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Social Capital and its Role in 1930s Drought Adaptation and Migration in Saskatchewan

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ABSTRACT

This research examines the role that capital, particularly social capital, plays in human adaptation to climate change through migration using the 1930s drought in Saskatchewan as the case study. Exploring the motivations of those who migrated from drought-stricken southern portion of the province to the Aspen Parkland to the north provides an understanding of how farmers and rural communities adapt to extreme climatic conditions. In a period of difficult economic and environmental conditions, when financial resources and formal education were limited for many households, farmers relied heavily on social networks to help them adapt to climate change by informing them about potential migration destinations and by helping them integrate into the new community. This project incorporated in-depth interviews with forty participants who experienced this migration along with archival data and other secondary sources, to develop an understanding of the relationship between social capital, migration, and adaptation. Insights developed through this study may be useful in better understanding future adaptation and migration responses to anthropogenic climate change.

RÉSUMÉ

Ce projet de recherche examine le rôle que le capital, surtout le capital social, joue dans l'adaptation des êtres humains aux changements climatiques par la migration en utilisant l'exemple de la sécheresse des années 1930s en Saskatchewan. L'exploration des motivations de ceux qui ont déménagé du sud de la province frappé par la sécheresse au Aspen Parkland vers le nord donne une meilleure compréhension de comment les agriculteurs et les communautés rurales s'adaptent à des conditions climatiques extrêmes. Durant un temps de difficulté économique et environnementale, quand les ressources financières et l'éducation formelle étaient limitées pour plusieurs, les agriculteurs comptaient fortement sur les réseaux sociaux pour les aider à s'adapter aux changements climatiques en fournissant de l'information sur les destinations possibles et en assistant à l'intégration dans la nouvelle communauté. Ce projet a utilisé des entrevues détaillées avec quarante participants qui ont connu cette migration et des sources secondaires telles des archives pour développer une compréhension de la relation entre le capital social, la migration et l'adaptation. Les perspectives développées lors de cette étude pourront servir à mieux comprendre l'adaptation future et la migration face à des changements climatiques anthropogènes.

Chapter 1: Introduction

A number of recent reports and studies suggest that anthropogenic climate change has the potential to cause large-scale displacements and migrations of human populations (CARE International, 2009; Myers, 2002; Christian Aid, 2007; IPCC, 2007). Humans rely on favourable environmental conditions to meet their basic needs, such as shelter and food, to maintain livelihoods and to provide ecosystem services (MEA, 2001). Agricultural systems and livelihoods are especially vulnerable to environmental change (Smit and Skinner, 2002). Changing environmental conditions, including climatic change, have influenced agricultural practices in the past and in some cases have been associated with migration in rural areas (Cunfer, 2003; Duncan, 1996; Parry, 1978). A decline in agricultural productivity is often associated with present-day rural to urban migration in many regions prompting farmers to seek off-farm income (Meze-Hausken, 2000). However, the factors that influence migration decisions in the face of adverse conditions are not always clear. Researching historical analogues is an established way to study adaptation responses to climatic stimuli (Glantz, 1991). This research has been used to study historical migrations influenced by climatic conditions. Alternately, it has been used to study events as a means of improving our understanding of potential future impacts of climate change (McLeman and Hunter, 2010).

The process of using analogues takes known observations about past events to make predictions about possible future events (Glantz, 1991). The events, past and future, must share relevant similarities in order to be compared. One of the largest migrations to occur in North America in living memory took place during the 1930s, when extreme droughts compounded by the economic hardships of the Great Depression led to high unemployment, low grain prices and farm failures across much of the Great Plains (Gray, 1966; Marchildon et al., 2008; Waiser, 2005; Gregory, 2004). Many farmers in southern Saskatchewan adapted by migrating to the cooler and wetter Aspen Parkland, the northern transition area between prairie and boreal forest (Waiser, 2005). While government agencies offered incentives to some who moved to this region, the majority of families chose to move using their own, limited funds (Waiser, 2005). This case study provides an opportunity to explore why families chose to migrate

under such conditions, the roles of environmental and socio-economic factors in their migration decisions, and the perceived benefits and actual outcomes experienced by migrants.

Agriculture has been practiced on the Canadian Prairies since the mid 19th Century, well before Saskatchewan became a province in 1905 (Archer, 1980; Waiser, 2005). The success of agriculture on the southern Prairies was, and still is, highly contingent on climatic conditions. Many Europeans settled in Saskatchewan at the beginning of the 20th Century when climatic conditions were relatively mild with slightly higher than average rainfalls and milder winters, which served to encourage further settlement (Jones, 2002; Waiser, 2005). While early explorers believed the Prairies were too arid for agriculture, due to favourable conditions during the early settlement era, these opinions were ignored (Jones, 2002; Waiser, 2005). During World War I international demand for wheat soared, as did its market price, encouraging farmers to grow this crop almost exclusively (Waiser, 2005). In the following decade commodity prices fell sharply. The stock market crash of October 1929 coincided with the onset of a prolonged drought, the most severe that many had ever seen (Archer, 1980; Schulz, 2004; Waiser, 2005). As the Great Depression wore on, the number of farms decreased as farm families began to look for work in the cities or leave the Prairies for new lands in north-central Saskatchewan and Alberta's Peace River country (Archer, 1980; Waiser, 2005; Thompson, 1998). There were few government programs to support farmers or encourage them to stay on the land; social networks were often the only support system farmers could rely on (Schulz, 2004).

This project draws upon research on human-environment interactions, climate change adaptation and vulnerability, migration theories, and social capital to examine the experiences of 1930s drought migrants in Saskatchewan. In climate impact and adaptation research, the effects on and responses of human populations with respect to adverse climate conditions are described in terms of vulnerability (Smit and Wandel, 2006). Vulnerability is the potential to experience loss or harm, and is moderated by adaptive capacity, the ability of an individual or community to cope with or respond to change, in this case climate change (McLeman and Smit, 2006a; Adger, 2006; Smit and

Wandel, 2006). One of the ways in which those living in vulnerable areas may potentially adapt to conditions like drought is through migration (McLeman and Smit, 2006a). This research considers migration to be part of the adaptation process, albeit often the last option considered by many farmers. Migration theories examined here include traditional theories of 'push' and 'pull' factors as well as more contemporary theories that look at how social networks of family and friends or larger macro-networks permit difficult or costly migrations to take place.

Social capital is an important factor that influences families and individuals and their adaptive capacity, and thus provides options to reduce vulnerability (Smit and Wandel, 2006). It has also been shown to play an important role in migration by allowing migrants to learn about possible destinations and helping them integrate into their new community (Bauder, 2003; Nee and Sanders, 2001; Adger, 2006; Pelling and High, 2004). As is shown in subsequent chapters, social capital played an important role in rural adaptation and migration in Saskatchewan during the 1930s, when government support for drought-stricken communities was inadequate.

To examine the experiences of individuals who moved from southern Saskatchewan to the Aspen Parkland during the 1930s and determine the role social capital played in migration decision-making, I drew upon secondary and primary data sources. The secondary data sources included relevant reports and documents from the provincial archives in Saskatchewan and other pertinent materials from Statistics Canada and the Library and Archives Canada websites. Analysis of these secondary data sources helped me to formulate specific questions used in semi-structured interviews conducted in the summer of 2009 with people whose families migrated to the Aspen Parklands in the 1930s. These primary sources helped me to understand the motivations, perceptions and experiences of households in a way not possible through secondary data alone (Cloke et al., 2004). The compilation and analysis of the findings from both primary and secondary sources used methods with origins in grounded theory (Charmaz, 2004), a process of theoretical induction which has been applied in other studies of migration on the Great Plains (for example McLeman, 2006 and Gilbert 2009).

1.1 Rationale and Objectives

A systematic investigation of the experience of 1930s rural migration to the Parkland is important and timely for several reasons. First, Prairie agricultural systems and populations are seen as being highly vulnerable to drought and other impacts of anthropogenic climate change that are likely to become more common in Western Canada in coming years (Lemmen et al., 2008). By using a historical analogue to understand how rural populations have adapted to drought and climatic stresses in the past, it may be possible to gain insights on how they may adapt to future climate change (Glantz, 1991; Rosenzweig and Hillel, 1993; Gilbert and McLeman, 2010). Research of this type has not previously been done in Saskatchewan. Second, researchers have suggested that social capital plays an important role in adaptive migration (Adger, 2003), but its specific effects have not been explored in detail with respect to past climate migrations. Much of our knowledge of Depression era drought migration in Canada is based on popular histories (such as Pierre Berton, 2001 and Barry Broadfoot, 1997). Little research has been done to systematically collect first hand information from farmers who migrated during the Great Depression on the Canadian Prairies. If a farmer were twenty years old in the 1930s, he/she would be almost 100 years old today; therefore it is imperative that this first-hand, experiential knowledge be collected quickly before it is lost.

The objectives of this research project are threefold:

1. To better understand rural household adaptation strategies during 1930s drought. Sufficient understanding of past vulnerabilities of participants to drought is necessary in order to understand the adaptation processes used by participants, and where migration fits within those processes. It is therefore important to understand the nature and level of exposure participants had during the drought as well as their adaptive capacity (and the socio-economic factors that shaped it), which together determined the adaptation strategies used by participants. Particular emphasis was placed on migration as an adaptation outcome.

2. To examine the role of social capital in migration decision-making and integration. Which relationships were important in helping farmers migrate and integrate into their new community?
3. To use these insights to potentially explore how rural adaptations and adaptive capacity might play out under conditions of future climate change, and to gauge the suitability of the case study as an analogue for future climate change research.

Selection of specific sites for field study was done using GIS maps created by McLeman et al. (2010) which compare population changes at the census division level within the Prairies with 1930s drought conditions. This data was supplemented with more detailed census information by township and range to pinpoint areas with high population growth between 1926 and 1936. The communities of interest identified in this way were Spiritwood and Carrot River, where I conducted 30 interviews in the summer of 2009. Participants from this area were mostly second-generation Canadians who had moved to Saskatchewan at the turn of the 20th Century to buy land on which to farm. The average age of the participants was 84, with 22 females and 18 males participating in my research project. The information gathered through interviewing was combined with data gathered from secondary sources such as archival reports and local histories to generate the findings that follow.

1.2 Outline

The following chapters describe the conceptual background and literature relevant to this project, methods, and major findings. Chapter 2 provides a detailed theoretical background for the research including environmental and human interaction, migration theory, and the origins and applications of the concept of social capital. Chapter 3 gives context to this research and outlines the study area through an examination of Saskatchewan's physical geography and human history, including settlement and early farming history. Chapter 4, the methodology chapter, describes the design of research questions, the selection of fieldwork location, the creation of interview questions, the interview process, data analysis, and the development of conceptual frameworks.

The results and conclusions are outlined in detail in Chapters 5, 6, and 7. First, data from interviews and other information were presented to answer research questions about the vulnerability and adaptive capacity of 1930s Saskatchewan farmers in Chapter 5. This includes an analysis of the environmental and economic exposures of participants and how they tried to adapt to these conditions. Chapter 6 is a discussion of the role of social capital in migration decision-making and integration. This includes a description of the types of social capital that participants possessed and how this helped them choose a migration destination and integrate into their new community. Finally, Chapter 7 focuses on the lessons that can be learned from this research for the future of climate change adaptation and migration on the Prairies. By examining what has changed since the 1930s, the usefulness of the analogue can be determined. These chapters also introduce and explain the conceptual frameworks developed throughout this research that may be applicable more broadly to questions of climate and migration in rural populations. Chapter 8 concludes by summarizing the lessons learned through this research and offers thoughts on potential future research.

Chapter 2: Literature Review

This chapter examines literature in the fields of climate change vulnerability and adaptation, migration, and social capital to explain the background to the research projects objectives. The goal of this chapter is to highlight research that has also considered adaptive migration in the face of climate change and to combine this with research that looks at the role of social capital in assisting with the migration process.

2.1 Climate Variability, Human Vulnerability, and Adaptation

2.1.1 Environmental Change and Migration

Because human livelihoods and wellbeing are inherently connected to the physical environment, changes and variations in environmental conditions may be expected to influence their behaviour and decision-making. There are varying views on the nature of such interactions. For example, Malthus' 1798 essay on human population growth and the impacts of food production remains influential to modern research including research which suggests that environmental scarcity will lead to migration (and potentially to conflict over resources in some instances) (Homer-Dixon, 1994; Adger et al., 2002). From this theory came the idea of the carrying capacity of a given location, that is the number of organisms that the environment can sustainably support. Other authors such as Blaikie and Brookfield (1987) have examined how people are able to adapt to changing environmental conditions such as land degradation without migrating but by changing the ways in which they interact with their environment to make it more sustainable. While a variety of outcomes may be possible, it is evident that humans are affected by the environment in ways that force them to change their own behaviour whether through migration or other adaptation outcomes.

Burton et al. (1978) outline other aspects of how human well-being and livelihoods are affected by the environment including hazards, such as extreme weather events, geomorphic incidents, and disease outbreaks. These events may be defined by their magnitude including its frequency, duration, extent, or speed of onset, spatial dispersion, and temporal spacing. For example, drought is a phenomenon with a

gradual onset, long duration, widespread effect, diffuse dispersion, and a somewhat regular temporal pattern. In contrast a tornado happens suddenly, is of short duration, has a limited impact on a concentrated area, and occurs randomly. The authors also examine how society responds to hazards as a relation of the perceptions of the potentially hazardous event and the awareness of the possibilities to adapt and prepare for it. For example, tornadoes occur infrequently in some areas and are thus perceived as being less hazardous resulting in little preparation by individuals (Burton et al., 1978). Many of these hazards may become more frequent due to anthropogenic climate change. Migration is often a response to changes in environmental conditions, sometimes caused by natural hazards or disasters, which may have made a region unattractive to human habitation or inhabitable.

Through agriculture, humans have caused changes in environmental conditions for millennia. In some instances, these human-induced environmental changes have in turn led to human migrations in and out of a region. Cunfer writes, “since its inception 10,000 years ago, farming has been the most direct, extensive, and sustained interaction between human beings and the natural world” (Cunfer, 2005: 3). Duncan (1996) elaborates on the origins of agriculture in the Mediterranean and its progression to the rest of Europe and into northern Africa. He writes that as agriculture progressed, so did soil erosion, which resulted in poorer growing conditions and as a result lands were no longer productive (Duncan, 1996). Meanwhile, Parry (1978) looked at climate changes over the last 1000 years and found that poor growing conditions, including reduced soil quality, have periodically affected crop production, in turn motivating farmers to seek out new land to put into production. Duncan (1996) also discusses the role the economy has played in the way humans interact with nature through agriculture. In recent centuries a situation has developed where natural constraints are no longer the limiting factor in agriculture production due primarily to technological improvements, but rather the economy decides what crops should be produced and how they should be produced (Duncan, 1996). This transition can also be understood as the switch from subsistence agriculture to agribusiness. This has led to the over-exploitation of land, one cause of out-migration, that goes beyond the influences of population growth and carrying capacity of the land. Cunfer (2005) also discusses the migration of humans as a process

of long-term swidden agriculture in which humans are constantly drawn towards untouched, fertile land. Thus environmental conditions have motivated migration through both the emigration from places of scarce resources and the immigration to places with good agricultural lands or other environmental benefits.

2.1.2 Climate Change: Vulnerability and Adaptive Capacity

In climate impacts and adaptation literature, the relationship between humans and climate is often described in terms of vulnerability, which may be defined as “the degree to which a system is susceptible to and is unable to cope with adverse effects (of climate change)” (Adger, 2006: 269). The key parameters of vulnerability according to Adger (2006) and the IPCC (2007) are the stress to which a system is exposed, its sensitivity to those stressors, and the adaptive capacity of that system. Stress to the system, in this context, could be an environmental hazard caused or exacerbated by climate change, such as drought or flooding. The sensitivity of the system is determined by the degree to which it is affected by the environmental changes taking place, that is how severe the environmental changes are and how well the system is prepared for these changes (Adger, 2006). For example, native prairie grasses have evolved to cope with drought so that they lose less moisture to evaporation in hot and dry conditions and are thus less sensitive to drought and therefore not as vulnerable to routine variability in precipitation in that region. For humans, socioeconomic conditions also affect exposure and sensitivity (Smit and Wandel, 2006). For example, the poor are often highly exposed to the effects of extreme events such as flooding because their poverty restricts them to occupying undesirable, low-lying areas in floodplains (McLeman and Smit, 2006b).

Adaptive capacity refers to how well a community or household is able to contend with or respond to a changing climate (Adger, 2006; Smit and Pilifosova, 2006) and is related to access to financial resources, education, information and technology, social networks and capital, and past experience dealing with similar climate variations (Smit and Pilifosova, 2006; Sauchyn and Kulshreshtha, 2008; Wandel et al., 2007). A system or region with a high adaptive capacity would be able to successfully adjust to, and possibly benefit from, changes in climate (Sauchyn and Kulshreshtha, 2008).

Adaptive capacity exists at household, community and institutional levels, but institutions and governments, and communities to some extent, have the added ability to improve the capacity of lower-level actors to adapt to climate change (Smit and Pilifosova, 2006; Smit and Skinner, 2002). Barnett and Adger (2003) state that the nature of adaptive capacity has cultural and locational characteristics that affect the extent to which institutions can help people adapt to climate change. For example, in some atoll countries traditional knowledge has allowed inhabitants to address rising sea levels (Barnett and Adger, 2003). Adaptive capacity also depends on perception and one of the many suggested barriers to building adaptive capacity is the lack of recognition of climate change's occurrence at the institutional and household level resulting in no adaptation preparation (Bryant et al., 2000; Sauchyn and Kulshreshtha, 2008; Barnett and Adger, 2003). Adaptive capacity can also affect the socio-economic future of areas highly exposed to climate change impacts. For example, if there is a lack of confidence of foreign investors, aid agencies, and the people themselves in the capacity of a given community to adapt to climate change, then investments may conceivably be withdrawn and people will be left with even fewer resources (Barnett and Adger, 2003).

Various authors have studied vulnerability and adaptive capacity in a range of time periods and a variety of locations. In Canada authors in Lemmen et al. (2008) found that vulnerability to climate change is highest in sectors that depend on natural resources, such as agriculture, fisheries and forestry. While adaptive capacity in Canada today is generally believed to be relatively high, given Canadians' access to financial capital, it is limited in some regions due to a lack of planning by government and policy-makers (Lemmen et al., 2008). Studies that have examined the impacts of climate change on poorer regions, such as Africa, have found populations to be much more vulnerable due to their exposure to climatic hazards such as drought, water shortages, and flooding, depending on their location (Christian Aid, 2007). For example, in dryland areas in Mali, many young people are abandoning the family farm to move to the city where they may have a better chance of making a living; in this case migration is the best adaptation option (Christian Aid, 2007). Present-day cases such as this are reminiscent of historical examples from North America, particularly Depression-era drought migration on the Great Plains. For example, McLeman and Smit (2006a)

looked at the experiences of farmers in Eastern Oklahoma during the Great Depression, and found that tenant farmers at that time migrated from the southern Plains to California in large numbers often following friends and family who had gone before. Migration is often the last adaptation option considered due to the difficulty selecting the destination and the risks associated with moving. These studies all agree that the poor are more vulnerable to environmental change and that when governments do not provide aid, individuals must rely on their social networks to help them adapt.

2.1.3 Rural Adaptation to Climatic Variability and Change

Early assessments of the relationship between climate and human well-being in the late 1980s and early 1990s focused on the biophysical effects of climate change and tended to treat adaptive capacity as being uniformly distributed across the exposed area or population of interest (Adger, 2006; Smit and Wandel 2006). For example, Easterling et al. (1992b, 1992c) looked at the hypothetical effects of farm level adaptations to climate change in the mid-western United States by examining the productivity of various crop mixes farmers could try growing and their potential productivity under various climate change scenarios (in what they described as “dumb-farmer/smart farmer” scenarios). By the late 1990s, researchers began to examine the effects of climate change in the context of vulnerability and adaptation, and, from the perspective of rural populations, looked at how farmers and others would be able to avoid risk (Smit and Skinner, 2002). This brought about discussions of risk perception and planned decision-making on the part of the individual farmers as part of adaptation. Research by Blaikie and Brookfield (1987) was an influential forerunner in this respect, in that it looked at how economic, political and social forces influence farmers’ decisions that may lead to land degradation. Later climate change studies of agricultural systems consequently viewed farm-level decisions as part of a larger process of decision-making by governments and other farmers and began employing the vulnerability model described above (Smit and Skinner, 2002). The progression of approaches to understanding adaptation in agriculture is described in Table 2.1.

Table 2.1 Analytical Approaches to Adaptation in Agriculture

Approaches	Description
Conventional Climatic Change Impact Assessment	This early assessments looks only at climate and not at human decision-making. In this approach adaptations are assigned across the board.
Natural Hazards	Looks at risk perception and human coping strategies.
Agrarian Political Economy	Looks at the role of institutions and other macro-level forces (including government policies) in the agri-food sector.
Innovation Adoption	This approach recognizes that adaptation is the function of the personal and situational circumstances of the decision-maker and the characteristics of the innovation under consideration.
Agricultural Systems and Farm Decision-Making	Emphasizes interconnections within the agricultural system (including field, farm, community, region, and nation) and describes possible changes at aggregate scales and single farms.
Risk Management	Adaptation is considered a response to financial risk in agriculture.
Agricultural Vulnerability and Adaptation	This approach recognizes that there are pertinent climatic factors to which agricultural systems are most sensitive. These factors are then used to analyze the implications of climate change.

Adapted from Smit and Skinner (2002)

Generally, adaptive capacity with respect to climate change is believed to be high in Canada but is not evenly distributed between populations and within regions (Lemmen et al., 2008). Rural communities are often seen to have less institutional adaptive capacity than urban areas, usually because of a lack of money and power, and so informal social networks are often an important feature of rural adaptive capacity (Sauchyn and Kulshreshtha, 2008; McLeman and Smit, 2006a). Despite the trend toward industrial agriculture, many farms remain family-run and are continually adapting their practices to address issues such as soil conservation through the use of direct-seeding (the use of air-seeders reduces erosion since soil does not need to be tilled before seeding) (Sauchyn and Kulshreshtha, 2008). Smit and Skinner (2002) identify a variety of options that farmers may use to increase their adaptive capacity at the household and institutional levels (Table 2.2).

Table 2.2 Types of Adaptation Options in Agriculture

Adaptation Option	Examples
Technological Developments	Crop (seed) development, improvement of weather and climate information systems, resource management innovations
Government Programs and Insurance	Agricultural subsidy and support programs, private insurance, resource management programs
Farm Production Practices	Farm production (diversification), land use change, land topography modifications, irrigation, timing of operations
Farm Financial Management	Participating in crop insurance programs, investment in crop shares and futures, income stabilization programs, diversification of household income

Adapted from Smit and Skinner (2002)

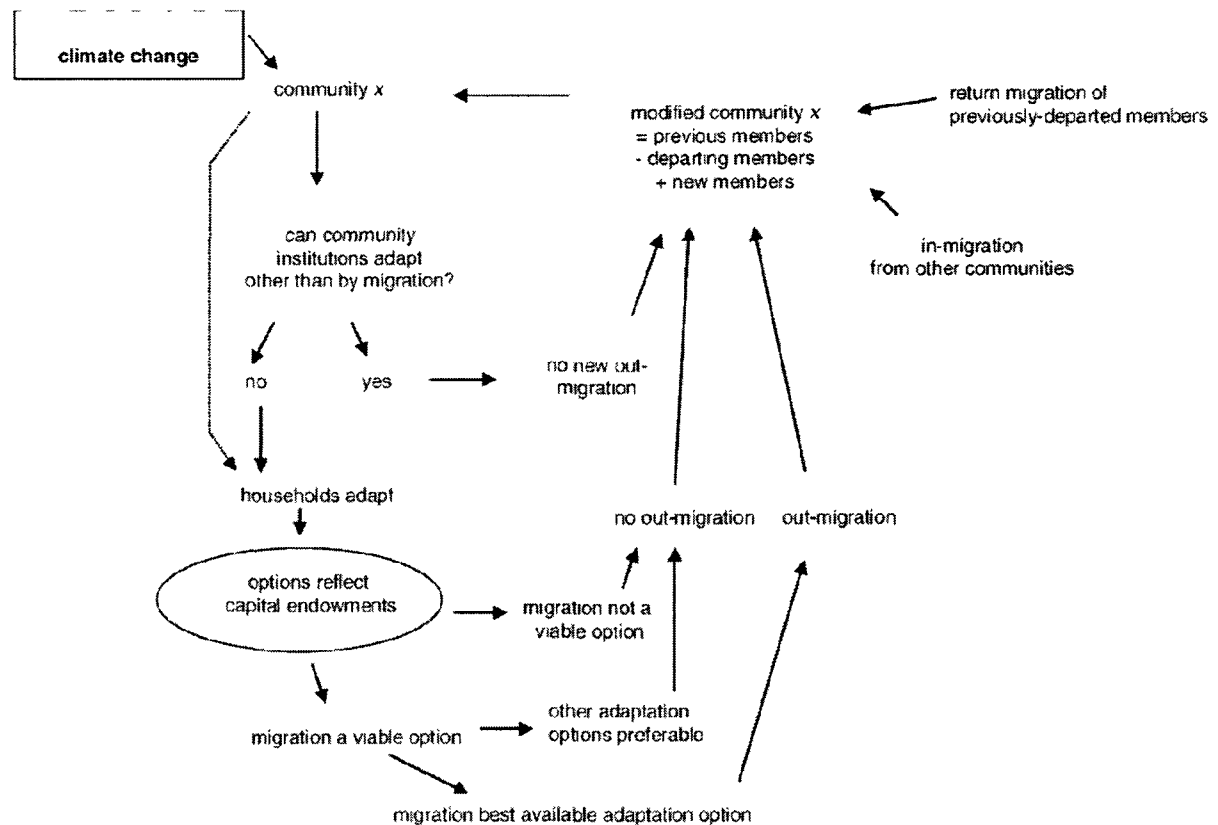
Smit and Skinner (2002) list four categories of adaptation options: technological developments and government programs and insurance happen at the institutional level while farm production practices and farm financial management happen at the farm household level. Farmers have long relied on advances in technology to improve their production capacity and reduce losses (Palmer, 2003) including, most recently, improvement in cultivation techniques, more accurate weather information systems, and resource management innovations (Smit and Skinner, 2002). Governments and private companies often fund institutions such as universities to conduct this research. While technological improvements can increase efficiency, they are often costly for individual farm families. Governments and institutions also play a role in improving the ability of farm families to adapt through agricultural support programs, resource management programs, and crop insurance (Smit and Skinner, 2002). These programs often aim to increase farm diversity (by increasing the variety of crops and livestock and income is also diversified) and help farmers stay competitive. At the household level, farmers can change their production practices to adapt to climate change, such as diversifying crops and livestock, using irrigation, and changing the timing of operations to address changes in precipitation amounts and its seasonal distribution (Smit and Skinner, 2002). These options are often less costly, but require knowledge and training in order to succeed. Finally, farm families can also undertake a variety of lifestyle changes including looking

for off-farm work to supplement their farm income and using crop insurance (Smit and Skinner, 2002). While Smit and Skinner (2002) do not discuss community level adaptations, Halseth and Ryser (2007) have suggested that social capital may help increase adaptive capacity at both the household and especially the community level.

2.2 Relevant Migration Theory

Migration is one of the ways by which individuals and households may adapt to environmental or climate-related risks on a global scale (Adger et al., 2002, McLeman and Smit 2006a). As such, migration decision and behaviour under conditions of climatic stress are subject to the same range of potential influences as adaptive capacity. McLeman and Smit (2006a) therefore suggest it is important to consider the broader theories of migration behaviour more generally and incorporate these into any study of climate migration. In the case of rural areas, migration is more likely to occur if there is little institutional support or if the decision-maker is poor and the adaptation options listed above by Smit and Skinner (2002) are not possible. The nature of migration depends upon a variety of factors including the dimensions of the climatic stimulus. The term 'environmental refugees' is sometimes used as shorthand for people who migrate or are displaced by environmental factors. Bates (2002) defines three types of environmental refugees based on the kind of problem they face: those fleeing a disaster temporarily (such as a flood), those displaced due to drastic environmental changes (such as the construction of a dam), and those who migrate permanently due to the gradual deterioration of environmental conditions such as water scarcity or overuse of agricultural land. McLeman and Smit (2006a) suggested a conceptual model of migration decision-making influenced by climatic factors that situates the migration decision within a broader set of adaptation processes (Figure 2.1).

Figure 2.1 Model of Migration in Response to Climate Change



Source: McLeman and Smit (2006a)

In Figure 2.1 climate change is acting upon a given community. The consideration is whether or not the community can adapt to the environmental change, usually through the work of government or other institutions. The next step is to consider the level of household adaptive capacity which is reflected by access to capital. If neither communities nor households can adapt, then migration may take place if other adaptation options are not available or not preferable. McLeman and Smit (2006a) go on to explain that out-migration from one community will lead to in-migration in another community which will change the adaptive capacity of both communities. This decision-making process that considers first community or institutional-level adaptive capacity and then household-level adaptive capacity is used in this research.

There are various explanations in the literature of why people in general undertake migration. Traditional (or neo-classical economic) theories were often based on studies of emigration from Europe to the New World, and use descriptions of ‘push’

and 'pull' factors (Lee, 1966; Castles and Miller, 2003). 'Push' factors may include population growth, low standards of living, and politically restrictive states at home, while 'pull' factors can include high demand for labour, land availability, and freedom within another region. According to traditional migration theories, the factors that influence migration decision-making by families involve a combination of the area of origin, the area of destination, the intervening obstacles, and personal factors (Castles and Miller, 2003) so that migration decisions are essentially made by families weighing the benefits and problems with each of these factors. For example, families ask themselves what is the best destination area available? Is migration affordable? Is it desirable? Such theories seem to propose that families are always making decisions rationally and are continually trying to maximize economic capital. As a consequence these theories may not have strong applicability to situations of involuntary displacement.

Other scholars have observed that people move for non-economic reasons as well and that decision-making may be more complex than simply weighing 'pros' and 'cons'. Stark (1991) argues that job security and other risk minimization factors are important influences when families choose to migrate. Nee and Sanders (2001) make similar arguments based on their observation that migrants today are often families, or members of families, and not just independent job-seekers looking for short-term employment. Subsequently, Castles and Miller (2003) suggest migration systems theory as an alternative to traditional theories, and look at connections between destination and origin including relationships between nations, mass culture, and family and social relations to explain the decisions taken by migrants. For example, a key reason for high levels of Algerian immigration to France is due to the past colonial presence of the French in Algeria that created large transnational communities (Castles and Miller, 2003). Influences on migration networks also include macro-structures such as international politics and markets, as well as micro-structures such as social connections that migrants have at the destination (Castles and Miller, 2003).

Past investigations have explained Depression era Great Plains migration in various ways. Cunfer (2005) states that American farmers would often work the land for

a few years until it was no longer productive and then move further west, making migration an ongoing process that was effective until settlement reached the Rocky Mountains. Farmers then had to learn how to farm on the same land for more than just five to seven years, an event that coincided with the droughts of the 1930s. Through trial and error, some farmers learned to produce as much as possible off the land, although sometimes damaging the fertility of the soil in the process (Cunfer, 2005). Gray (1967) describes the migration process on the Canadian Prairies as one in which farmers were continually migrating until the high price of wheat, resulting from high war-time demand, made it economical to stay on the land permanently. Gray explains that farmers as making migration decisions based on “push” and “pull” factors. The “pull” to stay in southern Saskatchewan in the 1930s occurred because there was a chance that the drought was nearly over and that conditions would improve (reducing the disturbance that would be caused by migration), while the “push” was poor growing conditions and government assistance to move north. Other research, such as that done by McLeman and Smit (2006a), suggests that social networks, also known as social capital, may also have been important to this migration process.

2.3 Social Capital

Social capital has been defined and conceptualized in a number of ways in recent decades but its origins are often traced to the works of Bourdieu (1986), Coleman (1988) and Putnam (1993) (Wall et al., 1998). Given its previously successful application to migration studies elsewhere, Bourdieu’s conceptualizations of capital, particularly social capital, are used in this project. Bourdieu (1986) used this term to explain important forms of non-economic capital that influence societal structure and function, in a way similar to how Karl Marx described how economic capital connects people together through the accumulation of labour. The concepts of economic, cultural, and social capital are used by Bourdieu to explain how people interact with other individuals and society more generally. The focus of this project is the importance of social capital, but the other two forms of capital are important complements to social capital. According to Bourdieu (1986), economic capital is the traditional understanding of capital, and is mainly composed of money and items that are readily convertible to money. Cultural capital is that which is institutionalized, usually in the form of education but it can also

exist in an objectified state, including cultural goods such as books, state of the art equipment or technology, and works of art (Bourdieu, 1986). Cultural capital is a key feature that distinguishes social classes; those of higher classes have access to more cultural capital and thus have more items that reflect their class. For example, a wealthy person may be a collector of rare paintings, a form of capital that distinguishes them from the lower class. Another example is the cultural traditions of different ethnic groups; for example, Ukrainians made good earlier farm settlers because their traditional way of farming suited the flat and dry Saskatchewan Prairie.

Bourdieu (1986) describes social capital as being formed within the social networks that connect individuals. Social capital can be formal or institutionalized (such as members of a labour union or community organization) or informal (such as neighbours or co-workers). For example, relationships with family or close friends may result in more help on the farm, while relationships with an influential or powerful person, such as a politician, may result in important information. The value of social capital may be related to the size of the network, the number of connections within, and the volume of capital (social, cultural, and economic) that members of the network possess. Social relationships become capital only if they may be converted to other forms of capital or facilitate the accumulation of capital (Bourdieu, 1986). This is the form of social capital that is emphasized in this research, however social capital can exist in different forms. Adger (2003) writes that informal social capital bonds are often based on kinship while formal social capital bonds are based on expectations of reciprocity. Social relationships can also serve non-social capital purposes, such as sharing stories and cultural traditions which can help create a sense of community which may also help with addressing extreme weather conditions (Adger, 2003). It is difficult to measure social capital since not all social networks will be used for adaptation or other reasons, thus having more relationships does not mean that an individual has more social capital since these relationships may not be helpful (Adger, 2003). Social capital's role in migration is important and multi-dimensional. It can make migration possible when economic restrictions are great, it can allow migrants to learn more about possible destinations, and help them integrate into their new community (Adger, 2006; Pelling and High, 2004).

Once social networks were identified as being influential on migration (Massey, 1990; Massey and Espinosa, 1997), case studies were examined to better understand this process. Nee and Sanders (2001) looked at its role in Chinese, Filipino, and Korean immigration to Los Angeles while Bauder (2003) used it to study the integration of new immigrants from the former Yugoslavia and South Asia in Vancouver. New immigrants may sometimes depend on social capital to reduce the costs of settling in a new country, costs that would have made migration impossible otherwise (Nee and Sanders, 2001). For example, a new immigrant to Canada may live with relatives upon arrival and also use this relationship to help him/her find a job, thus making migration affordable. Bauder (2003) looks closely at what Bourdieu (1986) calls institutionalized cultural capital, in the form of occupational or professional accreditation such as medical degrees. He found that it is difficult for immigrants to transfer their accreditation into a marketable skill in the Canadian workplace, making them even more dependent on social capital to help them find other work (Bauder, 2003). This is consistent with Massey's (1990) earlier work which suggests that social networks make migration easier. He also states that studies that only look at economic causes of migration do not have a complete understanding of the motivations of migrants since many decisions are made based on social and cultural factors (Massey, 1990).

2.3.1 The Importance of Social Capital in Rural North America

Three case studies provide insight into the importance of social capital in rural areas. First, Halseth and Ryser (2007) examine the role of social capital in providing services in four communities in rural Canada that have seen a decrease in services since the 1980s due to the adoption of neo-liberal policies that have resulted in the regionalization and privatization of services and left some communities without some services. They determined that residents of these communities felt that it was important that partnerships be formed between local governments and private citizens. While creating partnerships helped address the lack of services, these new service providers relied on the work of volunteers who were often overworked. The formation of partnerships sometimes provided legitimacy to government organizations working within the community and also provided funding opportunities for voluntary organizations, therefore benefiting both partners (Halseth and Ryser, 2007). These

private-public partnerships, when executed correctly with the use of social capital, benefited the community.

Hanna et al. (2009) theorize that communities do not require social capital to thrive, but their resilience, sustainability and adaptive capacity may be weakened without a strong social capital base. Their research looks at the importance of social capital and sense of place in Merritt, BC, an example of a small resource town of approximately 5 000 people. They found that due to the decline of the downtown area in many small towns, community social capital has declined. Although shopping centres still exist they are more exclusive since they are in the form of big box stores on the edge of town, which require cars to access them and involve fewer chance encounters that can help build social capital. The authors also found that town planning is very important in the promotion of social capital and that bridging capital, that which connects people of different classes or groups, is weak in small towns. It is difficult to interact between groups in these communities since the town's physical structure promotes interactions with people of the same social class. Also, social capital is a factor of political action, power relationships, and class; exclusion due to existing inequities can continue to occur even as community leaders seek to enhance social capital. However, the authors found that community members can overcome this problem by seeking out new relationships with each other and through the preservation of historical buildings that promote social interactions, such as libraries or other attractive buildings (Hanna et al., 2009).

Besser (2009) studied 99 communities in Iowa over a ten-year period to find if social capital in small towns had declined and if so, what factors contributed to this decline. He theorizes that communities with higher local ownership of businesses and more small farms have more social capital which is demonstrated through higher rates of civic engagement. The challenges faced by small towns include rising poverty rates and income inequality between community members. Besser uses Putnam's (2000) thesis that there exists a 'civic generation' born between 1910 and 1940 that was more civically engaged than any generation proceeding it or following it. Since this generation is aging, there may be a decline in their involvement and thus a decline in

volunteering and other civic activities generally within these communities. Besser found that both bridging and bonding social capital, social networks between and within groups, respectively, had declined over the 10-year period (1994-2004) but that there was also an unexpected increase in voluntary participation in community projects over that period, thus contradicting his hypothesis that social capital is required for civic participation to occur. Besser concluded that there were limitations to the research, such as a possible peak in social capital at the beginning of the research that affected his findings. He also proposed that due to increased poverty, more individuals might have been using bonding social capital networks to reach out to one another. He also found that communities with higher social capital and relationships of trust are better able to weather the challenges presented by economic uncertainty (Besser, 2009).

These three studies highlight the importance of social capital for the resiliency of small towns and rural communities, consistent with the climate change science that suggests adaptive capacity is strongly influenced by social capital (e.g. Adger, 2003). However, social capital is not always present in rural communities due to the inability of residents to provide a value for the relationship due to higher poverty and sometimes it becomes exclusive to only certain community members. It is the uneven access to social capital that was identified as potentially influencing migration decisions at household levels in studies by McLeman (2006) and Gilbert and McLeman (2010) whereby those with less local social capital are more likely to migrate out of a drought region because they have less adaptive capacity. The importance of economic, cultural, and social capital to adaptive capacity is discussed in the following section.

2.4 Application of Vulnerability Approach and Social Capital to 1930s Saskatchewan Migration

In the 1930s, Prairies residents experienced the combined impacts of an economic depression and a severe and long-lasting drought, making it difficult for many farm families to continue to support themselves. Thousands of Saskatchewan residents adapted by migrating north (Marchildon et al., 2008; Waiser, 2005). Marchildon et al. (2008) looked at the adaptive processes that took place during the 1930s on the Canadian Prairies, and suggest that adaptation was carried out for the most part at the

household level. This suggests that there is room for closer investigation of the role of household access to capital, especially social capital, in the decision-making and migration processes of rural populations in the 1930s. Figure 2.2, a conceptual framework used for this project, pulls together the preceding literature on climate, adaptation and migration to suggest how household access to the forms of capital can be situated within the context of the adaptive capacity of household decision-makers.

Figure 2.2 Adaptive Capacity of Environmental Migrant

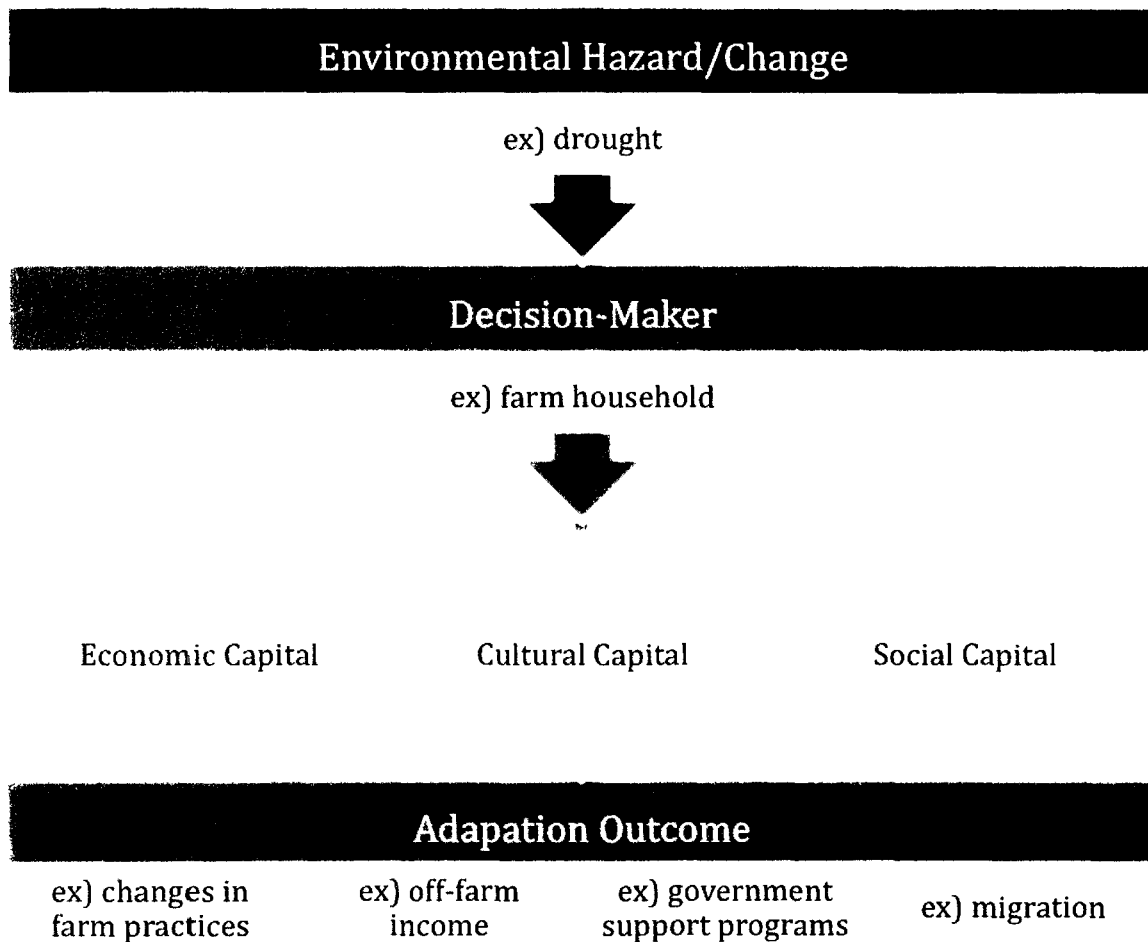


Figure 2.2 suggests the amount of capital present and its availability to farm households influences the adaptation outcome of that household and whether migration is selected. Access to capital also influences likelihood of migration vis à vis other adaptation options in times of crisis. In this case the climate change effect experienced is a drought, which is affecting the farm household and motivating them to adapt. The farmer's access to the various forms of capital influences his or her adaptation options;

in some instances, limited access to particular types of capital may act as an incentive to migrate. For example, access to economic capital is characterized by wealth, which can allow decision makers to purchase equipment to help them adapt to the drought. Cultural capital includes education and other factors of social class, such as access to opportunities; cultural capital can make it easier to find alternative employment. Finally, social capital can help adaptation by improving access to knowledge about adaptation options and access to labour and other forms of assistance. The farm household may not possess all of these forms of capital equally, but the more they have the more successful the adaptation. In this case, my interest is in the migration process. This conceptualization of the relationship between social capital, migration, climate vulnerability and adaptation guided my study of 1930s Saskatchewan migration. A more extensive outline of this relationship is presented in Chapter 3.

Conclusion

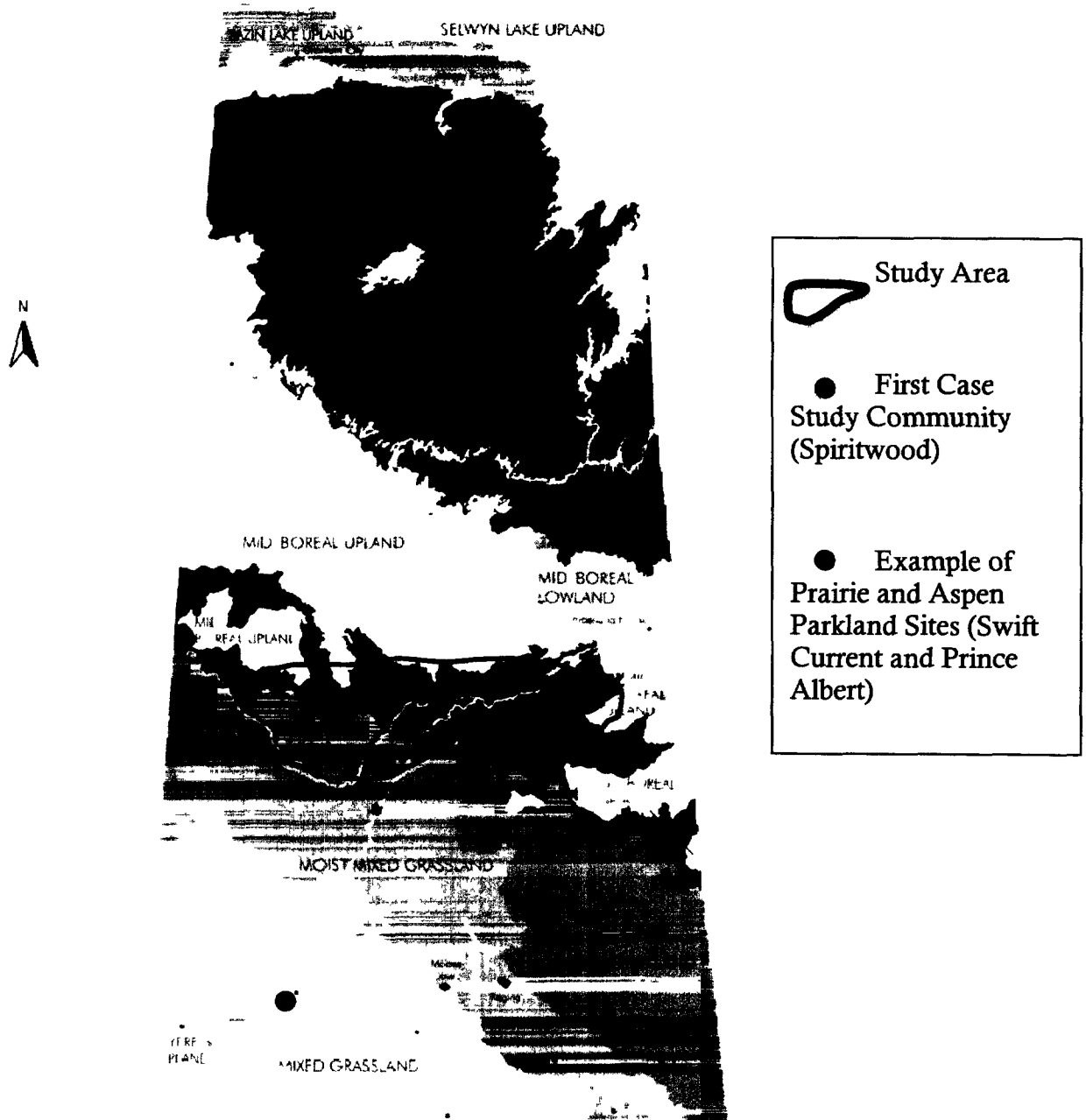
This chapter has outlined four major theoretical/conceptual influences on my research project related to humans and the environment, vulnerability and adaptation, migration, and social capital. Humans and the environment interact through agriculture (Duncan, 1996; Cunfer, 2005; Parry, 1978). Increasingly economics plays a role in how this interaction plays out (Duncan, 1996), often resulting in over-exploitation of the land. When over-exploitation happens, humans living on this land may have to consider migration to new locations (Christian Aid, 2007; McLeman and Smit, 2006a). Vulnerability is determined by exposure of a system to climate change effects and the adaptive capacity of that system (Adger, 2006; IPCC, 2007; Smit and Wandel, 2006). Rural areas in Canada were, and continue to be, more vulnerable to climate change and have less adaptive capacity than other regions within the country (Sachyn and Kulshreshtha, 2008; McLeman and Smit, 2006a). Research shows that migration decisions need to be understood beyond theories of push/pull for most environmental migrants and includes considering the availability of institutional assistance and then social networks to help with the migration process (Bates, 2002; McLeman and Smit, 2006a; Castles and Miller, 2003; Nee and Sanders, 2001). Social capital is important for those with limited access to economic or cultural capital because it can increase adaptive capacity (Adger, 2003; Nee and Sanders, 2001; Bauder, 2003; Massey, 1990). It can

provide increased household and community level adaptive capacity which is particularly important for the resilience of rural areas in North America (Halseth and Ryser, 2007; Hanna et al., 2009; Besser, 2009).

Chapter 3: The Study Area

My study focuses on the 1930s migration into the Aspen Parkland region of central Saskatchewan by former rural residents of the dryland Prairie mixed grassland region of Saskatchewan (Map 3.1). The physical characteristics of each region are distinct and contributed to the migration patterns that emerged during the 1930s.

Map 3.1 Saskatchewan's 11 Ecoregions and the Study Area



Source: *Canadian Plains Research Center Mapping Division*, from <http://esask.uregina.ca>

3.1 Physical Geography

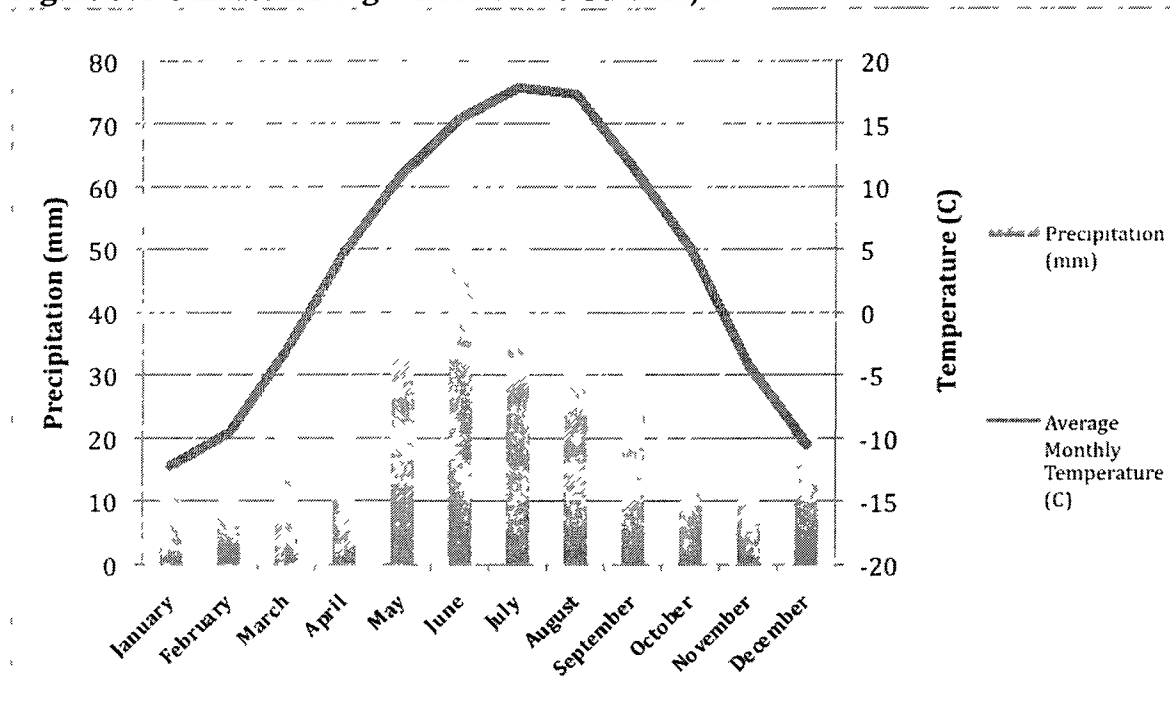
Saskatchewan is located on both the Canadian Shield and the northern portion of the Great Plains, also known as the Canadian Prairies. The Prairies were formed during the last Ice Age when soil was deposited as the glaciers receded (Widdis, 2006). This soil can be very fertile; the freezing temperatures for part of the year mean that decomposition is slow and soil fertility has tended to increase since the time of the glaciers (Savage, 2004). Growing conditions are less than ideal because the cold, semi-arid climate in this area is one of low precipitation and extreme temperatures (Sauchyn and Kulshreshtha, 2008). The Prairies' extreme temperatures can vary from -40°C in the winter to nearly $+40^{\circ}\text{C}$ in the summer (Environment Canada (EC), 2008). This extreme weather is demonstrated in the climate histogram for Swift Current, in southwestern Saskatchewan (Figure 3.1). In Swift Current in January the average daily low temperature is -17°C , while in July the average daily high reaches a maximum of 25°C (EC, 2010). Total annual precipitation is 377mm with a monthly high of 68mm in June and a monthly low of 14mm in February (EC, 2010). Summer evapotranspiration (the loss of moisture by plants through both evaporation and transpiration) rates are high. Grasses have adapted to these dry conditions and thrive on the Prairies; trees are generally restricted to low lying areas near bodies of water (Savage, 2004). An important feature of Prairie landscape are sloughs, temporary wetlands that last usually for a few months (or longer in wetter years) and provide refuge for waterfowl, which are also commonly used by farmers for watering livestock. Precipitation levels on the Prairies suit the production of wheat, which needs higher levels of moisture in June and July. August temperatures are also important; if temperatures are too high, crops can dry out, too cold and crops can be lost to frost (Marchildon et al., 2008).

To the north of the Prairie is the Aspen Parkland, a transition region from grasslands to boreal forest, whose climate is demonstrated in the climate histogram for Prince Albert (Figure 3.2). Its characteristic vegetation is stands of aspen trees (*Populus Tremula*) that thrive in the cooler and moister climate (Savage, 2004). Aspen are quick to colonize grasslands when conditions permit. Even before anthropogenic climate change and the arrival of agriculture, humans were affecting the Aspen Parkland

ecosystem so that it has long been in a state of flux. The current distribution of trees relative to grass seen today in the Parkland may be higher than before European settlement, because two factors that favoured grass, wildfires and bison, have since disappeared (Savage, 2004). Bison grazing encouraged the grass to grow more thickly by creating more openings in the plant cover, thus making it difficult for tree species to take over. Trees are also slower than grasses to grow back after a fire (Savage, 2004). The influence of European settlers along with changes in First Nations' livelihoods resulted in the near extinction of the bison while fires have been suppressed (Savage, 2004). Climate data for the Aspen Parkland, represented by Prince Albert, SK is shown in Figure 3.2. Highest average daily temperature in Prince Albert is reached in July (24°C) and the coldest average daily temperature is in January (-25°C) (EC, 2010). The minimum average precipitation is in February (11mm) (EC, 2010). The month with the most precipitation, on average is July with 77mm (EC, 2010). Over the course of the year, Prince Albert receives a total annual average of 424mm of precipitation, about 50mm more than Swift Current (EC, 2010). In the Aspen Parkland today it is more common to see forage crops such as alfalfa, which can better tolerate short growing seasons and is less tolerant to drought. Oats are also common and while they require conditions similar to wheat, but they have the advantage of being easily switched to hay production when the growing season is short. Oats and alfalfa are less profitable as cash crops so their main value is as feed (Marchildon et al., 2008).

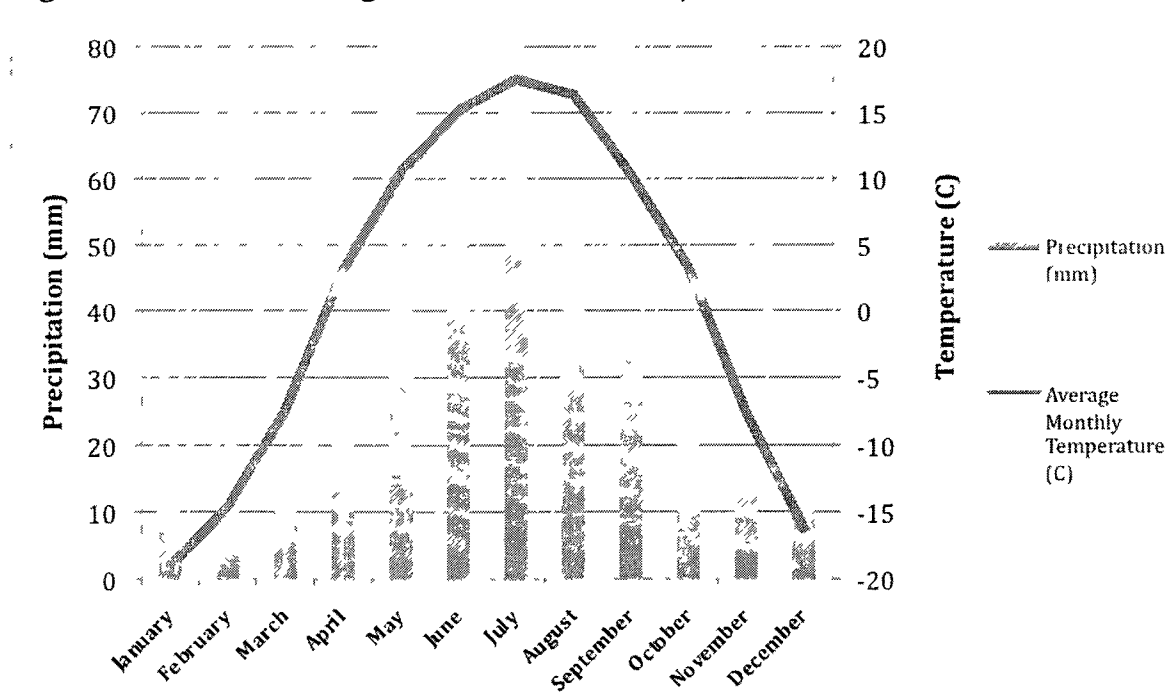
On the next page, Figure 3.1 and Figure 3.2 are shown together to highlight the differences in the climate conditions. The climate histogram for Swift Current, Saskatchewan, on the Prairie (Figure 3.1) displays average monthly temperature and precipitation values. Meanwhile, Prince Albert (Figure 3.2), in the Aspen Parkland is cooler, but also receives more moisture.

Figure 3.1 Climate Histogram for Swift Current, SK



Source: Environment Canada's 'Canadian Climate Normals or Averages 1971-2000' (2010).

Figure 3.2 Climate Histogram for Prince Albert, SK



Source: Environment Canada's 'Canadian Climate Normals or Averages 1971-2000' (2010).

3.2 Historical Settlement

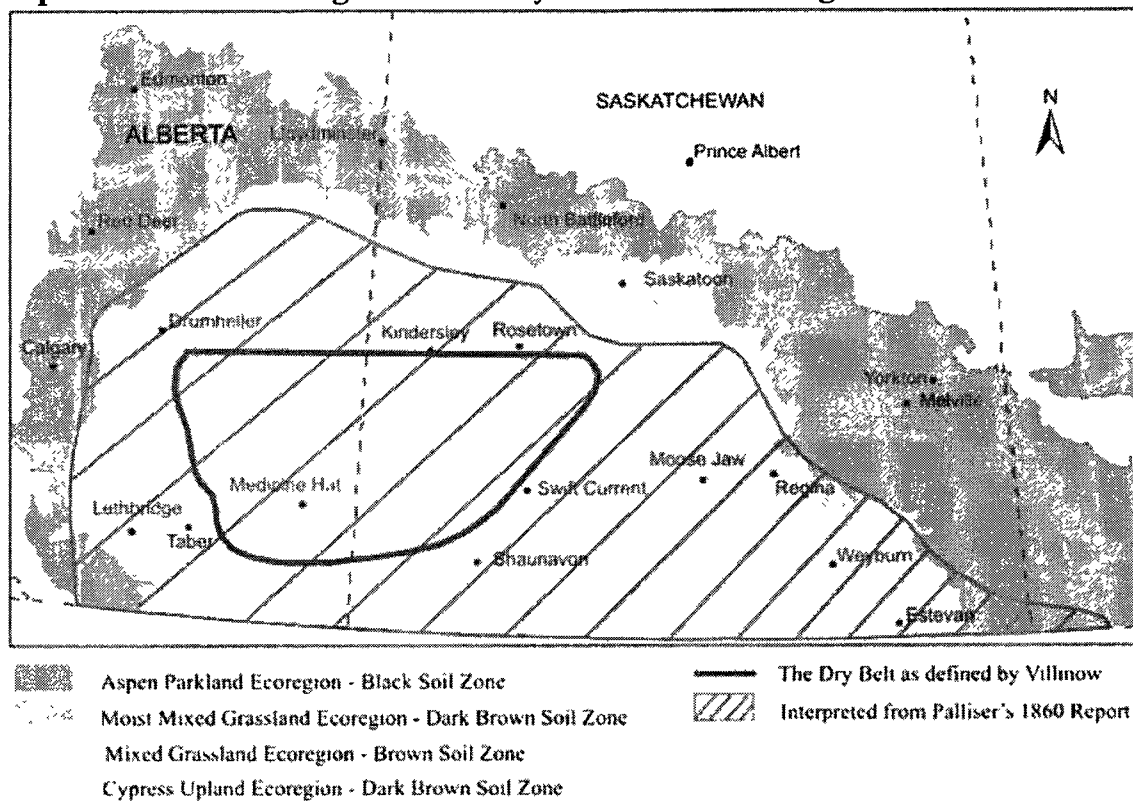
The first people who moved to the grassland region arrived around 10,000 years ago to hunt many of the prehistoric animals that lived in the area (Widdis, 2006). Various indigenous groups migrated west and south over the centuries and became the people today described as Plains and Woodland Cree who continue to dominate on the Saskatchewan Prairies and Aspen Parkland. They traded widely with each other and with other groups to the south in the Mississippi and Missouri river valleys (Binnema, 2001). Contact with Europeans was initially made for fur trade purposes as early as the 17th Century (Waiser, 2005). The negotiation of treaties with Prairie First Nations began shortly after Canada obtained Rupert's Land in the 1870s from the Hudson's Bay Company (Waiser, 2005). This process was not a smooth one and there were several conflicts, most notably the Riel Rebellion of 1870 in Manitoba and the Northwest Resistance of 1885 in Saskatchewan (Brown, 1992), which emerged as a result of the encroachment of Europeans into the land that had always been occupied by the various First Nations and then later the Métis. Part of the promise made to First Nations when they signed the treaties and agreed to live on reserves was that they would receive government assistance to begin European style farming (Carter, 1990). Both First Nations farmers and their European counterparts struggled to farm under conditions and land use with which they were not familiar (Carter, 1990). First Nation's farmers faced additional challenges due to government policies that reduced their agricultural production so that they would not be in competition with settlers (Carter, 1990). In the late 1800s, the number of Europeans grew larger than the number of First Nations and Métis due in part to settlement promotions such as the Dominion Lands Act/Homestead Act of 1872 (Waiser, 2005).

The Homestead Act allowed new settlers to acquire a total of 160 acres of land, known as a quarter section, for only \$10 if they agreed to clear ten acres per year and build a home within three years of registration in a procedure known as 'homesteading' (Waiser, 2005). Land was surveyed and divided according to the township and range system. Townships consist of thirty-six sections of one mile by one mile. Within the townships, some quarter sections were designated for use by the railways, and others were set aside for schools. At the time of settlement, farmers could only access one

quarter section of land and if they wanted to acquire another quarter section, it could not be adjacent. Homesteading was challenging since all quarter sections were assumed to be equal and differences in soil quality or landscape were difficult to ascertain at the land office. Most settlers chose their land without seeing it so some were left with land that was not suitable for growing wheat. Isolation was also a challenge since the government wanted to have people evenly distributed on the land, instead of congregated in communities (Waiser, 2005). Farmers who found themselves on less productive land, with few neighbours to help them, soon found themselves considering onward migration.

Palliser's Triangle, in the southwest portion of Saskatchewan, has a particular history. The region is shown on Map 3.2 (as defined by Villmow (1956)). The Triangle is prone to drought, being deep in the rain shadow of the Rocky Mountains, and has particularly high rates of evapotranspiration due to warm winds called Chinooks (Marchildon et al., 2008; Waiser, 2005). The region is named after John Palliser who explored the region in 1857 and declared it unfit for agriculture (Spry, 1963). While Palliser believed that agriculture would never thrive on the Canadian Prairies, other explorers disagreed. In the same year Palliser began his exploration, Henry Hind was exploring an area to the north along the North Saskatchewan River valley where he found a fertile strip with sufficient rainfall (Waiser, 2005). Then in the 1870s, a relatively wet period, Dominion government botanist John Macoun concluded that the southern portion of the Prairies was ideal for growing wheat and supported the construction of the CPR mainline through the prairie grassland (Evans, 1978; Thompson, 1998). Ignoring Palliser's warnings, the government chose to believe Hind and Macoun when they reported that the land was fertile and the government then encouraged settlement of this portion of western Canada. When Saskatchewan and Alberta were established in 1905, the area known as Palliser's Triangle was experiencing higher than average precipitation (Marchildon et al., 2008), further encouraging settlement.

Map 3.2 Palliser's Triangle and the Dry Belt: Prairie Ecoregions and Soil Zones



Source: Marchildon et al., 2008

Increased settlement in Saskatchewan was in part due to the vision of Clifford Sifton, the minister of the interior for the Canadian government in the late 1800s and early 1900s (Waiser, 2005). Sifton promoted the immigration of farmers from non-traditional immigrant source countries, such as Ukraine and Russia, to settle on the Canadian prairies since they were seen as hard workers who were used to harsh climatic conditions. Sifton and many other policy-makers at the time believed that agriculture was the backbone of a strong economy and that resources grown on the Prairies would provide raw materials for Canada's Eastern factories (Waiser, 2005). Those farmers who moved to southern Saskatchewan through Sifton's program, arrived during wetter years (1905-1915) and were able to grow very profitable wheat crops (Marchildon et al., 2008; Sauchyn et al., 2003).

It was realized early on by farmers and the government that farming on the Canadian Prairies was not going to be easy and as early as the 1880s the federal government established an experimental farm at Indian Head, Saskatchewan (about

100km east of Regina) (Waiser, 2005). Experimental farms played an important role in developing new seeds and new technology suited to the harsh climate, and also served as informal schools where farmers learned new techniques. It was one of the few ways that the federal government was actively involved in farming until after the Depression (Schulz, 2004; Waiser, 2005). Meanwhile, farmers established their own agricultural support organizations such as the Grain Growers Association to help them deal with fluctuating commodity prices by working together to get a fair price (Waiser, 2005; Morton, 1992). Then, as now, farmers were at the mercy of world market prices, making them price-takers who had few options when prices fell. The Farmer's Union of Canada, established in 1921, sought to get farmers to participate in farmer's movements, for example by encouraging them to join the Saskatchewan Wheat Pool (Waiser, 2005; Morton, 1992). The Wheat Pool was a handling, processing, and marketing cooperative that allowed farmers to pool their wheat together and sell it for the highest price, thus making them less vulnerable to changes in the market (Waiser, 2005). These organizations and institutions helped farmers deal with market uncertainty until the crash of 1929.

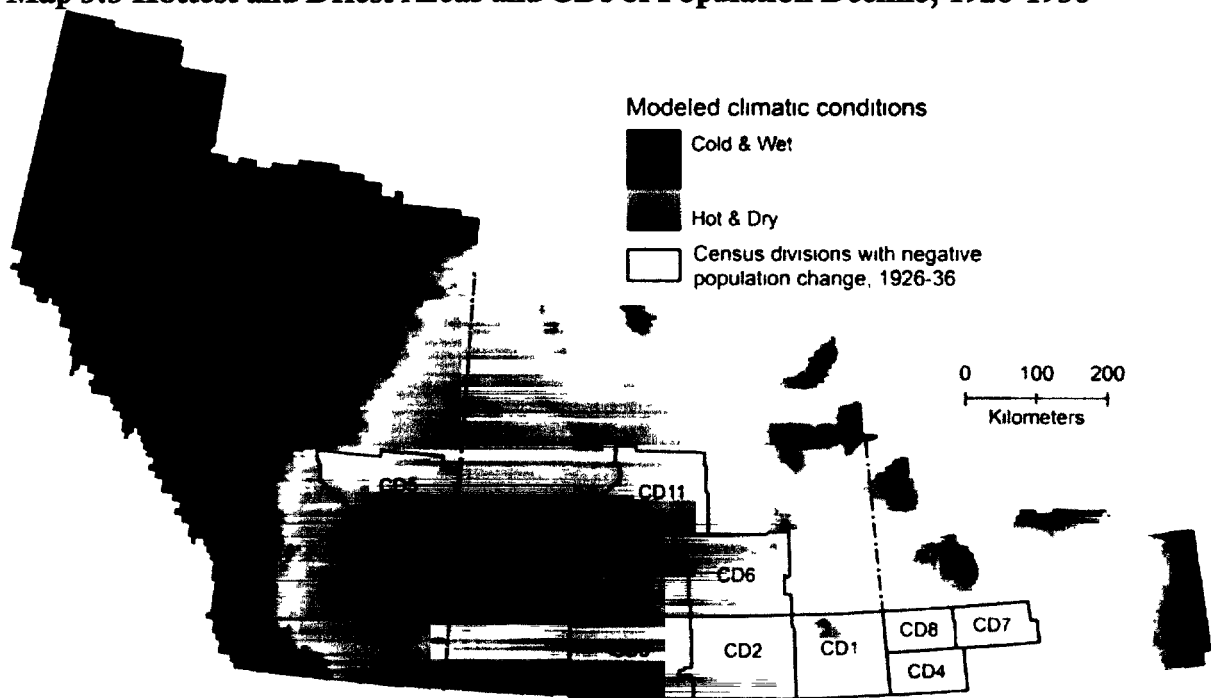
3.3 Depression Era Droughts

The combination of the economic effects of the Great Depression with prolonged drought conditions caused many rural families to fall into poverty and many farms in Saskatchewan to fail. The economic depression was partly due to the practice of buying on credit and other global factors. In the 1920s many farmers took out loans on the basis of high yields and high commodity prices. However, the North American producers in the 1920s were overproducing for the European market that was still rebuilding after WWI and prices soon fell (Waiser, 2005). As these commodity prices fell throughout the 1920s, indebtedness grew, leaving many farmers with high levels of exposure to the economic consequences of the Depression (Waiser, 2005). The drought that occurred in the 1930s was just one of many cyclical droughts that occur on the Prairies. However, factors such as dryland farming techniques popular at the time made the soil more vulnerable to drying out and made this drought particularly difficult (Cunfer, 2005; Waiser, 2005).

3.3.1 Extent and Severity of 1930s Drought

The Prairies are characterized by their periodic droughts (Savage, 2004; Cunfer, 2005), but the widespread and long drought of the 1930s was one of the most severe in recent memory. The extent of this drought on the Prairies is shown on Map 3.3 which indicates areas of hot and dry in red and areas that were cooler and wetter in blue for the period of 1926-1936. The map also highlights the Census Divisions (CDs) that saw population decline in that period. Climate conditions shown on the map were chosen because they are critical for the production of wheat; temperature values are daily maximums from June, July, August and precipitation totals are from May, June, and July. The area known as Palliser's Triangle is clearly visible as an area hardest hit by the drought, while areas to the north and closer to the mountains in Alberta show relatively cooler and wetter conditions during this time.

Map 3.3 Hottest and Driest Areas and CDs of Population Decline, 1926-1936

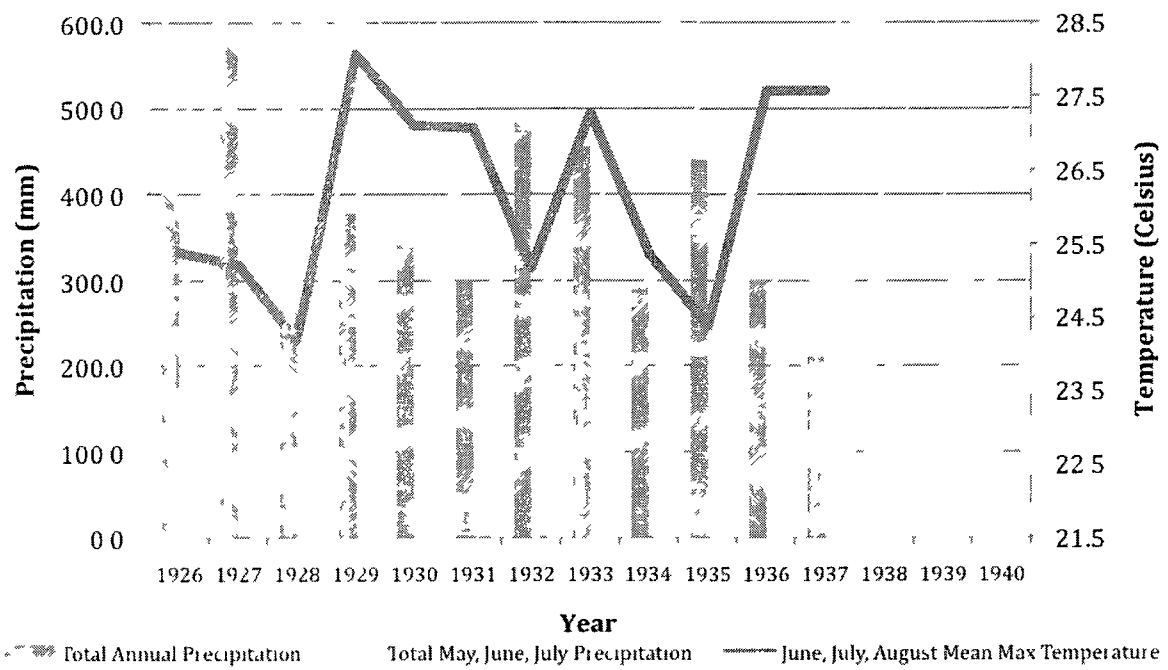


Source: McLeman et al. (2010)

Even within the drought areas, the conditions differed. In the examples below conditions were taken from Swift Current and Prince Albert. The temperature and precipitation amounts were chosen from years that corresponded to Map 3.3, with a few

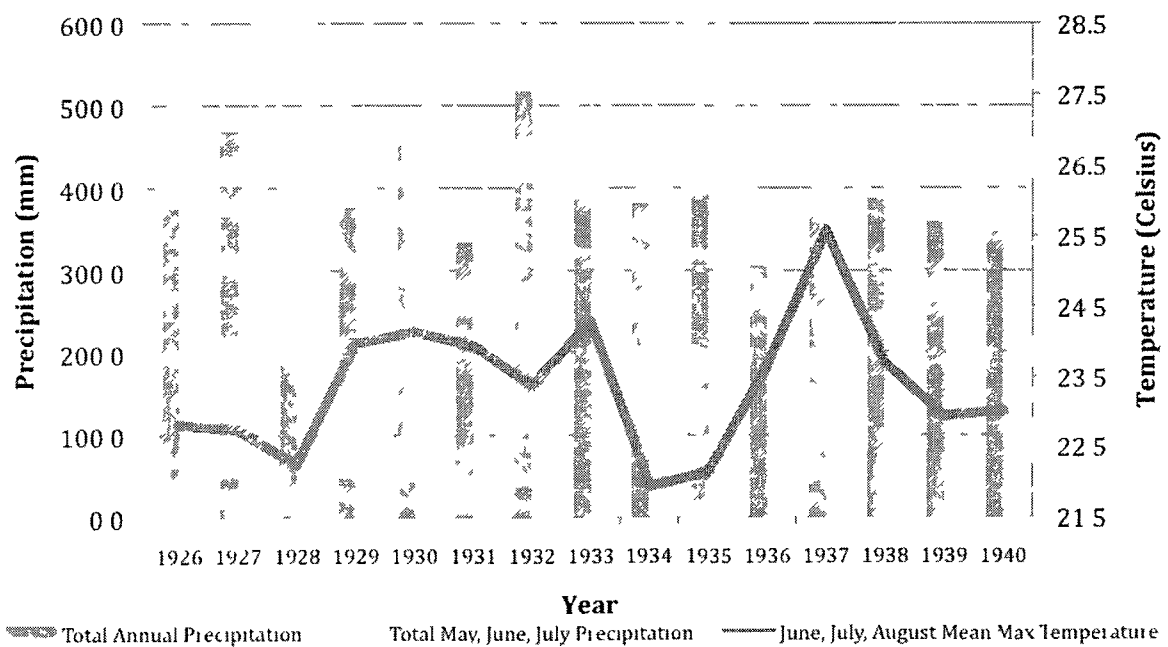
additional years added after 1936 to show the general trend towards improvement. Unfortunately, some data was missing from the Swift Current station.

Figure 3.3 Historical Climate Data from Swift Current, SK



Source. Environment Canada's National Climate Data and Information Archive, 2008

Figure 3.4 Historical Climate Data from Prince Albert, SK



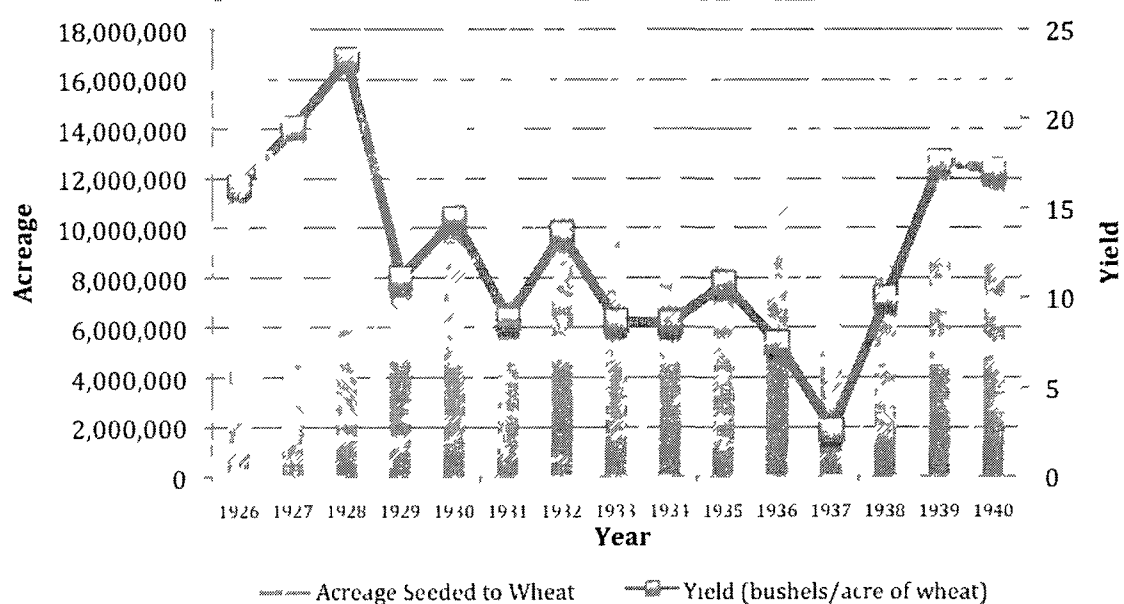
Source. Environment Canada's National Climate Data and Information Archive, 2008

Drought conditions were different between Swift Current and Prince Albert with Swift Current experiencing much higher summer temperatures over this period. While the two locations received approximately the same total amount of precipitation over the period, much of Swift Current's rainfall would have been lost as evaporation. 1937 is often referred to as the worst year of the drought (Archer, 1980) and is supported by the presence of high temperatures and low levels of precipitation that year and for the preceding years. This would have negatively affected yields that year, as demonstrated in the following section.

3.3.2 Impacts of Economic Depression

Since farmers in Saskatchewan at the time grew mainly wheat because it was “more profitable and practical” (Spector, 1983 as quoted in Waiser, 2005), they were very susceptible to falling wheat prices. Early in the Great Depression, wheat yields were still relatively high and quality was good, but the price of wheat had fallen to the lowest in centuries at only thirty-five cents per bushel in 1932 (Waiser, 2005). Figure 3.5 shows both average yields for Saskatchewan and acreage for wheat in the 1920s and 1930s.

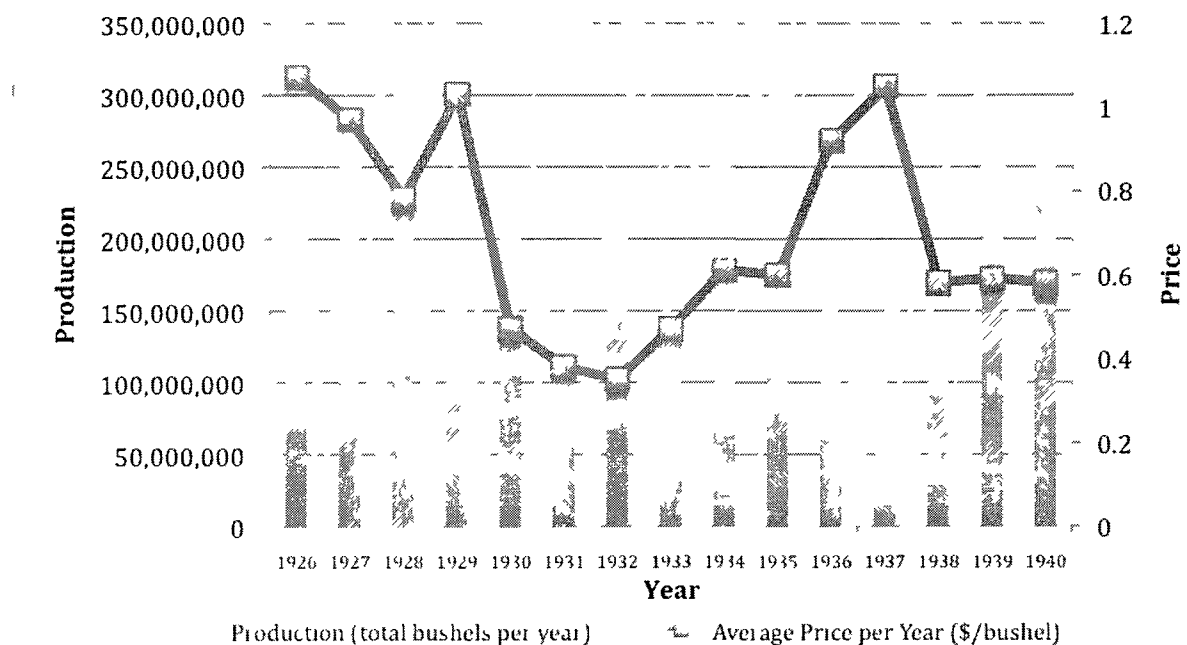
Figure 3.5 Wheat Acreage and Yields, 1926-1940



Adapted from Archer, 1980, The Saskatchewan Agriculture and Food Stats Handbook, 2010

As seen in Figure 3.5, acreages of wheat decreased during the 1930s due to the drought. The decrease in yield in 1937 is also clearly visible in this figure, corresponding to the worst year of the drought. Figure 3.6 shows similar trends by highlighting wheat production and average prices from the same period which demonstrates the effects the drought had on production while also showing the weak commodity prices of the Great Depression*. Again, the year 1937 is noticeable, with a decrease in production visible; however, there was an increase in price that year. Prices fell again in 1938 and held steady for three years.

Figure 3.6 Wheat Production and Price, 1926-1940



Adapted from Archer, 1980, The Saskatchewan Agriculture and Food Stats Handbook, 2010

The Great Depression in Saskatchewan was not only the result of poor prices but also poor growing conditions due to a severe and ongoing drought. The next section discusses how the population in Saskatchewan was unprepared for these conditions and what they did as a result.

* The full list of values used in Figures 3.5 and 3.6 is available in Appendix D, which also includes values from 2006 as a comparison

3.3.3 Responses to the Drought and Depression

The first period of severe localized droughts began in the 1920s at the Alberta-Saskatchewan border of the Palliser's Triangle, in response to which the government of Alberta developed a program to convert farms to ranches and to relocate populations from the southeast to the Peace River area (Marchildon et al., 2008). The government of Saskatchewan did not follow suit, preferring to see farmers remain on the drylands of the southwest. As drought conditions persisted and spread over the Prairies in subsequent years, provincial governments began providing basic relief for families. Saskatchewan soon became heavily indebted and required assistance from the federal government (Marchildon et al., 2008; Waiser, 2005). It was also at this time that the federal Prairie Farm Rehabilitation Administration (PFRA) was created (Marchildon et al., 2008). PFRA encouraged farmers to try new techniques such as planting shelterbelts of trees to protect fields from wind erosion, subsidizing the digging of dugouts, small man-made lakes for watering livestock, and other irrigation projects to keep their farms healthy (PFRA, 2009). Regrettably, these government programs were initiated too late to assist many drought-stricken farmers during the 1930s (Marchildon et al., 2008).

Due to the lack of institutional response in Saskatchewan, many Depression-era farmers were essentially on their own in terms of adapting to drought. Drought adaptation was especially difficult for those with little financial means, a group to which most farmers belonged given low commodity prices. To make matters worse, many were relatively new immigrants, inexperienced with dryland farming. Many tried to stay on the farm as long as possible but when it became obvious that conditions would not improve with time, they collected their things and left. Some went looking for work in cities; thousands of young men rode the rails from city to city relying on relief to get food (Waiser, 2005). Shame and hopelessness were common feelings of people living in Saskatchewan in the 1930s: shame that they were unable to manage their finances, and hopelessness that their situation would ever improve (Waiser, 2008).

3.4 Migration to the Aspen Parkland

Among those who experienced the drought in Saskatchewan during the 1930s, some are believed to have migrated to cities or to other provinces, while many others

moved north to the Aspen Parkland where rainfall was more reliable (Waiser, 2005; Archer, 1980). By 1938, there were between 7,000 and 8,000 new farmers settled around the Parkland communities of Meadow Lake, Big River, Nipawin, Carrot River, and others (Waiser, 2005; Marchildon et al., 2008; Wood 2006). The Aspen Parkland had a small but ethnically diverse population when the 1930s began due the settlement of veteran's land from WWI and many ethnic group colonies (Wood, 2006). Some of the Depression era migrants received funding from the provincial government to help pay for their move, but most chose to move at their own expense (Waiser, 2005; Marchildon et al., 2008).

The relationship between drought, farm failure, and migration can be illustrated by the following excerpt from the autobiography of Rudy Wiebe and his family, Mennonites who had originally migrated from Russia to escape persecution and poverty and settled in 1930 in Kelstern, near Swift Current (Wiebe, 2006). When the region was struck by drought shortly after their arrival, the family moved in 1933 to Speedwell, Saskatchewan in the Aspen Parkland. As a grown man, Wiebe asked his brother Dan why the family chose this area, and he replied:

There was really no work in the south, and Mam and Pah wanted their own land to work. Things didn't go so good working for Henry Knelsen anyway, and all that drought and grasshoppers and foreclosures down south. Then Pah heard the government had lots of homestead land up north, even new Mennonite immigrants from Russia were getting land to file on up there. And good rain and snow too, you just had to build a house, clear ten acres a year and break it. He heard through some connections with Fiedlers, they met somewheres [sic] (Wiebe, 2006, p. 72-73).

Wiebe writes that the population around Speedwell grew rapidly during the Depression because "immigrants prefer to settle land in language and racial groups – a practice Canada has always encouraged for stability and development – and also because the Saskatchewan government wanted farmers in its aspen parkland north, away from the dried-out prairie south" (Wiebe, 2006, p. 9). The Wiebe family's experiences are consistent with the observations of scholars like Waiser (2005), Gray (1967), and Archer (1980), and suggest that the 1930s movements of migrants from the

Saskatchewan Prairies to the Parkland were stimulated by a combination of climatic, economic, and social factors.

Conclusion

This chapter has presented the study area in order to put in better context the experiences of research participants' decision-making motivations. Three main arguments were made in this chapter which explained why the 1930s are a useful analogue to study climate change adaptation on the Canadian Prairies. First, climate change, characterized by high temperatures and low precipitation, and economic factors, including low wheat prices and unemployment, were the main exposures for 1930s Saskatchewan farmers (Waiser, 2005). Second, since farming was relatively new on the Prairies, and farming techniques were not always suited to the Prairies, many farms failed (Waiser, 2005). Finally, social networks and capital appear to have been important for the migration process and the integration of newcomers to the Parkland, by helping them find land, move, and establish themselves (Waiser, 2005; Marchildon et al., 2008; Wiebe, 2006).

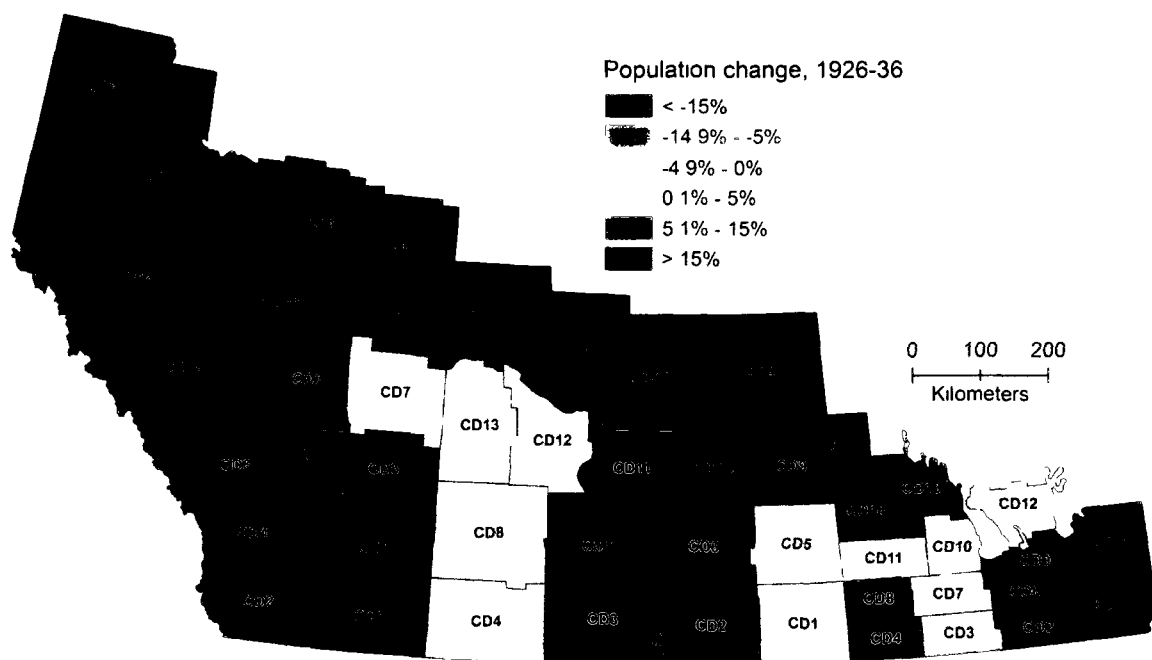
Chapter 4: Methodology

In order to better understand the experiences of migrants from southern Saskatchewan to the Aspen Parkland in the 1930s and the importance of social capital in migration and adaptation decision-making, a set of methods derived from geography, history, anthropology, and other social sciences was employed. I mostly used qualitative methods, including open-ended interviews to gather information. This chapter further examines the motivation for the selection of the study region, the methods for information gathering, conducting interviews, and data analysis.

4.1 Selecting the Study Area

The first step in the collection of information was to review population data for the period of interest collected from the Canadian Censuses of 1926, 1931, and 1936. Map 4.2 shows agricultural regions of Canada's three Prairie Provinces with Census division (CD) boundaries (from McLeman et al. (2010)). CDs that gained population between 1926 and 1936 are in green, those that lost populations are in red. As can be seen, Saskatchewan Aspen Parkland CDs 14, 15, 16, and 17 all had high rates of population growth compared with southerly CDs and were selected for further study.

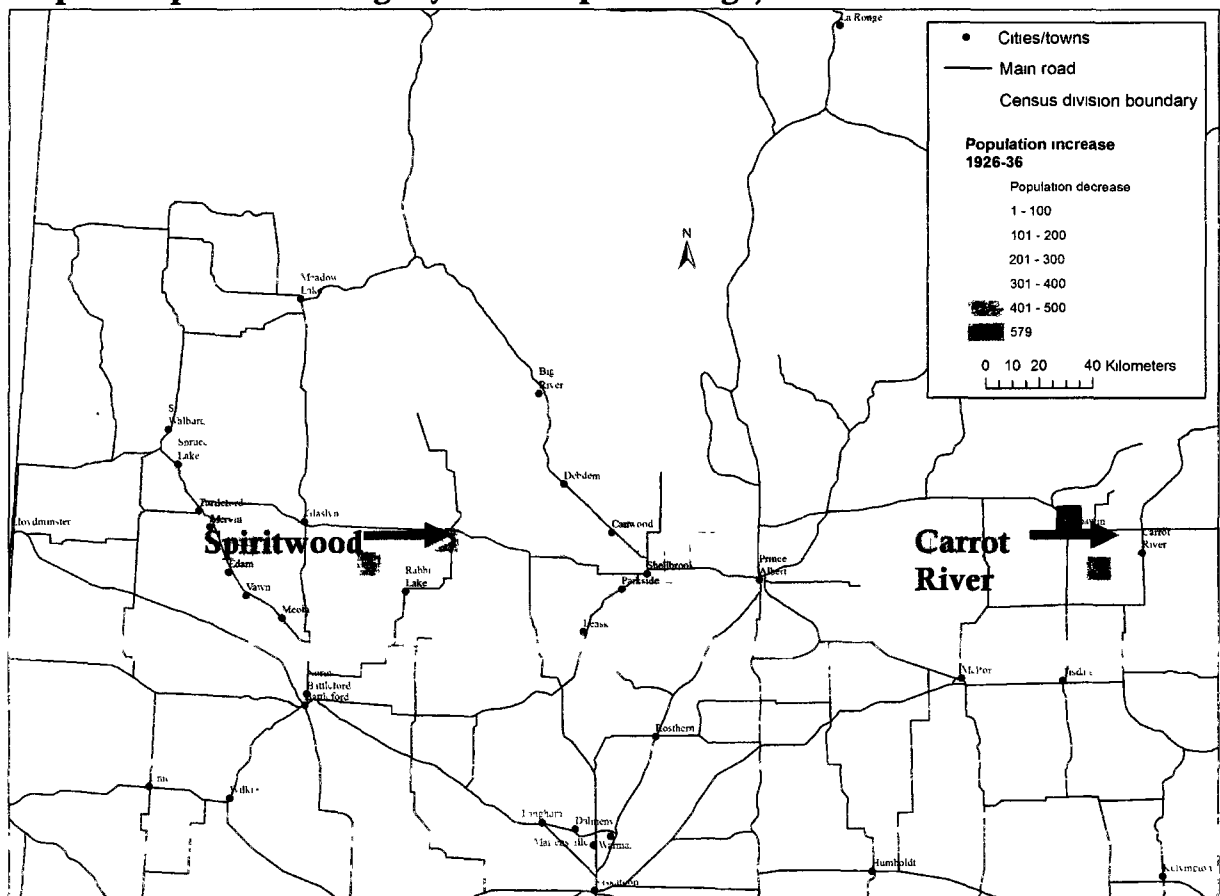
Map 4.1 Population Change on the Canadian Prairies, 1926-1936



Source: McLeman et al., 2010

Map 4.3 was created using census information at the township and range level (6 miles by 6 miles squares) for the Aspen Parkland in Saskatchewan CDs 14, 15, 16, and 17 for 1926-1936. The map shows specific areas that were chosen for field study based on their location within the Aspen Parkland, their high rate of population increase in the study period, and proximity to the highway (for ease of transportation for the researcher). The map shows absolute population changes over the course of 10 years with large increases shown in red. After the map was completed, the communities of interest were identified as Spiritwood and Carrot River.

Map 4.2 Population Change by Township and Range, 1926-1936



Both quantitative and qualitative methods were used in this research. Quantitative data, particularly the use of census data, was used primarily to help select the study area (described in Chapter 3). The objectives of this study are to understand individual household vulnerability to climate change and the importance of social

networks to the migration process, information about which is not readily available through existing data sources. These objectives are complex and multi-faceted, therefore qualitative methods were seen as being more appropriate. Interviews with individuals with first-hand recollection of the 1930s migration were done in order to give participants an opportunity to fully share their thoughts and opinions with the researcher (Cloke et al., 2004, Valentine, 2005). Qualitative methods were selected because this research is exploratory in nature and these methods, particularly the use of open-ended interviews, seem best suited because they allow for the representation of multiple truths (Cloke et al., 2004). This allows participants to more easily introduce new ideas and inspire new questions throughout the process, which can help in the further development of the project. I also strove to use feminist methods and methods that better represent marginal groups, this meant that I tried as much as possible to be open to participants about my research project and its goals. These techniques are discussed in more detail at the end of this chapter.

Interviews are a common technique used to gather information needed to answer the type of exploratory research questions pursued here (Cloke et al., 2004; Kaufman, 1994). Interviews are also used when researchers want to gather opinions from the subjects and give them an active voice in the process (Cloke et al., 2004). One advantage of doing interviews is that details can be clarified, making them more useful than survey questionnaires (Valentine, 2005). The goal in this project was not to be representative of the experiences of all drought migrants in Saskatchewan in the 1930s, which is not possible given the time that has passed and the number of potential participants who are deceased, but rather to understand the actual experiences of participants (Valentine, 2005). In-depth interviews are often done casually, making it difficult to replicate the process (Valentine, 2005; Kaufman, 1994) so that triangulation becomes important when conducting data analysis. The goal of triangulation is to have the perspectives of the respondents point towards a commonality that other participants and the literature support which will help in answering the research questions (Valentine, 2005). In this project, this was done by sorting participant responses to look for common links. The following sections will discuss the details of how interviews were carried out, while building a methodological consideration by various authors.

4.2.1 Interview Questions

With respect to selecting the types of questions that will be asked to the participant, Cloke et al. (2004) suggest that the researcher take her/his research question and break it down into mini research questions. For each mini research question, the researcher can then develop a series of questions that would lead to reaching the objectives that the researcher really wants to understand (Cloke et al., 2004). I attempted to ask questions in chronological order to help the respondents remember their experiences. Nevertheless, I was able to keep together interview questions that led to my research objective. Three general sets of questions were asked based on the objectives of the project. First, interview questions were required that ascertained the types and importance of social networks of participants in order to understand the role of social capital in drought migration decision-making of 1930s farmers in Saskatchewan. At the beginning of the interview process, more specific questions were asked that helped me understand the social capital networks participants had (for example, Did you know someone at the destination before you moved? Did anyone you know follow you here?). By the end of the interview, the words 'community spirit' or 'sense of community' were used instead of the term 'social capital' in order to make the concept more understandable to the participants. These terms were understood to include volunteerism and neighbourliness. Second, questions were asked about environmental and economic conditions on the farm in southern Saskatchewan and how conditions differed from the Aspen Parkland in order to better understand farmers' drought experiences. Third, questions were asked about participants' observations of changes in farming and rural communities and how they saw the future of farming in order to determine the applicability of the findings to present day.

Once the interview questions have been created, Cloke et al (2004) and Valentine, (2005) suggest that a guide should be created that will remind the researcher of the questions that they want to ask. The full list of questions is given in Appendix A. Appendix B is the answer sheet that was used during interviews to record observations, emotional responses of participants, and verbal responses. Cloke et al. (2004) also state that the researcher should cross-reference the questions and potential answers to ensure that they really lead towards the research question. I tried to do this in an ongoing way

by reacting to comments by participants during the interview. Consistent with practices in grounded theory research, the question guide evolved over the course of the project as I found that some questions were difficult or impossible to answer, the sequence of questions needed to be changed in some cases, and new follow-up questions were developed. Interviews are also meant to be flexible in order to deal with the needs of the participants; for example, to clarify questions (Valentine, 2005).

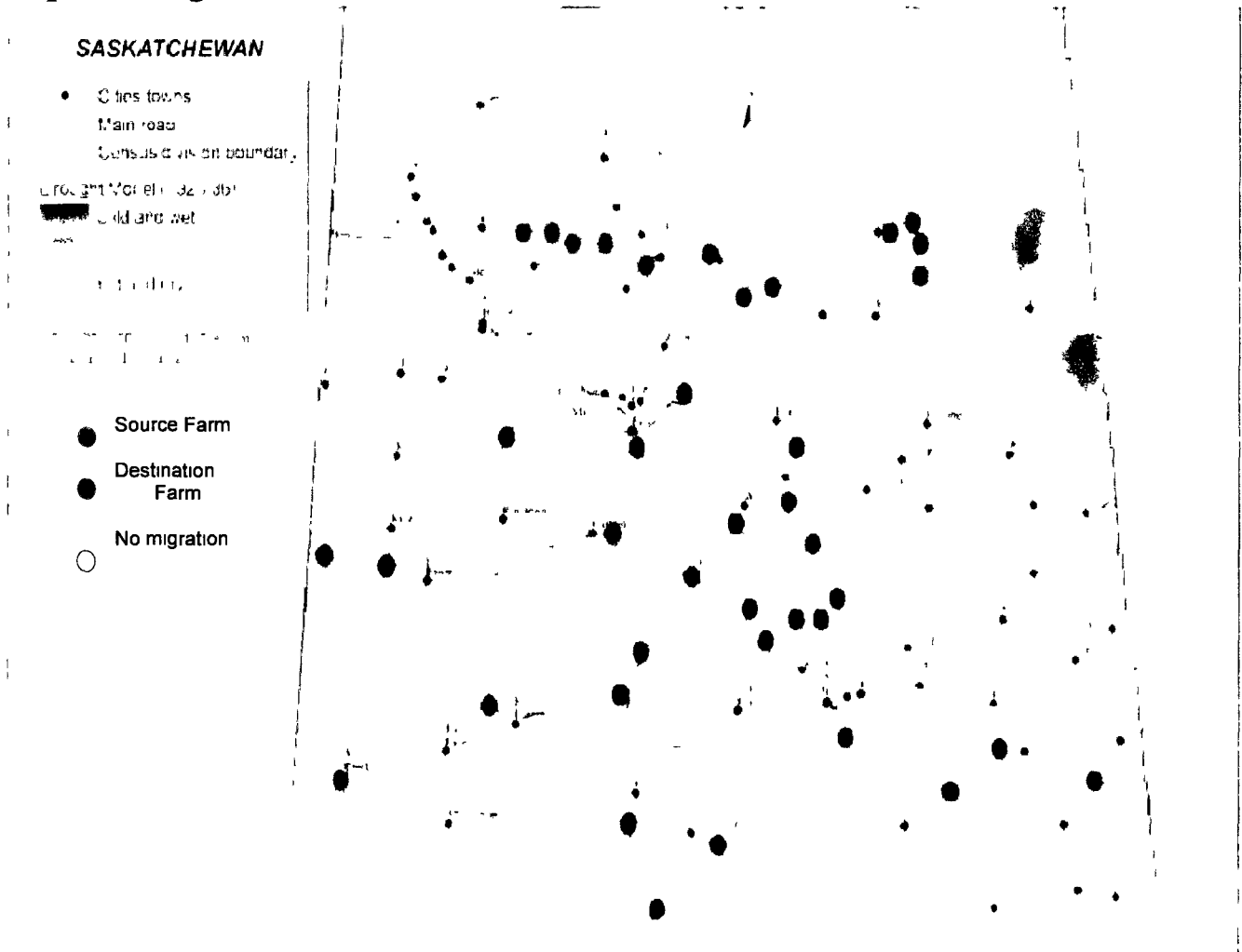
I also found that my personal experience helped me come up with better research questions. I took the opportunity to spend most of my summer living at a small cabin at a lake in the Shellbrook area. This cabin has no running water, no central heating (except from an old wood stove), no telephone or Internet, and no electricity, except for lights which are powered by a small solar panel. I spent much of my time there alone with few neighbours. This acted almost as a type of surrogate ethnography, as it helped me to understand more fully questions about isolation. Thus my questions changed from being about isolation from schools or doctors to questions about distance to neighbours and friends as well. Also, I chose to make bicycling my main mode of transportation which helped me to better understand the relative distances that people would have travelled in the 1930s when automobiles were less common.

4.2.2 Recruitment

Interviewees were selected on the basis of having experienced the drought in southern Saskatchewan in the 1930s and migrated to the Parkland. Southern Saskatchewan was defined as south of Saskatoon and the decision to migrate had to have occurred between 1926 and 1936. Thirty interviews were conducted from June 2009 to August 2009 in Saskatchewan with 40 participants since husbands and wives, brothers and sisters, and parents and children were sometimes interviewed together. Map 4.3 shows the location of the farms from where participants in this study originated and the farms to which they relocated, overlaid on the historical climate data map (Map 3.3) shown earlier. The map also shows two participants who did not move during the study period. Participants were from the communities of Spiritwood, St. Albert (Alberta), Medstead, Shellbrook, Shell Lake, Edmonton (Alberta), Carrot River, Prince Albert, Arborfield, Nipawin, the Muskoday First Nation, and Weldon. Most

participants were retired and no longer living on the farm which was located within the study area.

Map 4.3 Drought Model with Source and Destination Farms



I recruited interviewees in a snowball fashion with the help of gatekeepers (Valentine, 2005). A local resident in Spiritwood agreed to be my initial contact, and introduced me to a woman who had worked on the local history book several years previous. She in turn became my gatekeeper and introduced me to several participants. Later I was able to use her name simply to create trust between potential participants and myself. The gatekeeper proved to not only be a good source of information about local people, but she also contacted many participants on my behalf in order to introduce me, and accompanied me on occasion. Many participants wanted to help with my recruitment of other interviewees and would sometimes also contact their

neighbours or friends on my behalf. A total of nine interviews were conducted with thirteen participants in the Spiritwood area.

After I had completed several interviews in Spiritwood, I moved on to Carrot River where a similar gatekeeper-snowball technique was used. The relationship between gatekeeper and participants was different here, since the gatekeepers were less closely acquainted with potential interviewees, but the use of gatekeepers did allow, once again, for a building of trust with the initial interviewees. Snowballing in Carrot River seemed to be much easier as the community members seemed to have a better idea of who fit my research criteria. It was also beneficial that my family is known in this area, which allowed me to establish a relationship with participants who recognized my last name and therefore trusted me. Altogether, a total of eleven interviews were conducted in Carrot River area with fourteen participants.

During the fieldwork period, I contacted local newspapers in Spiritwood, Shellbrook and Nipawin and requested that they interview me. This allowed me to disseminate my search for participants more efficiently. This technique only brought in three participants; however, these were all participants who had been overlooked in the gatekeeper-snowball process. I also used family and friends to help recruit. This however, did not always lead to interviews since I was often put in contact with people who did not fit the criteria. Even non-participants were useful to talk to, since they gave me a better idea of what life was like in the 1930s and allowed me to refine my interview questions.

4.2.3 Conducting Interviews

In order to conduct an extensive interview, rapport and trust must be created with the interviewee. For my project this was accomplished by having a trusted person, such as the gatekeeper or another participant, introduce me to the interviewee. Trust was also created through actions that I took, such as being prepared to answer the questions that the interviewee may have had and to tell them something about myself at the beginning of the interview; this usually replaced the use of warm-up questions that Valentine (2005) suggests using. Another part of establishing rapport is to be clear and open about the expectations that the participants should have for the research process in

terms of time commitment and publication of their responses (Kaufman, 1994). This was also done before the interview, when I took time to explain the project and have the participants sign a consent form giving me permission to record and use their stories for my research.

Preparing for the interview includes selecting a location. Choosing the location of the interviews can affect the level of comfort of the respondent and thus result in better answers (Valentine, 2005). Valentine (2005) suggests holding interviews in the respondent's home, but only if both the researcher and the participant feel comfortable doing so, otherwise the participant could suggest a public, but familiar, location. My interviews sometimes were done in a public place such as a café, but more commonly they were done at the residence of the interviewee as this seemed to be more convenient and comfortable for them. Two phone interviews were also conducted which were the only ones that were not recorded using an audio recording device. Some interviews were conducted with both a husband and wife present, but questions were only asked about the person whose family migrated within the time period examined, while the other person may have helped remember details. Brothers and sisters were also interviewed together and in two instances children of elderly participants were also on hand during interviews. This often appeared to make participants feel more comfortable and resulted in a more relaxed, conversational tone.

Clark et al. (1992) discuss the various interacting factors that are involved in asking questions, and also address the potential of influencing answers during the interview process and how this can be avoided. At first I tried to remain impartial and objective, as Palys (1997) suggests, in an attempt to avoid influencing participant responses; however, I soon found that participants responded better if the tone was more conversational, where I shared stories as well. As a researcher, I also have opinions on the research topic and it was sometimes difficult not to lead participants towards the answer I anticipated (Clark et al., 1992). I found that participants expected me to share my views, especially towards the end of the interview where I asked for their opinion on the future of farming. Participants would often ask to hear my ideas before they would share their own. This seemed to create more trust and I believe it led to more detailed

responses from participants as well (Kaufman, 1994). Asking open-ended questions and asking for clarification can help prevent bias (Clark et al., 1992; Kaufman, 1994). During the interview it was also important for me to be aware of the mood of the respondent and to act accordingly, such as taking a break if the respondent seemed tired (Valentine, 2005).

These types of interviews serve not only an ethnographic and biographical purpose, but can also be therapeutic for the interviewee who may feel empowered by having someone listen to their story and take their opinions seriously (Kaufman, 1994). It was important to listen to the participant even if (s)he seemed to be going off topic as they may have been addressing something that is important to them which may be related in a way that I could not immediately see (Kaufman, 1994). On this note too, it is important not to discard this information when transcribing notes, since it may prove useful later (Kaufman, 1994). After the completion of each interview I tried as much as possible to go over my notes immediately and record observations that may not have been recorded during the interview (Valentine, 2005).

I have since followed up with participants by thanking them by mail, and in a few instances, through a phone call. I received ten requests for written or audio copies of the interview from participants, which were sent. I have also received requests for a copy of my thesis once it is completed and accepted. Finally, in following Kaufman's (1994) advice, I hope to make the findings of the research accessible to the participants since it is only through their participation that any conclusions can be made. I will be writing articles for local newspapers including *The Western Producer* as well as contacting local radio and TV stations, once the research and thesis have been completed.

4.2.4 Data Analysis

In order to identify and examine the vulnerabilities of 1930s Saskatchewan farmers, the role of social capital among factors that influenced migration decision-making, and the usefulness of this project as an analogue, I performed an analysis that used a loose type of coding where not all the codes were predetermined, but came out through the research process (Cloke et al., 2004). In the context of vulnerability, participants identified several types of exposures that they experienced and they also

listed their motivations for migration directly. Then social ties were closely noted to determine which were most important to farmers' decision to migrate, including culture, religion, language, family, friends, etc. Finally, participants were asked to describe changes in farming and rural communities that they have experienced since the 1930s. I also photocopied entries from the local history books on the families I interviewed, which served as a supplement to the information collected in the interviews. Some key words were chosen at the onset of the project with more created throughout the process; these are noted in Chapters 5, 6, and 7. In this case the context of responses was more important than the use of the key word itself; that is, words reflecting a general position or which expressed a certain sentiment were noted even if the key word itself was not used. For example, when participants were asked to describe their experiences in southern Saskatchewan, many of them mentioned the economic effects of the Depression, but did not mention the economic crisis explicitly. However, when looking over the responses, I sometimes found where they spoke of financial difficulties from this time, which was interpreted as being linked to the Depression.

All interviews were transcribed and then entered into an Excel database constructed with the question in columns and the individual participant in rows. Direct quotes were entered into the spreadsheet when it seemed appropriate, for example, when the quote was more than a simple yes/no answer or when it expressed an emotion or explained the response in detail. All the answers were then compiled and sorted according to the response. Participants' answers were then compared to and triangulated with each other and to the literature. I uncovered key questions that were then isolated and sorted by answer to look for obvious trends with respect to subsequent answers. I later developed conceptual diagrams to illustrate the relationship between social capital, migration, and adaptation based on my interpretation of the data, relating those back to the theories of migration, social capital, and vulnerability reviewed in Chapter 2.

4.3 Other Research Considerations

4.3.1 Reflexivity and Situated Knowledge

Since the 1970s, traditions of humanistic and feminist geography have promoted the ideas of reflexivity and situated knowledge by researchers (Cloke et al., 2004). Reflexivity requires that researchers give careful consideration to the motivations behind their research as well as the selection of methodology and to be open about these motivations in their research (Cloke et al., 2004; Silvey, 2003; Valentine, 2005). Reflexivity is self-reflection and being aware of the cultural and personal factors that influence the way research is conducted and the sorts of observations and conclusions the researcher will find (Silvey, 2003). Situated knowledge recognizes that researchers cannot be objective in all things and that all knowledge is partial and located in some worldview or place; situated knowledge examines this critically (Cloke et al., 2004; Silvey, 2003). Factors that influence positionality include the researcher's gender, class, race/ethnicity and how these play a role in their position in society and thus their worldview and their research, both how they ask research questions and their selection of methods. Methods may affect the types of conclusions that are reached, but so too can attitudes and opinions that the researchers have, therefore acknowledging situated knowledge is important.

My position is both one of a local person, with a farming family and some knowledge of agricultural practices, but also as a person attending an eastern Canadian university, 3000 kilometers away, putting me at once in a position of an equal and in a position of power. I was sometimes found myself in the position of subordinate as many of my participants were significantly older than me and were experts on farming in the 1930s since they had actually lived this experience. I found that since I am from the area in which I conducted the interviews, this made it much easier to relate to the participants and to understand details that they may have had difficulty explaining. I also have a fairly good knowledge of farming since I have heard similar stories from my grandparents and parents, providing me with some situated knowledge. However, I tried to stay open to unanticipated or unexpected answers and used them to create new questions. As mentioned, one problem that I encountered was that at first I tried to stay

objective and not influence the participants, but I soon found that if I shared my own life experiences with them, the participants opened up to me. Unfortunately, this often meant that I had to share my own opinions on the research questions, but I do not feel that this affected their responses, since many participants chose to disagree with my assessment.

4.3.2 Justice

Radical geography also emerged in the 1970s and seeks to expose the injustices that are perpetuated through research, especially research in which oppressed or marginal groups are treated with less respect by researchers or are less likely to have their oppression examined (Cloke et al., 2004; Weis and Fine, 2004). I am also aware that my selection criteria restricted me to mostly male participants of European descent and I would have liked to incorporate more people who did not experience the migration first hand, but have important stories to tell. I was able to interview one First Nations man who farmed on a reserve in the study area. I found his perspective of the 1930s to be very interesting even though he did not fit the selection criteria since he was not a migrant. I also tried to identify the experiences of farmwomen during my research. Farming is still often considered a man's domain, but women's role in the home is equally important to the success of a farm. Circumstances did not allow me to have a large enough sample of First Nations and women interviewees to isolate aspects of their adaptation experiences. I also wanted my research to be beneficial to participants. One way that I was able to give back to participants and the community was by helping participants, spending time with them, and giving the research findings back to the community, both through sharing the thesis itself and by writing to local newspapers. I also hope that this research allows for seniors, whose opinions are often ignored by western society, to have a voice in the future of farm and rural communities.

4.4 Limitations

This study is not trying to understand the experiences of all Aspen Parkland migrants by only interviewing a few, rather it is understood that this is only a glimpse into the lives of these migrants. This research was undertaken on a very small scale and thus it is difficult to generalize based on the results. Participants were chosen for their

experiences and those interviews that did not fit the criteria were not used in the data analysis. A particular challenge in this study was the interview process because those interviewed were primarily elderly people who were telling stories of their past family history. Stories such as these are often affected by the cultural recollections of the time, some of which may actually be popular myths (Gregory, 2004). In addition, there are a variety of factors that affect memories, such as the amount of time a participant has to answer, the order of events being recalled, and the presence or absence of anchors of comparison (Pearson et al., 1994). There are a variety of techniques that I employed which reduce the errors and biases due to memory decay. First, participants were reminded (often, if necessary) that they should be as accurate as possible when responding. I reinstated the context of the event being recalled regularly and used aided recall methods by giving participants a list of things related to the event being recalled to help prompt their memory. Since questions were being asked about a particular landmark event, the answers were more likely to be precise (Pearson et al., 1994). I felt that I was able to tell when participants were telling 'stories' and when they were sharing their own experiences. Usually these stories did not affect the interview since they were not a response to questions I had asked, but rather were part of building the relationship between the participant and myself. I also found that many people were comfortable enough to be able to say that they simply did not feel that they could remember the details accurately enough and declined to answer certain questions.

Conclusion

In conclusion the case study location was selected because of the presence of immigrants from southern Saskatchewan who had arrived between 1926 and 1936 and was selected using historical census data. Qualitative methods, particularly interviews were the main source of information about the experiences of participating drought-migrants. This research project strives to apply reflexivity, situated knowledge, and anti-oppression practices. The main limitation of these methods is the memories of the people interviewed are somewhat unreliable since events occurred 90 years ago.

Chapter 5: Vulnerability and Adaptation in 1930s Saskatchewan

This chapter highlights findings with respect to the vulnerability of farm families in Saskatchewan during the Great Depression and their adaptive capacity. It describes the exposures and adaptive capacity of participants and the subsequent adaptation options they undertook, with a focus on migration. It begins with a theoretical overview of vulnerability and adaptation research which is used to explain the findings from this research. The exposures that Saskatchewan farmers faced during the 1930s were mainly due to drought, but also included other factors, such as market forces, changes in farming techniques, and government policies. This chapter also includes information about the source farms in southern Saskatchewan; for example, when the first farm was settled, how successful the farm was, and the main challenges faced by participant families on the Prairies. Then the adaptive capacity of participants is considered along with their actual adaptation actions. The focus is on the individual-level decision-making, but the role of institutions in the 1930s in potentially increasing adaptive capacity is also considered. A detailed description of the migration process is then given, including the motivations for migration, the method of migration, and how this fits within the adaptation process. Throughout this section, comparisons will be made to the literature which also looks at vulnerability and adaptation in other regions and at other times.

Vulnerability is influenced by the exposures that confront individuals or communities and the adaptive capacity of those individuals or communities (Smit and Wandel, 2006). Alternatively, vulnerability is also understood as the degree to which a system is susceptible to and is (un)able to cope with adverse effects of climate change (Adger, 2006). Exposure and sensitivity depend on the interaction between the characteristics of the system and on the attributes of the climate stimulus (Smit and Wandel, 2006). Typically those who are more vulnerable also have less adaptive capacity, which makes them more likely to suffer from the negative consequences of climate change. Adaptive capacity refers generally to the potential ability of individuals

to address or respond to the effects of climate change and is related to adaptability, coping ability, stability, robustness, flexibility, and resilience (Smit and Wandel, 2006). It is a function of the individual's access to resources, including information and technology, education, social networks, and past experiences (Smit and Pilifosova, 2006; Sauchyn and Kulshreshtha, 2008; Wandel et al., 2007). The goal of my research was to look at vulnerability and adaptive capacity from a bottom-up approach in which the experiences of community members are explored directly through interviews.

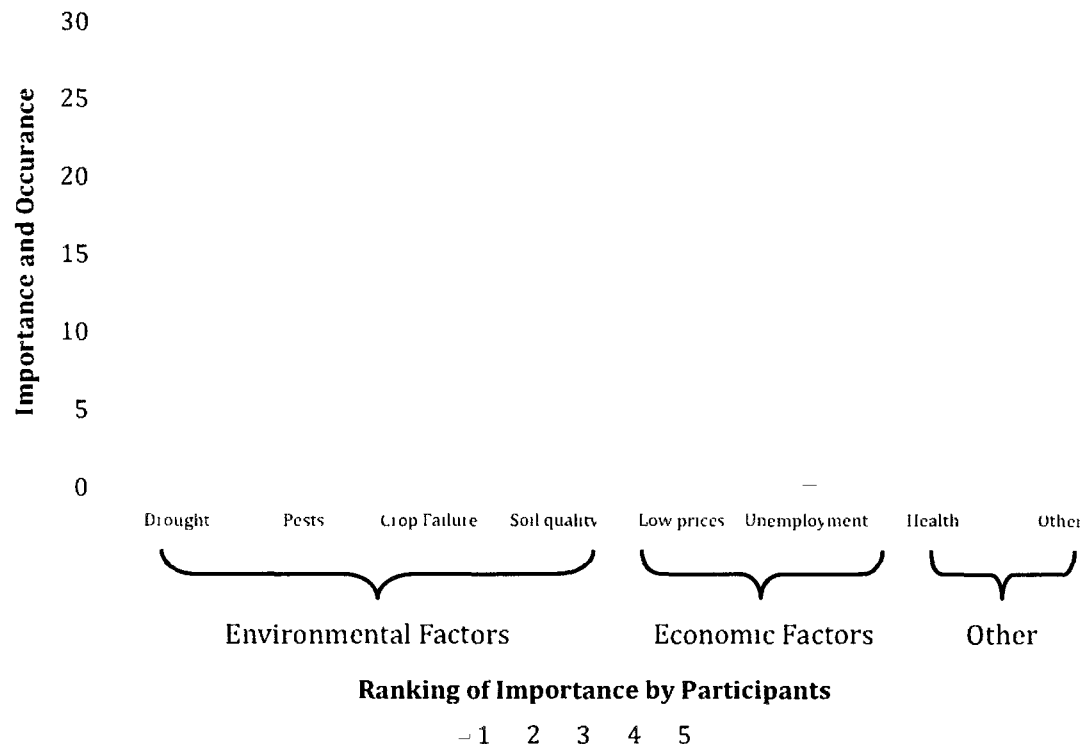
5.1 Exposures of 1930s Saskatchewan Farmers

Participants shared some of the ways that they reduced their vulnerability, mostly by limiting their level of exposure. According to participants the specific exposures in the 1930s included a lack of knowledge and experience with dryland farming, drought, pests, crop failure, loss of soil quality, low prices, unemployment, health problems, and other factors. Many tried using their limited knowledge of dryland farming techniques, but over half of participants experienced total or partial crop failure. Participants also stated that they practiced mixed farming, which is defined as having livestock while producing some sort of crop, to increase their income. Initially most farmers raised animals only for their own use and not as an additional source of income but when the Depression happened they began selling cream and eggs because they were not making enough money selling wheat. This chapter will show many such cases where farmers faced many challenges in spite of their attempts to increase their adaptive capacity.

Figure 5.1 summarizes the exposures that participants experienced. Based on the answers that participants gave to a variety of questions, the following categories were created with three main types of exposures: environmental (drought, pests, crop failure and soil quality), economic (low prices and unemployment), and other (health, a sense of adventure, and other). Participants could list as many exposures as they felt were relevant to explain their situation, and these were ranked according to the importance participants gave them, with one indicating the most important exposure and five being the least important. Twenty-four participants stated that drought was their first motivation for migration while three stated that it was the second most important reason. By far the most frequent exposure named by participants was the drought,

followed by problems with pests and crop failure (both of which were related to the drought conditions). The least common factors that motivated migration were a sense of adventure, health problems, or other problems. Environmental factors were by far the largest exposure felt by participants, followed by economic conditions and other factors.

Figure 5.1 Participants' Exposures



The following sections contain some detailed responses given by participants about the source farm centred on how long the farm had been settled and what kind of farming was being done. Appendix C1 details the answers to these questions. These sections include the characteristics of the source farm in terms of its physical geography, the way the farm was operated, and the drought experience of families.

5.1.1 Operational Characteristics of Source Farms

Most interviewees were newly married couples who moved off the farm on which they had grown up and settled on a new farm, here called the 'source farm'. Many had prior farming experience, but not necessarily in Saskatchewan, since many were first generation immigrants from Poland, Russia, Scotland, England, the northern US, and Ontario. Most owned, rather than rented the land. They described their land

as flat with few sloughs and poor quality soil which often had rocks on it. As expected there were few trees on the Prairie. SW5 described the land down south as “open country” with little water in low spots, few trees and “very barren.” N1 remembered rolling hills and thunderstorms with no rain. The majority of families relied on wells for water for themselves and their livestock which they either dug themselves or shared with neighbours. CR4 said, “We had a well on the Prairies there, but there wasn’t too much water.” Springs were more common as a water source since few had access to sloughs.

Commodity price structures and market forces encouraged cultivating wheat, while governments encouraged mixed farming (grain and livestock). Families typically had a few animals, such as horses or sometimes oxen to work the fields, dairy and beef cows, and chickens. This often supplemented farmers’ income somewhat since some were able to sell milk, cream, or eggs. Most interviewees said that the farm was successful until the Depression began. For example, SL1 stated, “Well, you could tell that it must have been quite good, because [father] bought this new combine and tractor in 1929.” However, CR11’s family was not so lucky, “Well yeah, they did get a few good crops, you know, but then things... they didn’t get the rains and the moisture...” While N3 did not believe that his father ever had what it took to be a farmer: “No. My dad wasn’t a farmer, he wanted to farm, he was a boy and he was born on a farm. And he was no... he wasn’t any farmer.” Most had never experienced a severe drought before the 1930s.

Half of the participants said that they experienced crop failure when the drought happened, with another quarter saying they experienced poor yields. SB1 remembered the drought in detail: “1928 was the last good crop that they had down there and then ’29 wasn’t so good and ’30 was really poor. ’31 was a total wipeout; grasshoppers took the crop.” CR12 remembered partial crop failure: “Oh I guess there was [...] no crop, period. I think they had slough, in that low spot see, they could grow a little bit of oats, or wheat, but very little.” Many spoke about problems with pests such as Russian thistle and grasshoppers which seemed to thrive in drought conditions.

5.1.2 Household Socio-economic Conditions of Source Farms

Most participant families were of average or below average financial status compared to their neighbours. Since many of them were first or second-generation immigrants who came to Canada with very little, it is not unexpected that they continued to live in poverty. This made participants more vulnerable to drought since their meagre savings dwindled as the price of wheat fell. SB2 remembered his childhood thus, “Well they certainly weren’t rich and my dad had no debts and us kids were always well looked after, well fed, and well clothed.” However, many recalled how they had enough to eat, mostly due to the fact that they kept large gardens even though they had very little money.

Almost half of participants could not say how or if the stock market crash affected them; the other half stated that it affected them because prices fell and they could no longer make money selling wheat or livestock. SW5 talks about how the stock market crash affected her family: “I remember them saying that they could take and ship a cow and then they had to pay, they never got no money, they still had to pay the freight.” Some got off-farm work at this time, some of which was relief work to pay off debts owed to the rural municipality (RM). CR4 talks about his father,

My dad did, yeah [...] When we came up here; he was working in the bush and at the sawmill and stuff [...] He'd done some relief work, but he'd go to the municipalities and help them. [...] Well he was trying to farm, but for a long time he only had about 15 acres broke.

The RM later cancelled some of these debts. The majority claimed that their parents never went on relief, usually in the form of money distributed by the provincial government to those in need, likely due to the mentality at the time that relief meant that you were lazy and therefore most tried to avoid it. PA1’s father abandoned his family when they went on relief because he was ashamed: “That's what happened to my dad, he couldn't handle that, he'd been financially able all his life, he wouldn't take any kind of thing, that's why he took off.” Many people received blanket relief in the form of food or feed for animals that was distributed to nearly everyone. Not everyone who wanted relief was eligible, as SW7 explains:

Well, when they were on the farm here they did try. But he made the mistake of getting all dressed up in his best clothes and he went into town to get relief and they looked at him and said well if they can dress as well as you are then they don't need relief.

For those farms with access to a tractor, many chose not to use it or were unable to afford to run it because of fuel prices. Many continued to use horses, which were seen as more reliable and cheaper. The end result of these socio-economic exposures was that farm families had few financial resources available to them as the drought conditions became severe.

5.2 Adaptive Capacity of 1930s Saskatchewan Farmers

Adaptive capacity can be explained by a household's access to economic capital, cultural capital and, particularly social capital, as explained by Bourdieu. In the case of participating farmers on the Prairies in the 1930s, financial capital was severely limited due to the low prices for grain and crop failure and because many farmers were not well established since they were relatively new to the land. This meant that some adaptation options were beyond many farmers since most require access to economic capital. This also meant that the adaptation progression presented in Figure 5.2 often resulted in migration, since the other adaptations were unsuccessful. With their financial capital exhausted, farmers relied more heavily on other forms of capital. But cultural capital was also limited due to lack of formal education by farm family decision-makers at that time. Since the average level of education was about grade 8, most participants had difficulty finding off-farm work that was not based on physical labour. Most farmers were looking for physical work and were therefore in competition with each other for increasingly scarce jobs. Cultural capital is typically developed over the long-term and would be difficult to increase or acquire during a drought. This also explains why education became so important to many families. The parents felt limited by their own lack of education and therefore strongly encouraged education in their children. If participants knew the education of their mothers and fathers, it was about a Grade 8 level, while their children, the participants themselves, had on average a Grade 11 education. SB2 talks about how his father stressed that his children get an education: "Yeah, like considering the homesteading days and things like that, it was very

important to my Dad. We were never allowed to miss a day of school; we had to work until dark when we got home, but we went to school.”

The type of capital that was most readily available to farmers in this study was social capital through formal and informal social networks. This is not to suggest that non-migrants had less social capital, simply that they did not need to use it to adapt to the drought. It seems likely that those who stayed had more access to capital beyond social capital, in that they had more financial/economic capital and cultural capital which allowed their earlier adaptations to succeed since these relied on access to this capital. For example, changing farm practices required economic capital to invest in new equipment and cultural capital to have the education necessary to put these changes into practice successfully. It may also be possible that non-migrants had more local social capital, while migrants had more social capital networks in the Aspen Parkland. As W1, a non-migrant explains, having close friends and families on the source farm helped them decide to stay: “Basically I think they stayed there because of their neighbours, who were friends, and they were staying [...] And you see, as I said so many of these men shot themselves, or killed themselves somehow, so then it was mostly women [who] were there with elder sons who were farming, so then they just all sort of stuck together.” These social capital networks and their role in the migration process are described in more detail in Chapter 6.

5.3 Adaptation Options Utilized by 1930s Saskatchewan Farmers

Smit and Skinner (2002) suggest that farmers have four general types of adaptations available to them (Table 2.2): technological developments, changing farm production practices, farm financial management, and government programs and insurance. The first three options involve access to money in order to invest in these adaptations, access to sources of knowledge, or use of institutional assistance, all of which were limited in the 1930s. Smit and Skinner’s (2002) adaptations are at two levels; there are two institutional level adaptations (technological developments and government programs and insurance) and two household level adaptations (changing farm production practices and farm financial management). The adaptations used by participants in this research vary from those proposed by Smit and Skinner (2002) due to

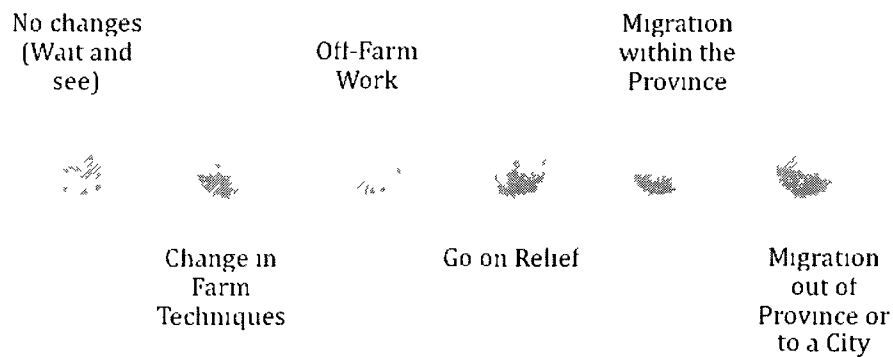
greater poverty in the 1930s and the lack of a variety of technological development options and government programs and insurance compared to the modern agriculture they examine. In this case the change in farm techniques that participants used, such as trying to plant shelterbelts, digging dugouts, and growing other crops, would fit with both technological development and farm production practices. Changes to farm financial management would fit with finding off-farm work or going on relief. Relief was also the only government program available at the time. Farmers today have many other options available to them, which are described well by the four categories that Smit and Skinner (2002) suggest.

Many participants stated that they felt powerless to do anything to adapt to the drought. This may be due to a variety of factors, such as reduced economic capital, lack of knowledge, or even a general sense of disempowerment. Since drought was often perceived as an 'Act of God' it follows that participants would believe that there was little or nothing they could do about it (Jones, 2002). CR1 expressed this hopelessness when asked if her family tried anything to adapt to the drought: "No, because there was nothing you could do, nothing would grow." Those participants who tried to adapt seemed to do so based on personal experience or as a result of access to social capital. For example, three siblings who were interviewed together explained that their father was a seed tester for the experimental farm at Indian Head, therefore he had personal experience that allowed easy access to new seeds, which he was able to use during the drought years, with limited success. While these adaptations may not have helped immediately with conditions on the Prairies, it likely played a role when families settled the new farm and began using these practices on previously unfarmed land with less severe drought.

Figure 5.2 demonstrates the adaptation options used by participants in order of preference beginning with no changes made and continuing until the decision was made to migrate out of province or to a city, essentially to stop farming. This figure shows the progression of household-level adaptations. Adaptations were chosen based on how easy they were to perform and how desirable (or undesirable) they were perceived to be. These adaptation strategies can also be thought of as a continuum with several

potentially happening concurrently. Also, some participants may have skipped steps or done them in a different order depending on the opportunities that they had available to them. For example, some families found off-farm work for older brothers before they were able to try different farm techniques. It is also likely that those who stayed in southern Saskatchewan saw success after the earlier stages of adaptation and therefore did not need to consider migration.

Figure 5.2 Participant Adaptation Progression



For most participants it seemed that there was a preferred progression of adaptation that saw them taking less risky options first and then moving on to options otherwise viewed unfavourably or that required more investment of time and money, involving progressively more uncertainty, until one of these options proved successful. The first option that participants chose was to do nothing and simply await the arrival of improved conditions, either through increased precipitation or improved prices. The next option for many was to continue farming, but to try different techniques. In this instance farmers could try other crops, switch to increased livestock production, or dig dugouts. But these changes required economic and/or cultural capital that many did not have. Of the thirty families interviewed, five stated that they tried to plant shelterbelts, mostly done before the drought began, three tried to dig dugouts, three tried growing other crops, while eight did nothing at all and twelve did not know or had no response. Participants noted that physical adaptation was difficult for a variety of

reasons and that for them it was often not possible. One participant stated: "They didn't have any tree nurseries at that time [with which to plant shelterbelts], now you can order trees and that," to which her husband replied: "[t]hey had planted trees and when the drought came the trees simply died" (CR10). The three participants who stated that they tried growing other crops tried flax or rapeseed (now known as canola) with little success. CR4 remembered his father planting flax, a rare crop at the time, "[y]eah, well they had bad crops, but I remember Dad seeding flax, I think it was the last year we were there, he had flax seed and nothing came of it." Meanwhile, SW9 stated that they did not have a dugout because they did not have the right kind of machinery to dig one.

Adaptation also took place off the farm through off-farm employment, relief or migration. The majority of participants said that someone in their family had some form of off-farm work, usually the father or older brother, but many girls worked as housekeepers at this time as well. Some of this off-farm work had always been done, but most had found work after they realized that farming was becoming more challenging. Rural municipalities (RMs) would allow families to pay off their debts by building roads or other work that needed to be done in the area. As mentioned, participants negatively perceived the option of going on relief and many felt proud that they did not have to rely on it, and those few who did use it were resigned to the fact. If all these failed, families would migrate to new land. This option was less appealing since it involved a considerable amount of uncertainty and cost. While information was limited, there is no real trend towards a later migration date based on the number of other adaptations that were tried. All adaptations, aside from migration, were partial failures since participants were still forced to migrate.

Of all potential migration destinations, the Aspen Parkland was preferred for a variety of reasons. Land was affordable and available, rainfall was more abundant and evaporation lower and there were trees to use for shelter and heat. The wood was often sold as cordwood which helped supplement the family income when they first moved north. Other migration locations were less attractive and therefore less common. Only two families considered moving out of province, one looked for land in BC but did not find anything they liked so they moved to Carrot River instead. The other moved to

Vancouver for a time, but did not like it and moved again to Shellbrook. This out-of-province migration was less likely to happen, since there was more uncertainty involved due to greater distances and increased cost. In addition, places such as Vancouver were even farther from friends and family, sources of social capital, and therefore were less appealing options. Cities were also negatively perceived by many participants with many stating that even today, now that they are older, they would not want to move to a large urban centre due to attachments to their communities. CR1 criticizes cities thusly: “[T]hey talk about people moving to the city, but why would you move to the city? And then starve in the city? I have no idea.” Essayist Epp (2008) confirms the meaning that rural people give to their lifestyle by summarizing the advantages of living in a rural community, including a closer sense of community and neighbourliness, routine contact across generations, proximity to the working countryside (particularly food production), and an ongoing sense of historic belonging.

5.4 Adaption Through Migration

I asked detailed questions about the conditions within the family that may have influenced their decision to migrate, such as their financial situation, religious, political, and community involvement, and health conditions. There were also questions about the logistics of migration, such as when and how it was done, and how the destination was selected. These questions and responses are outlined in appendix C2. Table 5.1 shows a breakdown of participants who indicated that one or more of the following key factors played a role in their migration decision-making: informal social capital, formal social capital, and health. These categories were selected based on the literature where it is suggested that they may have been influential during the Great Depression or other times of mass migration. The responses were compiled during the interviews when participants would mention one or more factors listed here, however participants were also asked to identify what they felt were their main motivations, that is to choose their own categories, which may not have fit with those pre-determined. These responses are shown in the final column. In some cases participants indicated that more than one factor was at play; however, there was still one factor that played a more significant role than others. This is reflected in the choice of motivating factor that participants reported. In some cases, participants stated that they chose the Aspen Parkland for non-

vulnerability reasons, such as affordability, but they still experienced social capital effects through informal social networks, as demonstrated by participant SW6. SW6 spoke of the influence of informal and formal social capital connections, including political involvement, as well as changing health conditions which may have motivated the decision to migrate; however, SW6's understanding was that affordability was the main quality that made migration possible and influenced the selection of the destination farm.

Table 5.1 Motivations for Migration Decisions

Participants	Informal Social Capital	Formal Social Capital	Health	Participants' explanation
SW1 and SW2			Yes	-
SW3 and SW4	Yes	Yes		Community networks
SW5	Yes			-
SW6	Yes	Yes	Yes	Affordable
SW7 and SW8				Community networks
SW9	Yes	Yes	Yes	Family networks
SW10 and SW11	Yes			Good land
SB1 and SB2				Work
SL1	Yes	Yes		Family networks
SW12	Yes	Yes	Yes	Health
SB3		Yes		-
N1	Yes	Yes		Work
CR1	Yes	Yes		Other
CR2	Yes			Affordable and available
CR3	Yes			Family networks
CR4	Yes	Yes		Community networks
CR5, CR6, and CR7		Yes	Yes	Affordable
CR8 and CR9		Yes		Religion
CR10				Available
CR11	Yes	Yes		Community networks
CR12	Yes			Community networks
PA1		Yes		Available
A1				Other
N2	Yes	Yes		Family networks
N3	Yes	Yes	Yes	Community networks
N4	Yes			Community networks
SW13		Yes		Health
SL2 and SL3	Yes			Good land

A majority of participants stated that both formal and informal social capital somewhat influenced their migration decision-making. Other explanations included the

affordability and availability of land in the Aspen Parkland, which was considered to be of better quality. There were also cases where work was available at the destination which was not available elsewhere, usually at a sawmill. Finally health, religion and other (usually divorce or the death of children) were also motivators for participants. Health motivations usually involved one parent's respiratory problems and the doctor's suggestion that they move north, to a more humid climate. A few families had experienced a death on the source farm of a family member (typically a young child) and had moved to escape the memory. I had expected to find that social capital was important for all migrants when it came to deciding to migrate and then the selection of the destination, but it was found that migrants understood that economic and environmental factors were more important to the selection of the destination. For many, it was found that they may have heard about the Aspen Parkland from others, but when it came to choosing a location, most picked a location that was affordable. For example, PA1 states:

Well my dad and mother had gotten an old Model A Ford car, and they drove from Verwood up to Prince Albert and they heard that, they'd heard about these homesteads available. So they come up here to look at it. And, really what happened, they found this quarter section here that was available.

Participants were also asked why they thought their family moved while neighbours stayed down south. The most common response (of those who had a response) was that there were differences in income levels and that their neighbours were better off than they were. Seven participants suggested that money was the main factor that allowed farmers to stay south, while other responses included their own problems with poor farm management, less established farms, poor health conditions, and personal difficulties that affected their family in a way that was less important to non-migrants. There was also sometimes a more adventurous spirit for migrants. CR3 explained her family's decision as being a result of multiple factors:

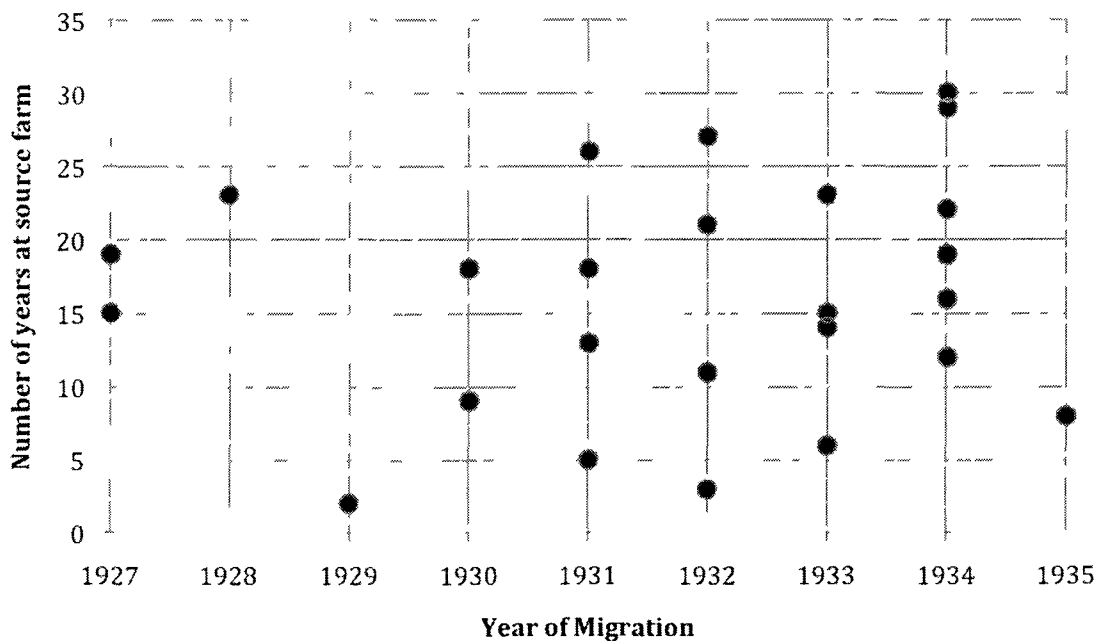
I often wondered about that: I think their money situation must have been better than ours. We had no possibility of staying there because we were going to lose the land and lose the horses and lose everything. And for us to go north was the only option, really. Plus we had an uncle, my dad's

brother, and he said, bring all your stuff and you can stay for the winter and then we'll find a place for you and you can move to that.

CR4 talked about adventurous spirit when he described his father's outlook: "'I really don't know, except that Dad was the kind of guy that he wasn't a sticker like the other boy's dads were.'" CR10's family moved as a result of poverty: "'We were not poor or hard-up, we were destitute.'"

I found no relationship between year of migration from the source farm and the number of years of residence on that farm. This can be seen in Figure 5.3, which compares the time of migration to the number of years spent on the source farm. For example, the figure shows that 1934 was the most common year of migration, however the range of years that the farm had been settled ranges from 12 to 31 years, whereas the only family to migrate in 1935 did so after only 8 years on the source farm. Another example is to compare the family that moved in 1928 and who had been on the source farm for 24 years to the family that moved in 1929 who had been on the source farm for only two years. The scatter plot shows no obvious trends in date of destination farm settlement to the length of residency on the source farm prior to migration to the Parkland.

Figure 5.3 Time of Migration



Most of those who migrated used the train for either part or the entirety of their migration. For example, CR1's family moved north with three boxcars on the train with their cows, sheep, furniture, and equipment. Her brothers drove up and the rest of the family came up in a touring car pulling a heavy-laden rig that her father had made. Some interviewees drove a wagon and herded their livestock northward while still fewer came by car. SW5's family had moved up with a wagon and horses in 1929 and then moved the family up to stay in 1932 with her father using the family's Model T Ford to move things back and forth. CR10's family did not know where they were going prior to departure, they simply packed up and left and kept going until they found something. Generally they were headed toward land owned by the Hudson's Bay Company, but on arrival they found land in Carrot River which had recently been abandoned, and on which they then settled. The majority of those interviewed did not receive government assistance to help them move and many did not even know about this option. Those who did have government help mostly came with a settlers' car, a car on a train heading north that was subsidized by the provincial government. CR4 explains, "[y]eah, there was something about a settler's car or something, but I never did get that all out of mind right. But I know that they got some assistance." Some participants did not seem to know about the government program, but they did know that they got a good deal on boxcars when they moved. Sometimes family members would split up, with older brothers or fathers taking the train and the rest following by car. Occasionally, friends would help by meeting them at the train to guide them to their new home, since roads were not well maintained or did not exist at all. A couple of older sisters were working at the time of the move and so followed up about a year later, bringing the money from their job to help their family buy necessities.

Conclusion

In conclusion, this chapter highlighted the vulnerability of participants by examining their exposures and adaptive capacity and the subsequent adaptation options, with a particular focus on the decision to migrate. Vulnerability of Prairie farmers in the 1930s was due to the interaction between the changes in the physical environment as demonstrated through drought and the changes in socioeconomic conditions associated with the economic depression. Concurrently, the farm level adaptive capacity of farmers

was limited by a lack of economic capital (financial resources) and cultural capital (general knowledge and experience with drought). The ability of farmers to use the adaptations that Smit and Skinner (2002) propose, including technological developments, changing farm production practices, farm financial management, and government programs and insurance, was limited. Families tried unsuccessfully to use adaptations that were available which led to the eventual decision to migrate. In addition, due to the limited action by institutions, particularly all levels of government, in helping farmers adapt, many were left with little guidance and therefore failed to be able to remain on the source farm. The following chapter examines in more detail the role of social capital in the migration process, both in terms of the decision to migrate and the integration into the new community.

Chapter 6: The Role of Social Capital in Adaptive Migration and Integration

This chapter interprets some of the key findings of this research regarding the role of social capital in increasing adaptive capacity and its role in migration decision-making of farmers during the Great Depression in Saskatchewan and their integration at the destination. First there is a review of the relevant social capital theories of Bourdieu (1986) as outlined in the literature review and how participants experienced these social networks. Results will then be presented throughout this section that will explain the importance of social capital to people who migrated. The destination farm in the Aspen Parkland is described by participants, including the process of integration into the new community, success levels on the new farm, and thoughts and feelings of various family members on the new location. Questions asked about participants' arrival at the destination farm are in Appendix C3. Finally, this chapter examines the differing role of informal and formal social capital in assisting with migration and integration, respectively.

Social capital is the value of social networks that individuals have which allows them to access opportunities that would otherwise be difficult or impossible for them to attain on their own (Adger, 2003; Pelling and High, 2005). Social capital can be informal, including friends, family, and neighbours or formal, including members of churches and community organizations. The value of informal and formal social capital varies according to the needs of those using it, this is the value found in the usefulness of the social capital and whether or not it can be converted into something else, usually economic or cultural capital. For example, in the 1930s, social capital could be used in the construction of a barn for a neighbouring farm family, thus giving the social capital economic value since this saved the family labour expenses that would cause the construction to be otherwise unaffordable.

6.1 The Importance of Social Capital to the Adaptive Capacity of 1930s Saskatchewan Farmers

As mentioned earlier, since the amount of economic and cultural capital available was limited to participants in the 1930s, many relied on social capital to help them adapt to drought conditions. Cunfer (2003) points out many farmers on the Great Plains at this time were much more transient than they are today. In fact, many at this time were the children of immigrants and had settled a second farm after they were married since land was open and available and because government policies encouraged the development of new farms (Waiser, 2005). While social capital certainly existed on the southern Saskatchewan Prairies, it was not sufficient to keep people from migrating when tough economic conditions dominated. So although participants could ask neighbours or family for assistance, these networks likely had limited assistance to offer or there was simply no one remaining to offer assistance. Social capital played a lesser role in motivating participants to stay, but was useful when it came to helping families integrate into the new community. Participant SW13 felt that her family was better able to integrate because in this area parents were often involved in community organizations, something that helped them make new friends. Finally, social cohesion was reported to be high at this time and therefore accessing and using social capital was not difficult. SW7 explains,

They were happier than they are now because everybody saw that they were all in the same boat, so to speak, and because everybody was hard up or poor or maybe their clothes weren't always so fancy, but they had hearts of gold. That's what I would say was good about it.

Figure 6.1 provides a more detailed representation of the conceptual model of farm level adaptation introduced previously as Figure 2.2. The climate change effect in this situation is drought, where its slow progression means that different participants, depending on their adaptive capacity, may make decisions at different times. The drought is acting upon the farm household, which has a certain level of adaptive capacity. While a variety of adaptation outcomes were possible, not all were successful and in the case of this study, migration was the final adaptation for most participants.

Figure 6.1 Adaptive Capacity of Participating 1930s Saskatchewan Farmers

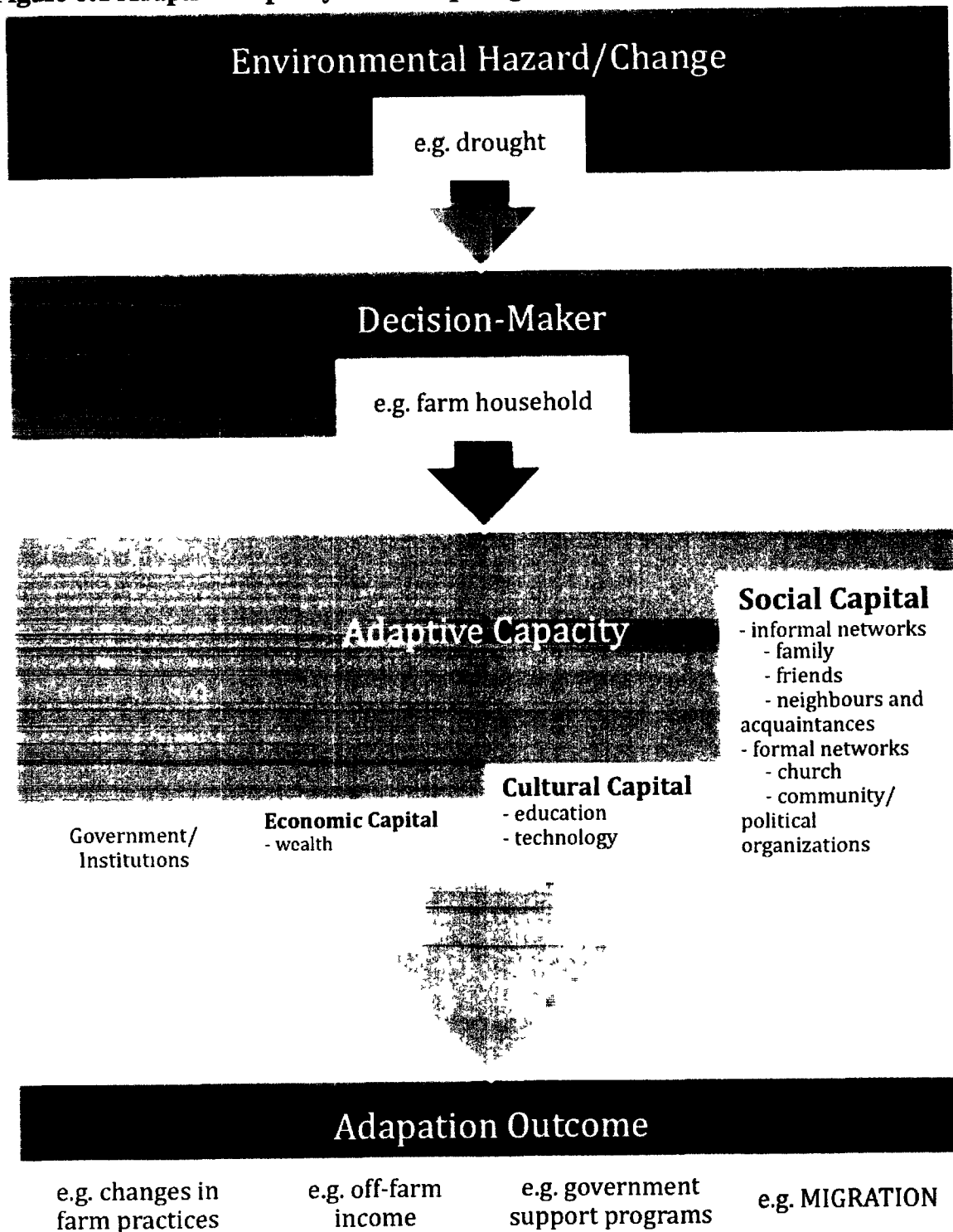
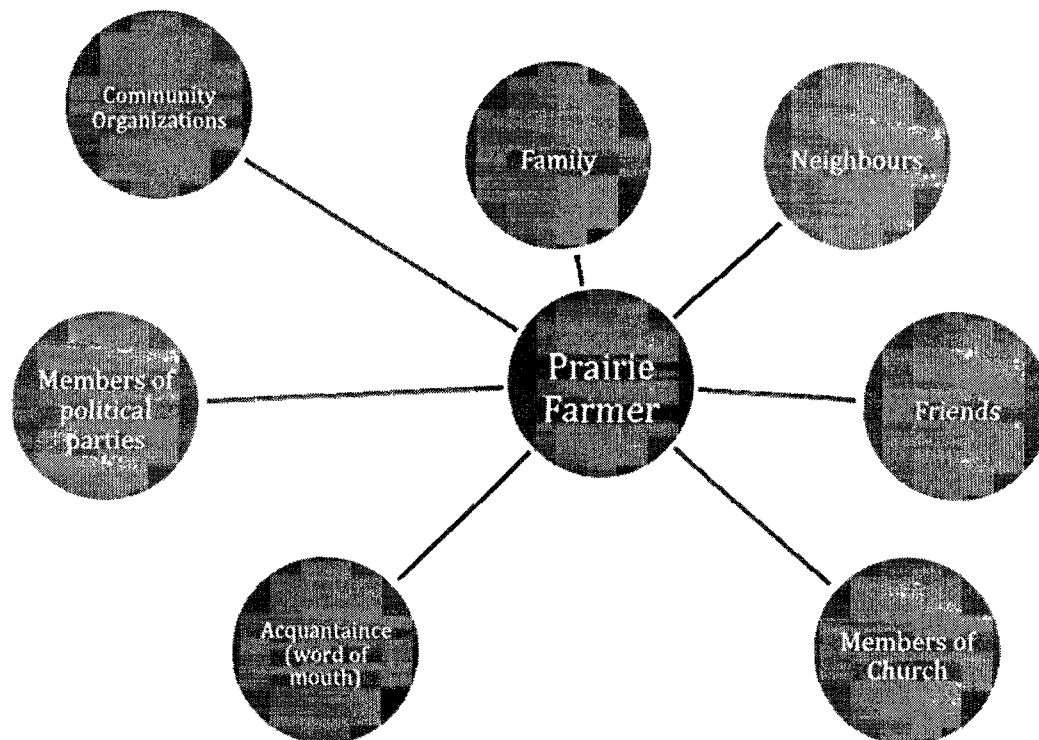


Figure 6.1 offers a summary of the important role that social capital played in the migration process. The figure shows the limited economic and cultural capital that participants had in the 1930s and the variety of social capital networks that helped them

choose a migration destination, assisted their move, and allowed them to integrate into the new destination once they arrived. Figure 6.1 also demonstrates that access to different forms of adaptive capacity led to different adaptation outcomes. However, in the case of participants, the emphasis they placed, as former migrants, was on their access to social capital. As discussed later in this chapter, this does not necessarily indicate a causal link between social capital and migration. The role of different forms of social capital in the migration process is presented in Figure 6.2 which illustrates the social networks that participant families could potentially access. The seven main network types categorized in this research are family, neighbours, friends, members of the same church, acquaintances from the same region (demonstrated through word of mouth), members of the same political party, and members of the same community organizations. These types of networks were selected throughout the research process, with some chosen during the development of interview questions and others suggested by participants during the interview process.

Figure 6.2 Social Networks of Participating Farmers



The length of the lines connecting these networks to participants indicates how close the relationship is between the two based on responses given by participants. The

closest relationship would be with family since they are more likely to keep in regular correspondence with these people as opposed to members of the same political party who they may only meet once or twice. This closeness is a hypothesis made at the start of the research, but it was also confirmed later by participants when they explained these relationships during the interviews. These relationships also indicate a higher level of trust because participants know them better. For instance, participants sometimes stated that they had followed family in a way that indicated that they were a motivating factor in their decision-making, whereas they would usually only indicate acquaintances in passing and would give them little weight in decision-making. For example, SW9 spoke of how her father's brother Bill had moved north first and then encouraged her family to move north as well. Bill went as far as to house SW9's family when they first arrived. CR1's experience was similar; she talks about how someone known to the family moved north first: "[M]y dad and my brother went way up to Loon Lake which is where our hired men had gone and they wanted us to move up there." On the other hand, it was common to hear the following statement from CR4: "There was people from Davidson ahead of us, but we didn't know them." This indicated that while they knew someone from the same source location, they did not help with the migration itself; their role was more subtle in that it may have influenced the choice of destination by CR4's family.

6.2 Social Capital and Migration Decision-Making

Questions were also asked to determine why families selected the land on which they eventually settled. Most had moved to the Aspen Parkland because they learned about it from someone else, usually through word of mouth. Those relationships and networks that were more regularly maintained, and therefore more trustworthy (Figure 6.2), had a more significant role to play in this respect. When participants stated that they knew someone who had moved before them, it was usually a neighbour. But, if they stated that they explicitly followed someone, it was usually a closer relationship, such as a friend or family member. Over half of the participants said that they knew someone who lived at the destination location before they moved there, but few of these were close relationships and played a minor role in migration decision-making. In turn, many interviewees stated others had followed them north in a form of chain migration. It was important to participants to have a high level of trust in the person advising them

when making the decision to migrate especially for farmers who were not making much money at the time because it was costly to move. Many participants had not visited the destination farm and therefore did not know what to expect. Therefore it was common for informal relationships between friends, family, and neighbours to be described by participants as important to their selection of migration location and occasionally, these relationships also resulted in assistance with migration itself. Table 6.1 shows a breakdown the relationships that motivated migration including informal relationships that motivated migration (family and friends/neighbours) and formal relationships (political and religious).

Table 6.1 Social Capital and Migration Decision-Making

Participants	Family	Friends/ Neighbours	Religious	Political
SW1 and SW2				
SW3 and SW4		Yes	Yes	
SW5		Yes		
SW6	Yes			Yes
SW7 and SW8				
SW9	Yes		Yes	
SW10 and SW11				
SB1 and SB2				
SL1	Yes			Yes
SW12		Yes		Yes
SB3				Yes
N1		Yes	Yes	
CR1		Yes	Yes	Yes
CR2	Yes			
CR3	Yes			
CR4	Yes			Yes
CR5, CR6, and CR7		Yes	Yes	Yes
CR8 and CR9			Yes	
CR10				
CR11		Yes	Yes	Yes
CR12		Yes		
PA1			Yes	Yes
A1				
N2	Yes		Yes	
N3		Yes	Yes	
N4		Yes		
SW13			Yes	
SL2 and SL3		Yes		

Informal social capital was found to be slightly more important to migration decision-making than formal social capital which is demonstrated by the fact that seventeen participants responded that they had followed family, friends, or neighbours when they moved north. However, when it came to formal social capital, religious reasons for selecting the destination outweighed political ones; that is, church connections seemed more important than relationships formed within political organizations. For example, participant CR8's family were Mennonites who moved to Carrot River because of the strong Mennonite community there. Meanwhile, CR1's father was involved in the CCF (Co-operative Commonwealth Federation, the precursors to the modern day New Democratic Party, NDP) and it was through this connection that he found out about government funding for migrants, thus making their migration affordable. When participants explained how they chose their destination, the majority stated that informal networks of friends or family were important to both the selection of the destination and with assistance with the actual migration. This usually meant that participants knew someone who had moved before them and who then later helped them move to the Aspen Parkland.

As mentioned, there were other considerations for families when it came to migration decision-making, including availability and affordability. This was because the new land was being opened to sale as a homestead and therefore prices fell from around \$1000 to only \$10 if families could clear the land within three years. SW10 and SW11 explained their parents' situation: "I know that for ours Dad asked at the land office for a place where there was going to be a school and water." A few people chose their new location because it was the best quality land they could find; many knew that moisture conditions were better up north than on the Prairies. For most families, the father made a reconnaissance trip to look for land, or else he had been to the Parkland previously, likely for work. There were also a significant number of participants who stated that they moved because of a desire to start over. These people saw the drought as an opportunity to try again.

Most participants said that the pre-existing social/community structure, that is the ethnic makeup, of the destination was not important to them when it came to

migration decision-making. CR4 summarized this openness to other cultural groups this way:

It was fairly diverse though because we had people here who didn't talk much English, they were of Ukrainian descent or Polish or something but we all needed each other to survive. [...] Like my dad always said, you can live without friends, but you can't live without neighbours.

Those who did feel the makeup of the community was a relevant factor stated that the most important things were a general sense of community, followed by religious similarities, and access to school. Most felt that their new community was different from their old community in all respects including language and cultural backgrounds, but that this was not important. This sentiment is summarized by SB1 and SB2:

"Everybody was accepted for what they were. I don't think anyone was looked down on because they couldn't speak English. Not in my experience anyway." SL1 expressed similar ideas:

I don't think that [the social and ethnic background of the new community] really mattered. Because where he came from there was no, like, there were English people but there were also a lot of German, Hungarian; all different nationalities around them. So they were used to living where there were a lot of different nationalities.

It appears that considerations such as availability and affordability of good quality land sometimes took precedence over social networks in terms of direct influence on the final decision to migrate. However, informal social networks were often important for many to help them gain information about this available land. Seventeen participants stated that they knew someone who had moved ahead of them to the Aspen Parkland and that was how they found out about it. Those who went before participants included both informal and formal social capital relationships, with the majority being informal relationships including family, friends, and neighbours. Only in five cases was informal social capital used directly by migrants to get direct assistance with the migration process. Formal social capital, was, however, very important for helping migrants integrate into their new community after arrival. Once the time came to consider migration, farmers used the informal, closer networks shown in Figure 6.1 and 6.2 (family, friends, neighbours, and acquaintances) to find a location, make the move,

and settle into the new community. In conclusion, social capital becomes more important to migrants, in that it was more useful, the further along a participant is in their adaptation progression (Figure 5.2). This is discussed further in the following section.

6.3 Social Capital and Integration

The formal social capital networks available to participants served a particularly valuable role when it came to integrating into the new community. These formal social capital networks included members of churches, political organizations and community organizations. Ten participants stated they were very involved with the church, the most common denominations being the United, Anglican, Catholic, Lutheran, Pentecostal, and Mennonite churches. Involvement usually meant singing in the choir or volunteering at church functions. Another ten participants stated they were very involved in politics. Of those with known affiliations, the majority were supporters of the CCF, followed by Conservatives, and finally a couple were Liberal supporters. Those who were actively involved, that is helping out with elections, hosting events, and canvassing, were most likely to support the CCF. Finally, many participants stated that they were involved in community organizations: six were involved with the Wheat Pool, three with the Grain Grower's Association, ten were on various boards (school, church, various cooperatives, or credit unions), three attended ladies' clubs, and two volunteered with other organizations.

For those who were involved in a church or other formal social network throughout the migration process, having a familiar church to attend helped with the creation of new relationships and accessing important information. Participants were usually more actively involved in these organizations before migration since when participants first arrived in the Parkland, these organizations were not yet formally established and their participation was more *ad hoc*. While church involvement was limited by access to a church building, politics and community organizations were usually more accessible. It was also found that those who were involved in the community were more likely to say that they felt that they were happy with the decision to move and that they did not feel isolated. CR11 parents' experienced this, "my mother

joined all the - joined the ladies' club right quick. And my dad took, well he was a trustee, a school board rep, and that's all there was here you see, it was a bunch of homesteaders." So while closer relationships that had higher levels of trust were important when it came to making the decision to migrate, other, more distant relationships, often became important when it came to integrating into the new community. There was an important role of informal social capital for migration decision making while formal social capital was important for integration into the new community. Participants explained that family, friends, neighbours, and acquaintances sometimes played a role in the selection of the destination farm and with the migration itself. However, members of political, community, or church organizations were more important to integration into the new community and for the relationship of new friendships that helped reduce feelings of isolation.

Most people expressed the sentiment that because everyone was in the same set of circumstances, it made integration into the new community easier. This speaks to social capital as well. Community cohesion was higher at this time due to poor economic conditions. There were fewer social-economic differences between people; essentially all farmers at the time were poor. This equal status meant that there was greater opportunity to develop and use social capital. Community and social events were one of the ways that participants accessed social capital networks. Many participants spoke fondly of this time. They remembered many parties, picnics, and dances that gave the community the opportunity to get to know each other and to have fun. Perhaps because many were under high amounts of stress, due to the drought and depression, these events seemed unusually important, or perhaps because lack of telecommunications made these social interactions the only form of entertainment, but participants found these experiences to be very memorable. For example, participant SW8 talks about how although people were relatively poor they had strong social capital:

Dad talked about those times as actually being the best times. He would say that they never had any money, but there was always food and there was parties because there was a family on every section and usually they got [...] music and there were parties every weekend. And, you know, it

was something like people helping each other all the time and if we can learn that in our own way of doing things.

These social occasions were an opportunity for community members to build the formal social capital relationships that were developed upon arrival into the community. Creating new friendships was important to community cohesion and a sense of satisfaction with the destination location for many participants.

The sense of unity that participants felt was often referred to as 'community spirit' during the interview process. Community spirit therefore represented the connections that participants had to each other and the sense of place and belonging that they felt to their community both geographically and socially. N2 summarized it this way, "[w]e were all in the same boat, yeah, there was no problem there." A similar sentiment was expressed by A1: "Both Mom and Dad they, there was no holier-than-thou with them at all. They were, as my mother would say, common as dirt." As mentioned, people who were involved in the community felt more welcome. CR3 talked generally about how her parents experienced their new location:

Well, that was never any trouble. They made friends easily. They shared and they had fun with other people. They were easy neighbours. They would share whatever they had with whoever came along. People were always made welcome in our home.

6.3.1 Social Capital and Isolation

Isolation and integration were major themes explored with participants. While no one explicitly reported having any difficulties integrating into their new community, social capital was limited by geography, that is, participants still felt isolated mostly due to the relatively great distances from services such as schools and doctors, but also distance to the nearest neighbour. Ten participants felt that their families were less isolated after they moved north likely due to the mass in-migration to the Aspen Parkland at that time. SB1 stated that she did not feel isolated after she and her husband moved north: "No, I don't think that I ever felt isolated. People accepted us so well. I was about a quarter of a mile from a farm and that lady was like a second mother to me." There was an even split of 7 respondents each who felt that they were more

isolated or that there was no change. CR4, however, felt that it was more isolated up north:

Oh, it was more isolated, yeah, because down there, there was a road you could use the car on and you could go to town on weekends and stuff. Here you can't. See we brought the car up here and it sat for four years and it never turned a wheel.

Many times women were more vulnerable to feelings of isolation since it was more difficult for them to leave the farm even if the family itself seemed to be integrating into the community. I asked participants about how their mothers felt about the move in order to determine if they ever felt isolated. Eight respondents each felt that their mother was happy with the move or that their mother was resigned with her situation. SW7 believed that her mother-in-law was happy with the move: "I think she was happy, you know, because they could have the occasional visit to... Hafford. That's where her sister was." W1's mother was resigned to her situation: "Well, I don't think she had much choice, you know, and of course when you get relief and can't pay it off, like eventually, one of the grocery stores in Wiseton owned the farm." CR4's mother was in a similar situation: "Let's just say that she made the best of it. She never ever freaked out or anything... She'd go for a big long walk and then come back and start all over." Some participants thought that their mothers wanted to return to the place where they were born. SL2's mother was unhappy with the way things turned out:

She didn't want to come to Shell Lake at all, she didn't want to farm. And she never really, oh, she liked it here, but she would have much sooner been back in Saskatoon again. But because of, you know, Dad wanted to farm, so then, that was it... Mother missed home, which was Ontario.

However, eight participants were unsure how their mother felt about the move. CR8 explains, "Oh I imagine she was lonesome but she never showed it very much."

Since men were more mobile than women in the 1930s, they were more likely to have a positive integration experience because it was easier for them to find new friends. Those women who were more involved in community organizations, and therefore were able to spend time off-farm, also had a positive integration experience. The experiences of women with respect to isolation are discussed in more detail in the following chapter.

6.3.2 Challenges and the Level of Improvement at the Destination Farm

While social capital allowed for better integration to take place, there were still challenges facing Aspen Parkland migrants. Few saw their farm incomes improve, but most did not seem to mind and seemed to be satisfied with the decision to move. This again, is likely due to their ability to integrate and the strong social capital networks that made them feel welcome in the Aspen Parkland. Farm families with limited finances still had strong social capital networks that helped with the construction of farm buildings and with other farm work.

There were a number of reasons for the continued challenges that participants felt after migration, including the fact that the drought, while less severe in the Aspen Parkland, did not end until about 1939, which was several years after most families migrated. In addition, prices for wheat did not improve until the 1940s with the onset of the Second World War. Since many migrants had low financial capital when they moved, it took several years for them to see an increased income. However, due to the price squeeze some families never saw an increase or it was so gradual that it was not observed until 10 years after migration. N2 states that things began to improve in 1937 "because from then on it seemed like, things seemed to open up for us. That seemed to be the turning point in our lives." However there were a few who saw an immediate improvement, likely due to relatively worse conditions on the source farm. For CR8, his family's situation improved quickly: "Well, I would say almost immediately because there was enough feed for the livestock and there was enough to eat and there was lots of work..." There were also those who saw no improvement at all, but who were satisfied that their circumstances did not deteriorate further. For SW10 and SW11 there was no improvement:

The farm never made money but we were able to lease a neighbouring quarter from the government so we had stock and a certain amount of steers to sell and enough to milk to supply cream and milk. But as far as our farm was concerned, Dad's farm, there was never enough broke on it for the farm to sustain itself.

The vast majority of participants felt that migration was the right decision for their family to make, although for most it was simply because they had no other choice.

SW8 said: "For them I think it was a good idea because the Prairies were just dried out. It was bad. There were grasshoppers and drought and they just couldn't... it was hard for them." Those who were unhappy with the move felt that the land that they own in the Aspen Parkland was not as productive as other land that they could have purchased. However, the majority felt that staying in southern Saskatchewan would have been difficult for the family and that they would have been unlikely to succeed at farming. CR4, however, expressed a sentiment that perhaps they could have done better if they had made the decision to stay down south,

I don't think it was. If we'd have stayed... I think that we'd have had a better chance if we'd stayed because there was lots of land vacant [down south] that we could have went and returned [to farming there]... I know that my uncle that stayed, he bought lots of quarters after for about \$250 apiece, 10% down. So, you know, if we'd have stuck it out... He became a multi-millionaire and we didn't.

When asked if they thought that they (or their parents) would do it the same if faced with the same situation, most said that they would do it the same. SW10 and SW11 describe their parents as having no regrets: "They never had the idea that they wished they had done it this way, they were happy. They were a happy couple." CR10 even went so far as to say that "this is the best part of the world." Those who would do things differently likely would have moved to a different location than where they ended up. Related to this, participants seemed to feel that continuing to farm was the only option available to their families at that time. It is clear that farming is perceived as a way of life for the participants interviewed in this research since they were also still farming (even those who were retired continued to be involved in the family farm). Farming was seen as an ongoing family tradition.

Conclusion

This chapter highlights the importance of social capital for 1930s drought migrants in Saskatchewan. Social capital played a critical role in helping farmers adapt to climate change by: (1) helping in the selection of the destination farm for almost all families; (2) making migration possible for some families; and (3) allowing for integration to take place for almost all families. Social capital took many forms, from both formal and informal relationships to relationships of deep trust and more casual acquaintances, but

all of these served an important role in the migration process. The close relationships were important to selecting the destination location because of the trust between individuals; however, more formal relationships allowed families to more easily integrate into their new community. Many participants indicated that they found that it was easy at the time to make new friends and to integrate, due to a sense of unity, the volunteerism with community and other organizations, and informal networking opportunities available to new members including dances and picnics. However, social capital could not always help with feelings of isolation that some felt after they moved north, nor did it necessarily lead to success of the new farm. The next chapter examines the changes in social capital since the 1930s and how this will affect adaptation options of farmers today.

Chapter 7: Insights for Today

This chapter reviews the way socio-economic conditions have changed since the 1930s and how this will affect the lessons learned from this research about the vulnerability of today's farmers to climate change. This chapter begins with a review of the use of analogues and the general historical context for this research. Next, general conclusions are made about the changing exposures and adaptive capacity of Saskatchewan farmers and the subsequent adaptation options. Particularly, the role of all level of governments when it comes to helping individual farm families adapt to climate change has changed and has replaced the role of social capital in improving the adaptive capacity at the household and especially the community levels. Finally, the experiences of 'others' will also be highlighted including farmwomen and First Nations farmers, who have become much less marginalized since the 1930s and which may also reveal some new motivations for farm families' decision-making.

The process of using analogues is similar to the creation of models, often used in climate science, in which past trends are used to make predictions about future outcomes (for example Rosenzweig and Hillel, 1993 and Easterling et al., 1992a). In this project Prairie droughts, past and present, are compared to look for potential adaptation strategies. Droughts have always occurred on the Prairies forcing populations to adapt (Sauchyn et al., 2003). Some reports have suggested that current anthropogenic climate change may lead, once again, to an expansion of agricultural production in the northern Prairies and Aspen Parkland areas (Weber and Grant, 2003) in part due to warming temperatures and in part due to increased frequency and severity of drought in the south. While economic and social structures and farming practices have changed since the 1930s, there are still lessons to be learned from past events. For example, analogues are useful in understanding societal responses to climate change by allowing the identification of societal strengths and weaknesses (Glantz, 1991). Analogues have also been useful in understanding migration behaviours during times of climatic stress (McLeman, 2007; McLeman and Hunter, 2010). By understanding how participating individuals reacted to the worst-case scenario that was the Great

Depression, policy-makers and individuals can better plan for an uncertain future (Glantz, 1991; McLeman, 2006; Marchildon et al., 2008).

Generally, Saskatchewan farmers in the 1930s were exposed to the combined impacts of climatic and economic hardship for a variety of reasons, some of which date back to decisions made by governments decades earlier. Warnings by John Palliser, Henry Hind and others about drought conditions on the Prairies had been ignored by federal and provincial governments (Waiser, 2005; Jones, 2002) and therefore many farmers were poorly prepared to raise crops on the drought-prone Prairies. Farm instructors who were sent to help farmers were educated in southern Ontario and they themselves knew little of dryland farming techniques (Jones, 2002). A variety of factors made farmers susceptible to the exposures of drought and economic depression, such as growing varieties of wheat that were not adapted to the northern Great Plains, the lack of experience with (and preparation for) drought conditions as mentioned earlier, low financial capital, and the fact that farmers are price takers on the world market, meaning they are unable to affect the price of wheat and must simply react to whatever price has been set. However, after initial limitations, conditions slowly improved. Marquis wheat replaced the slower maturing Red Fife variety and new dryland farming techniques such as summerfallowing and deep ploughing became more prevalent which, although they caused soil erosion in the long-term, did allow for some moisture retention in the short term (Waiser, 2005). Although many aspects of Prairie agriculture and settlement had improved by the 1930s, there were still many exposures that affected farmers and few ways for them to increase their adaptive capacity.

Today, rural people and rural communities are vulnerable to changes in markets, but now they are also vulnerable to the price squeeze as they are encouraged to buy more expensive forms of technology that are touted to improve productivity (Argue et al., 2003; Jaffe, 2003), however these increased costs of production are not always offset by increased commodity prices. This economic stress is being passed on to the environment through soil and water degradation (Cushon, 2003; Edmondson, 2003). This environmental instability may make farmers more vulnerable to anthropogenic climate change. The price squeeze (when increasing costs of inputs are not matched by

an increasing price of production) is currently being addressed in two ways by Prairie farmers: (1) through the reduction of costs by simplifying farming by making it organic; (2) by increasing profits by farming more land or growing more profitable crops (Cushon, 2003). While technology and government support programs will help increase farmers' adaptive capacity, the market and climate change vulnerabilities still exist, making it difficult to determine how farmers will adapt to future climate change.

At the end of each participant interview, a few concluding questions were asked to try to summarize their feelings about migration and to get their thoughts on the future of farming and rural communities in Saskatchewan. These questions and answers are summarized in Appendix C4. Most participants were happy to give their opinions on the future of farming and many stated that they were disappointed that their children or community leaders did not ask them for their opinion more often. While some conditions are very similar to those seen during the Great Depression, many key elements have changed; there are still lessons that retired farmers can teach today's generation. However, a third of all participants had no advice to give since they felt that they no longer had a good understanding of farming because things had changed too much since they farmed. CR3 felt that she could not talk about farmers today: "I don't think that there would be any lessons, I don't think. Life now is so different to what it was then. I mean, people have more things now than we had then, we had nothing."

7.1 Changes in Exposure

Climatic variability is an inherent feature of dry-land regions like the Prairies and may be exacerbated by anthropogenic climate change in coming years. Water quantity is limited on the Prairies because of low precipitation. Much of the water that is available in rivers comes from the Rocky Mountains and as snow-packs melt earlier due to shorter winters, water shortages may become more frequent (Sauchyn and Kulshreshtha, 2008; Schindler and Donahue, 2006). Today, water demand is growing because of a growing oil and gas industry that uses large quantities of water in its extraction process (Sauchyn and Kulshreshtha, 2008) and also growing urban populations, particularly in Alberta (Lemmen et al., 2008; Sauchyn and Kulshreshtha, 2008). In addition, climate change may increase the occurrence of extreme weather events, such as hail and tornados

(Sauchyn and Kulshreshtha, 2008). Many of the climate risks on the Prairies today are similar to those experienced in the 1930s.

Participants in this project were asked to give their thoughts about the current state of farming and the challenges that farmers today face. These challenges are non-climatic sources of exposure that nearly all farmers face. In the 1930s, farmers' financial wherewithal was being eroded by increasing debt and falling commodity prices, leaving them little economic capital to fall back on when confronted by drought. Today, farmers are facing a similar situation with rising debts and low prices. Most participants stated that debt management was a problem that continues to plague farmers. Many participants felt that their children are spending too much money and they worry that they may find themselves in the same situation as farmers in the 1930s. SW5 said, "I think that people just have to watch how much they spend. And make sure that at the end of the day, that they have enough food for themselves." SW8 expressed several thoughts, but mostly about increasing farming expenses:

I mean you just talk to those poor buggers and it's like they're on a treadmill and they've got to borrow more and buy more to keep up. And that's stupid and it's just getting worse and worse. And any little disaster...

Even those such as N3, who felt less informed, had some advice:

Well, you know, really I'm so far out of touch. I mean you start to think of it, when I hear my family talk about it, the amount of money they've got involved in it, machinery, and inputs, even the land, and so on. I just sit back and listen. [...] I still think [they] could watch, or [be] more careful of a bottom line, in assuming so much debt.

Today, as participant CR2, a former educator in farm management pointed out, debt management means that farmers are challenged with cutting back on frivolities such as vacations or a new television, but in the past the price squeeze was more likely to result in farm families cutting back on necessities, such a feed for animals or clothing.

No, the livelihood is still tough; farming will always be tough... Farming has always been tough and I used to actually teach farm management courses, and I used to tell them, I said hard times on the farm do not go in at the farm kitchen or into the clothing or things. You may not go to Arizona or something, you may not buy the new car - but not the

necessities - the necessities will not change. So, no, we have it pretty good.

Other participants felt that they would like to see a return to smaller farms, which would allow for better farm management while permitting advances in farming practices. A1 felt that farms were getting too big:

Well I'm disappointed – if there's anything at, it kinds of bugs me – I don't like these people farming 20, 30, 40 quarters. I don't know. Do you have to do this, you know? I don't think it's good for the country. I don't think it's good for the business of farming either... So many people could be making a good living on far less land than they farm.

SW5 agreed and felt that big farms were part of the problem of rising debt:

And quit farming so big! Because all they're doing is putting their money into fertilizers and chemicals and then they don't got nothing left for themselves. That's the way I see it. I always say that if they farmed a little bit smaller, that they'd be farther ahead.

While this would allow more people to farm, it would decrease the income of everyone which would be difficult for many because of increasing costs.

7.2 Changes in Adaptive Capacity

While climatic risks remain (and may be increasing due to anthropogenic climate change), technology has changed drastically resulting in a very different kind of farming. Increasingly this modern technology has made farming more profitable, including advances in seed development and farm machinery (Jaffe, 2003). This has allowed farmers to increase their financial/economic capital, although the price squeeze of small selling prices relative to higher input costs, remains a challenge (Cushon, 2003). Changes at the farm level also include changes in techniques, such as the replacement of summerfallowing (the process of letting the land lie fallow for one season in an attempt to restore nutrients and control weeds) by direct-seeding or zero-tillage (in which the use of an air-seeder removes the need to till soil before seeding) (Cunfer, 2003). Farming has also become less labour intensive through the introduction of mechanization and chemical pesticides (Argue et al., 2003). This enables farmers to work until they are much older, therefore making more money over their lifetimes (Jaffe, 2003).

Farm families today commonly rely on off-farm work to manage their finances, which is made possible by increased education for farm families and women. Cultural capital has also increased as subsequent generations have acquired more education than their parents, as discussed in the previous chapter, and farmers can now afford more modern equipment and technology on their farms and in their homes. This increase in cultural capital has also enabled them to find work off-farm in order to continue to support the farm and help address the price squeeze. Another change since the 1930s is the presence of women in the workforce and on the farm itself since farming has become less manual. While the majority of farmers continue to be men, women now play an important role by offering a second income, which again, helps farmers address the price squeeze (Jaffe, 2003). However, this puts more pressure on farmwomen to work longer hours in order to meet their responsibilities at work, on the farm, and at home. Since farms are now run as a business, these pressures are even greater (Jaffe, 2003). While farming remains challenging, the increases in cultural capital and the presence of women in the workforce and on the farm have increased farmers' economic capital, which may serve to increase household level adaptive capacity.

Although, the price squeeze is still a problem, participants had a variety of thoughts on how the adaptive capacity of today's farmers has increased thanks to the wider variety of farming techniques and technology available. One participant suggested that those who practice organic farming make more money and therefore are less vulnerable to increased costs. There was also the familiar sentiment of trusting in technological advances to get farmers through any difficulties they could possibly face. Many believed that there is little to be concerned about since inevitably new seed varieties, chemical fertilizers or pesticides, or new farming techniques will be developed which allow farmers to continue to succeed. This however, would also result in increased costs as these technologies are often more expensive.

Participants also offered a variety of other suggestions, both new and old, that could further increase farmers' adaptive capacity. It was implied that today's farmers expect to make more money than their predecessors but that perhaps they should be satisfied with less. Without saying it directly, many participants

suggested that farmers today are greedier than people were in the past. CR11 said that people today have much higher expectations:

I think these old people were so bent on surviving to worry about anything else. Survival was the thing. Get enough to feed the kids and keep everybody happy, that's it, whereas now, they want to go offshore for a holiday in the winter or down south [...]

Participant CR7 suggested that farmers ought to work more cooperatively by sharing farm equipment since this is one of the largest expenses that farmers face:

They just, the younger generation, just doesn't want to cooperate. They'd be better if they could all work as a [cooperative] and I know how long that lasted after the war, the co-op farms and that, their wives started raising Cain and then it got onto the men, so it all broke up. But really, they would be better off if they could put their machinery into a co-op thing and work together.

This may be a reaction to the recent corporatization of many farm cooperatives, which once enabled farmers to act collectively. Related to these comment, many participants felt that since they had gone through difficulty during the Great Depression, they were better people because of those experiences. For example PA1 stated:

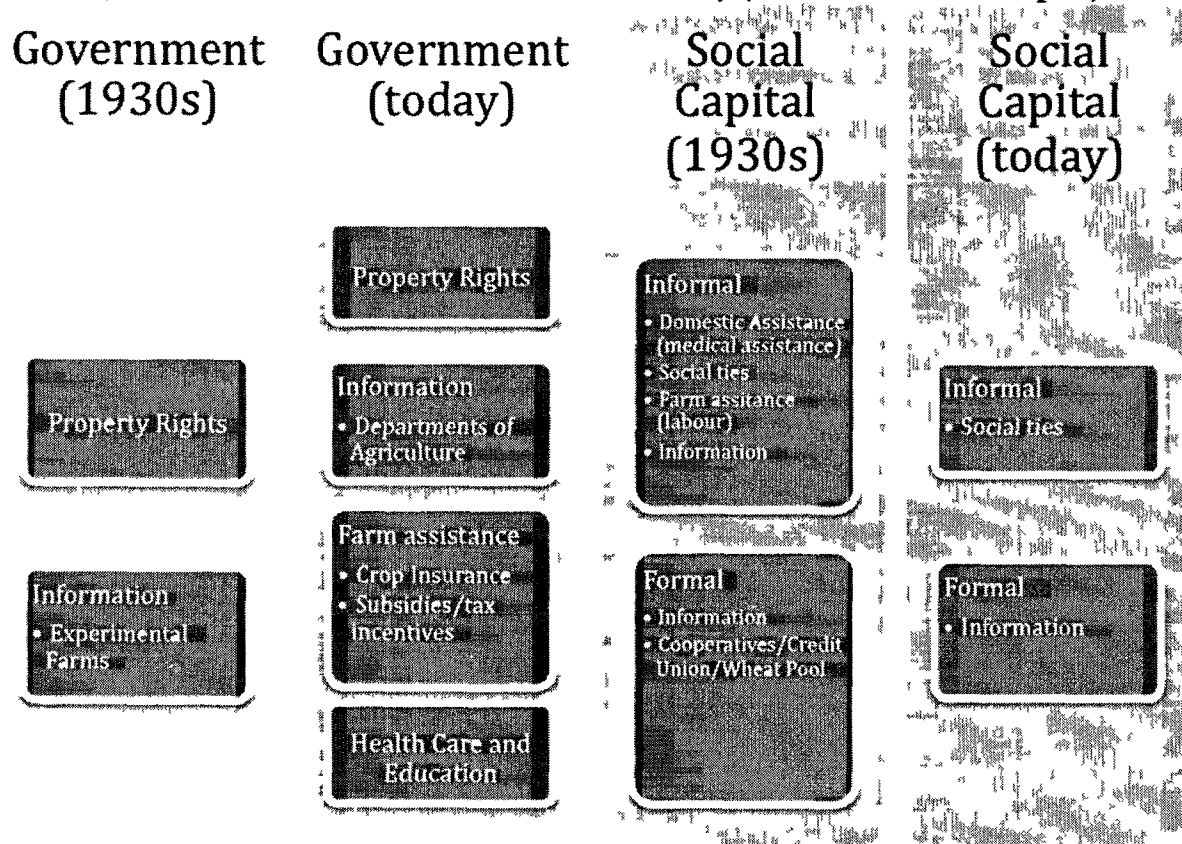
I always say that, how fortunate I was. I was lucky enough to be born and brought up so terribly poor. So terribly poor. So poor that I never got any bad habits like smoking or drinking or driving cars now. Just cause we had nothing, we had none of that stuff. How fortunate I was. I never got addicted or anything because I was so poor!

7.2.1 The Changing Role of Social Capital and Government in Rural Saskatchewan

It has become evident through this research that the role of social capital on the farm has changed considerably since the 1930s. At that time because farmers had limited financial/economic capital, cultural capital was not available in a useful form, and because governments offered little support, social capital was the most important source of farmer adaptation. However, much has changed. One important change since the 1930s is the increasing role federal, provincial, and municipal governments play in the maintenance and support of farmers. There has been a dramatic increase in the number of farm support programs offered by the federal and provincial governments, as

well as provincial government crop insurance which protects farmers from ongoing market irregularities (Schulz, 2004, Griezic, 1975). Figure 7.1 illustrates the services (formal and informal) that all levels of government now offer and how they changed over time. Social capital is from both informal sources, friends and family, and formal sources, membership to organizations. The lists of roles of both governments and communities are not exhaustive, but does give a fairly comprehensive list of services provided. These services are highlighted to show those that play a significant role in increasing the adaptive capacity of farm households in the face of economic and environmental uncertainty.

Figure 7.1 The Role of Governments and Social Capital in Increasing Adaptive Capacity of Farm Households in the 1930s vs. Today (some common examples)



One observation that participants repeated, and which is demonstrated in Figure 7.1, is that the nature of social capital has changed; although people are still willing to help others in the community, there is less demand for this type of help. Participants suggested this is because farmers now turn to government assistance first before asking their neighbours for help. Before and during the 1930s, the provincial government's role

was essentially to regulate property rights and some limited information about agricultural practices from experimental farms. Now, the government does this and supplies information through the former PFRA and other services offered through Agriculture and Agri-Food Canada, the federal department of agriculture (Sauchyn and Kulshreshtha, 2008). The federal and provincial governments also offer crop insurance, farm subsidies, and tax incentives. Education and health care are now provided by government, which gives farmers peace of mind and also puts less pressure on their economic capital.

The role of the community has decreased in importance (Figure 7.1). In the 1930s, the community offered help for both family (domestic) and farm life. If someone was injured or if there was too much work, neighbours or relatives could be relied on to help out. Community was also the main source of information, even though experimental farms existed, their most powerful method of communication was word of mouth, making them dependent on social capital. Social capital offered social ties and a sense of belonging that helped many families deal with difficult situations and also offered them peace of mind. Today community still plays this role and it also acts to provide communication about farm improvements, although this purpose has become less important as governments have improved their ability to communicate with farmers about farm programs, most recently through the internet.

This balance may change again due to the lack of institutional adaptations to climate change and the increase in neo-liberal policies in Canada. Marchildon et al. (2008) suggest six barriers to innovative institutional adaptation: lack of political leadership or experience; confusion around responsibilities between levels of government; lack of scientific capacity, particularly within governments, to understand the extent of the change; lack of financial resources; and lack of awareness and recognition of drought vulnerability and climate threats by policy makers. Some of these institutional barriers to adaptation are present due to neo-liberal policies which reduce the ability of government programs to meet their mandates. Since governments are now increasingly stepping away from their roles and allowing NGOs and other community organizations to take over, there may be a period of time where there is a

lack of services provided to farmers and rural communities. This may result in an increased role for informal networks to help farmers and rural families face uncertainty. Halseth and Ryser (2007) found that since the 1980s services provided by the government have decreased in rural BC which is particularly difficult for citizens since many of them work in the resource sector and are therefore more vulnerable to economic changes. This in turn means that they are more in need of services such as employment insurance and human resources centres. Services have become increasingly regionalized in rural BC and as a result there is an increase in partnerships between volunteer organizations and governments in an effort to provide services to communities.

The resulting shift in government away from providing services such as information, farm assistance, health care and education would result in these being offered by both government and community. This can be seen as a hybrid type of social capital since success of these programs rely on informal networks and trust between community members who administer the programs but with a continued (although decreasing) role for government. However, there are still many challenges facing these organizations such as lack of funding and decreasing numbers of volunteers in rural communities due to declining populations (Halseth and Ryser, 2007). Examining how rural communities can adapt to climate change with little government help and the role that social capital will play is a question that can only be answered through further research.

Participants were asked specifically about how they felt about changes in social capital in rural communities and if it had decreased since the 1930s. The question was asked using the term community spirit, which was explained to include how welcoming a community is and the level of volunteerism and involvement of citizens in community organizations. Ten participants each said that they were either unable to answer the question or that it had changed in some way, which demonstrated the difficulty they had describing this change. CR3 and CR4 are two examples of participants who felt that social capital had changed, but had difficulty describing this change:

Oh yes, yes. I think that they would always dig in and help each other. All of us here are older and grew up with that... I think we try to fit people in and make them feel welcomed. There's no farms left anywhere, you know, there's no place left for farmers to move to. There are jobs if you want to hunt for them (CR3).

People get so that they can get along and do things and you get your back against the wall there's someone who wants to help you or vice versa, you see someone who's down, you help them. It's just a different way now, eh? I mean the last few years things, there's been lots of money around so people don't do that, but you'll see at Christmas time, people help each other and donate and that, so I don't think that part is going to change (CR4).

Some said that social capital was still strong and only three said that it had decreased. CR8 felt that social capital was decreasing and that people no longer cared about their community in the same way:

Everything is on wheels. The people in Carrot go to Nipawin, the Nipawin people go to PA, the PA people go to Saskatoon, Saskatoon goes to Calgary and Calgary goes to Edmonton and everything is on wheels. And the basis of all that is people got too much money.

SL2 was one of the few participants who felt that social capital was still strong: "The community here works together good, I think. And I can see it more since we moved in here than what I did at the farm. Because when we were at the farm, I very seldom came into town." The majority of participants felt that whether or not it was still present, social capital was strong at the time of their migration.

7.3 Changes in Adaptation Options

While household level adaptations have changed very little over the years, there have been dramatic changes in institutional and community level adaptations. Since 1868, when the Department of Agriculture was created by a federal act of Parliament (Agriculture and Agri-Food Canada, 2009), a variety of Acts and regulations have been created with the goal of helping farmers. For example, in 1912, the Canadian Grain Commission was given authority to regulate grain handling in Canada (Canadian Grain Commission, 2009). Their mandate was to ensure the quality and quantity of grain while undertaking research in grain quality and protecting producers (CGC, 2009). With regard to helping farmers protect the land through innovation, the Prairie Farm

Rehabilitation Administration (PFRA) was created in 1935 by the federal government as a response to the ongoing drought during the 1930s and the high rates of crop failure (PFRA, 2009).

Meanwhile, the Prairies have a long history of populist responses to both economic and environmental uncertainty including social welfare (Atkinson and McCrorie, 2003; Schulz, 2005). Collective action was often taken at the community level, either informally through the use of social capital networks to help neighbours, or formally through the creation of cooperative banks (credit unions), farm machine companies (Canadian Co-operative Implements Ltd.), or cooperative elevator companies (Atkinson and McCrorie, 2003). Simultaneously, grassroots political party development saw the birth of the CCF (Co-operative Commonwealth Federation), the precursor to the New Democratic Party today. The CCF believed that the government should provide services equally to all citizens, including health care, educations, and insurance (Waiser, 2005). These ideas and the continued development of government social programs throughout the 20th Century changed the interdependency between rural citizens. Expectations of neighbours changed as a result; people became less reliant on their neighbours because they knew that the government would help them if things got hard.

However, since its peak in the 1930s–1950s, the cooperative mentality has been in decline in Saskatchewan and in Canada as a whole, and policies have begun to encourage competition (Atkinson and McCrorie, 2003). Those agriculture policies that were created to support farmers have disappeared, faced challenges, or have been significantly changed in the last 20 years due to changes in federal government policies. These include, the Crow rate (which equalized the freight rates) (Beingsner, 2003), the Canadian Wheat Board (Venema, 2007; CWB, 2009), and the PFRA (Chabun, 2009). Society and institutions have also changed greatly since the 1930s in ways that have decreased social capital in rural communities by making it less important for the survival of individual families and farms. Decreased social capital makes rural communities more dependent on institutional support to help them adapt to climate change. Many participants felt that this change would affect future migration as farmers would be less

likely to move because they can stay on the farm and rely on government support or if they do move, they will likely choose to move to the city to find work.

Smit and Skinner's (2002) typology of adaptation options considers mostly household or institutional level adaptations, and excludes community level adaptations which were prevalent in the experiences of participants in this research. In the 1930s, the community level adaptations, that reflect the role of social capital, were the most important and accessible adaptation option, with household adaptation also playing a significant role. Social capital is found at the community level since that is where participants found relationships, informal and particularly formal, that increased their adaptive capacity. Today the role of social capital has been squeezed out by the increasing emphasis placed on government level adaptations and the constant importance of household level adaptations. I developed Tables 7.1 and 7.2 using Smit and Skinner (2002) to show the changes in adaptation options available to farmers in the 1930s and today.

Table 7.1 Household, Community, and Institutional Adaptations in the 1930s

Adaptation Level	Adaptation Types	Examples of Adaptations
Household Level	Farm Production Practices Farm Financial Management	Dugouts, shelterbelts, diversification (mixed farming, new seeds) Off-farm work
Community Level	Social Capital	Help from extended family, friends, neighbours, church members, political party members, community organization members, members of cooperatives, acquaintances
Institutional Level	Technological Developments Government Programs and Insurance	Crop (seed) development Relief

Adapted from Smit and Skinner (2002)

Table 7.2 Household, Community, and Institutional Adaptations Today

Adaptation Level	Adaptation Types	Examples of Adaptations
Household Level	Farm Production Practices	Diversification, land use change, land topography modifications, irrigation, timing of operations
	Farm Financial Management	Crop insurance, investment in crop shares and futures, income stabilization programs, household income (off-farm work)
Community Level	Social Capital	Help from extended family and friends
Institutional Level	Technological Developments	Crop (seed) development, improvement in weather and climate information systems, resource management innovations
	Government Programs and Insurance	Agriculture subsidy and support programs, private insurance, resource management programs

Adapted from Smit and Skinner (2002)

In the 1930s (Table 7.1), most adaptation options were provided at the community level in the form of different types of social capital networks. Today these networks are less prevalent and their importance has decreased significantly. For example, participants observed that farmers today are more independent than they were in the 1930s and that they rely less on their neighbours. SW9 expressed thoughts about community and sharing. "They don't need each other, you know what I mean? They're too self-sufficient." High levels of social capital may also have resulted in the growth of cooperatives during and immediately following the 1930s which allowed farmers to act together in the face of market and environmental uncertainty. In the 1930s household level adaptations were important, but they were often limited by access to economic capital and by limited knowledge to put them into practice. Today farmers have increased economic and cultural capital and these options are more easily implemented (Table 7.2). Finally, institutional level adaptations have increased dramatically since the 1930s when governments were providing limited technological developments and very little support. Today there are improvements in how provincial and federal governments, private companies, and universities perform research into new technologies and communications for farmers. The changing role of social capital is discussed further in the following section.

Participants were asked to share their thoughts on the outcomes of another 10-year drought combined with hard economic times, but most felt that they were unable to answer the question. Of those who did respond most thought that farmers would simply give up or move to the city. This belief is based on the observation, made by many participants, that this trend is already happening with rural communities becoming smaller and the population older, as young people move away to find work. SW1 thought that government would help farmers: "Well, there's too many handouts nowadays. You don't have to [move]. Government handouts." SB1 agreed that another Great Depression was unlikely: "It's a different world. We didn't have electricity, we didn't have central heating; we burnt wood. I don't think it could ever happen again. Everybody would be on welfare." Two respondents felt that farmers may consider moving north again in the future, with another two saying that a drought would have no significant effect on farmers today. CR8 brought up the possibility of farmers moving to northern BC or to cities:

[T]here's places up in Northern BC that they say are looking for, like the farms are so big some of them up there and that's not the best either. Which is starting to happen in Saskatchewan that I don't like, everything is conglomerating in a few cities.

A few thought that a drought would have less of an impact on farmers because they had access to improved technologies, such as more drought-resistant seeds, better machinery, and improved farming techniques. It is likely the case that current droughts will have less of an impact on farmers and that only those who are already in a situation of low financial capital will be affected. PA1 felt that a drought would not be such a problem as in the past: "Well, they won't have that problem anymore because the farms are different. It's really the drought hit the farmers, they're farming things now so different that the drought wouldn't bother them the same."

7.4 Other Experiences: Women and First Nations

The lives of many formally marginalized people have changed dramatically since the 1930s. Women and First Nations' people had few rights in the 1930s and while the right to vote, own property, and even the ability to take out bank loans have come about since this time, these groups still face challenges. These stories are important to

highlight since they are often overlooked, but also because these groups will change the future of farming due to the increased role they play in agriculture today.

7.4.1 The Experience of 1930s Farmwomen

As discussed in the previous chapter, women in the 1930s were more likely to experience feelings of isolation, even though their family might have high levels of social capital, since they were less able to leave the farm because they were responsible for maintaining the household. In addition, travel was more difficult so families generally left the farm only rarely. An additional hardship was that when women married they usually left their families to join their husbands. Many women still felt homesick for the places where they had grown up. It appears that those who came from a region that appeared similar to the Aspen Parkland were more likely to be happy with the move there because it reminded them of their childhoods. SL1 describes her mother's reaction to the move north: "[T]he country here was more like Manitoba where she was, grew up, and so it, she liked the North country better and all the wildflowers were the same [...]" It was helpful to the happiness of women if they had family nearby, which was the case for three participants' mothers. Some women were highly involved in community organizations because they were more outgoing, and these women expressed fewer sentiments of isolation. CR3 described her mother's experiences by saying that although her mother was initially unhappy with the move "she had lots of energy and she would not stay home and let life happen somewhere else, she went and she joined in." CR3 felt that this changed her mother's perception of the new location and made the transition easier. Therefore, physical isolation was less important than social isolation to women's happiness, that is if women could make new friends, the geographic distances and cultural differences seemed less restrictive.

Also, when women were more involved in the decision-making process, and felt that their needs were considered, they were more likely to be satisfied with the results. This power-sharing on small family farms in the 1930s was fairly common because people had to rely on each other more than in the city (Sachs, 1983). Both parents were involved in keeping the farm running and both had a source of income (men – wheat and cattle, women – dairy, eggs, and other produce). Generally, the mother and father

of participants made most household decisions jointly; but when they were not made together usually the father took the lead. Describing how her parents made decisions together, SW5 states: "I remember that all their married life, you know, they discussed things together." SL2 describes how although her parents talked about decisions, her father probably had the final say: "I would say that they did a lot of talking back and forward, I would think so... probably, when it come right down to it, I think probably Dad made the final decision." Nevertheless, there were a few cases where the mother was the primary decision-maker. Particularly when prices fell women's role was increased because their neighbours still needed food and could still pay for it even if the market price for wheat was poor. This may have contributed to women's overall feeling of happiness since they felt that they were making a more meaningful contribution to the family. SW10 and SW11 describe how their mother was sometimes the boss:

Mom looked after the money up here; she looked after paying bills and things. I don't know who looked after business, that was something they would talk about on their own, I guess. They didn't really discuss it, they wouldn't have to... there was never an argument about it.

As many participants stated, the role of women on the farm continues to gain importance, as more and more family farms require women to find off-farm work to supplement the farm's income. Women are also taking a more active role in farm decision-making and helping out with farm work, which was at one time restricted to men. Unfortunately this has put additional stress on women as they are now faced with a third responsibility of farming in addition to their off-farm job and household tasks (Jaffe, 2003, Sachs, 1983). While women continue to do informal farm work, their increased economic role on farms is one way that farmers' ability to adapt to drought and climate change may have increased since the 1930s.

7.4.2 The Experience of 1930s First Nations Farmers

This research also considered, in a limited way, the experience of First Nations farmers during the 1930s. Since it was impossible for farmers living on reserves to migrate, First Nations farmers did not explicitly fit the criteria for participation. The situation facing First Nations farmers was particularly difficult due to restrictions placed on them by the federal government that forced 'peasant' farming. Carter (1990) explains

that beginning during WW1 land was leased to off-reserve, non First-Nations, farmers, if it was seen as being under-productive. Generally, these actions were taken because of racist sentiment and pressure by European settlers and returning veterans who felt First Nations had an unfair access to land; however, the federal government was reluctant to give in since this meant that they would have less control over this land (Carter, 1990). The participant who was interviewed stated that he was unable to find a bank that was willing to give him a farm loan until the 1950s so he could begin farming on reserve land. At this time, farming by First Nations was still discouraged by the federal government. The participant stated that he did not recall much about the drought and depression era likely because he was less exposed because of his location within the Aspen Parkland and because of the farming restrictions.

First Nations farmers continue to face challenges due to public perceptions, however governments have made efforts since the 1930s to improve farming conditions on and off reserves most notably through the Saskatchewan Indian Agriculture Program (SIAP) in the 1970s (SIAP 1989). SIAP's goal was to provide meaningful and professional support for Aboriginal farmers as a way to move forward with First Nations self-government (SIAP, 1989). Participant M1 also had concerns about the future of farming on reserves since current leadership believes it is best to lease land to off-reserve farmers than to encourage First Nations people to continue to farm. For example, Sprott Resources Corp. from Toronto has established One Earth Farms Corp. to rent land on reserves and employ First Nations farmers to work on this land which will be run as an agribusiness (Sprott Resources Corp., 2008).

Conclusion

Changes in vulnerability are a product of changes in exposures and changes in adaptive capacity which result in different adaptation options for farmers today. Exposure has changed due to the decreased number of farms and increasing farm size, the changing nature of technology and its increasing prevalence on farms, and the amount of financial capital invested in farms; however, climate remains uncertain and its changes are unpredictable. Changes in adaptive capacity include more farm support programs that provide economic capital available to farmers, technology improvements

(from seed development and chemicals to equipment), the increased role of women, and the increase in off-farm work of farm household members. The resulting changes in adaptation options result in more adaptations taking place from the list provided by Smit and Skinner (2002) including technological developments, government programs and insurance, farm production practices, and farm financial management. There is also a decreasing importance of social capital and community level adaptations. Government level adaptations have increased in importance over community level adaptations, while household level adaptations have remained steady since the 1930s. However, due to increased economic and cultural capital for farmers, household level adaptations are more easily carried out. Finally, due to the increased role of formerly marginalized groups, specifically women and First Nations, all levels of adaptations will be different from those seen in the 1930s.

Chapter 8: Conclusions

Due to a decade-long drought and severe economic depression in the 1930s, many farmers in southern Saskatchewan were going into debt. In order to overcome these conditions, as many as 8 000 migrants moved to the northern Aspen Parkland where conditions were milder and where they could cut firewood to sell as a means of supplementing their income (Waiser, 2005). The objectives of this research were threefold: to better understand the vulnerability and adaptive capacity of 1930s Saskatchewan farmers; to examine the role of social capital in migration decision-making and integration into new communities in the Aspen Parkland of these farmers; and to find out how these experiences may be relevant to farmers today facing climate change. In order to accomplish these goals, interviews were conducted with 40 participants who migrated from southern Saskatchewan to the Aspen Parkland in the 1930s and who had been motivated by drought conditions and an economic depression. This research is particularly timely because the current environmental and economic risks facing farmers are very similar to those in the 1930s. In addition, the people who lived through the Depression are in their 80s and 90s and soon this source of information will be lost. This chapter reviews the major findings of this research project while putting the discussion in the context of modern Prairie agriculture.

This study looked specifically at the ways in which social capital assisted this migration. Farmers who participated in this study were relatively poor at this time and had few employment options outside of physical labour jobs, making it almost necessary to keep farming. The land in the Aspen Parkland was available as a homestead, at a cost of only \$10, making it very appealing to drought sufferers. Farmers used social capital networks to find out about the availability and affordability of land, to help with the migration, and most importantly to assist them in integrating into the new community. This research is important because it can serve as an analogue to help increase our understanding of how farmers can address current climate change. The Prairies continue to experience frequent and severe droughts that negatively affect farms. This research can therefore offer lessons regarding how individual farmers can adapt to climate change and the potential role for institutions in this process.

8.1 Major Findings

Farmers in the 1930s were vulnerable to climate change through continued exposures while their adaptive capacity depended on their access to economic, cultural, and social capital.

The vulnerability of dryland farmers to change in environmental conditions is ongoing. In the 1930s farmers were exposed to drought, pests, crop failure, loss of soil quality, low prices, unemployment, and health problems. Their adaptive capacity was limited by lack of access to resources, including information and technology, education, social networks, and lack of knowledge and experience with dryland farming. Put differently, adaptive capacity can be understood as a farmer's access to economic, cultural, and social capital. Poverty in the 1930s limited economic capital and participants' parents also had little cultural capital as demonstrated by their lower levels of education and training. Social capital, that is the informal and formal connections to the community, was crucial to helping farmers adapt. The findings of this research project show that social capital helped farmers adapt through migration to the Aspen Parkland. While the exposures experienced by farmers today remain the same as in the 1930s, adaptive capacity can be seen as increasing over time. Farmers now have more access to economic and cultural capital. However, rural social capital is in decline and is therefore less relevant to farmers' current ability to adapt to climate change.

Smit and Skinner's (2002) farm adaptations were not readily available to farmers in 1930s.

This research looked at how farmers and rural communities can adapt as a function of their levels of economic, cultural, and social capital. Smit and Skinner (2002) suggest the following agricultural adaptations to climate change: changing farm production practices, farm financial management, technological developments, and government programs and insurance. The former two options take place at the household level while the latter two are at the institutional level. However, this model does not reflect circumstances in the 1930s when many adaptations were taking place at the community level through access to social capital. This was due to the limited number of institutional level adaptations and the fact that many household level

adaptations require access to economic capital. Governments and other institutions have since helped increase farmers' adaptive capacity through support programs which put less strain on farmers' financial capital and through advances in technology. Farmers have also increased their household level adaptation due to expanding economic and cultural capital. Community level adaptations have been squeezed out by the increase in institutional level adaptations and have coincided with a decrease in social capital. This means that institutions will need to take the lead to help farmers adapt to current climate change since this is where many will turn when the situation becomes more desperate.

In the 1930s, social capital helped with migration decision-making, particularly with participants' integration into the new community.

Participant farmers' limited access to economic and cultural capital restricted the adaptation options available to them as the drought progressed. Adaptive capacity was also limited by the fact that many farmers were relatively new immigrants who had little experience with Prairie farming. However, participants were able to use their social capital to help them adapt. For many, the best option was to move to a new farm outside the drought region. It was through informal social capital networks, including family, friends, neighbours, and acquaintances that families were able to learn of the land available in the north and in many cases these social networks also made the migration itself possible. Social capital most contributed to the successful migration of farmers by allowing for easier integration into the new community. Families were able to quickly make new friends and neighbours once they had moved north, often through their involvement in formal social capital networks, including community organizations, church groups, and political organizations, which allowed them points of access to other resources, such as labour, skills, and knowledge. Social capital not only provided social support, it also contributed to farm help including the construction of barns and some homes that was done by community members. The social cohesion of the communities in the Aspen Parkland was very high at this time and led to successful migration experiences for all participants. Without the social networks that were created in the

north, many families may not have stayed or may have taken much longer to successfully establish themselves.

Institutions (governments) have replaced the role of informal and formal social capital in increasing household adaptive capacity and are therefore key to keeping rural communities healthy.

In the 1930s institutions, particularly governments, played a minimal role in helping participant farmers adapt to changing climatic conditions. There was little farm support or insurance available; governments' primary ways to help farmers were through the experimental farms, basic relief, or the program that helped farmers move north by train – none of which had significant impacts on farmer's adaptive capacity or their eventual decision to migrate (Waiser, 2005; Schulz, 2004). Had institutional responses been stronger in the 1930s, in the form of current farm support programs, for example, it is likely that fewer farmers would have chosen to migrate. Institutions can help farmers safeguard financial capital through farm support programs, and improve cultural capital by increasing farm skills and knowledge thereby strengthening adaptive capacity, as suggested by Smit and Skinner (2002). Participants spoke about the current situation of farming with optimism due to these farm support programs. Many felt confident that because of these programs, farmers would feel fewer effects of a recession or climate change. However, with the current neo-liberal trend of decreasing government participation in agriculture and rural communities, the role of social capital may once again become preeminent. As governments propose more neo-liberal policies that reduce services in rural areas (including hospitals, schools, and other federal services such as post offices), volunteerism and helping neighbours may once again become important for the survival of many rural communities

Household level adaptations are still important for farmers in Saskatchewan.

Again and again, participants spoke of their own experiences with household debt and how they fear that their children face these same challenges, thus making household level adaptations such as changing farm production practices difficult. Due to the nature of farming, prices of inputs are continually rising and uncertainty means

that farmers do not always know if their investment will pay off with a good crop that they can then sell for a good price. Fortunately, government programs have helped farmers address this uncertainty through a variety of support programs. Farmers rely heavily on these programs and it is likely that without these programs there would be a further decrease in the number of farmers in Canada. In the 1930s, when government programs were at a minimum, farmers saw the formation of cooperatives, a type of formal social capital, as a solution to dealing with an uncertain market. Although not included in Smit and Skinner's (2002) list of adaptations in farm financial management, cooperatives have served that role in the past and one that many participants used (specifically credit unions and the Saskatchewan Wheat Pool).

8.2 Limitations and Opportunities for Future Research

One of the major limitations of this project was the study of the social capital of non-migrants. It was also difficult to gauge the level of social capital that participants had on the source farm since memory decay resulted in them placing less importance on this social capital, likely because they had difficulty remembering and describing it. While it was originally my intent to visit some of the source farms to discuss the experiences of non-migrants due to time constraints and other logistical problems this did not take place. A good opportunity for future research would be to explore these experiences.

Greater research on the role of neo-liberal policies in rural Canadian communities would provide additional insights into the potential adaptations that may be available to farmers in the future as governments pull back from the services they previously provided. Whether or not social capital will return to rural communities and become a driver of adaptation remains to be seen, and merits study in present day case studies. In addition, the role of women in supporting greater adaptive capacity for farm households can be further examined. Furthermore, the adaptive capacity and vulnerability of First Nations farmers in particular is worth investigating, since their agricultural and socio-cultural history varies greatly from European settlers. Another interesting avenue for research is the role of cooperatives as an institutionalized form of social capital that could help today's farmers adapt to climate change. It is unfortunate

that cooperatives in Saskatchewan have declined in the past 20 years because they may be an effective mechanism to address climate and market uncertainties and their impacts on rural households, by allowing farmers to act collectively rather than as individuals.

I would like to conclude with a quote from a personal email from author and rancher Sharon Butala who has written about Saskatchewan's landscape and people. Her comments reflect the longing of many rural communities for a time that may never have really existed, when communities were strong and united:

Most farmers are businessmen first. They happen, most of them, to really love their business, and they are also motivated by an immense pride in what they do, as vital to salvation of human beings. They want to make money - some more so, and some less - and they love nature about the same as everybody else. The older farmers knew it much better than some farmers do today, I suppose. And they are also motivated by the pride in knowing that their families began as virtually penniless homesteaders and look where we are today. (Butala, personal communication, March 5th, 2009)

Appendix

A: Interview Questions

Questions will follow the chronology of discussing first the source farm, then the migration, and finally the destination farm.

Icebreaker questions

- Tell me about yourself, your family today and your current situation.
- Tell me about your experience of the 1930s; tell me about your childhood. Do you have a particular memory from that time period?

Source Farm

- Where was the source farm?
- Was this the first place your family had settled? Who settled the source farm? A relative or yourself? How many years had your family been there?
- Was the farm successful? Explain
- What type of agriculture were you engaged in during the 1930s? Which crops/livestock?
- What was the topography (vegetation, hilly, flat, etc) of the land? How did this affect farming during the 1930s? How did this affect you and your family's response to environmental changes? (For example, if you had hilly land was the drought different than if you had flat land?)
- Did you move more than once during the 1930s?
- Do you now or did you previously own the farm (i.e. did you sell it after you had moved)?
- Can you describe the environmental changes (weather, soil fertility, vegetation, etc) that you experienced during the 1930s? Which changes impacted you the most?
- Had you experienced drought prior to the 1930s? After? How did the drought of the 1930s differ from these other experiences?
- Did you suffer crop failure? Define what you mean by failure (nothing to harvest, just enough for next year's seed, less than the cost of seeding it in the first place?)
- Can you describe your farm family's economic well-being? (For example, did you have enough to eat or were you hungry? Did you have any cash? etc.)
- How close was the source farm to urban centres during the 1930s? How did this affect your access to social services? Did you visit urban centres often for goods and services?
- Did you ever go back to the source farm?

Migration

- Tell me about moving to the Aspen Parkland.

- Did you experience migration out of dry areas during the 1930s? If you didn't experience migration first-hand, what is your relationship to someone who did, and what is your understanding of the process?
- When did you migrate?
- Were environmental factors (drought, insects, etc.) significant enough to motivate you to move? To what extent was drought a factor in the decision to migrate?
- Did you notice a change in soil quality in the 1930s? Can you describe this? To what extent did this impact your decision to migrate?
- What was your economic situation before the stock market crash and the drought? How did this change? Can you describe these impacts? To what extent did these play a role in your decision to migrate?
- Did you receive government assistance during the 1930s? Did this play a role in your decision to either stay on the land or migrate?
- Why types of technology did you use during the 1930s? Did you experience an increase or decrease in the use of farm technology, such as tractors or other farm equipment, during the 1930s? Did this increase or decrease your ability to adapt to change?
- Did you know of family or neighbours who moved during the 1930s? Did they move to the same place you did?
- Why did some stay while your family moved?
- Were there macro-level factors, such as changes in community structure or the role of different levels of government, which were barriers or facilitators to migration? (For example, did you accept government assistance to help you migrate?)
- What were you/your family's health conditions during the 1930s? Did they change with the onset of drought and depression? Did this play a role in the decision to migrate?
- What was your education level during the 1930s? Did education levels impact the viability of the farm during the 1930s?
- Did you or your family belong to any formal groups of farmers or a political party? (For example, SARM, the Grain Grower's Association, Saskatchewan Wheat Pool)
- How did household decision-making operate? To what extent was this an individual decision vs. a family decision? How did this affect the decision to migrate and the migration destination?
- How did you choose the location that you moved to? Was family, culture, religion, or language an influence on this decision Explain.
- Were there cases where only one member of the household migrated or was it generally household migration?

Destination Farm

- What were some economic changes that impacted you and your family? Did your economic situation improve after you migrated?
- Was it easy for the family to integrate into the destination community?
- Was your destination farm closer to an urban centre? Did this make it easier for you to access services?

- How did your mother feel about the move?
- Why do you think your family moved while others stayed on the Prairies?
- What was the role of the destination community's social and physical amenities in your decision-making? What had changed from the source community? For example, access to a church, social network, political

Conclusion

- Was migration successful for your farm? Do you feel that moving was a good idea in the long run?)
- Do you think that the lessons that you learned from your experience would be helpful to farmers today?
- What would farmers do if there was another drought today?
- Is the sense of community still strong here?

B: Answer Keys

The following is an example of how the information was collected and categorized during the interview.

Date and Location of Interview:	Marital Status and Family structure:
Name of Participant and Age:	Employment (past and current)
Background	
Date of move:	
Source farm:	
Destination farm:	
Time on source farm:	
Time on dest. farm:	
Source Farm Key words: Drought () Soil quality () Extreme weather events... () Pests() Low prices() Crop failure () Unemployment () Political parties () Farm organizations ()	

Family nwk () Religious nwk() Cultural nwk () Language () Health() Education ()	
Migration Key words: Drought () Soil quality () Extreme weather events... () Pests() Low prices() Crop failure () Unemployment () Political parties () Farm organizations () Family nwk () Religious nwk() Cultural nwk () Language () Health() Education ()	
Destination Farm Key words: Drought () Soil quality () Extreme weather events... () Pests() Low prices() Crop failure () Unemployment () Political parties () Farm organizations () Family nwk () Religious nwk() Cultural nwk () Language () Health() Education ()	
Conclusion and Other	

C: Participant Responses

1: Synthesis of responses to questions about the source farm

When were your parents married?	1908-1927
When was the farm settled?	1904-1929
Did you rent or own the land?	Owned: 21 (72.4%); Rented: 4 (13.8%); Unknown: 4 (13.8%)
Did the family have any farming experience?	Yes: 14 (48.3%); No: 9 (31.0%); Unknown: 6 (20.7%)
What was the land like on the source farm?	Flat: 13 (22.4%); no sloughs: 9 (15.5%); hilly/Coulees: 8 (13.8%); sloughs: 7 (12.1%); no trees: 7 (12.1%); poor soil: 6 (10.3%); rocks: 4 (6.9%); good soil: 4 (6.9%);
Where did you get your water?	Well: 13 (41.9%); spring: 3 (9.7%); slough: 2 (6.5%); unknown: 13 (41.9%)
What kind of farming were you doing?	Mixed: 20 (66.7%); wheat: 2 (6.7%); dairy: 1 (3.3%); beef: 1 (3.3%); unknown/NA: 6 (20.0%)
Was the farm successful at first?	Yes: 20 (69.0%); No: 6 (20.7%); unknown/NA: 3 (10.3%)
Had you seen drought before the '30s?	No: 19 (65.5%); yes: 2 (6.9%); unknown: 8 (27.6%)
Did you suffer crop failure?	Yes: 15 (51.7%); poor crops: 5 (17.2%); no: 1 (3.4%); unknown: 8 (28.6%)
How well off was your family?	Above average: 2 (6.9%); average: 13 (44.8%); below average: 4 (13.8%); unknown: 10 (34.5%)
Did you try any adaptations when the drought came?	Planting trees (shelterbelts): 5 (15.1%); Dugouts: 3 (9.1%); Growing other crops: 3 (9.1%); Other: 2 (6.1%); nothing: 8 (24.2%); unknown: 12 (36.4%)
Did you ever go back?	Just to visit: 9 (31.0%); no: 9 (31.0%); yes: 4 (13.8%); unknown/NA: 7 (24.1%)

2: Synthesis of answers to questions about migration

When did you migrate?	1927-1939
How did you migrate?	Train: 7 (23.3%); train for effects and vehicle for people: 7 (23.3%); wagon: 6 (20.0%); motorized vehicle: 5 (16.7%); train and walking the last portion: 3 (10.0%); unknown: 2 (6.7%)
Did you receive government assistance to help you move?	Yes: 9 (31.0%); no: 13 (44.8%); unknown: 7 (24.1%)
How did the stock market crash affect you?	Prices fell: 12 (40.0%); jobs decreased: 3 (10.0%); no effect: 3 (10.0%); unknown: 12 (40.0%)
Did anyone in your family ever get off-farm work?	Father: 11 (34.4%); Brother(s): 6 (18.8%); generally yes: 4 (12.5%); no off-farm work: 0 (0%); unknown: 11 (34.4%)
When was your first tractor or did you mostly use horses?	Before 1925: 1 (3.4%); 1926-1930: 4 (13.8%); 1931-1935: 5 (17.2%); 1936-1940: 4 (13.8%); 1941-1945: 3 (10.3%); after 1945: 3 (10.3%); never: 5 (17.2%); unknown: 4 (13.8%). Of the 14 who bought a tractor before or during the Depression (before 1940) 5 did not use that tractor (35.7%)
Why this land?	Someone knew about it: 16 (44.4%); It was available: 9 (25.0%); It was good quality land: 3 (8.3%); It was affordable: 2 (5.6%); other: 3 (8.3%); unknown/NA: 3 (8.3%)
Did you ever go on relief?	No: 12 (41.4%); worked off relief: 6 (20.7%); received food or animal feed: 5 (17.2%); received money: 3 (10.3%); unknown: 3 (10.3%)
Was social or community structure important to your decision to move?	No: 12 (41.1%); access to services/general sense of community: 3 (10.3%); Religious similarities: 2 (6.9%); access to school: 1 (3.4%); generally yes: 1 (3.4%); unknown: 10 (34.5%)
Did you have any health conditions that changed when you moved?	No change: 23 (74.2%); Death down south: 3 (9.7%); improved health: 3 (9.7%); worsening health: 2 (6.5%)
How much school did your parents have? You and your siblings?	Mother: Gr. 1-3: 1 (3.4%); Gr. 4-6: 3 (10.3%); Gr. 7-9: 8 (27.6%); Gr. 10-12: 4 (13.8%); post-secondary: 6 (20.7%); unknown: 7 (24.1%) Father: Gr. 1-3: 1 (3.4%); Gr. 4-6: 8 (27.6%); Gr. 7-9: 9 (31.0%); Gr. 10-12: 2 (6.9%); post-secondary: 4 (13.8%);

	unknown: 5 (17.2%) Children: Gr. 4-6: 2 (2.6%); Gr. 7-9: 25 (32.1%); Gr. 10-12: 31 (39.7%); post-secondary: 16 (20.5%); unknown: 4 (5.1%)
Did you attend church?	Level of involvement: Not involved: 13 (44.8%); Involved: 10 (34.5%); unknown/NA: 6 (20.7%) Denomination: United: 9 (40.9%); Anglican: 3 (13.6%); Catholic: 2 (9.1%); Lutheran: 2 (9.1%); Other Protestant: 1 (4.5%); Other: 5 (22.7%)
Were you involved in politics?	Level of involvement: Very involved: 10 (34.5%); Voted: 12 (41.4%); not involved: 6 (20.7%); unknown: 1 (3.4%) Affiliation: CCF: 8 (57.1%); Conservatives: 4 (28.6%); Liberals: 2 (14.3%)
Were you involved in the Grain Grower's Association, Wheat Board, Community organizations (credit unions, cooperatives, ladies clubs, etc.)?	Boards (school, church, co-op, credit unions): 10 (21.7%); Wheat Pool: 6 (13.0%); Grain Grower's Association: 3 (6.5%); Ladies clubs: 3 (6.5%); other: 2 (4.3%); not involved: 4 (8.7%); unknown: 8 (17.4%)
How were household decisions made?	Together: 15 (51.7%); Father primarily: 8 (27.6%); mother primarily: 3 (10.3%); unknown: 3 (10.3%)

3: Synthesis of answers to questions about the destination farm

How long until your situation improved?	Right away: 5 (17.2%); a few years later (once the land was cleared): 10 (34.5%); more than 10 years after the move (after the war started): 3 (10.3%); No change (no improvement, but it didn't get worse either): 7 (24.1%); unknown: 4 (13.8)
Was it easy for your family to integrate?	No: 0 (0%); people were friendly/neighbourly: 20 (69.0%); there was a sense of sameness that united people: 7 (24.1%); family was involved in the community: 2 (6.9%); unknown: 1 (3.4%)
Were you more or less isolated?	More isolated than down south: 7 (24.1%); less isolated than down south: 10 (34.5%); No change: 7 (24.1%); unknown: 5 (17.2%)

How did your mother feel about the move?	Happier than down south: 8 (27.6%); wanted to stay south: 2 (6.9%); wanted to go home (where she was born): 3 (10.3%); resigned: 8 (27.6%); unknown: 8 (27.6%)
Why did your family move while others stayed?	Differences in wealth: 7 (22.6%); poor farm management: 3 (9.7%); not as established as others down south: 3 (9.7%); looking for an adventure (a chance to start over): 3 (9.7%); other: 1 (3.2%); unknown: 14 (45.2%)

4: Synthesis of answers to concluding questions

Was migration a good idea for your family?	Yes: 23 (79.3%); No: 2 (6.9%); no choice: 2 (6.9%); unknown: 2 (6.9%)
Would you/they make the same decision again?	Same decision: 13 (44.8%); would have stayed south: 0 (0%); would have moved, but not to the same place: 2 (6.9%); not sure (parents disagreed about outcomes): 2 (6.9%); unknown: 12 (41.4%)
Are there lessons that farmers today can learn from your experiences?	Debt management: 13 (35.1%); Farm management: 3 (8.1%); Farming practices: 2 (5.4%); Return to smaller farms: 4 (10.8%); other: 5 (13.5%); unknown/no lessons: 10 (27.0%)
Is community spirit still strong in rural Saskatchewan?	Yes: 6 (20.7%); No: 3 (10.3%); Changed: 10 (34.5%); unknown: 10 (34.5%)
How would farmers adapt if there was another drought?	Move to new farms (likely north): 2 (6.9%); Move to the city: 3 (10.3%); nothing/give up: 5 (17.2%); farming is different and the drought would have little or no effect on farms: 2 (6.9%); unknown: 17 (58.6%)

D: Historical Wheat Yields and Prices

Year	Acreage	Yield (Bushels/Acre)	Production (Total Bushels)	Dollar Value of Wheat Produced	Average Price (\$/bushel)
1926	13,558,384	16.2	219,646,000	237,199,100	1.07
1927	12,479,279	19.5	252,500,000	244,914,500	0.97
1928	13,790,854	23.3	321,215,000	247,311,200	0.78
1929	14,445,286	11.1	160,565,000	165,400,700	1.03
1930	14,326,000	14.4	206,700,000	97,152,400	0.47
1931	15,026,185	8.8	132,466,000	50,327,200	0.38
1932	15,543,000	13.6	211,551,000	74,041,500	0.35
1933	14,743,000	8.7	128,004,000	60,163,500	0.47
1934	13,262,000	8.6	114,200,000	69,650,300	0.61
1935	13,206,000	10.8	142,198,000	85,333,500	0.60
1936	14,744,000	7.5	110,000,000	101,187,100	0.92
1937	13,893,000	2.6	36,000,000	37,800,700	1.05
1938	13,793,000	10.0	137,800,000	79,918,900	0.58
1939	14,233,000	17.6	250,000,000	146,490,600	0.59
1940	15,571,000	17.1	266,700,000	154,679,500	0.58
2006	9,415,000	31.8	299,141,700	1,214,499,000	4.06

Adapted from Archer, 1980; The Saskatchewan Agriculture and Food Stats Handbook, 2010; The Bank of Canada Inflation Calculator, 2010.

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