

THE BLOOD TRIBE: ADAPTING TO CLIMATE CHANGE

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Abstract

A community vulnerability assessment to water related impacts of climate change was conducted in the Blood Tribe in the South Saskatchewan River Basin (SSRB). The vulnerability of the Blood Tribe to climate change impacts such as floods is compounded by pressing socio-economic concerns such as health, housing shortages, and unemployment. This array of socio-economic challenges limits their capacity to adapt to present and future climate change impacts. For communities like the Blood Tribe, addressing issues such as housing shortages and unemployment can also serve as measures that minimize their vulnerability to climate change impacts.

Sommaire

Une évaluation de la vulnérabilité de la collectivité, par rapport aux impacts liés à l'eau qui sont dus aux changements climatiques, fut effectuée chez la tribu des Blood dans le bassin de la rivière Saskatchewan-Sud (BRSS). À cette vulnérabilité de la tribu des Blood aux impacts liés aux changements climatiques, tels que les inondations, se superposent des préoccupations pressantes de nature socio-économique telles que : la santé, la pénurie de logements et le chômage. Cet éventail de défis socio-économiques auquel fait face la tribu réduit sa capacité à s'adapter aux impacts présents et futurs liés aux changements climatiques. Pour les communautés telles que la tribu des Blood, s'attaquer aux questions telles que la pénurie de logements et le chômage peuvent aussi être des mesures qui contribuent à minimiser leur vulnérabilité à ces impacts.

One of the main issues in the community is the lack of employment; we are basically living in *third world* conditions here . . . There is only a certain number of dollars that come into the reserve on a yearly basis . . . I don't know what the current financial transfer agreement is with the federal government . . . You see, our treaty did not have a cap on it. We had under the treaty, under the true spirit of the treaty, that the Queen, in exchange for sharing some of the land—we did not surrender our land—she was going to share the land with us; because of that she was going to care for us as long as the sun shone, the grass grew and the rivers flowed. That meant medication [health care], education, basic living essentials (housing, water, whatever); but that has since stopped, the federal government has put a cap on it, a cap on the services.¹

Introduction

The Blood Tribe, a Blackfoot community in the South Saskatchewan River Basin (SSRB), is one of Canada's largest reserves and has significant natural assets that include agricultural land, oil, gas, minerals, and water. However, like other First Nations communities in Canada, most of the people of the Blood Tribe live in Third World conditions. Unemployment figures in 2005—according to some members of the community—was as high as 80%. Housing conditions are poor and overcrowded, alcoholism and drug addiction are rampant, and the prospects for economic development opportunities are almost non-existent. Over the past decade, impacts of floods and droughts have had adverse consequences on the community's farming operations, homes, roads, and drinking water supplies.

Climate change and variability in the form of droughts and floods has a long history in what is now the SSRB.² There is evidence however that prior to the arrival of Europeans indigenous people in the SSRB area, including ancestors of the Blackfoot people, had developed successful adaptation strategies that allowed them to cope with the effects of climate variability. For example, in times of droughts, indigenous people were able to hunt buffalo through traditional pedestrian techniques because they were able to predict and to a certain extent control the movement of buffalo herds. They predicted the movement of buffalo herds because they learned the location of water sources that would not dry up during drought spells and hunted the buffalo that sought out the green grass and drinking water available from these water sources. They also recognized the importance of ponds and reservoirs created by beavers in times of droughts. Water trapped in these ponds and reservoirs provided a water supply for the buffalo herds. By not exploiting the beaver population they

were able to control and manage some of the water sources and hence predict the movement of the buffalo herds.³

With the arrival of Europeans in the 18th century, the type and means of livelihood for indigenous people underwent profound changes. With the use of horses and guns to hunt buffalo, indigenous people no longer needed to know where the water sources were located nor did they need to maintain beaver populations and thus preserve water sources in order to predict the movement of buffalo. Therefore, as the type and means of their livelihood changed, their vulnerability to climatic variability such as droughts increased.⁴

For indigenous people in the SSRB the incremental loss of their traditional livelihood and a decreased dependence on their natural resources for their survival is today almost complete. At present the well-being of most of the Blood Tribe people is directly related to the annual transfer of funds by the federal government—funds promised upon the signing of Treaty 7 in 1877⁵—for housing, health, education, social welfare, economic development and various other needs,⁶ rather than on the health of their environment and an in-depth knowledge of their surroundings.

The disruption of the Blood Tribe people's traditional livelihood, combined with increased dependence on federal government funds and the impacts of government policies such as the Residential Schools, have generated high levels of poverty, unemployment, poor housing and other hardships, resulting in great social problems including violence, addictions, and poor health. These social problems and issues are today the primary concerns of the Blood Tribe people because they impact the great majority of them on a daily basis. Although floods and droughts have impacted the community, only some of the people have been directly affected. Those affected would have been people whose homes were flooded, or who had a road they rely on washed out, or who had crops they grew lost due to water shortages or flooding. Consequently, for the Blood Tribe finding solutions to poverty, unemployment, housing, and so on are of greater priority than adaptations to climate change.

In light of the social, economic, and political context of the Blood Tribe community, this paper discusses some of the key vulnerabilities to climate change impacts, as well as some of the challenges confronted in developing adaptation strategies to those impacts. In this sense, highlighted is the importance of considering policies such as the Indian Act and the Residential Schools, which have produced institutional arrangements, reshaped people's relationships with their environment and with each other, all of which facilitates or constrains the adaptive capacities of the community to climate change impacts.

The data collection for this study involved community-level fieldwork through in-depth personal interviews with key informants, focus groups, and

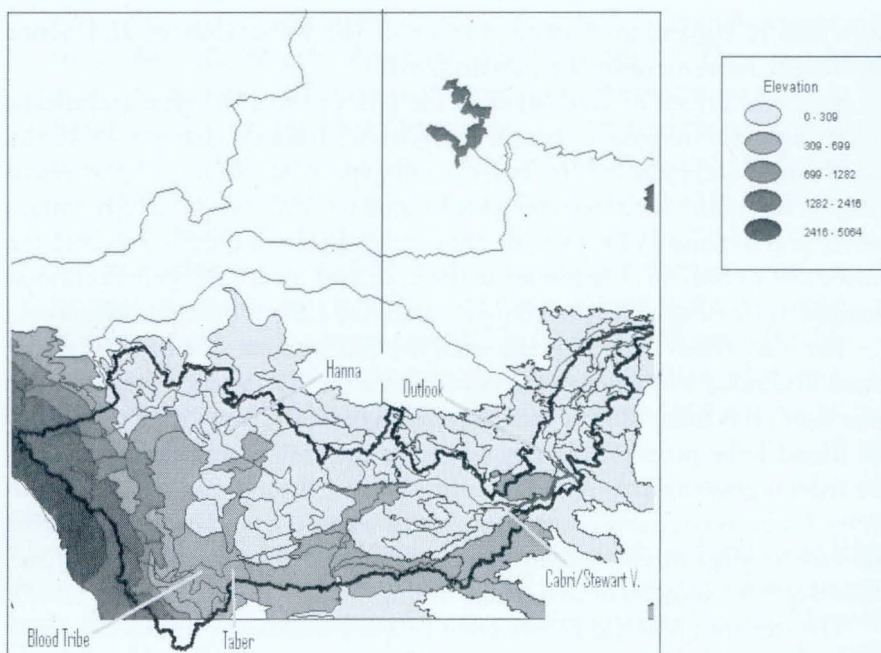


Figure 1. The Blood Tribe and other selected rural communities in the South Saskatchewan River Basin.

participant observation. Community members interviewed included male and female, youth, elderly, business people, and Band employees. Due to the sensitive nature of some of the information or opinions provided by the respondents, the anonymity of each respondent is maintained by citing them by an assigned code (e.g., BT1 for Blood Tribe respondent number 1, BT2 for Blood Tribe respondent number 2, etc.). All interviews were transcribed with the results coded and interpreted using a NVivo software package.

Blood Tribe: Background

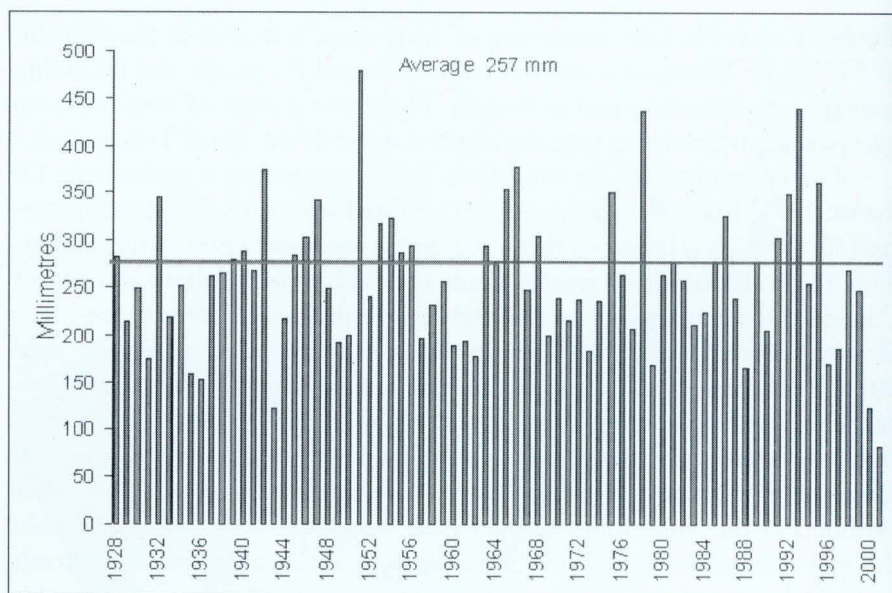
The Blood Tribe reserve, located in southern Alberta (Figure 1), is one of the largest in Canada. A member of the Blackfoot Confederacy and the Treaty 7 Tribal Council, the Blood Tribe people lived in this region for hundreds of years before European contact. The Blood Tribe territory consists of two parcels of land: Reserve No. 148 and Timber Limits No. 148A.⁷ Reserve No. 148 is bounded by three rivers: the Belly River to the west, the St. Mary River to the east, and the Oldman River to the north. Reserve No. 148 consists of 351,961 acres and it is the land base where the various communities that make up the Blood Tribe are scattered. These communities are Standoff, Moses Lake, Lavern, Old Agency, Fish Creek, Fort Whoop-Up, and Bullhorn.

Timber Limits No. 148A, consisting of 4,795 acres, is located in the foothills of the Rocky Mountains and has been allocated for public use including recreation and hunting and gathering. These two parcels of land make up 356,756 acres, which is the total territorial domain of the Blood Tribe people.⁸

The economic base for the Blood Tribe community is agriculture. Of the total land base, 180,140.8 acres are cultivated and 55,601.4 acres are grassland, all of which is leased on three-year leases to about 61 non-native farmers. Title to the Blood Tribe reserve lands is held by Her Majesty in right of Canada and set apart for the use and benefit of the community members. However, within the Blood Tribe about 80% of the land is privately held through occupancy rights by about 10–12% of the people; the remaining 20% of the land is held communally and under the control of the Band Council. Individuals with occupancy rights to the land—although they do not have fee simple title to the land—can transfer, exchange or sell their lands to other members of the community but not to an outsider. Most to the land held through occupancy rights is leased out to non-aboriginal farmers. Proceeds from the leasing of the land benefits only the 10–12% with occupancy rights, and this has generated frictions between those who own land and those who do not.⁹ At the same time, community members without occupancy rights cannot own a home because they do not have the land to build it on, even if they had the means to own a home. Therefore, most of the people without occupancy rights move to townsites such as Standoff, Moses Lake, and Levern, where they live in rental housing managed by the Band Council. Others move out of the reserve to nearby communities such as Cardston, Lethbridge, and Fort McLeod.

Collective lands under the control of the Band Council are used by community agricultural corporations such as the Kanai Agribusiness Corporation (KAC) and the Blood Tribe Agricultural Project (BTAP). These corporations function at arms length from Chief and Council and cultivate 68,191.8 acres. BTAP operates one of the largest irrigation projects in Canada, consisting of 20,000 acres cultivated with timothy hay destined for Japan; the operation also has its own hay processing plant. About another 1,385 acres are also public lands, and are set aside for recreational, residential, commercial, and industrial development.¹⁰

According to Statistics Canada,¹¹ in 2001 the population of the Blood Tribe living on reserve was of 3,850 people; however, Blood Tribe administration employees interviewed for this study estimated the 2005 population to have been about 9,000 to 10,000 people, with 6,000 to 7,000 people living on reserve. One possible explanation for the discrepancy between Statistics Canada's figures and the estimates by the Blood Tribe administration—according to the Blood Tribe administration employees—is that there is a



Source: Alberta Agriculture, Food and Rural Development, 2002.

Figure 2. Average growing season precipitation (April 15–October 15) of 257 mm, obtained from Bow Island, Lethbridge, Medicine Hat and Taber precipitation data (Environment Canada's data, 2001).

constant outflow of the population to nearby towns in search of employment or housing, and that many people return to the community when they fail to find jobs or accommodation.

With respect to environmental conditions, the southern region of Alberta, where the Blood Tribe community is located, has historically been affected by periodic floods and droughts.¹² As illustrated in Figure 2, since 1928 there were severe droughts in 1936 and 1943, but the worst drought occurred in 2001.

In the 2001 drought, only 83 mm of rain fell for the growing season (April 15 to October 15), compared to the historical average of 257 mm. To make matters worse, for the previous growing season only 123 mm of rain fell, which was also well below the historical average.¹³ Even though the southern Alberta region has water reservoirs, the two consecutive drought years of 2000 and 2001 had severe impacts on the irrigation industry. Figure 2 also shows that there have been years when precipitation was well above the historical average of 257 mm. The Blood Tribe was impacted by floods in 1995, 2002, and 2005.

With regard to temperature, trends show that in 1990–98 the mean annual air temperature increased by an average of 0.9° C over southern

Canada, especially in western Canada, and the greatest warming occurred during the winter and spring.¹⁴ A 2002 study on behalf of Alberta Environment concluded that one of the most dramatic impacts of climate change in the prairies has been the increase in mean temperature over the last 50 years, primarily due to the increase in the minimum temperature in the winter season.¹⁵ For Alberta, the temperature in the winter has increased by 1° C to 3° C, but it has cooled slightly in the summertime.¹⁶

In the Prairie Provinces the agricultural community has already experienced substantial economic losses due to moisture constraints; moreover, climate projections forecast greater moisture limitations by 2040–2069. Although precipitation is expected to increase, moisture availability will decrease due to warmer temperatures and higher rates of evapotranspiration.¹⁷

Do First Nations in Canada live in Third World conditions?

The difficult living conditions of First Nations people in Canada is often compared to the living conditions of the poor in Third World countries. This comparison is not an exaggeration because First Nations communities in Canada and some poor people in Third World countries share a similar colonial European conquered-conqueror relation that has resulted in dispossession, marginalization, discrimination, and assimilation. This relation and its consequences persist, and is perhaps somewhat renewed, due to the increasing economic, social, and political restructuring of societies worldwide due to globalization. The legacies of colonial policies and their persistent modern forms represent probably the greatest challenges to the adaptive capacities of indigenous peoples, like the Blood Tribe, and the poor in Third World countries, to impacts of climate change.

According to the Assembly of First Nations, based on the United Nation's Human Development Index, in 1998 First Nations in Canada ranked 63rd in the world in terms of quality of life indicators.¹⁸ In the case of the Blood Tribe, according to the Community Well-Being Index (cwbi)¹⁹ developed by Indian and Northern Affairs Canada's Research and Analysis Directorate, in 2001 the community had a score of 61 out of 100, compared to 84, the average for non-First Nations communities in Alberta.

With respect to education, the level of education in the Blood Tribe population is much lower relative to the province of Alberta. For example, in 2001, 40% of the Blood Tribe population aged 20–34 had less than a high school graduation certificate, against 18% of the same age group for Alberta. More recent figures by Statistics Canada (2008) show that only 8% of the Blood Tribe's labour force has a university degree, compared to 21% for the province of Alberta.

With respect to income, according to figures by Statistics Canada, in 2001 the median family income for the Blood Tribe was \$20,768, compared

to the median family income for Alberta which was \$60,142.²⁰ Statistics Canada's unemployment rate for the Blood Tribe for 1996 and 2001, are 29% and 45% respectively.²¹ Statistics Canada does not have more recent unemployment rates for the community; however, several of the Blood Tribe people interviewed in 2005–2006 estimated the rate of unemployment to range between 60% and 80%.

According to the Blood Tribe Housing Department,²² there is a considerable shortage of houses to satisfy the community's housing demand. Due to the shortage of houses it is common to find 2–3 families living in a single home. This shortage of houses forces families to move to the nearby towns as the Housing Department cannot build homes fast enough to fulfill the demand.²³ In March 2006 there were 439 applicants on the Housing Department waiting list, while the average number of homes built annually has only been 20.²⁴

Of 915 adults (15 years old and above) surveyed by Statistics Canada in 2001, only 60 reported working in agriculture and other resource-based industries, and, ironically, despite the assertions by the Blood Tribe Lands Department²⁵ that the economic base for the Blood Tribe community is agriculture, none reported agriculture as an occupation.

These key socio-economic characteristics indicate that Blood Tribe people have low educational levels, a high unemployment rate, lower levels of income, a shortage of housing, and only a few of the people depend on the land for their livelihood. These characteristics constitute serious challenges and constraints for the Blood Tribe in adapting to climate change impacts.

The Poor: Vulnerabilities and Adaptive Capacities

Increasingly, there is an acknowledgment that impacts of climate change will be greater for the poor because they are more frequently exposed to climate related risks. Poor people are more exposed to these risks because they live in marginal lands and poor housing conditions, and have a higher sensitivity to those impacts due to limited economic, human, and institutional capacity to respond to the impacts.²⁶ It is also argued that for the poor the impacts of climate change will exacerbate existing vulnerabilities such as limited access to drinking water, poor health, and food security. For example, in developing countries the recent years of droughts, floods and storms have had disastrous consequences on agricultural resources and therefore on the food security of the poor, thus rolling back decades of food security progress from development efforts.²⁷

The vulnerability of the poor to climate change impacts is best understood by taking into account other stresses to which they are frequently exposed:

Vulnerability is both a condition and a determinant of poverty, and refers to the (in)ability of people to avoid, cope with or recover from the harmful impacts of factors that disrupt their lives and that are beyond their immediate control. This includes the impacts of shocks (sudden changes such as natural hazards, war or collapsing market prices) and trends (for example, gradual environmental degradation, oppressive political systems or deteriorating terms of trade).²⁸

Similarly, it is generally acknowledged that the capacity to adapt to climate change impacts is uneven within and between societies because some individuals and groups have less capacity to adapt than others. The level of adaptive capacity of these individuals or groups is positively influenced by their "economic and natural resources, social networks, entitlements, institutions and governance, human resources, and technology."²⁹ On the other hand, the adaptive capacity of individuals and groups is negatively affected by "technological, financial, cognitive and behavioural, and social and cultural constraints."³⁰

Given that populations that are most vulnerable to climate change impacts are those that experience other stresses such as poverty, unequal access to resources, food insecurity, environmental degradation and risks from natural hazards, it is logical that by addressing these other stresses the vulnerabilities to climate change impacts can also be reduced.³¹ Therefore, some of the mechanisms that can be used to enhance the coping ability of vulnerable populations to climate change include increased access to information and technology, equity in the distribution of resources, and enhanced human and social capital.³²

Unfortunately, as observed in many instances worldwide, development and economic activities continue to exacerbate climate-related vulnerabilities of the poor rather than reduce them. These activities exacerbate the vulnerabilities of the poor because they fail to address the non-climate stresses such as poverty, food insecurity, and so on. In fact, despite the seemingly obvious benefits of promoting sustainable development as an adaptation strategy to climate change impacts, only a handful of efforts explicitly recognize and acknowledge this fact.³³ For the poor, the promotion of development that addresses existing non-climate related vulnerabilities should be viewed as a key mechanism for reducing climate change impacts.³⁴

Blood Tribe Exposures to Climate Change

Based on the interviews conducted, there are recent examples of significant climate change impacts that the Blood Tribe people have experienced. Some of these experiences can be discerned from comments such as "kids do not

go sleighing anymore because of the lack of snow; some birds no longer migrate; there are more grass fires during the early spring; there are more mosquitoes in the summer; and, sometimes there are not enough units of summer heat for growing a second crop.”

However, extreme climate related events such as floods have had the most impacts on the Blood Tribe community. Over the last ten years the Blood Tribe experienced severe floods in 1995, 2002 and 2005, and according to the Housing Department the cost for the 2002 and 2005 floods were \$8 and \$6.5 million, respectively. In 2005, out of the total of 1,280 homes in the community 397 were affected through flooded basements and/or water damage because of roof and wall leaks or poor drainage.³⁵

Due to the 2005 floods a new well had to be dug for one of the communities because flood waters damaged the existing well through siltation. The cost for the new well was \$800,000. Flood events have also added extra costs to the maintenance of roads because these were often damaged by washouts.³⁶ Also, for the 2002 floods, for two months Kanai Resources, which manages the Blood Tribe's oil and gas resources, closed down oil wells located near the river bottom. The two month closure of the oil wells caused a loss of \$20,000.³⁷

Recent droughts have also affected the operations of Kainai Agribusiness Corporation (KABC) and the Blood Tribe Agricultural Project (BTAP). The 2001 drought, which affected most of the Canadian prairies, caused the loss of feed crops for the 700 heads of cattle that KABC had at the time. As a result, KABC reduced the size of the herd from 700 to 200.³⁸ Water shortages during the 2001 drought also affected the operations of the BTAP because, like other farmers in southern Alberta that depend on the St. Mary's river, it received 125 mm less water than required for the 2001 growing season.³⁹

Given the history of periodic floods and droughts in the area, the likelihood of future droughts and floods affecting the Blood Tribe is fairly high. If floods were to increase in frequency, the Blood Tribe Fire and Emergency Services foresees that in order to be better prepared they require more equipment: a small all-terrain vehicle that could be used to access more remote areas, and a boat in order to gain access to flooded homes in the low lying areas.⁴⁰ With regard to long term planning, there is a need for moving about 500 homes away from the flood plains that are at risk of future flooding.⁴¹

According to the Lands Department, to date there have been no cases whereby non-native farmers have cancelled land leases because of continuous years of drought. However, if in the future the intensity and length of the droughts increase there is the potential risk that non-native farmers may stop leasing the land from members of the Blood Tribe.⁴² The loss of the income from land leases will add further stress on Blood Tribe members who depend on that income.

Blood Tribe Adaptive Capacity

The Blood Tribe is governed by a Head Chief and a Council of 12 people who are elected by the community for a four-year term of office. Over the past two decades Indian and Northern Affairs Canada has transferred decision making powers to the Blood Tribe government over matters such as education, health, policing, and social services. The belief is that as the Blood Tribe community increasingly regains control over managing its own affairs, there will be an increase in opportunities for the people to regain the capacity to develop their human and natural resources and create a more stable economy in the community. The various departments that make up the administrative body of the Blood Tribe include health, education, economic development, police, public works, housing and others.⁴³ Blood Tribe departments that normally deal with the impacts of droughts and floods include health, public works, housing, and police.

Since floods have affected the community most, some strategies to avoid and/or recover from flood impacts have been developed, but these strategies have been mostly reactive; that is, these strategies have been developed or implemented after the occurrence of a flood.

Examples of reactive strategies for the 2005 flood include the quick reaction by the Housing Department in covering leaking doors and roofs and using sump pumps to drain water out of flooded basements.⁴⁴ The Housing and Public Works Departments joined efforts and coordinated the availability of sump pumps for flooded basements. The Health Department provided bottled drinking water for residents because of the contamination of water wells with surface water; and, in the absence of bottled water, it had an advisory campaign for people to boil water before drinking it. Since the flood of 2002, Public Works has improved the quality of roads through more compaction and better drainage, which will prevent future road washouts during heavy precipitation events.⁴⁵ Also, due to the increase of flood events over the last ten years, the Fire and Emergency Services department has acquired hip gaiters, flood lights, and self-containing generators in preparation for future floods.⁴⁶

For preventative or anticipatory strategies, the Housing Department now conducts soil tests on lands where a home is to be built, making sure that the soil has the proper drainage capacity; thus, minimizing the risks of future flooding. Also, the Housing Department is negotiating with Indian Affairs for funding to move homes away from the flood plains, but this option is limited by issues of land occupancy rights. Homeowners that do not have rights of occupancy to lands other than in the flood plains, cannot easily move to another location; therefore, some of these homeowners are asking the housing department to put their homes on stilts, lifting their homes above flood levels—this could be the only option for some homeowners.⁴⁷

Blood Tribe Constraints to Adaptation

The Blood Tribe's departments of Housing and Public Works have been the main institutional bodies that have implemented adaptation strategies to address flood impacts. Although some of the strategies by these departments aim to prevent future impacts, most of the strategies implemented so far have been to cope with damages that have already occurred. The community's limited ability to develop long term strategies to address impacts of floods is very much mediated by some factors outside their control. In addition to the risks of being physically more exposed to climatic hazards, the Blood Tribe community faces challenges in developing adaptation strategies to climate change impacts because of the limitations posed by the imposition of a political system. This political system has greatly influenced the social, economic, and environmental conditions in the community as well as its own political and institutional arrangements.

The imposition of this political system has been done through policies such as the Indian Act, a piece of legislation that some First Nations people consider greatly discriminatory: the Indian Act as a piece of legislation is "discriminatory from start to finish . . . [that no] just society, and no society with even pretensions of being just can long tolerate."⁴⁸ Moreover, through the Indian Act First Nations defer the control of their resources such as land, oil, gas, and water to the Canadian government. In the case of the Blood Tribe, the Department of Indian Affairs and Northern Development (DIAND) administers "royalties and other revenues from natural gas and oil production on reserve lands."⁴⁹ Yet, at the same time, the Blood Tribe people "receive more than 80% of their annual revenue from the federal government in the form of funds allocated for specific purposes."⁵⁰ For some, the Indian Act and the historical legacy of residential schools have articulated the Canadian government's efforts to "civilize, that is, to assimilate, Indian Tribes."⁵¹

Interviews conducted for this study reflect that the control over the political structure, resources, land tenure system, and economic development of the Blood Tribe have been severely constrained by the Indian Act, and for some of the people the ramifications and consequences are fairly clear:

Economic development, it's probably the biggest [challenge in the community]. I don't know how many millions of dollars are spent on social services and other programs like that . . . from an economic standpoint, we are nothing if we don't have an economy, that's why you see so much poverty, suicide, drug abuse . . . If we could get our own economic engine started here, people would be a lot more prosperous and happier, and cut down on a lot of the social ills that are upon us. This bad economy which was forced upon us by Indian Affairs . . . in

my opinion, that's the biggest problem . . . if we could get our economy started somehow that would alleviate a lot of our problems.⁵²

Our Indian Reserve Land [is] held collectively [by] the Chief and Council for the members of the tribe; we don't have individual legal title. There's no real estate value; we can't sell it . . . around the turn of the century bison disappeared, which was our livelihood, we were forced to adopt agriculture . . . the Bloods adapted to agriculture very well and we were out-producing the non-natives across the river in grain, hay, and livestock production. After we started doing that, they started complaining and they were lobbying the government. They implemented restrictions on how much we could produce after that. When the playing field was level, so to speak, we were out-producing the non-natives. Then agriculture started to improve with technology and getting mechanized with farm machinery. At that time, because we couldn't take our land to the bank and borrow on it to buy equipment, we couldn't afford the new equipment and that's when we started falling behind. We never used to rent to non-natives. In 1960 there was a five year lease agreement to allow a number of non-natives to farm our land . . . It's been 45 years and 200,000 acres of our crop land is being farmed for the most part by non-natives . . . That is something that has been a challenge that we're trying to address. How do we get back out there?⁵³

With respect to the forceful internship of First Nations children into residential schools (run by the Roman Catholic, Anglican, and Presbyterian churches), people in the Blood Tribe believe that the consequences of separation from parents and community, the prohibition of their language and traditional practices, continue to reverberate in the Blood Tribe community and manifest themselves in the form of many social ills including alcohol and drug abuse, crime, family violence, and a general disintegration of social cohesion:

They established residential schools on the reserves throughout Canada, mostly Anglican and Catholic . . . They established those schools and forced the children to go; took them out of their homes . . . Obviously, at that time they didn't have any idea of the social implications. They broke up families, and they [children in the schools] were persecuted if they spoke their Native tongue and were forced to speak English. They didn't allow us to practise our traditional customs and ceremonies; they were trying to assimilate us. We were considered savages.⁵⁴

For most of the Blood Tribe people the high level of unemployment in the community is the inevitable consequence of the lack of skills, training, and business opportunities, and, more importantly, the lack of access to capital. The lack of access to capital is deemed to be one of the biggest factors for the lack of economic activity in the community. Not being able to access capital prevents community members from starting up small businesses or engaging in agricultural activities. According to some respondents, to undertake a farming operation requires large amounts of funds for machinery and equipment, and therefore individuals most likely to succeed are those that undertake a large farming operation so as to be able to recover the investments in expensive machinery and equipment. However, individual members of the Blood Tribe have difficulties accessing capital because they do not have fee simple title to their lands. Faced with these limitations, the best option for those who have occupancy rights to lands in the Blood Tribe is to lease them out:

Most of the [land] owners lease out their land; I only know of one or two native farmers [who do not lease], but everybody else leases. We can't afford to buy this machinery these days, because, as I said, I only have 100 acres, I can't expect to make a living off of 100 acres, you need maybe 1,000 acres at least before I buy a half a million dollar tractor, half a million dollar combine. All these stuff costs big money, so they have a stranglehold over us there.⁵⁵

Difficulty in accessing capital is not the only factor that influences the low level of economic activity in the community. For some, the lack of strong leadership by Chief and Council is also a significant factor that contributes to the lack of economic opportunities:

We have the largest reserves in Canada, but we are poor, we are very poor. Basically, because all the employment that you see here on the reserve . . . [is] in this building [the building that contains most of the band administration offices, a grocery store and a café], everything else . . . for example, as far as major highways is concerned, the maintenance of the reserve, farming, even the rare rock ammonite that is being mined, all of these are being done by non-natives. All the major, major employment is done by non-natives; that's not our doing; that's the doing of our leaders, and that's what Indian Affairs is doing now.⁵⁶

The type of land tenure also influences the type of economic activity in the community. Although the Indian Act stipulates that the land belongs to the Band collectively, not all members have access to or benefit from the land.

Economic revenues from leasing the land only benefits the 10–12% of the Blood Tribe people that have occupancy rights to the land, but the vast majority do not obtain any benefits. This inequity with regards to benefits from the land has created divisions and conflicts in the community. Several respondents believe that resolving the issue of land tenure is critical for addressing the many land disputes in the community and can potentially lead to economic activities that are more locally controlled. A study conducted in the community regarding the flow of money in and out of the community showed that the leasing of land to non-natives results in a net annual outflow of \$48 million.⁵⁷ One non-native farmer alone rents 70,000 acres from the Blood Tribe.⁵⁸ There is a feeling that the issue of land tenure would not easily be resolved by Chief and Council because of its sensitivity and the influence and power of landowning families.

It would probably be fairly difficult [to change the land tenure system], it would have to be phased in . . . There has been talk that the majority that don't occupy land [are] frustrated . . . it's very clear in the legislation that governs this place that it's [the land] for the use and benefit of everyone. So it'll take political will . . . Why it hasn't changed is because the ones that occupy land have more money. They are maybe more upstanding citizens in the community and maybe have more influence and their families have elected them to leadership over the years. The majority of the Chief and Council occupy land. I think there's only one or two that don't occupy land. It's a . . . change that I think needs to happen sooner than later.⁵⁹

The combination of social and economic hardships, land disputes, and mistrust of the Chief and Council, and managers and directors of entities such as the Blood Tribe Agricultural Project, the Kainai Agribusiness Corporation and Kainai Resources, appear to be contributing to feelings of internal marginalization and the loss of social cohesion and networks in the community:

We don't know where that money [from resources] goes. They say that it goes to cap off operations for the reserve, but yet when you look at it, there is only a handful of people here who are benefiting off this land. Now there is a motion where they are saying, "well, we are going to control all our oil resources, oil and gas resources" . . . this is going to happen, but how is this going to benefit the people? It will not. It's just going to disappear that much faster [the money], so everything that the people on this reserve feel that—or they

should—by nature, by law, should be benefiting them, is not. So people are left . . . well, you see them walking around, they don't have anything, while you see others driving brand new vehicles.⁶⁰

Chief and Council need to put their feet down and [see] where [the] money is going. When the dollar becomes your almighty then you start having problems. They [Chief and Council] have to start sitting down with the people. It goes to their heads and they forget about us. There's no communication with the people. They don't come down to our level.⁶¹

We just had an election seven months ago. During the election everyone [politicians] promised transparency: "there is going to be a huge change, we are going to work for the people, blah, blah, blah." . . . [But] they have no new ideas to introduce to the people to help them start their own economy. There is no economy on this reserve, there is nothing here. If you look at it, there are gas stations, but even then those gas stations are struggling.⁶²

Another thing that really destroyed our members . . . it used to be with the clan system that families lived together; extended families helped one another, they never saw anyone starve or to be without the basic: food, clothing and shelter; that's how we were. In the 60s we were forced to go under the election system and that's when we started creating the town sites and so many of our people were forced to live in the town sites; they were just put there, and their families were far away. So we lost contact with who our families are; many of our members now don't know which clan they are from.⁶³

The adaptability of indigenous people like the Blood Tribe to coping with climate variability prior to the arrival of Europeans has been eroded. With the change in their type of livelihood, the strategies that they had developed from past experiences and accumulated knowledge have largely been forgotten. Although the Blood Tribe is one of the largest reserves in Canada, this reserve land is only a fraction of the territory that they had access to prior to signing a treaty with the Canadian government. Therefore, for the Blood Tribe their access to natural resources, which is one of the key factors for coping with climate variability, has been profoundly changed and has compromised their adaptive capacity. Moreover, effects of the Indian Act and Residential Schools have generated personal trauma as well as a break down in interpersonal relations, and have negatively affected the level of trust, social

networks, and support in the community, and therefore further reduce the adaptive capacity of the community.

Given the many and more immediate social and economic challenges that the Blood Tribe community faces, it is not surprising that for most of the people climate change variability and their impacts are not, for now, a major concern:

Cancer is very high; sugar diabetes is very high. So . . . people here because they have had nothing for a long time they feel that they don't have a sense of belonging to the tribe anymore. They just don't care what happens out there with the farmland; unless you are a farmer or landowner you don't care about the farmland. Unless you have land or cattle you'll care about the moisture; other than that, people here in the community live on a day to day basis. They are wondering where they are going to get their next meal. You go to social services [and] you only get a cheque once a month, which is maybe about \$330 and you have to live on that for a month. So, it's pretty bad.⁶⁴

So there are a lot of issues I could bring up, but what we are talking about today . . . the people don't really care about climate change here. They live on a day to day basis. Morale right here is very low. Our average age of death I think is 50 years.⁶⁵

Conclusion

To recapitulate, the imposition of a political system and policies of assimilation by colonial and current Canadian governments on the Blood Tribe community have significantly and negatively altered their access to natural resources, governance and institutional arrangements, social networks, and human and technological resources, thus limiting the adaptive capacity of the community to climate change impacts.

Through their displacement and relocation onto reserves, the Blood Tribe, like other First Nations, lost access to once vast traditional territories and became dependent on the Canadian state for housing, education, health care, employment, and other living essentials. The combination of an imposed governing structure and the loss of their land base and traditional forms of livelihood has resulted in the loss of economic, human, and social capital. Without these, the community will continue to face great challenges in their adaptation to climate change impacts.

Climate change is affecting societies worldwide and, as is increasingly acknowledged, those affected most are societies that face other social and

economic stressors. For the Blood Tribe, understanding their contextual socio-economic and political conditions informs one of their particular vulnerability and adaptive capacity to climate change impacts. Given the trends and predicted impacts of climate change in the South Saskatchewan River Basin, it is important that the Blood Tribe develop anticipatory strategies to cope with floods and droughts. The Blood Tribe community is a clear example of situation where other stresses affect the community more directly and immediately; therefore, in order to enhance the coping ability of the community to climate change impacts it is critical to address these stresses. Strategies that increase access to resources, reduce poverty, unemployment, and the lingering effects of residential schools, can greatly increase the financial, human and social capital of the community. The alleviation of these non-climate related stresses will strengthen the community's adaptive capacity to climate related stresses.

Clearly, past and present Canadian government policies have contributed to the Third World conditions in First Nations communities like the Blood Tribe. Improving living conditions in First Nations communities will rectify some of the injustices they have been subjected to, while at the same time strengthening their adaptive capacity to cope with climate change impacts.

Endnotes

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