

# [The of climatic change has raised questions](https://assignbuster.com/the-of-climatic-change-has-raised-questions/)

The Impact of Climate Change onAgricultureClimate change has become asignificant challenge for many countries globally. Food security posed by theadverse effects of climatic change has raised questions regarding the worlds’capacity to supply food to an increasing population, while at the same timesustaining an already stressed environment (Rosenzweig 14). Frequent extremeweather conditions such as violent storms, droughts, and floods have negativelyimpacted food and livestock productions, thus disrupting food supply chains andthe availability of certain foods in various regions (Nordås 27).  It is in the context of this background thatthis paper highlights the impact of climate change on agriculture andrecommends steps that can be implemented to mitigate some of these effects.

Just like in any country, theagricultural sector plays a significant role in the economic growth of Canada. More precisely, it contributes to about 6. 6% of the country’s gross domesticproduct (GDP). The sector is reported to have generated an estimated amount of$108. 1 billion in 2014 (Berrang-Ford 26).

Furthermore, it is the largestemployer in the country and employs around 2. 4 million people. On the otherhand, the sector relies heavily on climate change which plays a vital role ininfluencing crop productivity, animal production, and water availability, justto mention (Rosenzweig 15).

It is therefore not surprising that factors such asunpredictable weather changes pose a significant threat, especially, to thecountry’s economy, future food supply, and stability. This is especially thecase because frequent and unpredictable extreme weather conditions such asdrought, violent storms, and floods, are more likely to interfere with thesupply chain and production of certain crop yields and livestock, thusimpacting the economy and agricultural sector negatively (Rosenzweig 19).  Impactsof Climate ChangeThe agricultural sector in Canada hasundergone numerous changes over the last few decades. For instance, the numberof people practicing agriculture in the region has significantly declinedcompared to the previous years. This development is linked to various factorssuch as climate change, shifts in consumer preferences, government policies, and advances in technology (Nelson 21). The economy in general and the foodproduction sector in particular has suffered dramatically due to these radicalchanges.

This is as evidenced by many studies which have shown that the droughtin 2001-2002 saw agricultural exports and output decline by almost one-quarter, thus reducing the country’s GDP by $5. 8 billion and employment rate by 1%(Rosenzweig 22). There is need to design and implement effective measures thatwould help counter the harmful effects of climate change more so as witnessedin the agricultural sector. FoodInsecurityOne major challenge posed by climatechange in Canada is food insecurity. Worse still, variability in rainfall, prolonged droughts, and frequent extreme weather conditions, are anticipated tobecome more frequent in the coming decades, thus disrupting food supply chainsand the production of particular crop yields in some regions. Studies haveshown that temperatures are more likely to rise across the country with anannual average of up to 4. 6 degrees centigrade throughout the century (Nelson21).

In addition, an increase in atmospheric temperature is likely to result inmore severe droughts, violent storms, and a decline in the snow cover, thusaffecting the growth and development of crop yields such as wheat, barley, andcanola (Delgado 18). Food insecurity will be more magnified because farmingactivities will not go on as successfully. Impacton dairy FarmingPredicted climate changes will havea negative impact on dairy farmers and consumers of dairy products. Extremeweather conditions such as heat waves, decreased rainfall, and drought willaffect the quality of pasture and affect the output of grazing animals.

In the samematter, studies suggest that a decrease in rainfall by more than 10% willimpact immensely on the growth of crops and pasture in some areas, thusaffecting animal production (Rosenzweig 27). Moreover, the elevated levels ofCO2 in the country is more likely to result in a reduction in the foliarnitrogen concentration in plants, and impact the production capacity andnutritional value of pasture used in grazing animals. Contextual poor fieldsmay affect the quality of milk, cheese, meat, and other dairy products (Nelson21).

Besides, it may also affect the health and well-being of animals, thusleading to more financial losses for farmers and consumers of dairy products. Implicationson Food PricesThe impact of climate change on theagricultural sector could increase food prices. For instance, research hasshown that the California drought that began in 2012 has had a major impact onthe costs of vegetables and fruits in Canada (Smit 86). In the context of thisillustration, most of the plants and fruits consumed in Canada come fromCalifornia, which had been adversely affected by the drought in question, thusleading to increased food prices (Nordås 29).

The effect on food prices isclear considering that the costs of vegetables increased by 40%, while that offresh fruits by 43%. Additionally, the Cyclone Larry that took place in 2009destroyed almost 90% of the North Queensl’and banana crop, thus resulting in anincrease in prices by 500% after a decline in supply for nearly nine months(Rosenzweig 29). Therefore, the rapid increase of food prices is expected tocontinue if no mitigating measures are taken to counter the adverse effects ofclimate change. MitigationStrategiesThe purpose of undertakingmitigation strategies in the agricultural sector is to minimize future andcurrent effects of climate changes effectively. The approaches taken now couldhelp inform future decisions of farmers, policymakers, and other keystakeholders, thus minimizing the adverse effects of climate change(Berrang-Ford 27).  Some of thestrategies that could be implemented include the use of crop developmentmodels, irrigation systems, and crop species with a greater resistant toclimate change, among other approaches (Smit 89). In this regard, the use ofirrigation scheme methods could help farmers preserve water and counter theeffects of extreme weather conditions such as drought and wildfires. Additionally, adopting advanced crop species with a greater resistance toclimatic changes would protect farmers against financial losses often caused byextreme weather events (Delgado 26).

Besides, it would ensure future foodsecurity and supply in the country. Lastly, the use of crop development modelscould help researchers study the effects of global warming and climate changeon agriculture, thus making it possible to consider efficient adaptationstrategies. Climate change is expected to affectthe quality and seasonality of many foods in Canada. For instance, increasedtemperatures could result in frequent droughts and more resistant pests andthus impact the country’s wine growing region, which is likely to affect thequality of wine in the long run (Nordås 27). Therefore, many wine farmers andconsumers are concerned about the anticipated climatic changes, and feel that thegovernment should take more drastic measures to counter these effects beforethey occur (Delgado 25) Additionally, the yields of many important crop speciessuch as wheat, corn, and barley are anticipated to decrease significantly dueto global warming, which is expected to escalate by more than 30% across thecountry (Smit 89).

Moreover, these changes could influence the increased use ofmore heat-tolerant breeds in beef production and affect the quality of meat andreproductive rates. It is not disputable that more farmers, consumers, andsuppliers of these products are likely to suffer nutritional and financialloses. The implementation of climate changepolicies such as the carbon tax and the direct-action plan is another stepcurrently being utilized by developed countries towards sustainability.

Here, the main objective of the policies is to minimize the emission of greenhousegasses, which is regarded as the greatest contributors to climate change in theworld. From studies, it has emerged that greenhouse gases enhance globalwarming, thus leading to extreme weather events such as wildfires and droughts, among other effects (Smit 90). In addition, the carbon tax policy ensures thatthe largest emitters of greenhouse gasses are charged for every tone of carbonthey emit. On the other hand, the direct-action plan provides incentives toemitters for emission reduction initiatives, thus minimizing the level ofgreenhouse gasses in the atmosphere (Berrang-Ford 32).

Indeed, farmers are morelikely to benefit from the reduction of carbon in the atmosphere since it willcounter the effects of climate change on agriculture. In conclusion, climate change hasbecome a significant threat to food production and security in many developedcountries globally. In other words, frequent extreme weather conditions such asdrought, floods, and violent storms, have negatively impacted the productionand quality of livestock and food in various regions. According to research, these trends are more likely to continue if no effective mitigating strategiesare taken. In this context, the Canadian government has implemented variouspolicies such as the carbon tax policy and the direct-action plan, to minimizegreenhouse gas emission which is among the leading causes of global warming.

Other adaptation measures that could be implemented include the use of cropdevelopment models, irrigation schemes, and crop species that are resistant toclimate change. These mitigating strategies will protect farmers against hugefinancial loses commonly caused by extreme weather events and ensure foodsecurity within the country. It is, therefore, the responsibility of thegovernment and policymakers to ensure that these initiatives are enforced andefficiently implemented.