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Economic Impact Analysis of Post-CRP Policy Options in South Dakota

Luarel Venuiszen
South Dakota State University

Martin Beutler
South Dakota State University

Larry Janssen
South Dakota State University

ECONOMIC IMPACT ANALYSIS OF POST-CRP POLICY OPTIONS IN SOUTH DAKOTA*

by

Ms. Laurel Venhuizen, Dr. Martin Beutler
& Dr. Larry Janssen**

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** Co-authors. Laurel Venhuizen has recently completed a Masters Thesis at SDSU. Dr. Larry Janssen is Professor of Economics and Dr. Martin Beutler is Extension Ranch Economist and Associate Professor of Economics, South Dakota State University.

TABLE OF CONTENTS

LIST OF TABLES

ECONOMIC IMPACT ANALYSIS OF POST-CRP POLICY OPTIONS IN SOUTH DAKOTA

Ms. Laurel Venhuizen, Dr. Martin Beutler, and Dr. Larry Janssen
Department of Economics, South Dakota State University

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ABSTRACT

The primary objective of the study was to determine the major economic impacts on South Dakota of alternative future CRP decisions. Three steps were followed to find the economic impacts. First, the relative productivity differences between South Dakota CRP land and South Dakota crop land were determined. County Soil Survey Books and NRCS conservationists provided the necessary information for this step's completion. The second step determined the profitability of post-CRP land uses by sub-state region for three post-CRP policy options. CARE budgeting was employed using relative productivity information to find crop/forage net returns under full CRP, reduced CRP, and no CRP extension scenarios. In step three the economic impacts of alternative CRP land use scenarios on different regional and state economic sectors were determined. Information from the CARE budgeting was used in IMPLAN input/output analyses to determine each policy's broader economic impacts. Separate impact models were developed for the state and each of eight sub-state regions.

Reducing CRP extension levels was found to have negative impacts on economic indicators in most regions and state-wide. The induced effects of lost producer income under no or reduced CRP drove the results. Generally, direct and indirect effects from reducing CRP were positive. Moving from full CRP to less CRP positively affected economic indicators in agricultural-related industries and negatively impacted economic indicators in non-agricultural industries. Which CRP policy is best for South Dakota depends upon the goal society is trying to achieve (agricultural versus non-agricultural).

ECONOMIC IMPACT ANALYSIS OF POST-CRP POLICY OPTIONS IN SOUTH DAKOTA

INTRODUCTION

The Conservation Reserve Program (CRP) was created under the Conservation Title (Title XII) of the 1985 Food Security Act. CRP was enacted with the goal of removing highly erodible land and other environmentally sensitive land from crop production. Other goals of the CRP were to raise crop prices and control surplus production of crops that was occurring in the mid-1980's.

Twelve sign-up periods were scheduled from 1985 to 1992. A total of 36.4 million acres were enrolled nationally in the Conservation Reserve Program. Approximately 1.8 billion dollars is paid each year in rent to contract holders with average rent payments of fifty dollars per acre.

In 1996 the first of the Conservation Reserve Program contracts begin to expire. By 2001 nearly all of the contracts will have expired.

Problem Identification

South Dakota has approximately two million acres, ten percent of its cropland base, enrolled in the CRP. Thus, CRP's future is of vital interest to the state. In South Dakota, CRP acres tend to be concentrated in certain areas of the state: North Central, Northwest, and Northeast regions. This concentration; along with geographic, environmental, and economic structure differences across South Dakota; means that policy options may have widely varied impacts in different regions of the state.

First, the geographic and environmental differences affect post-CRP land use profitability. Relative productivity differences between regions create different per acre land use net returns to land.

Second, the geographic and environmental differences also impact the number of acres that go into each post-CRP land use. If CRP land is relatively unproductive, the farmer will be more likely to leave the land in grass or in CRP and will not require much incentive to do so. If the land is productive, the farmer will be more likely to replant it and future CRP policies would have to provide larger incentives to get the farmer to keep the land in a conserving use.

Finally, the productivity differences combine with economic structure to determine the impact of post-CRP policy options on the various regions. In some regions, such as the Northwest and South Central regions, the relative dependence on agriculture is high. In these

regions changes in post-CRP policies are more likely to have a larger impact on the total economy than in regions, such as the West and East Central regions, where dependence on agriculture is relatively low.

One of the critical concerns involving the future of the CRP is that there are many questions regarding the program's impacts on various sectors of society. Because the future of CRP is of crucial importance to South Dakota and because there were many unanswered questions about how alternative post-CRP policy options would affect different economic sectors, the focus of this research was on different impacts the would occur in South Dakota under alternative post-CRP policy options.

Research Objectives

The primary objective of the research was to determine the major economic impacts on South Dakota of alternative future CRP decisions. Several steps were followed in order to achieve the primary objective.

Step 1. Determining the relative productivity differences between South Dakota CRP land and South Dakota crop land.

Step 2. Determining the profitability of post-CRP land uses by sub-state region for three post-CRP policy options.

Step 3. Determining the economic impact of alternative CRP land use scenarios on different sectors of the regional and state economies.

Justification for the Research

The Conservation Reserve Program has had a significant impact on the United States' natural environment. Some of the benefits that have evolved from the CRP are: a 655 million ton per year reduction in soil erosion; a 200 million ton per year reduction in sedimentation of the nation's waterways; and a 65 million pound annual reduction in the amount of pesticides applied to the agricultural ecosystem. Not only is the CRP reaping great environmental benefits, it is outshining other USDA soil conservation programs. The estimated off-site benefits of CRP may be more than $82.00 per acre compared to less than $12.00 per acre for other USDA soil conservation programs (Roath, 1994, p.98). The benefits of CRP are even more impressive when they are taken over the total life of the program. Discounted public benefits over the life of the CRP are estimated to be worth about $13.4 billion, with the following distribution: fish and wildlife, $8.6 billion; water quality, $3.1 billion; soil productivity, $1.3 billion; and wind erosion, $0.4 billion (USDA, 1995).

The CRP was also implemented as an attempt to stop the over-production of crops in the mid-1980's. By idling cropland acres, the government hoped to raise crop prices and ease the surpluses. Since the CRP contracts were ten years in duration, this was seen as a longer term solution than annual set-aside programs. The CRP has been effective in these areas. Without CRP there would be increased volatility of crop and livestock production, prices, and farm income along with greater economic uncertainty among participants and nonparticipants alike (Cook, 1994).

In addition to reaping environmental benefits and raising crops prices, the CRP has also greatly improved wildlife habitat. This improvement in habitat is particularly noticeable in the Great Plains where approximately two-thirds of the nation's CRP acres are located. "In the Great Plains, the CRP is known as the wildlife habitat program where populations of certain wildlife species are recovering dramatically" (USDA, 1995). The CRP's benefits to wildlife are not limited to a few species. CRP benefits birds and mammals, alike.

The Conservation Reserve Program also has several cost-savings benefits. Annual farm program payments have been reduced by the CRP taking "base" acres out of production (INHF & AFT, 1995). The discontinuation of the CRP would likely result in higher Acreage Reduction Programs and higher paid land diversions (Mayer, Edwards & Sterweis, 1994).

Assessing the costs and benefits of CRP policy alternatives on the different economic sectors--such as the farm, non-farm agribusiness, and non-agricultural related economies in the nation--will lead to a clearer picture of which post-CRP policy option should be pursued. The assessment of the policy options is important on the state level as well. In addition to state-wide impacts, there will be regional impacts. Because of the differences in soils, climate, crop production, economic structure, and CRP distribution, various regions of South Dakota will be affected by post-CRP policies in different ways. It is important to determine the way in which policy alternatives will affect every region of South Dakota.

PRE-ECONOMIC IMPACT ANALYSIS WORK

A more complete summary of research methodology and results can be found in Venhuizen, 1996 or Janssen, Beutler and Venhuizen, 1997.

Region Determination and Representative Counties

South Dakota was divided into eight regions based on Agricultural Statistics regions but combining the West Central and Southwest regions into one, West, region. Two or three

representative counties were chosen in each region to estimate relative soil productivity differences and to estimate the profitability of the post-CRP land use alternatives. The goal was to represent all major soil types in each region while using the counties having the highest CRP acreage.

Linkage of SD Research to National CRP Modeling

National CRP policy modeling has been conducted using macroeconomic simulation models (FAPRI) for agriculture combined with an interregional agricultural policy simulation model (POLYSIS). This modeling approach measures only direct agricultural impacts. It was used to estimate national, state, and sub-state regional changes in cropland use and post-CRP land use for different economic policy scenarios. The national modeling was undertaken by the Agricultural Policy Analysis Center to examine selected farm sector economic impacts of alternative post-CRP policy options. Three major post-CRP policy simulations were examined: (1) continuing CRP at the Congressional Budget Office baseline of 15 - 18 million acres with possible targeting options, (2) completely terminating CRP, or (3) retaining a full CRP at the 30+ million acre level.

The South Dakota research has several linkages to the national modeling. First, South Dakota data on relative productivity differences of CRP land and all cropland were supplied to the national model. Second, crop prices used in the South Dakota budgets were derived from the model's national price forecasts for the year 2000. Third, the selection of post-CRP policy options to examine for South Dakota was based on the policy options included in the national simulation models. Finally, the national model's predicted number of South Dakota CRP acres by crop use for each policy option was used in the South Dakota research.

Determining Relative Productivity Differences

The first step in calculating the relative productivity differences between South Dakota crop land and South Dakota CRP land was to find the productivity of South Dakota crop soils. County Soil Survey Books were used to determine the soil types that represent at least 75% of the soil acres in each representative county that are generally suited for crops (LCC 1-4). Weighted yields for the crops in each representative county were found based on NRCS yields and the weighted number of acres per soil type. The second step was to measure the productivity of South Dakota CRP soils. NRCS conservationists provided information on the primary CRP soil types in each representative county. County Soil Survey Books provided the individual crop yields and number of acres in each county for the CRP soil types. Weighted

yield averages were computed for all crop land, CRP average yield land, CRP high yield land, and CRP low yield land, where the high and low yields represent the upper and lower quartiles of CRP yields. These yields were then used to determine the relative productivity ratios between all South Dakota crop land and the three classes of CRP land. The productivity ratios were applied to the 1985-1994 ten year average yield to update the all crop land and CRP yields.

CRP Land Use Profitability for the Alternative Post-CRP Policy Options

Three post-CRP policy options were focused on in the South Dakota research. They are the three options from the national modeling: no CRP extension; reduced CRP extension (CBO Baseline CRP); and full CRP extension.

Crop use returns were determined first. CARE budgets were set up for each crop in each region. Separate budgets were run for all crop land, CRP average yield land, CRP high yield land, and CRP low yield land for each crop in each representative county. Yields determined earlier were used in each budget along with predicted South Dakota prices for the year 2000. In the year 2000 most CRP contracts in South Dakota will have ended. South Dakota prices were abstracted from the national FAPRI predicted prices using equations regressed from historical national and regional crop prices (Table 1). Each budget was run once for each policy option. In each run, the predicted South Dakota prices for the appropriate policy option were substituted into the budgets. Predicted net returns to land were calculated for each crop in each region under each post-CRP policy scenario.

After determining the crop use net returns, the profitability of the forage alternatives was found. Gross forage returns for range, pasture, and wild hay were based on their AUM returns. AUM returns for the year 2000 were predicted using a regression function based on AUM returns and cattle prices. The regression function was applied to FAPRI's estimated cattle prices for the year 2000 to find the expected return of $12 per AUM for all three policy scenarios. Gross forage returns for alfalfa hay were based on tons per acre and the estimated South Dakota prices for alfalfa. A regression function of South Dakota and national prices was applied to the estimated national alfalfa prices under each post-CRP policy option for the year 2000. Net returns for the forage alternatives were calculated by subtracting the appropriate establishment, pre-harvest, and harvesting costs from the gross returns. Expected forage prices and returns per AUM are shown in Table 1.

Table 1. South Dakota Crop/Forage Price and Deficiency Payment Assumptions

Crop/Forage Prices	No CRP Extension	Reduced CRP Ext.	Full CRP Extension
CROP PRICES			
Corn	$1.92 ($0.66)	$2.04 ($0.53)	$2.09 ($0.48)
Sorghum	$1.67 ($0.70)	$1.77 ($0.59)	$1.83 ($0.52)
Oats	$1.19 ($0.20)	$1.27 ($0.12)	$1.40 ($0.00)
Barley	$1.66 ($0.45)	$1.80 ($0.32)	$2.01 ($0.12)
Sp. Wheat	$3.10 ($1.06)	$3.38 ($0.79)	$4.08 ($0.11)
Wt. Wheat	$2.84 ($1.06)	$3.16 ($0.79)	$3.98 ($0.11)
Soybeans	$5.24	$5.41	$5.65
FORAGE PRICES			
Range	$12/AUM	$12/AUM	$12/AUM
Pasture	$12/AUM	$12/AUM	$12/AUM
Wild Hay	$12/AUM	$12/AUM	$12/AUM
Alfalfa	$50.19/ton	$52.85/ton	$55.50/ton

Note: Deficiency payments are listed in parentheses for the appropriate crops.
All prices are per bushel unless otherwise stated.

ECONOMIC IMPACTS OF POST-CRP POLICY OPTIONS

The IMPLAN input/output model was employed to calculate the regional and state-wide economic impacts of the alternative post-CRP policy options. Separate IMPLAN models were created for each policy option. Each option had eight regional models and one state model. The models were developed using future land use costs and net returns developed earlier in the research.

The 1992 South Dakota data set was used as the baseline for the IMPLAN analysis. The full CRP extension scenario was set equal to the baseline data. Total costs, per acre costs times the estimated number of acres, were calculated for each policy option. These costs were taken from the CARE budgeting. Total costs away from the full extension scenario costs were found for the other two scenarios. The cost differentials were then entered into the no CRP extension and reduced CRP (CBO Baseline) models. The direct and indirect effects of moving from full CRP extension to no CRP extension or reduced CRP extension were then determined.

Total net returns plus CRP payments were calculated for each post-CRP policy option. Changes in returns away from full CRP extension returns were measured for no CRP and reduced CRP. These differentials were entered into IMPLAN income analysis to compute the induced effects of shifting CRP policy from full extension to no extension or reduced extension. The total economic impacts of moving from full CRP extension were determined for the no CRP extension and reduced CRP extension options. The impacts on four economic variables were examined: total industry output; total property and worker income; total value added; and employment (Tables 2, 3, and 4).

Regional Impacts

In this paper, the regional impacts of changing CRP policies are examined for two of South Dakota's regions: the Northwest and Northeast regions. The Northwest region was chosen because it has a large number of CRP acres and because over 40% of total industry output in the region is in agricultural industries. The Northeast region has a smaller dependence on agriculture, but also has a large number of CRP acres.

The total economic impacts of changing post-CRP policy options were examined for the regions and for the state. In addition to the total economic impacts, partial economic impacts were also examined. The impacts of changing CRP policies were examined for

Table 2. 1992 Base Year IMPLAN Economic Activity = Full CRP Extension

State/Region	Total Industry Output[a]	Total Property & Worker Inc[a]	Total Value Added[a]	Employment[b]
Northwest	634.4417	315.1514	356.5353	11810
North Central	1999.0660	975.5020	1095.5420	37203
Northeast	2333.4690	1118.3310	1238.9880	36515
West	5141.1770	2786.3740	3056.6710	96504
Central	1872.5120	844.2307	948.0280	31781
East Central	9224.6990	3875.2120	4310.5860	148429
South Central	642.5342	333.6686	374.7174	12478
Southeast	3158.7700	1593.1720	1754.8180	51227
South Dakota	24977.9500	11961.1700	13290.5400	428515

[a] Measured in millions of dollars.

[b] Measured in number of jobs.

Table 3. No CRP Extension Changes from Full CRP Baseline Economic Indicators

State/Region	Total Industry Output[a]	Total Property & Worker Inc[a]	Total Value Added[a]	Employment[b]
Northwest	9.6349	4.6933	5.6027	129.06
North Central	7.3645	0.3726	1.1862	-89.02
Northeast	-26.6062	-15.7949	-17.9812	-684.70
West	0.0679	-0.3169	-0.2790	-58.77
Central	-19.0349	-8.8956	-10.3472	-410.86
East Central	-14.9707	-7.7421	-8.7083	-388.86
South Central	4.1129	1.8396	2.3191	33.14
Southeast	-20.3513	-11.1890	-12.8007	-393.23
South Dakota	-76.9062	-47.5950	-52.1880	-2244.40

[a] Measured in millions of dollars.

[b] Measured in number of jobs.

Table 4. CBO Baseline Extension Changes from Full CRP Extension Economic Indicators

State/Region	Total Industry Output[a]	Total Property & Worker Inc[a]	Total Value Added[a]	Employment[b]
Northwest	-1.6943	-0.8705	-1.0481	-44.26
North Central	3.6013	0.4244	0.8650	-30.06
Northeast	-17.9286	-10.6004	-12.0501	-463.12
West	-0.0349	-0.1554	-0.1254	-29.57
Central	-5.8798	-3.3588	-3.8954	-157.05
East Central	-8.0965	-4.1801	-4.7394	-201.84
South Central	-0.8812	-0.5473	-0.5954	-35.79
Southeast	-12.7327	-6.9744	-8.0116	-241.73
South Dakota	-56.4143	-32.0750	-35.7575	-1425.26

[a] Measured in millions of dollars.

[b] Measured in number of jobs.

different types of industries in each region. Each region's economy was divided into three industry sectors: directly impacted agricultural industries, non-directly impacted agricultural industries, and non-agricultural industries. Directly impacted industries were those industries where changes in CRP policy caused direct changes in production and/or income. Total economic impacts for each region and the state were also broken down by the type of impact. There were three types of economic impacts: direct impacts of the policy change, indirect impacts caused by the increased spending from directly impacted industries, and induced effects from the changes in income under the different policy options.

Northwest Region

Changing CRP policies from full CRP extension to no CRP extension had positive impacts in the Northwest region. All four economic indicators examined--total industry output, total property and worker income, total value added, and employment--were positively impacted by the policy change. Total industry output grew by $9.63 million, 1.50%. Total property and worker income rose by 1.49%, or $4.69 million. There was a 1.57%, $5.60 million, increase in total value added. Employment expanded by 129.06 jobs, 1.09%.

Switching from full CRP extension to reduced CRP extension has the opposite impact in the Northwest region. Total impacts on the four economic indicators were negative. Total industry output fell by $1.69 million, 0.27%. There was a 0.28%, $0.87 million, decrease in total property and worker income. Total value added declined by $1.05 million, or 0.29%. The change in policies caused employment in the Northwest region to fall by 44.26 jobs, a 0.37% decline.

Under the no CRP extension option the impacts on the four economic indicators were positive in each industry sector (Table 5). The largest increases occurred in the directly impacted agricultural industries. All four economic indicators rose by 6.42% to 7.35%. The smallest increases occurred in the non-directly impacted agricultural industries were average impacts on the economic indicators ranged from 0.17% to 0.29%. Average increases of 0.37% to 0.60% were found for the economic indicators in the non-agricultural related industries.

The reduced CRP extension policy had more diverse impacts in the three industry sectors of the Northwest region (Table 5). The directly impacted agricultural industries had positive total impacts in all four economic indicators. Increases in the economic indicators ranged from a 0.18% increase in employment to a 0.42% increase in total industry output. Other industries in the region were generally negatively impacted by the change to reduced CRP extension. Non-directly impacted agricultural industries on average had very small declines, 0.004% to 0.006%, in all economic indicators except employment were there was a small average increase in jobs, 0.002%. Average impacts in the non-agricultural industries were negative for all four economic indicators. Impacts ranged from a 0.54% decrease in total property and worker income to a 0.58% fall in total value added.

Changing CRP policies from full CRP extension to no CRP extension had positive total direct and indirect impacts on all four of the economic indicators. These positive effects were negated partially by negative induced effects. Losses in CRP payments and reduced crop prices caused producer income to fall and the induced effects on each economic indicator to be negative. In the Northwest region the positive effects outweighed the negative effects so the total effect of switching to no CRP extension was positive for each economic indicator.

Switching CRP policies from full extension to reduced extension had negative total impacts on each economic indicator in the Northwest region. The direct and indirect effects

Table 5. Northwest Region - No CRP and Reduced CRP Impacts on Various Economic Sectors

Economic Indicator	Directly Impacted Ag		Non-direct Impact Ag		Non-Agricultural	
No CRP Extension						
Total Ind Output[a]	7.8899	(6.93%)	1.2451	(0.17%)	1.4995	(0.39%)
Tot Prop/Work Inc[a]	3.8372	(7.35%)	0.1228	(0.19%)	0.7332	(0.37%)
Total Value Added[a]	4.4205	(6.99%)	0.1278	(0.18%)	1.0544	(0.47%)
Employment[b]	72.42	(6.42%)	7.13	(0.29%)	49.52	(0.60%)
Reduced CRP Exten						
Total Ind Output[a]	0.4755	(0.42%)	-0.0057	(-0.004%)	-2.1641	(-0.57%)
Tot Prop/Work Inc[a]	0.2111	(0.40%)	-0.0035	(-0.006%)	-1.0754	(-0.54%)
Total Value Added[a]	0.2501	(0.40%)	-0.0039	(-0.006%)	-1.2942	(-0.58%)
Employment[b]	2.08	(0.18%)	0.04	(0.002%)	-46.38	(-0.56%)

[a] Measured in millions of dollars.

[b] Measured in number of jobs.
Percent changes are listed in parentheses.

were still positive for all of the economic indicators. However, under the move to reduced CRP the negative induced effects outweighed the positive direct and indirect effects. The effects of lost CRP payments and the reduction in crop prices were larger than the effects of increased crop production.

Northeast Region

Moving from full CRP extension to no CRP extension had negative total impacts in the Northeast region. All four economic indicators were adversely impacted by the policy change. Total industry output fell by 1.14%, or $26.61 million. There was a 1.41%, $15.79 million, decline in total property and worker income. Total value added in the Northeast region decreased by 1.45%, or $17.98 million. Changing CRP policies caused a loss of 684.70 jobs, a 1.88% decline in employment.

Changing CRP policies from full extension to reduced extension had total impacts similar to those caused by changing to no CRP extension. Each economic indicator was negatively impacted by the change in policies, though, by smaller percentages than under the move to no CRP. There was a $17.93 million, 0.77%, loss in total industry output. Total property and worker income fell by 0.95%, or $10.60 million. A $12.05 million loss caused a 0.97% decrease in total value added. Switching to reduced CRP caused a 1.27%, 463.12 jobs, loss in employment in the Northeast region.

The three industry sectors were impacted in different ways by the move from full CRP extension to no CRP extension (Table 6). On average, directly impacted agricultural industries experienced growth in all four economic indicators while non-directly impacted agricultural industries and non-agricultural industries had declines in the economic indicators. Economic indicators rose by 0.95% to 2.14% in the directly impacted industries, fell by 0.02% to 0.05% in the non-directly impacted agricultural industries, and fell by 1.93% to 2.45% in the non-agricultural industries.

Switching CRP policies from full extension to reduced extension produced similar results (Table 6). The directly impacted agricultural industries had average increases ranging from a 0.88% increase in employment to a 1.66% increase in total industry output. Non-directly impacted agricultural industries had average decreases in their economic indicators of 0.004% to 0.03%. Impacts in the non-agricultural industries were also negative, with losses ranging from 1.35% in total industry output to 1.69% in employment.

As in the Northwest region, changing from full CRP extension to no CRP extension had positive direct and indirect effects in the Northeast region. The total induced effects were once again negative. In the Northeast region, the induced effects of lost income outweigh the direct and indirect effects of increased production. The total effects on all four economic indicators are negative.

Table 6. Northeast Region - No CRP and Reduced CRP Impacts on Various Economic Sectors

Economic Indicator	Directly Impacted Ag	Non-direct Impact Ag	Non-Agricultural
No CRP Extension			
Total Ind Output[a]	7.5588 (2.14%)	-0.1183 (-0.05%)	-34.0466 (-1.93%)
Tot Prop/Work Inc[a]	3.3793 (1.97%)	-0.0443 (-0.04%)	-19.1302 (-2.29%)
Total Value Added[a]	3.9965 (1.98%)	-0.0473 (-0.04%)	-21.9302 (-2.40%)
Employment[b]	36.45 (0.95%)	-0.50 (-0.02%)	-720.65 (-2.45%)
Reduced CRP Exten			
Total Ind Output[a]	5.8721 (1.66%)	-0.0749 (-0.03%)	-23.7258 (-1.35%)
Tot Prop/Work Inc[a]	2.7255 (1.59%)	-0.0261 (-0.02%)	-13.3154 (-1.60%)
Total Value Added[a]	3.1768 (1.57%)	-0.0282 (-0.02%)	-15.0188 (-1.64%)
Employment[b]	33.69 (0.88%)	-0.13 (0.004%)	-496.68 (-1.69%)

[a] Measured in millions of dollars.
[b] Measured in number of jobs.
Percent changes are listed in parentheses.

Switching from full extension to reduced extension also had similar effects in the Northeast region. The direct and indirect effects of the policy change were positive, while the induced effects were negative. Once again, the income lost from CRP payments and reduced crop prices caused the negative induced effect to be larger than the positive direct and indirect effects. The total effect of the policy change in the Northeast region is negative.

State-wide Impacts

The impacts of changing CRP policies were found for the entire state of South Dakota as well as for its regions. The state, as a whole, has a smaller dependence on agriculture than some of its regions due to the presence of larger urban areas. Only 16.34% of the state's total industry output is agricultural related. While the state's dependence on agriculture may not be as high as some of the individual regions, there is still a strong dependence. Also, there are a large number of CRP acres in the state. There are approximately 2 million CRP acres in South Dakota.

The total impacts of changing CRP policies were calculated for each of the four economic indicators. Partial economic impacts were examined in addition to the total impacts. The state's economy was divided into the same three industry sectors as the regional economies were. Economic impacts on the indicators were determined for each industry sector. Total state-wide economic impacts were also broken down by the type of effect. Direct, indirect, and induced effects from each policy change were computed for each economic indicator.

Total Impacts on the Four Economic Indicators

The policy change from full CRP extension to no CRP extension had negative total impacts for South Dakota, as a whole. Each of the four economic indicators was negatively affected by the policy change. State-wide, total industry output declined by $76.91 million, 0.31%. Total property and worker income fell by 0.40%, with a loss of $47.60 million. There was a $52.19 million loss in total value added, a decrease of 0.39%. Employment state-wide fell by 0.52%, with 2244.40 jobs lost.

Switching CRP policy from full extension to reduced extension produced comparable, though relatively smaller, results. Again, all four economic indicators were negatively affected by the change in CRP policies. Total industry output for the state fell by 0.23%, with a $56.41 million loss. There was a 0.29%, $32.08 million, loss in total property and worker income. Total value added suffered a 0.27%, or $35.76 million, loss state-wide. South Dakota employment fell by 0.33%, with a total of 1425.26 jobs lost.

Economic Impacts on the Primary Industry Sectors

Under the no CRP extension option the impacts on the four economic indicators depended on which industry sector was being examined (Table 7). Directly impacted agricultural industries were positively affected. All four economic indicators experienced gains ranging from a 1.44% increase in employment to a 2.33% increase in total industry output. Other industries in the state did not fare as well under the policy change. Economic indicators in the non-directly impacted agricultural industries were negatively affected. Total impacts were fairly small with decreases in the indicators ranging from 0.05% to 0.07%. Non-agricultural industries were the most adversely affected by the change. The economic indicators suffered losses ranging from a 0.58% fall in total industry output to a 0.95% loss in employment.

The reduced CRP extension policy option had approximately the same, though relatively smaller, effects (Table 7). Directly impacted agricultural industries experienced positive effects

Table 7. South Dakota - No CRP and Reduced CRP Impacts on Various Economic Sectors

Economic Indicator	Directly Impacted Ag		Non-direct Impact Ag		Non-Agricultural	
No CRP Extension						
Total Ind Output[a]	46.5052	(2.33%)	-1.5354	(-0.07%)	-121.8761	(-0.58%)
Tot Prop/Work Inc[a]	18.7784	(1.98%)	-0.4441	(-0.05%)	-65.9293	(-0.65%)
Total Value Added[a]	22.5215	(1.96%)	-0.5254	(-0.06%)	-74.1845	(-0.66%)
Employment[b]	388.84	(1.44%)	-13.55	(-0.05%)	-2619.69	(-0.95%)
Reduced CRP Exten						
Total Ind Output[a]	18.1778	(0.91%)	-1.1705	(-0.06%)	-74.8727	(-0.36%)
Tot Prop/Work Inc[a]	7.9034	(0.83%)	-0.4003	(-0.05%)	-39.3990	(-0.39%)
Total Value Added[a]	9.4061	(0.82%)	-0.4559	(-0.05%)	-44.7075	(-1.64%)
Employment[b]	151.01	(0.56%)	-12.61	(0.05%)	-1533.64	(-0.41%)

[a] Measured in millions of dollars.
[b] Measured in number of jobs.
Percent changes are listed in parentheses.

from the policy change while non-directly impacted agricultural industries and non-agricultural industries experienced negative effects. All economic indicators in the directly impacted agricultural industries rose, with increases varying from 0.56% in employment to 0.91% in total industry output. Indicators in non-directly impacted agricultural industries had average losses of 0.05% to 0.06%. Losses were greater in the non-agricultural industries. Indicators fell by 0.36% to 0.41%.

Impacts from each type of Economic Effect: Direct, Indirect, and Induced

Changing CRP policies to no CRP extension from full CRP extension had positive total direct and indirect impacts on all four of the economic indicators. Production increases across the state caused positive direct impacts while increased crop production input use caused positive indirect impacts. Losses in CRP payments and reduced crop prices caused producer income to fall. This decrease in income caused negative induced effects through decreased spending by producers. State-wide, the induced effects from the policy change outweighed the direct and indirect effects to cause negative total effects on each economic indicator.

The move from full CRP extension to reduced CRP extension also had negative total impacts on the four economic indicators. The direct and indirect effects were once again positive. The induced effects of the policy change were negative. Lost producer income

outweighed increased production. The total state-wide effect of the policy change on all four economic indicators was negative.

SUMMARY AND CONCLUSIONS

Changing post-CRP policies from full CRP extension to no CRP extension had mixed regional total effects. In the majority of the regions and for the state, as a whole, economic indicators were negatively impacted by the policy change. All of the Northwest region's economic indicators were positively affected and all of the Northeast regions's economic indicators were negatively affected. State-wide, all economic indicators were adversely affected by the policy change.

The policy change from full CRP extension to no CRP extension produced more uniformly negative results. Total industry output, total property and worker income, and total value added experienced declines in seven regions and for the state, as a whole. Only the North Central region's indicators were positively affected by the policy change. The employment indicator fell in every region and state-wide.

The economic impacts of moving from full CRP to no CRP varied depending on which industry sector was examined and which region was used. In the Northwest region all four economic indicators rose in each of the three industry sectors. In the Northeast region and state-wide, only indicators in the directly impacted agricultural industries were positively affected by the policy change. The economic indicators in all other industries were adversely affected by the change in CRP policy.

Changing from full CRP extension to reduced CRP extension also had varied impacts among the industry sectors. Directly impacted agricultural industries in the Northwest and Northeast regions, as well as state-wide, experienced increases in all four economic indicators. Generally, economic indicators in both, non-directly impacted agricultural industries and non-agricultural industries, were adversely impacted by the policy change.

The policy shift from full CRP extension to no CRP extension generally had positive direct effects, positive indirect effects, and negative induced effects. The only exception was in the Southeast region where the direct, indirect, and induced effects were all negative. Results were driven by the induced effects. State-wide, and in the majority of the regions, induced effects outweighed the direct and indirect effects, causing negative total effects.

Moving from full CRP to reduced CRP usually had positive direct effects, positive indirect effects, and negative induced effects. Once again, the Southeast region was the

excepting with all effects being negative. The induced effects drove the results of the policy change, too. In almost all cases, the induced effects on the economic indicators outweighed the positive direct and indirect effects. Most total effects of this policy change were negative.

Which CRP policy option is best for South Dakota depends primarily on the goal that society is trying to achieve. If preserving producer income is the goal, the best policy for South Dakota is full CRP extension. If the goal is economic growth in agricultural industries, the best policy for the state and most of its regions is no CRP extension. However, if the goal is economic growth in non-agricultural industries, the best policy for the state and most of the regions is full CRP extension. Only after establishing primary goals can alternative CRP policies be evaluated or the best CRP program be chosen.

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