q18A Q18B Q18C Q18D)*Q3c/chisq;
5862 format Q3c CRPLand. Q18A Percentage.  Q18B Percentage. Q18C Percentage. Q18D Percentage. ;
5863 run;
5864
5865
5866 /*6 Moses did not examine anything about Question 18 on cropland Characteristics,
5867 at a minimum we could examine the distribution of 2014 cropland acres by region
5868 that exibit each characteristics (number of total cropland acres in Q4 multiflied
5869 by percent of 2014 crop land with selected charcteristics and sum by region. the
5870 orginal intent of this question was to connect it to various land use change and
5871 use conversion decisions (Q9 and Q8) */
5872
5873
5874
5875 data sasintro.dakota15reg1111;
5876      set sasintro.dakota15reg111;
5877
5878 Q18A1=Q18A/100*Q3B;
5879 Q18B1=Q18B/100*Q3B;
5880 Q18C1=Q18C/100*Q3B;
5881 Q18D1=Q18D/100*Q3B;
5882
5883 RUN;
5884
5885 proc print data=sasintro.dakota15reg1111;run;
5886
5887 proc format;
5888 value Percentagere 0 ='0 acres'
5889                    1-25.00 = '1 to 25.00 acres'
5890                   25.01-49.99 ='25.01 to 49.99 acres'
5891                   50-74.99 ='50 to 74.99 acres'
5892                   75.00-99.99 ='75.00 to 99 acres'
5893                   100-149.99 ='100 to 149.99 acres'
5894                   150-199.99 ='150 to 199.99 acres'
5895                   200-249.99 ='200 to 249.99 acres'
5896                   250.00-299.99 ='250 to 299.99 acres'
5897                   300-499.99 ='260 to 499.99 acres'
5898                   500-high ='500 acres and above';
5899 run;
5900
5901 proc freq data=sasintro.dakota15reg1111;
5902 label
5903       Q18A1 ='Highly erodable land'
5904       Q18B1='Heavy Soil'
5905       Q18C1='Slow draining soil(Perdominantly clay'
5906       Q18D1='Sandy Soil';
5907 tables (Q18A1 Q18B1 Q18C1 Q18D1)*Region/chisq;
5908 format Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere. ;
5909 run;
5910
5911
5912 proc freq data=sasintro.dakota15reg1111;
5913 label
5914       Q18A1 ='Highly erodable land'
5915       Q18B1='Heavy Soil'
5916       Q18C1='Slow draining soil(Perdominantly clay'
5917       Q18D1='Sandy Soil';
5918 tables (Q18A1 Q18B1 Q18C1 Q18D1)*State/chisq;
5919 format Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere. ;
5920 run;
5921
5922
5923 proc format;
5924 value Age
5925       1='19 to 34 years'
5926       2='35 to 49 years'
5927       3='50 to 59 years'
```

```
5928        4='60 to 69 years'
5929        5='70 years and over';
5930
5931  value Gender
5932        1='Male'
5933        2='Female';
5934
5935  value Education
5936        1='Less than high school'
5937        2='High school'
5938        3='Some college/technical school'
5939        4='4-year college degree'
5940        5='Advanced degree (Masters, etc.)';
5941
5942  value Occupation
5943        1='Farming or Ranching'
5944        2='Employment in off-farm job'
5945        3='Own/operate a non-farm business'
5946        4='Retired'
5947
5948  value Sales
5949
5950        12='Less than $99,999'
5951        3='From $100,000 up to $249,999'
5952        4='From $250,000 up to $499,999'
5953        5='From $500,000 up to $999,999'
5954        6='$1 million or more';
5955
5956  run;
5957
5958  proc freq data=sasintro.dakota15reg1111;
5959  label Q19='Respondent Age'
5960        Q18A1 ='Highly erodable land'
5961        Q18B1='Heavy Soil'
5962        Q18C1='Slow draining soil(Perdominantly clay'
5963        Q18D1='Sandy Soil';
5964  tables (Q18A1 Q18B1 Q18C1 Q18D1)*Q19/chisq;
5965  format Q19 Age. Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere. ;
5966  run;
5967
5968
5969  proc freq data=sasintro.dakota15reg1111;
5970  label Q20='Respondent Genger'
5971        Q18A1 ='Highly erodable land'
5972        Q18B1='Heavy Soil'
5973        Q18C1='Slow draining soil(Perdominantly clay'
5974        Q18D1='Sandy Soil';
5975  tables (Q18A1 Q18B1 Q18C1 Q18D1)*Q20/chisq;
5976  format Q20 Gender. Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere.  ;
5977  run;
5978
5979
5980  proc freq data=sasintro.dakota15reg1111;
5981  label Q21='Respondent Level of Education'
5982        Q18A1 ='Highly erodable land'
5983        Q18B1='Heavy Soil'
5984        Q18C1='Slow draining soil(Perdominantly clay'
5985        Q18D1='Sandy Soil';
5986  tables (Q18A1 Q18B1 Q18C1 Q18D1)*Q21/chisq;
5987  format Q21 Education. Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere.  ;
5988  run;
5989
5990
5991  proc freq data=sasintro.dakota15reg1111;
5992  label Q22='Principal Occupation'
5993        Q18A1 ='Highly erodable land'
5994        Q18B1='Heavy Soil'
5995        Q18C1='Slow draining soil(Perdominantly clay'
5996        Q18D1='Sandy Soil';
5997  tables (Q18A1 Q18B1 Q18C1 Q18D1)*Q22/chisq;
5998  format Q22 Occupation. Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere.  ;
5999  run;
6000
6001
6002  proc freq data=sasintro.dakota15reg1111;
6003  label Q23='Gross farm/ranch Sales'
```

```
6004        Q18A1 ='Highly erodable land'
6005        Q18B1='Heavy Soil'
6006        Q18C1='Slow draining soil(Perdominantly clay'
6007        Q18D1='Sandy Soil';
6008  tables (Q18A1 Q18B1 Q18C1 Q18D1)*Q23/chisq;
6009  format Q23 Sales. Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere.  ;
6010  run;
6011
6012
6013  proc format;
6014  value operation
6015        1='Have been a farm operator'
6016        2='less than 10 years as a farm operator'
6017        3='10 to 10 years as a farm operator'
6018        4='20 to 29 years as a farm operator'
6019        5='30 years or more as a farm operator';
6020  run;
6021
6022  proc freq data=sasintro.dakota15reg1111;
6023  label Q1='farm operator'
6024        Q18A1 ='Highly erodable land'
6025        Q18B1='Heavy Soil'
6026        Q18C1='Slow draining soil(Perdominantly clay'
6027        Q18D1='Sandy Soil';
6028  tables (Q18A1 Q18B1 Q18C1 Q18D1)*Q1/chisq;
6029  format Q1 Operation. Q18A1 Percentagere.  Q18B1 Percentagere. Q18C1 Percentagere. Q18D1 Percentagere.  ;
6030  run;
6031
6032
6033  proc means data=sasintro.dakota15reg1111 n nmiss sum min max mean CV std STDERR maxdec=2;
6034  class Region;
6035  var Q18A1 Q18B1 Q18C1 Q18D1 ;
6036  label
6037        Q18A1 ='Highly erodable land'
6038        Q18B1='Heavy Soil'
6039        Q18C1='Slow draining soil(Perdominantly clay'
6040        Q18D1='Sandy Soil';
6041  run;
6042
6043  proc means data=sasintro.dakota15reg1111 n nmiss sum min max mean CV std STDERR maxdec=2;
6044  class State;
6045  var Q18A1 Q18B1 Q18C1 Q18D1 ;
6046  label
6047        Q18A1 ='Highly erodable land'
6048        Q18B1='Heavy Soil'
6049        Q18C1='Slow draining soil(Perdominantly clay'
6050        Q18D1='Sandy Soil';
6051  run;
6052
6053
6054  /*You can use question 5a and 5b to develop a new variabele call acrechg.
6055  then you cross-tab (chi square) acrechg by a series of variables ins
6056  Q8, Q9, Q10, Q11*/
6057
6058
6059  data sasintro.dakota15sizeq5;
6060       set sasintro.dakota15clean;
6061
6062  Sizeq5=(Q5A*10)+Q5B;
6063
6064  RUN;
6065
6066  proc print data=sasintro.dakota15sizeq5;run;
6067
6068
6069  data sasintro.dakota15sizeqnew;
6070       set sasintro.dakota15sizeq5;
6071
6072
6073  ACRECHG=.;
6074      if (Sizeq5=22) then ACRECHG=1;
6075      if (Sizeq5=13)or (Sizeq5=31) then ACRECHG=2;
6076      if (Sizeq5=33) or (Sizeq5=32) or (Sizeq5=23) then ACRECHG=3;
6077      if (Sizeq5=11)or (Sizeq5=12) or (Sizeq5=21) then ACRECHG=4;
6078  RUN;
6079
```

```
6080 proc print data=sasintro.dakota15sizeqnew;run;
6081
6082
6083
6084 proc format;
6085 value Currentacres
6086       1 = 'Fewer acres than 10 years ago (by over 10%)'
6087       2 = 'No change or a minor change'
6088       3 = 'More acres than 10 years ago (by over 10%)';
6089 run;
6090
6091 proc format;
6092 value sizevariable
6093      33,32,23='Expand'
6094      22='Same'
6095      11,12,21='DownSize'
6096      13,31='Unsure';
6097 run;
6098
6099 proc freq data=sasintro.dakota15sizeqnew;
6100 label Q5A='Cropland acres operated';
6101 tables (Q5a)*Sizeq5/chisq;
6102 format Q5a Currentacres. Sizeq5 sizevariable. ;
6103 run;
6104
6105
6106 proc format;
6107 value Currentacres
6108       1 = 'Fewer acres than 10 years ago (by over 10%)'
6109       2 = 'No change or a minor change'
6110       3 = 'More acres than 10 years ago (by over 10%)';
6111 run;
6112
6113 proc freq data=sasintro.dakota15sizeqnew;
6114 label Q5B='Pasture/rangeland acres operated';
6115 tables (Q5B)*Sizeq5/chisq;
6116 format Q5B Currentacres. Sizeq5 sizevariable. ;
6117 run;
6118
6119
6120 proc format;
6121 value acrechgvari
6122       1='SAME'
6123       2='UNSURE'
6124       3='EXPAND'
6125       4='DOWNSIZE';
6126 run;
6127
6128 proc freq data=sasintro.dakota15sizeqnew;
6129 label Q5A='Cropland acres operated';
6130 tables (Q5a)*ACRECHG/chisq;
6131 format Q5a Currentacres. ACRECHG acrechgvari. ;
6132 run;
6133
6134
6135 proc freq data=sasintro.dakota15sizeqnew;
6136 label Q5B='Pasture/rangeland acres operated';
6137 tables (Q5B)*ACRECHG/chisq;
6138 format Q5B Currentacres. ACRECHG acrechgvari. ;
6139 run;
6140
6141
6142
6143
6144
6145 /** question 8 vs acrechg**/
6146
6147
6148 proc format;
6149 value Response
6150       1='Yes'
6151       2='No';
6152 run;
6153
6154 proc freq data=sasintro.dakota15sizeqnew;
6155 label
```

```
6156        Q8a='Grown corn and/or soybeans each year'
6157        Q8b='Increased proportion of corn and/or soybeans'
6158        Q8c='Grown wheat each year'
6159        Q8d='Increased proportion of wheat'
6160        Q8e='Grown other grains or oilseed crops each year'
6161        Q8f='Grown alfalfa or other hay crops each year'
6162        Q8g='Adopted or increased use of tile drainage'
6163        Q8h='Adopted or increased use of no-till';
6164  tables (Q8a Q8b Q8c Q8d Q8e Q8f Q8g Q8h)*STATE/chisq;
6165  format Q8a Response. Q8b Response. Q8c Response. Q8d Response.
6166  Q8e Response. Q8f Response. Q8g Response. Q8h Response.;
6167  run;
6168
6169
6170
6171  proc freq data=sasintro.dakota15sizeqnew;
6172  label
6173        Q8a='Grown corn and/or soybeans each year'
6174        Q8b='Increased proportion of corn and/or soybeans'
6175        Q8c='Grown wheat each year'
6176        Q8d='Increased proportion of wheat'
6177        Q8e='Grown other grains or oilseed crops each year'
6178        Q8f='Grown alfalfa or other hay crops each year'
6179        Q8g='Adopted or increased use of tile drainage'
6180        Q8h='Adopted or increased use of no-till';
6181  tables (Q8a Q8b Q8c Q8d Q8e Q8f Q8g Q8h)*REGION/chisq;
6182  format Q8a Response. Q8b Response. Q8c Response. Q8d Response.
6183  Q8e Response. Q8f Response. Q8g Response. Q8h Response.;
6184  run;
6185
6186
6187  proc freq data=sasintro.dakota15sizeqnew;
6188  label
6189        Q8a='Grown corn and/or soybeans each year'
6190        Q8b='Increased proportion of corn and/or soybeans'
6191        Q8c='Grown wheat each year'
6192        Q8d='Increased proportion of wheat'
6193        Q8e='Grown other grains or oilseed crops each year'
6194        Q8f='Grown alfalfa or other hay crops each year'
6195        Q8g='Adopted or increased use of tile drainage'
6196        Q8h='Adopted or increased use of no-till';
6197  tables (Q8a Q8b Q8c Q8d Q8e Q8f Q8g Q8h)*ACRECHG/chisq;
6198  format ACRECHG acrechgvari. Q8a Response. Q8b Response. Q8c Response. Q8d Response.
6199  Q8e Response. Q8f Response. Q8g Response. Q8h Response.;
6200  run;
6201
6202
6203
6204  /* Q9 vs acrechg */
6205
6206  proc freq data=sasintro.dakota15sizeqnew;
6207  label
6208        Q9aYN='Conversion of native grass to cropland'
6209        Q9bYN='Conversion of tamend grassland to cropland'
6210        Q9cYN='Conversion of CRP land to cropland'
6211        Q9dYN='Conversion of CRP land to pasture/hay'
6212        Q9eYN='Enrollment of farmland acres to CRP'
6213        Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
6214  table (Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN)*ACRECHG/chisq;
6215  format ACRECHG acrechgvari. Q9aYN Response. Q9bYN Response. Q9cYN Response. Q9dYN Response.
6216  Q9eYN Response. Q9fYN Response.;
6217  run;
6218
6219
6220  proc format;
6221  value Farmacres  0 ='0 acres'
6222                  1-99 = '1 to 99 acres'
6223                 100-179 ='100 to 179 acres'
6224                 180-259 ='180 to 259 acres'
6225                 260-499 ='260 to 499 acres'
6226                 500-high ='500 acrsa and above';
6227  run;
6228
6229
6230  proc freq data=sasintro.dakota15sizeqnew;
6231  label
```

```
6232        Q9aAC='Conversion of native grass to cropland'
6233        Q9bAC='Conversion of tamend grassland to cropland'
6234        Q9cAC='Conversion of CRP land to cropland'
6235        Q9dAC='Conversion of CRP land to pasture/hay'
6236        Q9eAC='Enrollment of farmland acres to CRP'
6237        Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
6238  table (Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC)*ACRECHG/chisq;
6239  format ACRECHG acrechgvari. Q9aAC Farmacres. Q9bAC Farmacres. Q9cAC Farmacres. Q9dAC Farmacres.
6240  Q9eAC Farmacres. Q9fAC Farmacres.;
6241  run;
6242
6243
6244  proc format;
6245  value Responsechg
6246        1='Yes'
6247        0 ='No';
6248  run;
6249
6250  proc freq data=sasintro.dakota15sizeqnew;
6251  label
6252        Q9aCorn='Conversion of native grass to Corn land'
6253        Q9aSoy='Conversion of native grass to Soybean land'
6254        Q9aWht='Conversion of native grass to Wheat land'
6255        Q9aOth='Conversion of native grass to Other use'
6256        Q9bCorn='Conversion of tamend grassland to Corn land'
6257        Q9bSoy='Conversion of tamend grassland to Soy land'
6258        Q9bWht='Conversion of tamend grassland to Wheat land'
6259        Q9bOth='Conversion of tamend grassland to Other use'
6260        Q9cCorn='Conversion of CRP land to Corn land'
6261        Q9cSoy='Conversion of CRP land to Soy land'
6262        Q9cWht='Conversion of CRP land to Wheat land'
6263        Q9cOth='Conversion of CRP land to Other use' ;
6264  table (Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth)*ACRECHG/chisq;
6265  format ACRECHG acrechgvari. Q9aCorn responsechg. Q9aSoy responsechg. Q9aWht responsechg. Q9aOth responsechg.
6266         Q9bCorn responsechg. Q9bSoy responsechg. Q9bWht responsechg. Q9bOth responsechg.
6267         Q9cCorn responsechg. Q9cSoy responsechg. Q9cWht responsechg. Q9cOth responsechg.;
6268  run;
6269
6270  /*Q10 vs ACRECHG*/
6271
6272  proc format;
6273  value Impact
6274        1='No Impact'
6275        2='Slight Impact'
6276        3='Some Impact'
6277        4='Quite a bit of Impact'
6278        5='Great Impact';
6279  run;
6280
6281  proc freq data=sasintro.dakota15sizeqnew;
6282  label
6283        Q10a1='Changing crop prices'
6284        Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
6285        Q10a3='Availability of crop and revenue insurance policies'
6286        Q10a4='Availability of drought-tolerant seed'
6287        Q10a5='Developments in pest management practices, including pest management seed traits'
6288        Q10a6='Improved crop yields (other than seed related traits)'
6289        Q10a7='Development of more efficient cropping equipment'
6290        Q10a8='Labor availability problems'
6291        Q10a9='Improving wildlife habitat'
6292        Q10a10='Changing weather /climate patterns';
6293  tables(Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10)*ACRECHG/chisq;
6294  format ACRECHG acrechgvari. Q10A1 Impact. Q10A2 Impact. Q10A3 Impact. Q10A4 Impact. Q10A5 Impact.
6295  Q10A6 Impact. Q10A7 Impact. Q10A8 Impact. Q10A9 Impact. Q10A10 Impact.;
6296  run;
6297
6298  proc format;
6299  value gimpact
6300        01 = 'Changing crop prices'
6301        02 = 'Changing prices in input markets (seed, fertilizer, chemicals, etc.) '
6302        03 = 'Availability of crop and revenue insurance policies'
6303        04= 'Availability of drought-tolerant seed'
6304        05= 'Developments in pest management practices, including pest management seed traits'
6305        06= 'Improved crop yields (other than seed related traits) '
6306        07 = 'Development of more efficient cropping equipment'
6307        08 = 'Labor availability problems'
```

```
6308        09 = 'Improving wildlife habitat'
6309        10 = 'Changing weather /climate patterns';
6310  RUN;
6311
6312  proc freq data=sasintro.dakota15sizeqnew;
6313  label Q10B='greatest impact on changes in ouwn land use';
6314  tables Q10B*ACRECHG/chisq;
6315  format ACRECHG acrechgvari. Q10B gimpact.;
6316  run;
6317
6318
6319  /*Q11 vs ACRECHG */
6320
6321  proc format;
6322  value Future
6323        1='Yes'
6324        2='No'
6325        3='Dont Know';
6326  run;
6327
6328  proc freq data=sasintro.dakota15sizeqnew;
6329  label
6330        Q11a='Plan to convert native grassland to cropland in next 10 years'
6331        Q11b='Plan to convert tame grassland to cropland in next 10 years'
6332        Q11c='Plan to convert cropland to grassland in next 10 years';
6333  tables (Q11a Q11b Q11c)*ACRECHG/norow;
6334  format ACRECHG acrechgvari.  Q11a Future. Q11b Future. Q11c Future.;
6335  run;
6336
6337  proc freq data=sasintro.dakota15sizeqnew;
6338  label
6339        Q11a='Plan to convert native grassland to cropland in next 10 years'
6340        Q11b='Plan to convert tame grassland to cropland in next 10 years'
6341        Q11c='Plan to convert cropland to grassland in next 10 years';
6342  tables (Q11a Q11b Q11c)*ACRECHG/chisq;
6343  format ACRECHG acrechgvari.  Q11a Future. Q11b Future. Q11c Future.;
6344  run;
6345
6346
6347  /*obtain a frequency distribution of Sizeq5 and also sum the number of cropland
6348  acres, pasture acres, and farmland acres (Q3 variables0 by eliment of Size5*/
6349
6350  proc format;
6351  value Farmland 10-259='1 to 259 acres'
6352                 260-499='260 to 499 acres'
6353                 500-999='500 to 999 acres'
6354                 1000-1999='1000 to 1999 acres'
6355                 2000-4999='2000 to 4999 acres'
6356                 5000-high ='5000 acres and above';
6357
6358  value Cropland 0 ='0 acres'
6359                  1-9 = '1 to 9 acres'
6360                 10-49 ='10 to 49 acres'
6361                 50-69 ='50 to 69 acres'
6362                 70-99 ='70 to 99 acres'
6363                 100-139 ='100 to 139 acres'
6364                 140-179 ='140 to 179 acres'
6365                 180-219 ='180 to 219 acres'
6366                 220-259 ='220 to 259 acres'
6367                 260-499 ='260 to 499 acres'
6368                 500-999 ='500 to 999 acres'
6369                 1000-1999 ='1,000 to 1,999 acres'
6370                 2000-4999 ='2,000 to 4,999 acres'
6371                 5000-high ='5000 acres and above';
6372
6373  value CRPLand  0 ='0 acres'
6374                 1-9 = '1 to 9 acres'
6375                 10-49 ='10 to 49 acres'
6376                 50-69 ='50 to 69 acres'
6377                 70-99 ='70 to 99 acres'
6378                 100-139 ='100 to 139 acres'
6379                 140-179 ='140 to 179 acres'
6380                 180-219 ='180 to 219 acres'
6381                 220-259 ='220 to 259 acres'
6382                 260-499 ='260 to 499 acres'
6383                 500-999 ='500 to 999 acres'
```

```
6384                1000-1999 ='1,000 to 1,999 acres'
6385                2000-4999 ='2,000 to 4,999 acres'
6386                5000-high ='5000 acres and above';
6387
6388
6389 value Pastureland 0 ='0 acres'
6390                  1-9 = '1 to 9 acres'
6391                10-49 ='10 to 49 acres'
6392                50-69 ='50 to 69 acres'
6393                70-99 ='70 to 99 acres'
6394                100-139 ='100 to 139 acres'
6395                140-179 ='140 to 179 acres'
6396                180-219 ='180 to 219 acres'
6397                220-259 ='220 to 259 acres'
6398                260-499 ='260 to 499 acres'
6399                500-999 ='500 to 999 acres'
6400                1000-1999 ='1,000 to 1,999 acres'
6401                2000-4999 ='2,000 to 4,999 acres'
6402                5000-high ='5000 acres and above';
6403 run;
6404
6405
6406 /* Q3a vs Sizeq5, chisq*/
6407
6408
6409 proc freq data=sasintro.dakota15sizeqnew;
6410 label
6411       Q3A='farmland acres operated in 2014';
6412 tables Q3A*Sizeq5/chisq;
6413 format Sizeq5 sizevariable. Q3A Farmland. ;
6414 run;
6415
6416
6417 /* Q3B vs Sizeq5 chisq*/
6418
6419
6420 proc freq data=sasintro.dakota15sizeqnew;
6421 label
6422       Q3B='cropland acres operated in 2014';
6423 tables Q3B*Sizeq5/chisq;
6424 format Sizeq5 sizevariable. Q3B Cropland. ;
6425 run;
6426
6427
6428 /* Q3C vs Sizeq5 chisq*/
6429
6430
6431 proc freq data=sasintro.dakota15sizeqnew;
6432 label
6433       Q3C='CRP acres  in 2014';
6434 tables Q3C*Sizeq5/chisq;
6435 format Sizeq5 sizevariable. Q3C CRPLand. ;
6436 run;
6437
6438 /* Q3D vs Sizeq5 chisq*/
6439
6440
6441 proc freq data=sasintro.dakota15sizeqnew;
6442 label
6443       Q3D='pasture/rangeland acres  in 2014';
6444 tables Q3D*Sizeq5/chisq;
6445 format Sizeq5 sizevariable. Q3D Pastureland. ;
6446 run;
6447
6448
6449 /* means analysis*/
6450
6451
6452 proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;
6453 class Sizeq5;
6454 var Q3A Q3B Q3C Q3D;
6455 label
6456       Q3A='farmland acres operated in 2014'
6457       Q3B='cropland acres operated in 2014'
6458       Q3C='CRP acres  in 2014'
6459       Q3D='pasture/rangeland acres  in 2014';
```

```
format Sizeq5 sizevariable.;
run;


/** question 8 vs acrechg MENA ANALYSIS**/


proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;;
CLASS ACRECHG;
var Q8a Q8b Q8c Q8d Q8e Q8f Q8g Q8h;
label
      Q8a='Grown corn and/or soybeans each year'
      Q8b='Increased proportion of corn and/or soybeans'
      Q8c='Grown wheat each year'
      Q8d='Increased proportion of wheat'
      Q8e='Grown other grains or oilseed crops each year'
      Q8f='Grown alfalfa or other hay crops each year'
      Q8g='Adopted or increased use of tile drainage'
      Q8h='Adopted or increased use of no-till';
format ACRECHG acrechgvari. ;
run;


/** question 9 vs acrechg MEAN ANALYSIS**/


proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;;
CLASS ACRECHG;
var Q9aYN Q9bYN Q9cYN Q9dYN Q9eYN Q9fYN;
label
      Q9aYN='Conversion of native grass to cropland'
      Q9bYN='Conversion of tamend grassland to cropland'
      Q9cYN='Conversion of CRP land to cropland'
      Q9dYN='Conversion of CRP land to pasture/hay'
      Q9eYN='Enrollment of farmland acres to CRP'
      Q9fYN='Enrollment of land into WRP (wetland reserve) or grass easement program';
format ACRECHG acrechgvari. ;
run;


proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;;
CLASS ACRECHG;
var Q9aAC Q9bAC Q9cAC Q9dAC Q9eAC Q9fAC;
label
      Q9aAC='Conversion of native grass to cropland'
      Q9bAC='Conversion of tamend grassland to cropland'
      Q9cAC='Conversion of CRP land to cropland'
      Q9dAC='Conversion of CRP land to pasture/hay'
      Q9eAC='Enrollment of farmland acres to CRP'
      Q9fAC='Enrollment of land into WRP (wetland reserve) or grass easement program';
format ACRECHG acrechgvari. ;
run;

proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;;
CLASS ACRECHG;
var Q9aCorn Q9aSoy Q9aWht Q9aOth Q9bCorn Q9bSoy Q9bWht Q9bOth Q9cCorn Q9cSoy Q9cWht Q9cOth;
label
      Q9aCorn='Conversion of native grass to Corn land'
      Q9aSoy='Conversion of native grass to Soybean land'
      Q9aWht='Conversion of native grass to Wheat land'
      Q9aOth='Conversion of native grass to Other use'
      Q9bCorn='Conversion of tamend grassland to Corn land'
      Q9bSoy='Conversion of tamend grassland to Soy land'
      Q9bWht='Conversion of tamend grassland to Wheat land'
      Q9bOth='Conversion of tamend grassland to Other use'
      Q9cCorn='Conversion of CRP land to Corn land'
      Q9cSoy='Conversion of CRP land to Soy land'
      Q9cWht='Conversion of CRP land to Wheat land'
      Q9cOth='Conversion of CRP land to Other use' ;
format ACRECHG acrechgvari.;
run;


/* Q10 vs acrechg mean analysis*/


```

```
6536 proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;;
6537 CLASS ACRECHG;
6538 var Q10A1 Q10A2 Q10a3 Q10A4 Q10A5 Q10A6 Q10A7 Q10A8 Q10A9 Q10A10;
6539 label
6540       Q10a1='Changing crop prices'
6541       Q10a2='Changing prices in input markets (seed, fertilizer, chemicals, etc.)'
6542       Q10a3='Availability of crop and revenue insurance policies'
6543       Q10a4='Availability of drought-tolerant seed'
6544       Q10a5='Developments in pest management practices, including pest management seed traits'
6545       Q10a6='Improved crop yields (other than seed related traits)'
6546       Q10a7='Development of more efficient cropping equipment'
6547       Q10a8='Labor availability problems'
6548       Q10a9='Improving wildlife habitat'
6549       Q10a10='Changing weather /climate patterns';
6550 format ACRECHG acrechgvari. ;
6551 run;
6552
6553
6554 proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;;
6555 CLASS ACRECHG;
6556 var Q10B;
6557 label Q10B='greatest impact on changes in ouwn land use';
6558 format ACRECHG acrechgvari. Q10B gimpact.;
6559 run;
6560
6561
6562 /* Q11 vs acrechg mean analysis*/
6563
6564 proc means data=sasintro.dakota15sizeqnew n nmiss sum min max mean CV std STDERR maxdec=2;;
6565 CLASS ACRECHG;
6566 var Q11a Q11b Q11c;
6567 label
6568       Q11a='Plan to convert native grassland to cropland in next 10 years'
6569       Q11b='Plan to convert tame grassland to cropland in next 10 years'
6570       Q11c='Plan to convert cropland to grassland in next 10 years';
6571 format ACRECHG acrechgvari.  Q11a Future. Q11b Future. Q11c Future.;
6572 run;
6573
6574
6575 /* #Q2 related analysis, where GRASCROP, it is most important that iteam
6576 is completd for the subset of 360+ response where GRASCROP=1*/
6577
6578 data sasintro.dakota15reg12;
6579      set sasintro.dakota15reg1;
6580
6581 GRASCROP=1 ;
6582 RUN;
6583
6584 proc print data=sasintro.dakota15reg12;run;
6585
6586
6587
6588
6589
6590
6591
6592
6593
6594
6595
6596
```