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Impacts of Climate Change on Future Agricultural Practices in Saskatchewan

Agriculture continues to be an industry of vital importance to Saskatchewan.

Saskatchewan currently encompasses more than 40% of Canada's cultivated cropland, and is the world's largest exporter of flax seed, mustard seed, and lentils, sending over \$100 million of product to 19 countries ("2010-11 Saskatchewan Agriculture Student Scholarship"). For these reasons, agriculture remains fundamental to the growth of both Saskatchewan and Canada. As such, proper steps must be taken to ensure agriculture prospers through upcoming challenges, specifically those presented by climate change. Within the next 15 years, research and experimentation will be vital to ensure agriculture can overcome challenges presented by climate change.

One of the primary changes to be faced in agriculture in Saskatchewan is that of sustained drought ("Policy Research Initiative"). In the 2020s, agricultural land southward of Regina is projected to see the largest drop in annual precipitation (Sauchyn et al. 95). Though hydrological models for prairie streams forecast a 24% increase in spring runoff by 2050, this increase will be followed by a 37% decrease by 2080 (Sauchyn et al. 64). Complications of this drought include soil erosion and potential desertification (Sauchyn et al. 95). For these reasons, investigation of more efficient irrigation systems and smarter irrigation practices, such as leaving irrigation until sundown, must be employed within the next 15 years to ensure the existence of agriculture in Saskatchewan for generations to come (Lemmen, Warren, Lacroix, and Bush 316).

In addition to researching and putting into practice ways to combat drought, an assessment of potential agricultural in the northern regions of Saskatchewan needs to be undertaken. Anticipated tree loss due to climate change suggests a northward shift in the forest-grassland boundary as well as the eradication of aspen parkland and fescue prairie, to be replaced by mixed prairie. This grassland expansion suggests increased growing seasons and less competition from trees and shrubs (Lemmen, Warren, Lacroix, and Bush 2002). This means agriculture may be a viable option in northern Saskatchewan. This migration of agricultural practices, however, is unable to take place without extensive research on items such as soil fertility. Evidently, research is necessary to determine whether expansion of agricultural lands will be possible in the future.

As well as facing drought and possible expansion, widespread crop diversification research is essential in the near future. Research conducted by "Plantwatch" concludes that spring arrives 26 days earlier than it did a century ago in Alberta, meaning earlier growing seasons can be expected in Saskatchewan as well (Sauchyn et al. 1994). With earlier growing seasons, more crop diversification will be available and current crops will need to be altered for optimal production. In addition, warmer winters will allow for an increased number of pests to survive year-round. In response, greater research must be conducted on both pesticides and herbicides.

By examining the facts presented above, it becomes clear that near future of agriculture in Saskatchewan must be used to conduct research and experimentation in response to upcoming climate change issues. New methods for irrigation in response to drought, the possibility of agricultural expansion northward in the province, as well as crop and pesticide diversification are all future complications for which preparations must presently begin.

Works Cited

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