

**AN ASSESSMENT OF PARTNERSHIPS IN FLOOD
EMERGENCY MANAGEMENT, RED RIVER VALLEY,
MANITOBA**

by

Nancy Powell Quinn

A Thesis submitted to the Faculty of Graduate Studies of
The University of Manitoba
in Partial Fulfillment of the Requirements for the Degree

Master of Natural Resources Management (M.N.R.M.)

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MASTER OF NATURAL RESOURCES MANAGEMENT

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ABSTRACT

Floods are one of many natural and human-induced hazards that threaten Manitoba annually. Emergency management tasks are assumed by a variety of organizations to protect people and resources from catastrophic loss and death by undertaking preparedness, response, recovery and mitigation actions and activities. As the climate changes at an unprecedented pace, flooding and other hazards become more uncertain. In an effort to address these uncertain flood (and other) hazards facing Manitoba, a number of partnerships have formed among government, private, non-government, and community-based organizations to better address hazard and disaster issues in the province. Combining two research methods, namely, a modified Delphi technique and a multiple case study of five specific partnerships, this thesis assesses the use of institutional partnerships in a flood emergency management context in the Red River Valley, Manitoba. The objectives of this study aimed to identify and examine the types of institutional partnerships that exist, to assess partnerships using characteristics of success as performance indicators, to determine the role of interpersonal relationships and networking in successful partnerships and to provide recommendations for partnerships in emergency management. The analysis provided detailed assessments of five partnerships. The characteristics of successful partnerships indicated that four of the five partnerships assessed will likely be successful in the event of a future disaster. Partnerships with strong interpersonal relationships and networking among partners and related organizations are critical to the development and maintenance of successful partnerships. Overall, it is recommended that partnerships in emergency management continue to be cultivated and to expand partner members and linkages beyond the scope of emergency management institutions.

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TABLE OF CONTENTS

ABSTRACT.....	i
ACKNOWLEDGEMENTS.....	ii
LIST OF TABLES.....	v
LIST OF FIGURES.....	v
LIST OF APPENDICES.....	vi
CHAPTER 1 INTRODUCTION.....	1
1.1 BACKGROUND.....	1
1.1.1 <i>Flooding in Manitoba</i>	2
1.2 PROBLEM STATEMENT.....	5
1.3 PURPOSE AND OBJECTIVES.....	6
1.4 THESIS ORGANIZATION.....	8
CHAPTER 2 EMERGENCY MANAGEMENT AND PARTNERSHIPS: A LITERATURE REVIEW.....	9
2.1 INTRODUCTION.....	9
2.2 DEVELOPMENT OF FLOOD EMERGENCY MANAGEMENT.....	11
2.3 INSTITUTIONAL ROLES AND INVOLVEMENT IN EMERGENCY MANAGEMENT.....	16
2.3.1 <i>PUBLIC SECTOR</i>	16
2.3.2 <i>NONPROFIT SECTOR</i>	23
2.3.3 <i>PRIVATE SECTOR</i>	24
2.4 PARTNERSHIPS.....	25
2.4.1 <i>Background in Partnerships</i>	25
2.4.2 <i>Type of partnerships</i>	28
2.5 SUMMARY.....	31
CHAPTER 3 METHODS.....	32
3.1 INTRODUCTION.....	32
3.2 RESEARCH DESIGN.....	34
3.3 MULTI-PHASE DELPHI TECHNIQUE.....	37
3.3.1 <i>Background</i>	37
3.3.2 <i>Phase I: Non-group face to face semi-structured interviews for idea generation</i>	38
3.3.3 <i>Phase II: Group Delphi survey 1 for individual positioning relative to group responses</i>	38
3.3.4 <i>Phase III: Group Delphi survey 2 for confirmation of individual positioning relative to group response</i>	39
3.4 MULTIPLE CASE STUDY.....	40
3.5 ANONYMITY AND CONFIDENTIALITY.....	41
3.6 DATA ANALYSIS.....	42
CHAPTER 4 DATA ANALYSIS.....	44

4.1	IDENTIFICATION AND TYPOLOGY OF PARTNERSHIPS.....	44
4.1.1	<i>Description of five partnerships</i>	44
4.1.2	<i>Typology of partnerships</i>	53
4.2	ANALYSIS OF PARTNERSHIP USING INDICATORS BASED ON CHARACTERISTICS OF SUCCESSFUL PARTNERSHIPS.....	54
4.3	ANALYSIS OF INTERPERSONAL RELATIONSHIPS AND NETWORKING.....	60
4.3.1	<i>Interpersonal relationships</i>	60
4.3.2	<i>Networking</i>	61
CHAPTER 5 DISCUSSION.....		62
5.1	PARTNERSHIPS IN FLOOD EMERGENCY MANAGEMENT IN MANITOBA.....	62
5.1.1	<i>Types of partnerships in Manitoba's Emergency Management Community</i>	62
5.1.2	<i>Role of cross scale institutional linkages in Emergency Management</i>	65
5.1.3	<i>Interpersonal relationship and their role in partnerships</i>	66
5.1.4	<i>Constraints and opportunities for partnerships in flood emergency management</i>	68
5.2	IMPLICATIONS OF RESEARCH TO BROADER EMERGENCY MANAGEMENT COMMUNITY.....	69
5.2.1	<i>'All Hazards' Approach to emergency management broadens scope</i>	70
5.2.2	<i>Actions to further the use of partnerships in emergency management</i>	71
CHAPTER 6 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....		72
6.1	SUMMARY AND CONCLUSIONS.....	72
6.2	RECOMMENDATIONS.....	76
REFERENCES.....		78

LIST OF TABLES

TABLE 2.1	RECENT CANADIAN NATURAL DISASTERS.....	13
TABLE 2.2	DISASTER FINANCIAL ASSISTANCE ARRANGEMENTS.....	17
TABLE 2.3	COMPILATION OF COMMON PARTNERSHIP TYPES.....	29
TABLE 3.1	RESPONDENT DISTRIBUTION ACROSS THE STUDY AREA IN THE MULTI-PHASE DELPHI TECHNIQUE.....	39
TABLE 3.2	KEY PARTNERSHIP INTERVIEW DISTRIBUTION AMONG PARTNERSHIPS	41
TABLE 4.1	TYPOLGY OF PARTNERSHIPS IN FLOOD EMERGENCY MANAGEMENT.....	54
TABLE 4.2	PERFORMANCE INDICATORS OF PARTNERSHIPS HIGHLIGHTING CHARACTERISTICS OF SUCCESS.....	58

LIST OF FIGURES

FIGURE 1.1 RED RIVER BASIN WITH RED RIVER VALLEY INSET.....	3
FIGURE 1.2 FLOOD DAMAGES IN CANADA 1975-2000.....	4
FIGURE 1.3 DAY AFTER BLIZZARD IN WINNIPEG, APRIL 7, 1997.....	7
FIGURE 1.4 AERIAL PHOTO OF FLOODING IN 1997 NEAR ROSENORT, MB.....	7
FIGURE 1.5..SANDBAG DIKES PROTECT WINNIPEG PROPERITES.....	7
FIGURE 1.6 STATE OF EMERGENCY DECLARED AND MILITARY ASSISTANCE REQUESTED.....	7
FIGURE 1.7 THE FORKS, FLOOD OF THE CENTURY.....	7
FIGURE 1.8 FLOODWAY INLET, FLOOD OF THE CENTURY.....	7
FIGURE 1.9 BRIDGES (ROAD AND RAIL) CROSS THE FLOODWAY.....	8
FIGURE 1.10 FLOODWAY OUTLET, FLOOD OF THE CENTURY.....	8
FIGURE 2.1 FOUR INTERCONNECTED FUCTIONS OF EMERGENCY MANAGEMENT.....	10
FIGURE 3.1 THE SCHEME OF IDEA GENERATING STRATEGIES.....	34
FIGURE 3.2 METHODS SCHEMATIC: MULTI-PHASE DELPHI AND MULTIPLE CASE STUDY.....	36
FIGURE 3.3 INDICATORS OF SUCCESSFUL PARTNERSHIPS.....	43
FIGURE 4.1 PARTNERS IN DISASTER LINKAGES.....	46
FIGURE 4.2 ELM PARK PENINSULA FLOOD PROTECTION COMMITTEE LINKAGES.....	47
FIGURE 4.3 MTS CORPORATE EMERGENCY MANAGEMENT DEPARTMENT LINKAGES.....	50
FIGURE 4.4 EMO INTERAGENCY EMERGENCY PREPAREDNESS COMMITTEE.....	50
FIGURE 4.5 RURAL MUNICIPALITY OF EAST ST. PAUL EMERGENCY PREPAREDNESS COMMITTEE.....	53
FIGURE 5.1 .COVER PAGE OF PARTNERS IN DISASTERS BOOKLET	58
FIGURE 6.1 IMAGE CAPTURED DURING FLOOD OF THE CENTURY.....	74
FIGURE 6.2 TEMPORARY RING DIKE AROUND A HOUSE NEAR EMERSON, MB.....	75

LIST OF APPENDICIES

I.	MULTI-PHASE DELPHI SURVEY INSTRUMENTS.....	82
II.	MULTIPLE CASE STUDY SURVEY INSTRUMENT.....	89
III.	ETHICS APPROVAL.....	91
IV.	CONSENT FORM TEMPLATE.....	92
V.	GLOSSARY OF TERMS.....	93

CHAPTER 1

INTRODUCTION

1.1. BACKGROUND

Throughout Canada's settlement history, primarily in the 19th and early 20th centuries, many Canadians established residences and livelihoods along riverbanks, lakeshores and coastlines (de Loe, 2000). During this time the responsibility to address hazards, such as flooding, was that of the local community and individual. Hazards refer to extreme natural events that may impact different places singly or in combination at different temporal scales (Blakie, et al., 1994, p. 21). As a result, many human lives and much personal and community property were taken at the hands of nature. Over time, these settlements grew into cities and communities with substantial development being placed along flood prone lands. This development changed people's vulnerability, which is 'characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from impacts of a natural hazard' (Blakie, et al., 1994, p. 9), such as periodic flooding. The vulnerability of Canadians and our cities can be illustrated by Canada's two greatest disasters in Canadian history in terms of economic loss and loss of life: the 1950 flood disaster of the Red River valley and the 1954 Hurricane Hazel disaster in southern Ontario. These events resulted in an estimated cost of \$1093 million (in 1999 dollars) for Manitoba and the death of 81 people in Ontario (data from Emergency Preparedness Canada) (Natural Resources Canada, 2004). These events were deemed disasters because a significant number of vulnerable people and property experienced the disasters and suffered severe damage and/or disruption of their livelihoods, to the point where individual recovery capacity was inadequate and external aid was required (Blakie, et al., 1994, p. 21).

Throughout the century, serious flooding and other disasters became a greater national concern as Canada could neither afford to lose lives and disrupt livelihoods during their most productive years,

nor could the country leave all citizens to solely deal with natural disasters. In the mid 20th century, there was a thrust to address flood risk and other hazards primarily by using engineering control structures. However, as the development of new and costly engineering technology advanced further, the expansions of cities and the increases in the vulnerability of Canadians took place. Also, the growth of the idea that senior government was responsible for the protection of its citizens in all kinds of peril became deep rooted as senior governments accepted more responsibility (OCIPEP, 2001). In order to explain the context for this research, experience of floods in Manitoba's Red River valley is discussed below. Following this background information, the research problem statement, objectives, and a brief outline of research methodology are provided.

1.1.1 Flooding in Manitoba

Flooding is a natural process where water exceeds the capacity of the 'normal' channel or basin and occupies adjacent lands temporarily (Askew, 1991 cited in de Loe, 2000). It is also an important process that replenishes soil nutrients and assists life cycles in some plant and animal communities (de Loe, 2000). Flooding is considered a hazard only where humans settlements and livelihoods occupy the floodplain, thereby placing property and lives at risk (de Loe, 2000). Due to the historical settlement around water ways, as outlined at the beginning of this chapter, the flood hazard in Canada is very prevalent. New Brunswick, British Columbia, and Ontario have records of flooding dating back since 1696, 1894, and 1680 respectively (de Loe, 2000). Evidence of the flood hazard in Manitoba has been recorded since 1812 (Haque, 2000; de Loe, 2000; Rasid et al., 2000).

Manitoba's flood situation focuses primarily on the Red River valley in southern Manitoba. As shown in Figure 1.1, as part of the Red River basin, the Red River valley in Manitoba is underlain by fine grained sediments left by glacial Lake Agassiz during the Wisconsin Glaciation (Rasid et al., 2000). The gently sloping basin extends approximately 10-15 km on either side of the Red River, which

has its origin in Minnesota, United States. The Red River basin's geomorphology has created an excellent environment for flooding as natural drainage is poor, gradient of the slope of the basin is low and the flows of the Red and Assiniboine Rivers, which carry excess water north, can be quite slow. This low gradient slope north presents another possibility for flooding by water from the south encountering ice blockages at any point up to and including Hudson Bay, its ultimate destination (Bumsted, 1987). Major flood activities have resulted in disastrous effects.

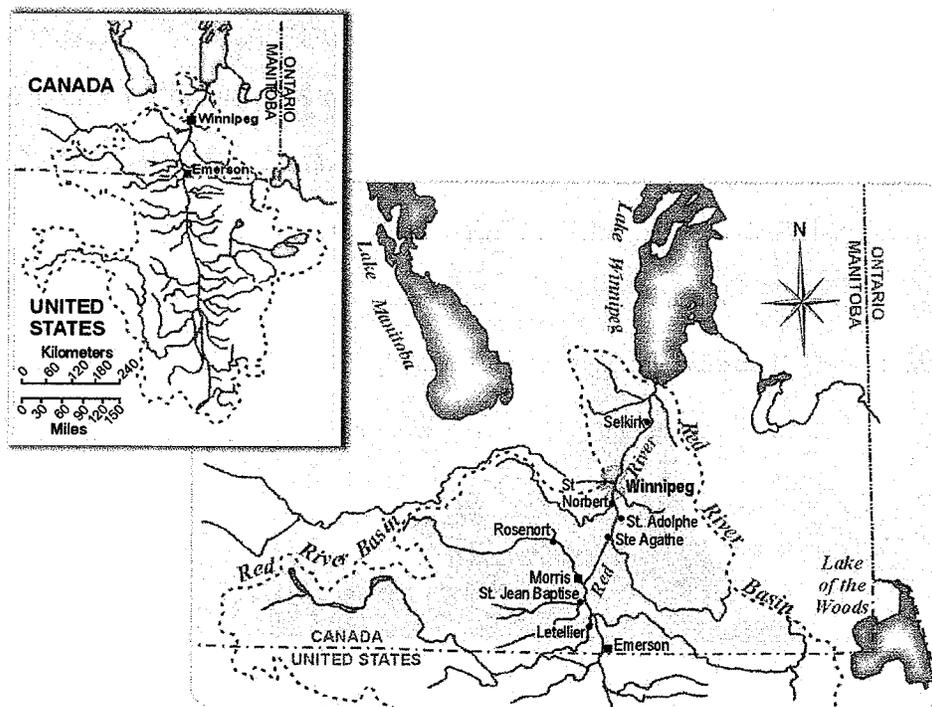


Figure 1.1 Red River Basin boundary with Red River Valley inset (Stewart et al., 2007).

The largest flood ever experienced in the Red River basin occurred in 1826, followed by another major flood in 1852. In 1861 and 1950, floodwaters covered the whole area of what is now

Winnipeg (Bumsted, 1987). The most recent extreme event, the 'Flood of the Century' in 1997, saw a volume of water nearly 50 times greater than that of the 1950 flood – the largest since 1852, covered over 1,836km², and resulted in significant costs exceeding \$500 million (Haque, 2000; Rasid et al., 2000). Figure 1.2 illustrates the trend in flood damages in Canada. This trend is indicative of the fact that the burden on government resources for support in the event of a disaster has increased over time, particularly since the mid 1970s.

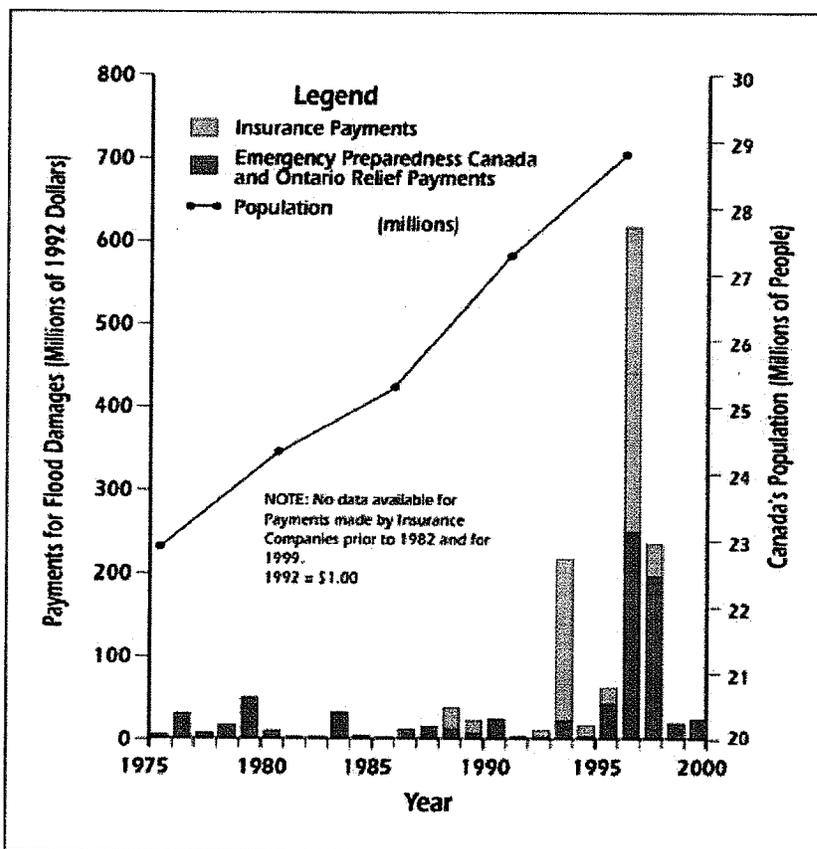


Figure 1.2 Flood Damages in Canada 1975-2000 (Shurbsole et al., 2003).

Records show that extreme floods of the Red River and its surrounding tributaries, although intermittent, have always been part of basin life; however the scale and magnitude of losses caused by

extreme events has greatly increased in recent decades (Haque, 2000). Figures (1.3-1.10) help depict a number of events during the 1997 flood.

1.2 PROBLEM STATEMENT

The trend of increasing disaster costs in Manitoba, across Canada and around the world continues. To slow or reverse this trend a shift from the 'traditional', centralized, top-down management approach of government towards negotiated, cross-scale arrangements which link government and other emergency management organizations across various levels is required. This shift is advancing due to increasing costs related to disaster recovery and constraints on institutional resources and accountability. Arrangements such as partnerships could be considered for this purpose - to develop cross-scale relationships among public sector (federal, provincial, and municipal governments), the nonprofit sector (including non-government, voluntary and community-based organizations) and communities, and to enhance communication, coordination, and trust among individuals, organizations, and communities. Formal partnerships are agreements between two or more government, non-government, volunteer, or community-based organizations designed to meet a common goal, objective or to implement a common activity for benefit to the partners.

Although literature outlines many known benefits to engaging in partnerships, there is little detailed information on partnerships within the emergency management context. There are several questions that must be considered. What benefits and limitations do partnerships encounter in emergency management and how can they be enhanced and minimized respectively? How are the partnerships structured, developed, and managed? How effective are partnerships for addressing flood emergency management issues? How do partnerships enhance networking among flood emergency management institutions? How do the dynamics among partners' factor into effective flood emergency management? The use of cross-scale partnerships may provide the means to coordinate multiple levels

of emergency managers and to develop innovative and inclusive emergency management policies and programs.

For the purpose of this research, I focused on the examination of formal institutional partnerships that are agreements between two or more organizations, such as government and NGOs, or government and private, or NGOs and CBOs, to achieve a common goal or objective. This area of focus has offered limited scope of research and therefore some quantification to the breadth of this study. There were several types of partnerships that could not be explored, mainly CBO / government partnerships and Public-Private-Partnerships. Another limitation in this research is the lack of analysis of resource sharing. The roles of resources other than information (e.g., monetary resources) were beyond the scope of this thesis.

1.3 PURPOSE AND OBJECTIVES

This research project investigated the use of partnerships among government, non-government, private and community-based organizations in flood emergency management. The purpose of this research was to evaluate partnerships in flood emergency management in the Red River basin at both broad and smaller scales. The scope of this study is the Red River valley, Manitoba, however, the experience of governments, non-government, and volunteer organizations striving for inclusive flood emergency management through the use of partnership arrangements can be applied at regional, national, and international levels and within other natural hazard and disaster contexts.

The study objectives were:

1. to identify and examine the types of institutional partnerships that exist to address flood emergency management in the Red River valley, Manitoba.
2. to assess partnerships in flood emergency management using characteristics of successful partnerships as performance indicators (based on literature).



Figure 1.3 Day after blizzard in Winnipeg, April 7, 1997 that increased the risk of flooding (Kolar, 1997).



Figure 1.4 Aerial photo of flooding in 1997 of the Red River Valley near Rosenort, MB (Government of Manitoba, 1997).



Figure 1.5 Sandbag dikes protect Winnipeg properties (Kolar, 1997).



Figure 1.6 State of emergency declared and military assistance requested (Kolar, 1997).



Figure 1.7 The Forks during the Flood of the Century (Kolar, 1997).



Figure 1.8 Floodway inlet, Flood of the Century (Government of Manitoba, 1997).



Figure 1.9 Bridges (rail and road) cross the floodway (Kolar, 1997).



Figure 1.10 Floodway outlet, Flood of the Century (Government of Manitoba, 1997).

3. to determine the role of interpersonal relationships and networking in flood emergency management partnerships and with other water management agencies.
4. to formulate policy recommendations concerning the institutional roles, including cross – scale partnerships, in flood emergency management.

1.4 THESIS ORGANIZATION

The thesis explored institutional involvement in flood emergency management in the Red River basin. Specifically, institutional partnerships will be examined to determine their effectiveness, relationships and networking capability to name a few objectives. A literature review on institutional involvement and partnerships in emergency management in Canada, highlighting Manitoba, is presented in Chapter 2. This chapter also outlines the past, present and future of flood emergency management, the roles and responsibilities of government and other institutions and the indicators used for evaluating the capacity for success of partnerships in flood emergency management. The methods for data collection, including recording and analyzing Delphi technique and individual interviews are detailed in Chapter 3. Chapters 4 and 5 provide research data and analysis, and discuss the results, such as the role of interpersonal relationships and networking, relative to current literature respectively. The final chapter, Chapter six, presents a summary, conclusions and recommendations.

CHAPTER 2

EMERGENCY MANAGEMENT AND PARTNERSHIPS: A LITERATURE REVIEW

2.1 INTRODUCTION

Emergency management is composed of several major components: mitigation, preparedness, response and recovery. These components occur at different temporal and spatial scales, which require the involvement of all levels of government as well as other organizations, and therefore, by the very nature of all the players involved in emergency management, is cross-scale management. Emergency management strategies and policies in Canada adopt an all hazards approach to emergency and disaster management, where both natural and human-induced hazards and disasters are addressed (Public Safety Canada, 2007). This is a generic approach that encourages emergency management organizations “to plan for, and reduce vulnerability from, potential adverse consequences regardless of the sources to avoid the duplication of planning efforts across the range of hazards” (p. 178, Hwacha, 2005). Figure 2.1 depicts the four components of emergency management and the weight of their importance. Preparedness is the foundation for emergency management, where the majority of time and resources are placed in non-disaster times.

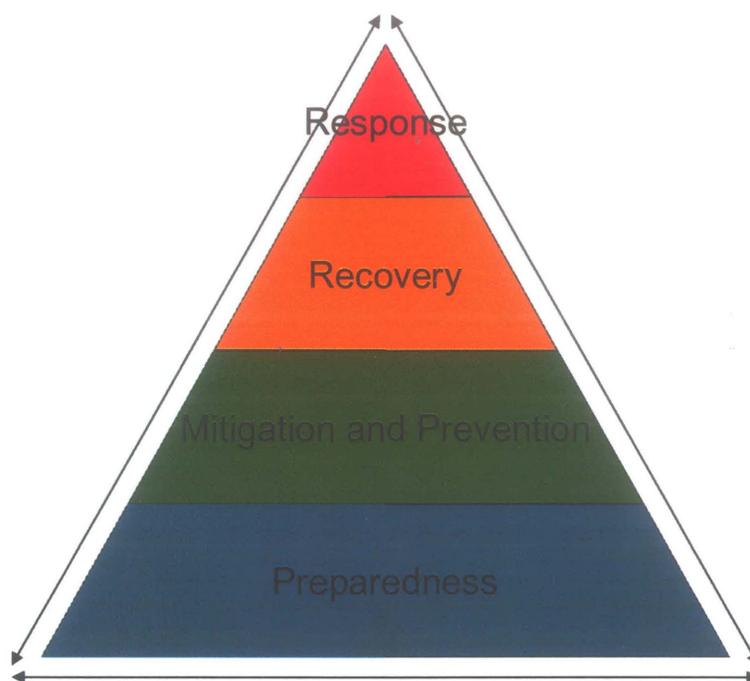


Figure 2.1 Four interconnected functions of emergency management that are not necessarily sequential (developed from concepts in Hwacha, 2005, Haque and Burton, 2005).

Coordination of such cross-scale involvement must be considered for efficiency purposes. Partnerships are one means for coordination and efficient involvement in flood emergency management.

In order to provide a comprehensive perspective of emergency management in Canada, its development must be summarized. Also, the various roles and levels of involvement institutions and organizations in emergency management must be clearly outlined. The first section of this chapter will delineate the development of emergency management in Canada. Section two on institutional involvement will review three different organizational sectors (e.g., the public sector, including its legislation and the roles of federal, provincial/territorial, and municipal governments; the nonprofit sector, including non-government, voluntary and community-based organizations; and the commercial sector) in emergency management in Canada and highlight Manitoba using specific examples, where

applicable. The third section will focus on partnership literature and include a list of the performance indicators for successful partnerships. The last section will provide a summary of the chapter.

2.2 DEVELOPMENT OF FLOOD EMERGENCY MANAGEMENT

Hazard and disaster management, including flood hazards, encompasses a cycle consisting of four components: mitigation, preparedness, response and recovery. The most common method for addressing not only flood hazard and disaster management, but also resource and environmental management in general stems from the 'traditional', top-down, centralized, expert driven, and financial consideration approach (Mitchell and Shrubsole, 1994). Under this method various members of the emergency management community have initiated, designed, and implemented several projects, falling into various stages of the flood management cycle, to address hazards and disasters at a national, regional, community and individual level. In Manitoba, for example, following the 1950 flood, the province of Manitoba commissioned a study by the Royal Commission (1958) to determine flood mitigation and protection options. The recommendations of this report resulted in the undertaking of several structural controls – mitigation. The Red River Floodway was the first structure completed in 1966 and diverts portions of the Red River flood waters around the City of Winnipeg (Haque, 2000; Simonovic and Carson, 2003). Additional structural controls outlined by the Royal Commission's study, such as the Portage Diversion, the Shellmouth Dam, the primary dike system in the City of Winnipeg, were constructed to further enhance the floodway's protection of the City of Winnipeg (Haque, 2000). Following the flood of 1966, a heightened concern over flood protection led to the construction of a permanent community dike system around towns and the individual diking or raised foundations of farmsteads in the Red River Valley (Haque, 2000). After the 1979 flood, the level of this protection was raised to a 100-year flood level, and again raised to the 1997 flood level plus 2 feet for freeboard following the 1997 flood (Haque, 2000).

The focus of flood protection from 1950s to early 1970s was structural in nature, where the protection of lives and property against flooding was controlled by physical structures. Unfortunately, from the early 1970s, it was evident that flood damage costs were increasing despite the tremendous financial investments in flood control works (de Loe, 2000). This period signals the beginning of the adoption of non-structural measures, such as flood plain mapping through the Flood Disaster Reduction Program (established in 1975), development of emergency plans, and forecasting. This program focused on the last three phases of flood emergency management to build capacity in regions at risk to flooding to prepare for, respond to and recover from disaster.

Generally speaking, Manitoba's structural and non-structural measures have been successful. The Floodway has been activated over 20 times since its completion and has saved close to \$6 billion in damages (PSEPC, 2004). Non-structural measures, such as forecasting and interactive flood management and planning tools, exist to improve accessibility of information and risk awareness throughout the floodplain (Water Branch, 2004). Overall the Red River valley flood protection and mitigation experience is primarily event driven and reflects many protection and prevention measures undertaken by the members of the 'traditional', top-down, emergency management community throughout Canada.

Despite all the efforts made by the emergency management community, the effectiveness of the past approaches and 'traditional' management must be questioned. Over the past thirty years, the costs of natural disasters around the world and across Canada have escalated, as have the number of lives disrupted and catastrophes reported. Developing countries are not alone in witnessing increasing vulnerability. Developed countries like Canada are experiencing higher vulnerability to hazards across the nation. Recently in Canada, between the years 1996 and 1998, three extreme weather-related events occurred, the Saguenay River flood (1996), the Red River flood (1997) and the ice storm in Eastern

Canada (1998), resulting in total damages of more than \$9.2 billion. Over \$1.5 billion in federal disaster financial assistance payments were required. Millions of people's lives and livelihoods were also severely affected for extended periods of time (PSEPC, 2004). Flood disasters alone resulted in payments of almost \$720 million (1999 dollars) from the federal government's Disaster Recovery Financial Assistance Arrangements program following 63 floods between 1975 and 1999 (EPC, 2000 cited in Shrubsole, 2000a). Insurance claims for flooding, excluding residential losses, were in excess of \$750 million (1999 dollars) between 1984 and 1998 (Insurance Council of Canada, 1998 cited in Shrubsole, 2000a). The continuing trend of large damages from floods and other extreme weather-related hazards is expected in the future for three reasons (Shrubsole, 2000a). First, there continues to be an influx of the Canadian population living in larger but fewer urban centres. Second, changing climatic patterns with an associated increase in extreme events are expected (Bruce *et al.*, 1999 cited in Shrubsole, 2000b). Third, an aging infrastructure that is more susceptible to damage will increase loss levels (Kovacs, 1999 cited in Shrubsole, 2000a). Despite Canada's approach reduce and manage disasters effectively, the trend of increasing vulnerability to extreme natural disasters remains and will continue to be a threat in the future unless innovative and proactive measures are taken. The potential for catastrophic loss is outlined in Table 1, which highlights the losses associated with the recent Canadian natural disasters.

Table 2.1 Recent Canadian Natural Disasters (McBean & Henstra, 2003).

Disaster	Number of deaths	Economic Cost (\$B Canadian)
Ice Storm (1998)	28	\$5.5
Edmonton tornado (1987)	27	\$0.15
Barrie tornado (1985)	12	\$0.2
Pine Lake tornado (2000)	12	\$0.02
Saguenay Flood (1996)	10	\$1.5
Manitoba flood (1997)	4	\$1
Calgary Hailstorm (1991)		\$0.36
B.C. Blizzard (1996)		\$0.2
Winnipeg Flood (1993)		\$0.16
Calgary Hailstorm (1996)		\$0.14

The most significant feature in these data is the “billion dollar” catastrophic disasters that took place during the 1990s for the first time in Canadian history. To slow the trend of increasing losses associated with natural disasters in Canada, the roles of the institutions involved in flood emergency management community should be revisited. The traditional top-down, centralized approach of dealing with complex problems should be reviewed for three reasons. First, public sector (government), third sector (non-government or volunteer organizations) and or private industry (e.g., insurance) can not support the trend of billion dollar losses associated with natural disasters. Second, jurisdictional and proprietary problems among members of emergency management community manifested from Canadian constitution. Third, a single organization or institution can not design, develop, implement and enforce policies, programs, and regulations for disaster and emergency management because of existing chain of command¹. Rather, new emergency management initiatives, such as partnerships, must be developed to encourage members of the emergency management community to mobilize limited resources, to coordinate policy and program development and implementation and regulation enforcement, to incorporate a wider variety of perspectives, and to address jurisdictional problems through the facilitation of dialogue, conflict resolution, and understanding (Mitchell and Shrubsole, 1994).

One initiative considering the use of partnerships is the development of a National Disaster Mitigation Strategy by the Government of Canada. Discussions surrounding a National Disaster Mitigation Strategy began following three large disasters (Saganay River flood, Red River flood and the ice storm in eastern Canada) as a means to advance the goals of PSEPC, which are “to provide national leadership and to implement a comprehensive approach to the protection of Canada’s national critical infrastructure and enhancement of Canada’s emergency management framework” (OCIPEP,

¹ Chain of command begins with the individual, followed by the municipal, provincial and federal governments.

2004). Following a series of workshops, it was learned that the predominate focus for emergency measures and expenditures was in the direction of building capacity to prepare for and respond to disasters (that is, post-event actions) rather than toward building capacity to mitigate the occurrence of or recovery from disasters. NDMS has therefore evolved into a strategy that aims to enhance Canada's capacity to employ measures that reduce risk, limit social disruption and contain the economic costs resulting from disasters, as well as replace the reactive nature to respond to emergencies with proactive and systematic coordination of activities that promote disaster-resilient communities (Hwacha, 2005). Partnerships would be an example of a cooperative arrangement useful for implementing such a strategy.

The NDMS is an excellent example of what the concept of 'sustainable hazards mitigation' is trying to encourage. Sustainable hazard mitigation is designed to limit the disruption and loss of resources caused by hazards and disasters (Mileti, 1999). Mileti (1999, pp5-6) outlines six objectives that must simultaneously be reached to mitigate hazards in a sustainable way and to reduce if not eliminate altogether, the trend towards increasing catastrophic losses from natural disasters: 1. maintain and enhance environmental quality and 2. people's quality of life, 3. foster local resiliency and responsibility, 4. recognize that vibrant local economies are essential, 5. ensure inter- and intra-generational equity, and 6. adopt local consensus building. Given these objectives, Mileti outlines several steps essential to the uptake of sustainable hazard mitigation: build local networks, capability, and consensus; establish a holistic government framework; conduct a nationwide hazard and risk assessment; build national databases on disaster losses; provide comprehensive education and training for managers and future academics; measure progress of sustainability; and share knowledge internationally. Many of these objectives and steps for sustainable hazard mitigation uptake, such as partnerships and network building, are discussed in the proposed NDMS.

The growing support, both academically and publicly, for collaborative and cooperative efforts among public, non-government, and private sectors in flood emergency management is encouraging. The development of partnerships as a means to address the need to minimize damages and losses, build networks, and share knowledge, for example, looks positive. Yet, there are many aspects of partnerships, in the context of flood emergency management, that are unknown. Through the research of existing partnerships in flood emergency management, it is anticipated that many questions surrounding the effectiveness of partnerships may be answered.

2.3 INSTITUTIONAL ROLES AND INVOLVEMENT IN EMERGENCY MANAGEMENT

It is thought that all organizations can be divided into three categories: the public sector, the nonprofit sector, and the commercial sector (Charity People, 2004). The following section defines each sector and outlines their involvement in emergency management in Manitoba and Canada.

2.3.1 PUBLIC SECTOR

The public sector is composed of government institutions at the federal, provincial, and municipal levels. The public sector also includes the agencies, departments, and their programs implemented by each government institution. Within the context of flood emergency management, each level of government undertakes and plays different roles and responsibilities. These roles and responsibilities are outlined below.

Federal Government

The federal government has legislative powers over navigation, fisheries, defense, inter-provincial and international issues, and can legislate for 'peace, order and good government' (Shrubsole, 2000a). It is primarily with these powers that emergency and disaster management responsibilities are shared among various federal government agencies as well as between provincial and municipal governments.

The emergency preparedness function of the federal government is directed by the 1988 *Emergencies Act*. This Act ensures that the federal government provides safety and security of Canadians, as afforded in the constitution, during national emergencies². The powers outlined by the Act apply to four types of emergencies: public welfare emergencies, such as natural disasters; public order emergencies, such as security threats; international emergencies, such as serious violence threatening the sovereignty of Canada or its allies; and war emergencies, where war or armed conflict involving Canada or its allies. Companion legislation was introduced at the same time as the *Emergencies Act*, called *The Emergency Preparedness Act*, which provides the legal basis for planning and preparedness programs required to effectively deal with all kinds of emergencies (PSEPC, 2004). The *Emergency Preparedness Act* also aims for “effective civil preparedness and cooperation between federal and provincial/territorial governments” (Natural Hazards Centre, 1999, p. 25). To assist Canadians, Public Safety Canada (PSC), formerly Public Safety and Emergency Preparedness Canada (PSEPC), which preceded Office of Critical Infrastructure Protection and Emergency Preparedness (OCIPEP) and Emergency Preparedness Canada (EPC), works address the decentralized emergency preparedness. PSC requires each federal department or agency to identify possible emergencies, to develop plans to deal with them, and to exercise these plans if emergencies arise within their area of responsibility. PSC uses department or agency knowledge of key subject matter as baseline information and supplements their expertise to assess the risks and make emergency plans. PSC works in cooperation with provincial and territorial governments and the private, voluntary and educational sectors to provide tools to help individuals become better prepared (Public Safety Canada, 2007).

² National emergency is defined as “an urgent and critical situation of a temporary nature that seriously endangers the lives, health or safety of Canadians and is of such proportions or nature as to exceed the capacity or authority of a province to deal with it, or seriously threatens the ability of the Government of Canada to preserve the sovereignty, security and territorial integrity of Canada, and cannot be effectively dealt with under any other law of Canada” (PSEPC, 2004).

In the event of a large-scale disaster, PSC also administers the Government of Canada's financial assistance program. The Disaster Financial Assistance Arrangements (DFAA), established in 1970, provide funding directly to individual provincial and territorial governments, when response and recovery costs surpass what could reasonably be expected of them to cover on their own (Public Safety Canada, 2007b). DFAA is limited to reimbursement for expenses incurred as defined in the national guidelines and considers two factors when determining the percentage of eligible costs³ for reimbursement: the extent of the damage and the population of the province or territory (Public Safety Canada, 2007b). The Government of Canada places no restrictions on how provincial and territorial governments design, develop, and deliver disaster financial assistance. PSEPC Regional Directors (RDs) assist provincial and territorial officials and help coordinate the two levels of government with the assessment of damages and the review of eligible response and recovery costs (Public Safety Canada, 2007b). The DFAA has a per-capita sharing formula that outlines when the Government of Canada may provide disaster financial assistance, as can be seen in Table 2.2. This table illustrates that provincial and territorial governments are only eligible for DFAA after expenditures are greater than \$1 per capita. Payments are made to provincial/territorial government following an audit of expenditures.

Table 2.2 Disaster Financial Assistance Arrangements (DFAA) per capita sharing formula.

Eligible Provincial/Territorial Expenditures	Government of Canada Share
First \$1 per capita	Nil
Next \$2 per capita	50%
Next \$2 per capita	75%
Remainder	90%

Source: Public Safety Canada, 2007b.

In general, emergency preparedness in Canada takes the "all-hazards approach", where all types of natural and human-made hazards in all sectors (e.g., utilities, environment, health care, water,

³ Eligible expenses include rescue operations, replacement or repair of basic, personal property of individuals, small

transportation, government) are considered and planned for in emergency management. The “all-hazards approach” leads to the development of common response capabilities that will be required for most emergencies, to the extent that is practical (Canadian National Committee, 1999). In terms of flood management, the federal government often provides research and recommendations concerning aspects of hazard management such as building standards or acceptable levels of risk and provides training for local emergency officials (Shrubsole, 2000a, p. 3). However, an “all-hazards approach” is not always practiced. The flood hazard in Canada is one example where the federal government took a leadership role in mitigation of this specific hazard.

Between 1953 and 1970, the focus of flood protection remained on structural measures, such as the construction of the Floodway around Winnipeg completed 1968. The Federal Government could provide up to 75% grants of the capital cost of structural adjustment (cited from Quinn in Shrubsole, 2000a). During the same period senior governments slowly began to expand into non-structural measures, such as the improvement of forecasting and warning systems and the regulation of flood plain land use and development (OCIPEP, 2001). By the early 1970s, however, several shortcomings became apparent in existing programs: protective works failed to prevent damages; collective demands for funding projects, response and recovery strained government resources; present system subsidized residents who occupied flood-prone areas and thus created an inequitable system; and the lack of participation of federal government in project development (Shrubsole, 2000a). These shortcomings shifted the responsibility of government to a role of leadership in flood hazard and floodplain management. By 1975 the federal government’s leadership role was established with the cooperative and predominately non-structural initiative, called the Flood Disaster Reduction Program (FDRP) developed under the *Canada Water Act(1970)*, and lead by Environment Canada. The FDRP was

businesses and farmsteads, public works and infrastructure restoration to pre-disaster conditions.

designed to map flood hazards across Canada using a scientific and technical basis for hazard definition and to ensure development would be restricted in flood prone areas through legislation (OCIPEP, 2001). The program successfully over saw 800 Canadian communities mapped and designated between 1975 and its termination due to government funding constraints in 1999.

Federal involvement in emergency response

Overall, federal involvement in mitigation activities is driven by the order in which the Canadian response system is practiced. The following outlines the order of government emergency response, or *chain of command*, required to activate the federal level (Canadian National Committee, 1994):

- Initial action in times of an emergency should be individual responsibility, as an individual should know best how to protect their life and property.
- Municipal services respond if coping is beyond an individual's capability. Municipal leaders, such as mayors or reeves, are responsible for the development of emergency plans and the exercising of these plans within their municipalities.
- Provincial or territorial assistance is expected if the municipality can not manage an effective emergency response and are responsible for the coordination of the interface with the municipality.
- Federal government assistance occurs if a province or territory formally requests their aid, through Emergency Preparedness Canada (although it is not necessarily through this agency). The federal government only intercedes when requested or when the emergency lies within federal jurisdiction (e.g., major floods crossing provincial or national boundaries).

Provincial/Territorial Governments

The provinces' ability to legislate in the general area of emergency management is derived primarily from their exclusive authority to legislate over property and civil rights, over matters of a

local and private nature, and over local works. Significant responsibilities are also associated with their ownership of natural resources including water (Shrubsole, 2000a).

Each province or territory will have slightly different names for their water management and emergency management acts outlined in the legislature. In Manitoba, for example, Manitoba Water Stewardship deals with ground and surface water management issues, water licensing, water infrastructure, and fish and wildlife (Mitchell and Shrubsole, 1994). The Emergency Measures Organization (EMO) exercises powers and performs duties pertaining to emergency and disaster management, as outlined by *The Emergency Measures Act*, its regulations and those assigned to it by the Minister (PSEPC, 2004). In general, each provincial or territorial emergency measures organization (EMO) must prepare, maintain and implement policies and procedures relating to preparedness, response and recovery from emergencies and disasters in their province or territory (Emergency Measures Organization, 2004), in order “to prevent loss of life and protect public health and safety; minimize damage; minimize disruption to Canadian communities; and inform the public of the potential risks from natural hazards” (Canadian National Committee, 1994, p. 46). It is the responsibility of the EMOs to coordinate response and recovery programs if a serious emergency occurs where local authorities are unable to cope. In the case of flood hazard, provinces or territories can establish specific regulatory flood levels, set building standards, and advise municipal government in flood mitigation (Shrubsole, 2000a).

It is also under this responsibility that emergency measures organizations design, development and delivery of disaster financial assistance (DFA) within each province and territory according to the Disaster Financial Assistance Policy and Guidelines (Natural Hazards Center, 1999). The purpose of the disaster financial assistance is to assist victims, municipalities, government departments, and other agencies to recoup some of the costs incurred with respect to mitigating the consequences of disaster

(Emergency Measures Organization, 2004). The DFA program activities include: i) the amounts and types of disaster financial assistance to those who have experienced losses and are free to implement disaster financial assistance that is appropriate to specific disasters and circumstances (PSEPC, 2004); ii) the co-ordination of partners in community recovery; iii) the development and implementation of guidelines for the evaluation; iv) the approval and payment of disaster assistance claims; and v) the consultation on guidelines and policy (Emergency Measures Organization, 2004).

Municipal Government

The formation of local governments transpires from provincial statute. For example, municipal governments must comply with provincial building codes through the passage of local bylaws. If minimum standards are not established by provincial statute, municipal governments have considerable discretion in implementing programs (Shrubsole, 2000a). The responsibilities municipal governments pertaining to emergency preparedness and management include hazard assessment, development and maintenance of municipal emergency plans, and the direction and control of municipal emergency response unless assumed by the emergency measures organizations of the provinces or territories (Canadian National Committee, 194, P. 46). In the case of Manitoba, as outlined in The Emergency Measures Act, a municipal government must create and maintain a local emergency response control group, which includes duties such as the preparation and coordination of preparedness plans and programs for the local authority (PSEPC, 2004). The emergency preparedness plans and programs of every local authority must be submitted to the coordinator of the provincial EMO for review and co-ordination with provincial emergency preparedness plans and programs (PSEPC, 2004). The local municipality must also establish a committee composed of community members to advise it on the emergency preparedness plan and program development (PSEPC, 2004). Municipal governments also hold a role in disaster financial assistance (DFA) as is seen in Manitoba. In order for an individual,

business or farmstead to be eligible to apply for DFA in Manitoba, for example, the municipal government must pass and forward a resolution within 30 days following a disaster (Emergency Measures Organization, 2004).

2.3.2 *NONPROFIT SECTOR*

The nonprofit sector includes nonprofit organizations (NPOs), which encompass volunteer organizations, non-government organizations (NGOs), and community based organizations (CBOs). The various organizations in this sector have four common features: the organizations will: 1) “be value led...with the objective of addressing a social need, rather than simply to provide a service or generate revenue”; 2) not generate profit or will reinvest revenue for it’s objective(s); 3) commonly make use of volunteer staff; and, 4) “not be under direct by political control” (Charity People, 2004).

Many of these organizations have been seen in performing several functions in emergency management. The dependence on volunteer organizations and NGOs to assist in response and recovery from disasters is evident in the integration of these groups into municipal emergency plans. Organizations that have well organized and well-trained emergency volunteers can help save lives, minimize injuries, and assist in recovery efforts. Some volunteer organizations provide ‘critical social functions’ in response to emergencies and assist in providing basic human necessities, such as food, shelter and clothing (e.g., Salvation Army, the Canadian Red Cross, and Mennonite Disaster Service) (Canadian National Committee, 1994).

The involvement of the nonprofit sector can also assist in the promotion and coordination of programs of public interest, such as land use measures or emergency evacuation procedures, to reduce losses from natural hazards (Paterson, 1998). This is important because at the local level, there is evidence of several gaps between individuals and senior government institutions stemming from lack of trust and poor communication (Natural Hazards Center, 1999; Krishna, 2003). This has been seen in

Manitoba, for example, where communication and trust gaps between the residents of the valley and the Water Resource Branch of Manitoba Conservation were highlighted during and following the 1997 flood in terms of emergency evacuation procedures and decision-making processes (Rasid et al., 2000). NGOs or CBOs may facilitate in the closing of gaps by becoming key brokers or mediators network or partnership building between senior government institutions and individuals or communities (Paterson, 1998) or boundary organizations (Cash and Moser, 2000).

2.3.3 *PRIVATE SECTOR*

The private sector is distinct from the nonprofit sector in that its primary purpose is to earn financial profit (i.e., commercial ventures). The nonprofit sector has similar organizational structures to the private sector, however, the private sector gauges its success on the amount of profit earned, rather than achievement of their

One member of the private sector involved in emergency and disaster management is the insurance industry. The insurance industry is an interested member of the emergency community due to damages associated with natural disasters. Losses caused by natural disasters are generally covered through property insurance or other branches of insurance. As a result this industry uses extensive data and analysis on losses and damages from all over the world in order to set insurance premiums to cover the estimated losses. This insurance industry is also capable of influencing public and private industry behaviour. By using the correct set of tools (e.g., premium deductibles) the holders can motivate the insured to take preparedness and mitigation measures (Canadian National Committee, 1994). Coverage for property is available for natural events such as tornadoes, windstorms, hailstorms, major rainstorms, and earthquakes. Crop insurance is also available. However, flood, tsunamis, and in British Columbia, landslide coverage, is not available because the evaluated risks are too great for the industry (Canadian National Committee, 1994). In these types of emergency and disaster, other forms of

assistance are employed, such as federal/provincial disaster assistance, and there is little direct involvement from the private sector.

2.4 PARTNERSHIPS

2.4.1 *Background in partnerships*

The term 'partnership' has a variety of definitions and meanings depending on the particular purpose, temporal and spatial scales, organizational structure, operating procedures and the type of participant members (Kernaghan, 1993; Lowndes, 2001). Partnerships are often described in terms of legal relationships where the outcomes from the decisions made by the partners are shared (Environment Canada cited in Kernaghan, 1993). They are also described casually as a means of 'getting people together' to debate or exchange information (Lowndes, 2001). This variety has resulted in warnings in some literature about the use of the word 'partnership'. Some researchers view it as a word that is over-used and "misused to the point that it is indistinguishable from other "good" management practices" (Rodal and Mulder, 1993, p. 27), such as straightforward contracting relationships (Johnson and Wilson, 2000).

Regardless of how partnerships are defined they share several key elements. Most partnerships have: common goals or objectives; shared risks, benefits, and costs (financial and non-monetary); joint responsibility, authority and accountability; opportunity to develop better strategies to address an issue than each partner operating individually; improved effectiveness and power of partners and their representative organizations (Ekos Research Associates, 1998).

Given these elements, a definition most applicable to this context is based on Mitchell (1997):

A partnership is a mutually agreed arrangement between two or more public, private or non-governmental *organizations* to achieve a jointly determined goal or objective, or to implement a jointly determine activity, for the benefit of the environment and society.

Before exploring the different types or approaches of partnership, it is important to examine the use of partnership in the private sector and the evolution of partnership use in the public domain.

Partnerships have long been associated with private industry. Many bi-lateral, business-to-business partnerships exist to address environmental issues surrounding development. For example, a professional partnership between McDonald's Corporation and Environmental Defense Fund (EDF) in the early 1990s analyzed McDonald's solid waste problems. However, many of these "traditional strategic alliances...lack cross-sectoral participation", which is required to effectively address public concerns, such as resource and environmental management (Long and Arnold, 1995).

The public sector engages primarily in multi-lateral partnerships. The original use of public sector partnerships was to create vertical and horizontal relationships among various government agencies and between private industry and government. With the increasing pressures described in the introduction, the context in which partnerships are used evolved significantly in the past fifteen years. Partnerships, once used for an adhoc response to particular problems involving private sector or intergovernmental agencies, evolved to a general approach to solve complex problems and uncertain issues and to improve the efficiency, effectiveness, and responsiveness of public organizations (Kernaghan, 1993). These multi-lateral partnerships engage the traditional private sector and public sector players, as well as, the voluntary, non-profit, non-government, community-based and labour organizations (Lindquist, 1993) as the trend towards collaboration among these players continues (Ekos Research Associates, 1998).

Johnson (2000) postulate four primary factors key in the development of modern natural resource partnerships in the United States which are benefiting natural resource management and land stewardship: 1. loss of trust in federal government leading to greater skepticism toward federal planning efforts on the part of the public, 2. greater access to information by the general public (print,

broadcast, and digital forms) leading to an increased level of awareness of federal environmental actions, 3. increased focus and importance placed on aesthetics and recreational values of the natural environment, and 4. increased public demand to incorporate multiple uses in natural resource planning. Although these factors are highlighted in the context of the United States, they are also applicable to the climate of the Canadian natural resource management industry which is experiencing greater interest and participation in natural resource management.

Overall, the popularity of partnership development in the public sector is increasing. Lowndes (2001) identifies four main driving forces for this increase in popularity. These trends are also outlined in many other sources of literature, such as Ekos Research Associates, 1998, Mitchell, 1997 to name a few.

1. *Efficiency* - the use of limited resources is maximized, access to other funding sources increases, and value-added decision-making relationships are established.
2. *Integration* - collaboration among organizations, which are becoming increasingly fragmented, is secured.
3. *Accountability* - participant involvement and dissemination of responsibility are the new means for securing forms of accountability.
4. *Requirement or promotion* - some central governments (e.g., United Kingdom) require the development of partnerships to address certain issues while other government agencies (e.g., Ontario Ministry of Natural Resources) promote the use and benefits of them to help foster trust and well-being among government agencies, public and interest groups (Lowndes, 2001; Rodal and Mulder, 1993).

2.4.2 *Type of partnerships*

There are many different types of partnerships due to the flexible nature and unique circumstances surrounding the development and maintenance of partnerships. Every partnership has unique purposes, characteristics, and members that create the extent to which partners are engaged in the arrangement and decision-making powers, risks mitigation and management (e.g., accountability) and costs are shared among partners. Some common partnership types and classifications are compiled in Table 2.3. The organization of this table starts with the context in which the author classified their partnership types. Within each author classification there are various partnership types, purposes, and characteristics.

Not all partnerships are useful for environmental and resource management concerns because of its primarily public sector nature. In order to highlight a few types of partnerships most beneficial for emergency management I explore a few examples.

Contributory partnership: Structural flood control works in Manitoba. Following the 1950 flood, the federal government and the Province of Manitoba initiated a study to assess the damages and suggest recommendations (Royal Commission, 1958). The study recommended the construction of the Red River Floodway, Portage Diversion, and Shellmouth Reservoir (completed 1966, 1970, and 1972 respectively). The former Water Branch of the Manitoba Conservation (presently, the Department of Water Stewardship) oversaw construction and currently maintains the structures. The province and the federal government engaged in a cost sharing agreement, where the federal government has little or no operational involvement in with the structures.

Operational partnership: Flood Damage Reduction Program. The federal government engaged provinces in agreements for a common core purpose: to conduct flood and floodplain risk mapping.

These provincial-federal agreements included the cost-sharing requirements (50/50) and the time-limited framework.

Table 2.3 Compilation of common partnership types.

Basis of partnership classification	Type of partnership ⁴	Purpose	Characteristics
Power Sharing	Consultative	A public organization solicits information and advice from external sources for input on policy and program development, delivery, evaluation and adjustment and to legitimize decisions.	Public advisory, government retains control, ownership, risk
	Contributory	Partners support (often monetarily) activity in which it has little or no operational involvement	Support-sharing, gov't retains control, contributors may influence
	Operational	Partners work cooperatively to share resource and exchange information to achieve similar goals and objectives	Work sharing, gov't retains control, partners influence decision-making via involvement
	Collaborative	Each partner encouraged to exercise power in decision-making in policy development, planning, program design and delivery, evaluation and adjustment.	Decision-making power, ownership and risk shared
Activity	Preemptive	Diffuse existing or potentially negative situation	Address constrained opportunities
	Coalescing	Bring parties dependent on each other together to accomplish goals but are often rivals for competing projects and resources.	Communication improved
	Exploration	Involve parties to investigate or research issue of mutual interest.	Knowledge and learning of activity shared
	Leverage	Invest in issue or problem in return for mutual benefit	Risks and costs shared
Structure	Contractual	Formal or functioning contracts, agreements, conventions and or treaties	Legally binding
	Representational	Representation and shared authority at conferences, on committees or boards	Representative
	Transactional	Agreements sharing or exchanging resources or joint-ventures	Research/business deal for mutual benefit

Source: compiled from the following: Rodal and Mulder, 1993; Ontario Ministry of Natural Resources, 1992; Kernaghan, 1993; Mitchell, 1997; Long and Arnold, 1995; Ekos Research Associates, 1998; Environment Canada, 1992 cited in Rodal and Mulder, 1993.

⁴ It is important to remember that the specific types of partnerships are not exclusive; rather every partnership is unique resulting in considerable overlap among types (Kernaghan, 1993).

However, ultimately, the decisions pertaining to the use of the information (such as implementation of zoning and land use by-laws) remained within the municipal jurisdictions, not the federal or provincial governments.

2.4.3 *Characteristics for successful partnerships*

There are various indicators identified in literature that can determine the likelihood of a partnerships' effectiveness. Some key indicators applicable to partnerships in flood emergency management are compiled below using common characteristics of successful partnerships (Kernaghan, 1993). Although the literature may not have referenced the indicators within the context of flood emergency management, a correlation can be made and the factors still apply⁵.

- Long-term commitment and adequate time for partnership building
- Well defined objectives and goals
- Strong leadership or champion(s)
- Shared and clearly outlined responsibility of key interest partners
- Sense of ownership
- Good communication networks, both internal and external
- Combined resources and identification of special skills or knowledge brought by each partner, where sum of partner efforts is greater than individual partner action
- Developed monitoring and evaluation plans for partnership activities
- Formal yet adaptable arrangements to allow for change and learning

⁵ Indicators compiled using Kernaghan, 1993; Long and Arnold, 1995; Mitchell, 1997; Ekos, 1998; Leach and Pelkey, 2001; Poncelet, 2001; and You, 2001.

These indicators will be used in assessing the partnerships and the likelihood of their success in times of emergency.

2.5 SUMMARY

Sustainable flood management encompasses several stages that occur at different temporal and spatial scales requiring the involvement of three institutional sectors: public, nonprofit, and commercial. In Canada, the public and nonprofit sectors are the most involved in flood emergency management, because commercial institutions, such as the insurance industry, are not directly involved in damage minimization and cost recovery. Partnerships are a means to coordinate the cross-scale involvement of public and nonprofit sectors. The likelihood of success of partnerships in the event of an emergency or disaster can be assessed using indicators of success drawn from literature.

CHAPTER 3

METHODS

In order to attain the objectives of the study, it was thought that the qualitative design of the methodology would facilitate the exploration of partnerships among municipal and senior governments, non-governmental organizations, voluntary organizations and community based organizations composed of local residents. Analysis of all data was done both manually and with assistance of a qualitative software program, such as QSR NVivo.

Two methods were used to achieve the research objectives. The first method was a Multi-Phase Delphi Process, which combined both non-group and group processes for data collection. To generate general issues and ideas, the first phase of this process was a non-group face-to-face interview method. The next phase employed two Delphi surveys, which is a group process that enables feedback to the respondents while remaining anonymous through written mail-in surveys. This research was conducted under the Flood Research Partnership, a Community-University Research Alliance (CURA), sponsored by the Social Science and Humanities Research Council (SSHRC), Canada. One component of the project investigated risk perception and decision-making in flood emergency management, including a section on partnership. This partnership section of the larger research project provided a macro view of the benefits and limitations of partnerships in flood emergency management.

To complement this, a second method was used in my research, which provides a detailed view of specific partnerships involved in flood emergency issues using a multiple-case study. The multiple-case study involved an examination of five partnerships in the Red River valley: i) NGO-Government, ii) Community, iii) Private-Government, iv) inter-Governmental agency and v) Government-Community. These partnerships are evaluated on their performance indicators in the context of disaster and emergency management. Data collection was conducted using individual semi-structured

interviews with key partnership members. The interview data are used to detail partnership development, structure, management, and the interpersonal relationships among the partnership members, and some performance indicators that lead to the evaluation of their overall capacity for success in flood emergency management. The overall success of partnerships is assessed using a list of performance indicators generated from the characteristics of successful partnerships found in the literature (see Chapter 2.3.3).

3.1 INTRODUCTION

Several layers of institutional involvement exist in flood emergency management in Manitoba. The public sector, private sector, and third sector all play important roles. Of the three sectors, the public sector, including three levels of government (provincial, municipal and federal) is the most involved in emergency management. However, the public sector's role and ability to effectively provide emergency management has and continues to change, due to situations such as citizen distrust of government decisions, and limited financial and human resources. To counter this, flood emergency management, policy, and action must consider other ways to employ more efficient and effective methods of program development. The cooperation and coordination of the third sector, including non-government and volunteer organizations, with the public sector must be considered an option.

The objective of this research was to evaluate how and why partnerships are employed and effective in flood emergency management for Manitoba's Red River valley. Partnerships are known to enhance information sharing, communication methods, decision-making and consensus, but there are many unknowns regarding partnerships in flood emergency management as well. What benefits and limitations do partnerships encounter in emergency management and how can they be enhanced and minimized respectively? How are partnerships developed, structured, and managed? How effective are partnerships for addressing flood emergency management issues? How do partnerships enhance

more interaction between the researcher and the respondent and allowing for a freer flow of information (Mason, 2002). However, researchers must acknowledge that respondents in non-group process, such as interviews described above, lack iteration and feedback and therefore do not have the opportunity to know what other participants said or to revisit and change their responses, which is pertinent to generate original thoughts and possibly consensus (Needham and de Loe, 1990).

Researchers must also keep in mind that interviews or surveys are heavily dependent on respondents' ability 'to verbalize, interact, conceptualize and remember' experiences, perceptions, or understanding of an issues and therefore responses should not be treated as a direct reflection of understanding (Mason, 2002, p. 64).

Group processes involve group thinking and interaction, such as feedback. They provide an opportunity to explore how issues are viewed, worked out and negotiated (Mason, 2002). Research has shown that group processes are superior to non-group processes with regards to the quality of, the average total number of, and the average number of unique ideas produced (Needham and de Loe, 1990). This is important for the development of creative solutions to complex problems that often require the accumulation and fractionation of knowledge (Delbecq and Van De Ven, 1971b). Examples of these group processes are focus groups, workshops, Delphi technique⁶.

The study design was composed of two research methods, a multi-phase Delphi technique and a multiple-case study. Each method required group and non-group process and uses different data collection strategies, which were each described in turn. The use of several data collection strategies aimed to provide additional depth and dimension providing different approaches to addressing similar research questions. Overall, this multi-method research design enabled the generation of two data sets,

⁶ Delphi technique: surveys where participants of a group develop ideas about a problem issue themselves, remaining anonymous, and revising their written responses based on the feedback compiled and presented by survey researchers. More information to follow in section 3.3.1

one broad and one narrow in scope, to identify patterns and themes, draw conclusions and make recommendations. A schematic diagram of the research design is shown in Figure 3.2.

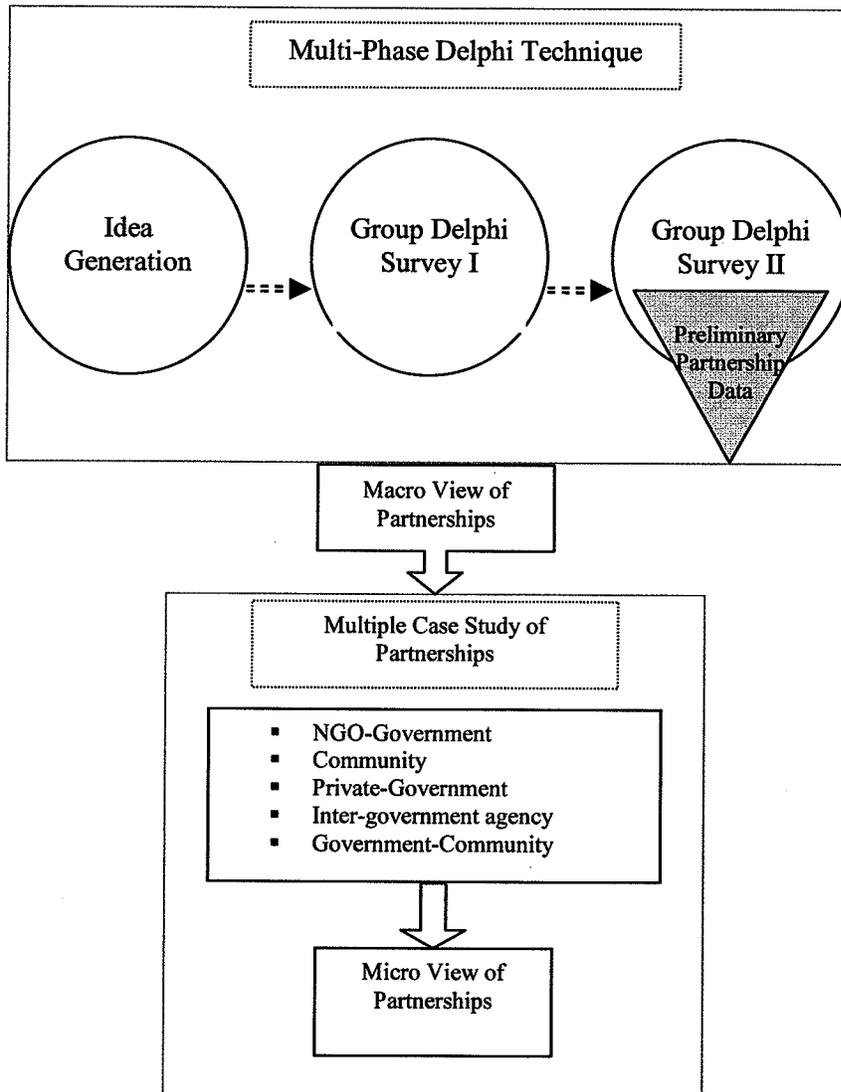


Figure 3.2 Methods schematic: multi-phase Delphi technique and multiple case study.

3.3 MULTI-PHASE DELPHI TECHNIQUE

3.3.1 Background

The Delphi process, originally designed and named by the Rand Corporation, takes its name from the great Greek oracle, Apollo's Delphic Oracle, which is known for excellent interpretation and foresight abilities. The Delphi technique is a method for structuring a group communication process, effective in allowing a group of individuals, as a whole, to deal with a complex problem (Linstone and Turoff, 1975) while maintaining anonymity, receiving controlled feedback and achieving statistical group response (Pill, 1971). Pill (1971) uses a description of Delphi given by N.C. Dalkey in 1969: anonymity reduces the effect dominant individuals may have on the group; controlled feedback reduces noise; and using statistical definition of the group response reduces group pressure for conformity. This group process utilizes written responses as opposed to bringing individuals together (Linstone and Turoff, 1975).

There are many benefits in employing the Delphi technique to research requiring the identification and exploration of complex and unknown issues. Some benefits include the aggregation of individual judgments to improve decision-making quality, no travel time or costs, the response time is flexible and sufficient time for thinking and reflection prior to response, the avoidance of placing undue focus on one issue, the avoidance of group member status pressures, the limitation of competition and conformity of issues, the discussion remains problem-centered, (Delbecq, *et. al.*, 1975) the ability to explore complex and abstract problems or issues, and the iterative nature using controlled feedback making it possible to reevaluate and/or revise previous answers (Smil, 1975).

There are also several negative factors to the Delphi technique. Some limitations include the chance for misrepresentation of respondent answers as researchers must summarize issues and responses in order to continue with process, the relatively high drop out rate of respondents, the

assumption that one Delphi technique design is appropriate for all issues, the difficulty respondents may have in reading the questions or expressing themselves by written communication (Delbecq, *et al.*, 1975), the dependency on individual participant motivation, high motivation required (Delbecq, *et al.*, 1975), the absence of opportunities for spontaneous discussion that occurs in a face-to-face group environment (de Loe, 1995).

Considering both the benefits and the costs, a modified Delphi technique was developed for this research in order to maximize the benefits and minimize the limitations. This modified design combined both non-group and group processes for data collection.

3.3.2 Phase 1: Non-Group face-to-face semi-structured interviews for idea generation

Similar to all Delphi techniques, the purpose of the first phase was idea generation. However, in this design, a non-group face-to-face semi-structured interview strategy was employed over a traditional written mail-out questionnaire, to engage respondents in the entire process using the researcher/respondent interaction and connection in the interview. This idea generating phase provided data, which was then analyzed and organized into themes, issues and patterns, required for the development of the second phase of the Delphi technique.

3.3.3 Phase 2: Group Delphi survey I for individual positioning relative to group responses

The second phase of this research method used the traditional, group process design of the Delphi technique. The survey design contained several statements based on the interview data. This phase enables the individual respondents to see the group responses and issues from the semi-structured interviews. The respondents were asked to read each 'group' statement and record their agreement or disagreement using a Likert scale (ranging from Strongly Disagree to Strongly Agree with no neutral position offered). Following each statement, respondents were asked to provide written

comments on and reasoning for their position. The data from the first completed Delphi survey was then analyzed and used to devise the second Delphi survey.

3.3.4 Phase 3: Group Delphi survey II for confirmation of individual positioning relative to group responses

The purpose of the second Delphi survey was to provide the respondents an opportunity to confirm and restate or to change their responses and reasoning for a given statement based on the results from the group. Again, this survey provided several statements, although less than survey I, in which respondents were to read the group statements and responses, record their agreement or disagreement on a Likert scale, and provide any reasoning or comments.

This portion of my research design was conducted as part of larger research project under the Community-University Research Alliance (CURA) risk perception and decision-making component of the Flood Research Partnership. Partnership data gathered from the partnership section were employed in the data analysis of Phase III, the Group Delphi survey II, and were used to address questions pertaining to what benefits and limitations do partnerships have in flood emergency management. This component of my research is expected to provide a macro view of the issue of partnerships in flood emergency management. In total 74 face-to-face interviews were conducted by the research team.

Table 3.1 outlines the breakdown of the respondents engaged in this process.

Table 3.1. Respondent distribution across the study area in the Multi-phase Delphi technique.

Floodplain Residents (flooded = 45; non-flooded = 10)	55
Senior Government (WRB (2), EMO, OCIPEP, WPG Water, Health)	6
Local Government (2 South RM, 1 North RM, 1 City Council)	4
Academics	4
NGO/CBO (SA, RC, MDS, NRAC, N of Fldwy Coal., RRBC, PD)	5

3.4 MULTIPLE-CASE STUDY

To complement the broad research issues and findings generated in the first method, the second method for my research employed has to provide a micro view of three specific partnerships involved in flood disaster management issues using a case study. The proposed case explored the following five partnerships: i) an informal, working partnership between a government emergency organization (Emergency Measures Organization) and several NGOs (e.g., Salvation Army, Mennonite Disaster Service, Red Cross), intergovernmental departments and private industry with mandates to facilitate disaster response and recovery in Manitoba; ii) a partnership between a government emergency organization and municipal government; iii) a formal partnership among several NGOs, for the enhancement of services provided in a response; iv) an informal partnership in a community to enhance flood protection; and v) a formal partnership in the private telecommunications industry. This multiple-case study data were used to detail the partners and their roles, the dynamics between the partnership members and their effects, the factors and characteristics for success/failure, the networking opportunities, and the effectiveness of partnership involvement in flood emergency management. Data on each partnership were collected using two research strategies: individual semi-structured interviews with key partnership members and a follow up focus group discussion with interviewees. Partnerships examined in this project were selected first by findings from modified Delphi method, followed by word of mouth, recommendation of case-study respondents.

Partner interviews

Individual semi-structured interviews of key partnership members were conducted to gather detailed data regarding benefits and challenges facing the partnership, partnership development and structure, partnership dynamics, critical success factors, effectiveness of partnership and input on

future directions. Table 3.2 outlines the distribution of the five partnerships examined using 15 interviews. To record this data set, I recorded field notes throughout the interview to highlight important themes, issues and interests and audio recorded each interview, given that permission was granted by the interviewee, to provide a back-up to hand written notes.

This multiple-case study was pursued to generate data in which analysis, themes, patterns, conclusions and recommendations could be completed at a micro scale. These findings from partnerships between government and non-government organizations dealing with flood response, recovery and planning at a predominately local scale were then applied to the larger context of partnerships in flood emergency management.

Table 3.2 Key partnership member interview distribution among 5 partnerships examined.

Flood Emergency Management Partnerships - 5 (flood hazards = 1; all-hazards = 4)		
Intergovernmental	EMO Interagency Emergency Preparedness Committee	4
Municipal Government	St. Paul Emergency Preparedness Committee	3
Community-based	Elm Park Peninsula Flood Protection Committee	2
NGO-Government	Partners in Disaster (RC, SA, MDS, St.J, CWRC)	4
Private-Government	MTS (CTEPA, EMO Interagency EPC)	2

3.5 ANONYMITY AND CONFIDENTIALITY

In both the multi-phase Delphi and the multiple-case study the researcher knew the interview subjects' identity during the data collection process, however, their names were never made to be directly associated with the data, only the respondent group designation (e.g., north of the outlet, south of the inlet, city of Winnipeg) or institution's name (e.g., RM, Provincial government) was used.

Regarding confidentiality, the data, including audio recordings, transcriptions, interview field notes, completed surveys and interview/survey schedule, were stored in a secured location where only

the primary researcher would have access to view the data. Specific subject quotes might be used in data analysis and thesis reporting, however, no information that identifies a subject are used with the quotes. Following the research, all identifying information were destroyed, including the audio interview recordings. Ethics approval was granted under the CURA-FRP project for the multi-phase Delphi technique in 2003 and a copy can be found in the Appendix-III.

3.6 DATA ANALYSIS

The qualitative approach to the methodology was used to facilitate the exploration of partnerships among institutions such as municipal and senior governments, non-governmental organizations and volunteer organizations. Four data sources were collected in total: Delphi interviews, Delphi surveys, and case study interviews. Manual analysis of the data was conducted simultaneously to the collection, by looking at patterns, themes and important insights.

Using performance indicators, compiled from literature highlighting characteristics of success (outlined below and in Figure 3.3), the results of each partnership were highlighted in chart form (Table 4.2).

- Longevity and sustainability develops trust and relationships
- Evolution ensures partnership is valid, current, and keep people engaged
- Monitoring and feedback mechanisms are in place to adapt and grow
- Roles and responsibilities clearly understood & outlined. Objectives focused.
- Leadership strong, there is a champion of the partnerships' purpose.
- Decision making predominately based on consensus.
- Institutional linkages have equal representation & power between/among partners.
- Communication mechanisms facilitate internal dialogue among partners and communication with external organizations to the partnership.

- Accountability of partnership and partners defined.

Analysis was done with the assistance of a qualitative software program, QSR NVivo.

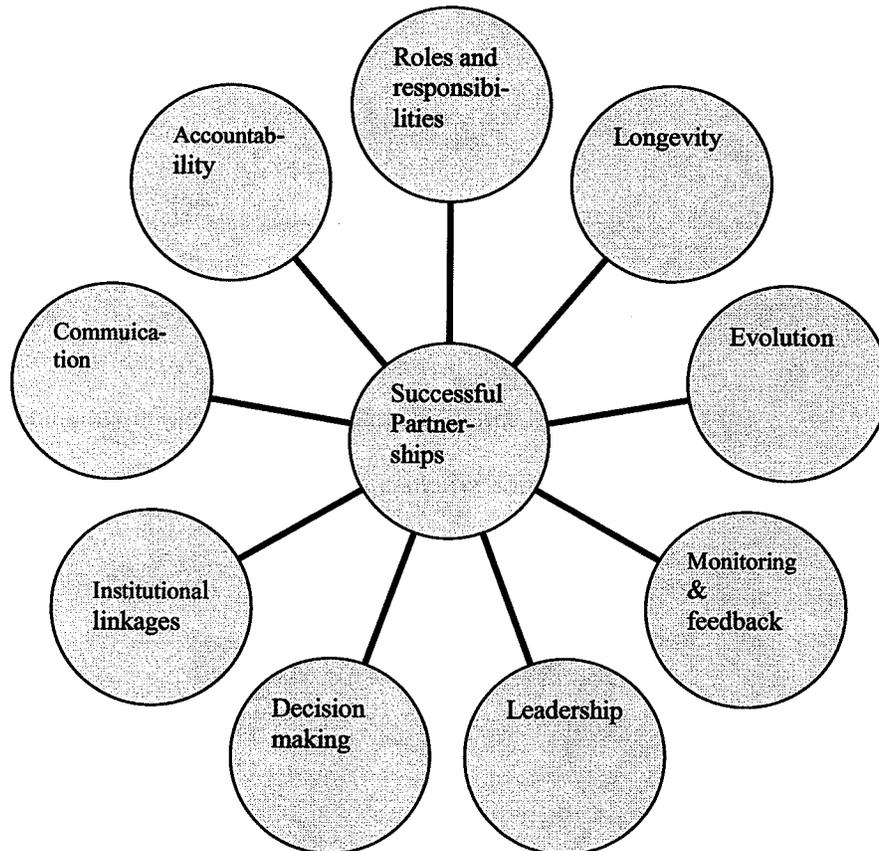


Figure 3.3 Indicators of successful partnerships (Indicators compiled using Kernaghan, 1993; Long and Arnold, 1995; Mitchell, 1997; Ekos, 1998; Leach and Pelkey, 2001; Poncelet, 2001; and You, 2001).

CHAPTER 4

DATA AND ANALYSIS

4.1 IDENTIFICATION AND TYPOLOGY OF PARTNERSHIPS

Identifying partnerships engaged in flood emergency management activities in the Red River Valley was done in two steps. First several partnerships were identified in the modified Delphi component of this research during face-to-face interviews. Second additional partnerships were identified during the multiple case study component through suggestions and recommendations offered by interviewees. A total of five partnerships were examined in detail using interviews of key partnership players, which illustrated examples of partnerships in all three sectors: public, private and non-government/non-profit. The remainder of this section explains the five partnerships examined as part of the multiple case study and places them within the typology as outlined in the literature review.

4.1.1 Description of five partnerships

Partners in Disaster

'Partners in Disaster' is a partnership between non-government organizations (NGO) that are involved in disaster response. This partnership began informally in the early 1990s in Canada at the national scale. Six national NGO representatives, the Adventist Development and Relief Agency (ADRA), Canadian Red Cross (CRC), Christian Reformed World Relief Committee of Canada (CRWRC), Mennonite Disaster Service (MDS), St. John Ambulance (SJA) and The Salvation Army (SA), developed Guidelines for Cooperation intended to facilitate the implementation and encourage local chapters of each agency to assess local needs in the Red River Basin and cooperatively share the workload in emergency and disaster service provision, while retaining their individual identity and mission. The local NGO chapters in Manitoba did just that by creating Manitoba 'Partners in Disaster' (PD) in 2002 and defining their own Guidelines for Cooperation. The Manitoba Partners in Disaster

membership is composed of the core NGOs (SA, CRC, MDS, SJA and CRWRC) and several associate members (non-voting) from various provincial and municipal agencies, such as Manitoba Emergency Measures Organization, Manitoba Emergency Social Services, Manitoba Health Disaster Management and the City of Winnipeg.

Based on past experiences, these agencies recognized the communication and transfer of knowledge difficulties that arise in disasters are often related to an unwillingness to share information with outside organizations. To facilitate the inter-agency coordination required for information sharing and communication PD engaged in several exercises (i.e., defining roles, outlining goals, addressing gaps in service, and identifying their network for information). The current institutional linkages of this partnership cross various scales of government and NGOs, vertically and horizontally (see Figure 4.1). The PD partnership, as a boundary organization, has horizontal linkages particularly between regional government and non-government organizations, and has informal vertical linkages between local government, as well as federal government when applicable. PD undertakes and plays several roles and activities, including a coordination role and engaging in activities to promote the partnership and individual members such as conferences, meetings, etc. (Powell Quinn et al., 2005) (Figure 4.1). The predominant functions of PD is to develop trust, maintain networks and relationships thereby developing effective and coordinated response and recovery efforts, and outline the extent of partnership development.

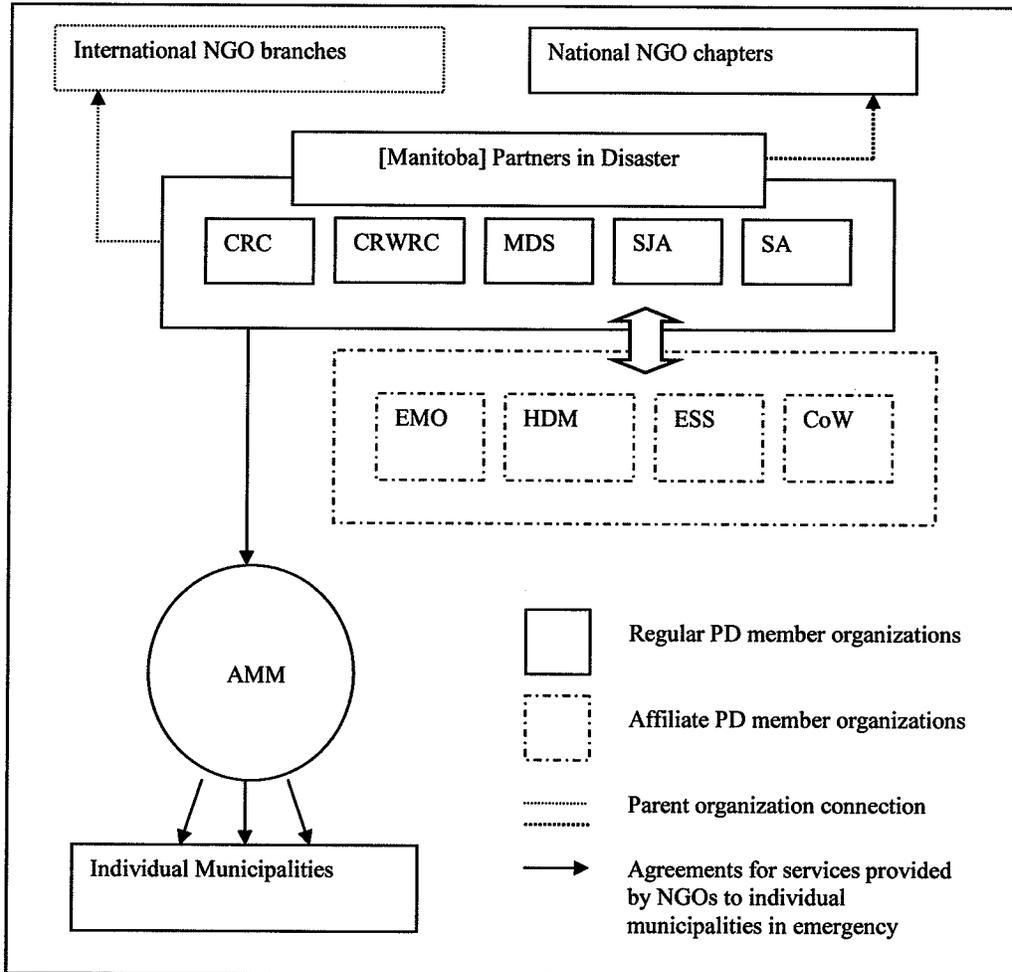


Figure 4.1 Partners in Disaster has linkages to international, national, provincial and local organizations.

Elm Park Flood Protection Committee

'Elm Park' is a residential community within the City of Winnipeg, situated on a peninsula of the Red River between the primary and secondary dike systems. Built in 1951, the secondary dike has suffered from river bank stability and embankment slumping issues, resulting in a community that, in some areas in 1997, had significant flood risk for property loss. Flooding in 1996 prompted three individuals to start addressing flood protection issues. These prominent community leaders stimulated the

development of the Elm Park Flood Protection Committee (EPP), community based organization formed in 1997 comprised of Elm Park residents. During the 1997 flood the community elected a leader to manage the flood protection, assigned several members to dike captain and supervisory positions. In June 1997, the EPP determined a number of issues that required attention in preparation for subsequent flood events. The committee developed a list of seven objectives based on issues that needed to be addressed, such as repairs to the secondary dike, river band erosion protection, emergency preparedness and pre-flood protocol, which was discussed with and supported by the community at large. The committee met and worked with municipal, provincial and federal levels of government to meet their objectives (see Figure 4.2). The organization of the committee and the coordination and support of the community supported the development of strong institutional linkages between the committee and government bodies (Figure 4.2).

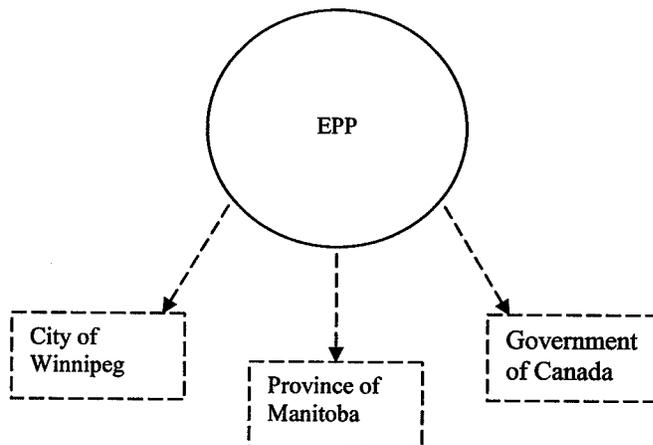


Figure 4.2 Linkages made by Elm Park Peninsula Flood Protection Committee to complete partnership goals.

Regular committee meetings were conducted at committee member homes and information on progress, etc., was shared to the community at general meetings and through newsletters through April

2005. Currently, the committee is satisfied in achieving most of the seven objectives and is in the process of evolving the committee through mandate and leadership changes.

MTS, Corporate Emergency Management Department

'MTS' is a prominent private communications provider in Canada, headquartered in Winnipeg, Manitoba. This company supports many services, one of which is critical in any emergency or disaster - telecommunications. To ensure the continuity of their services, the Corporate Emergency Management (CEM) department develops the methodology and manages the emergency program for the entire corporation. The issues addressed in this department are cross-scale and detailed as outlined in a key interview: "loss prevention initiatives, risk assessments, business impact analysis, business continuity plans, disaster recovery plans for IT systems, specific plans for technological equipment, power restoration planning, labour disruption planning, specific event planning like flood, forest fire, pandemic, all crisis management planning including all corporate strategies, which involves who the crisis management teams are, who works on what for any specific disaster, the emergency operations centre, care and feeding of those for an ongoing basis".

In 1996, an internal vulnerability assessment of the organization was conducted. The findings pointed to the need to design and maintain emergency management/business continuity programs. In order to develop, manage and oversee the plans, this small internal department was created. Using a facilitated approach, MTS Corporate Emergency Management (CEM) department provides the methodology and tools required for section planners throughout the organization to write emergency management and business continuity plans. For example, as stated in a key interview, "the emergency evacuation plan is with the Health and Safety group; disaster recovery planning for assistance is with the IT group so it is split up even though we provide the methodology and the approach we want to

use.” All organization component plans must be linked and partnered with the crisis management component, as it is what controls and manages the organization in a disaster.

Externally, MTS Corporate Emergency Management department belongs to several organizations (and in a sense partners with them). The following two examples will illustrate how this company, through the CEM department, partners with other private and public institutions. First, the Canadian Telecommunications Emergency Preparedness Association (CTEPA) is composed of members from 12 to 13 telecommunication companies across Canada to promote best practices among telecom companies in emergency planning and address issues as an industry. Each member is an emergency planner with their organization and participates in this partnership on a voluntary basis. This association has developed standards for each member company to use in best practices for emergency planning and signed mutual aid agreements to assist each other in resource sharing in times of an emergency, which are excellent examples of some of the activities the organization undertakes. Regular communications among the partnership takes place through bi-monthly meetings via teleconference and an annual face-to-face meeting. The second example of external partnership is seen with the Inter-Agency Emergency Preparedness committee, organized by Emergency Measures Organization (EMO) (see Figure 4.3). This committee is one of the five partnerships explored in this research and the details are given below.

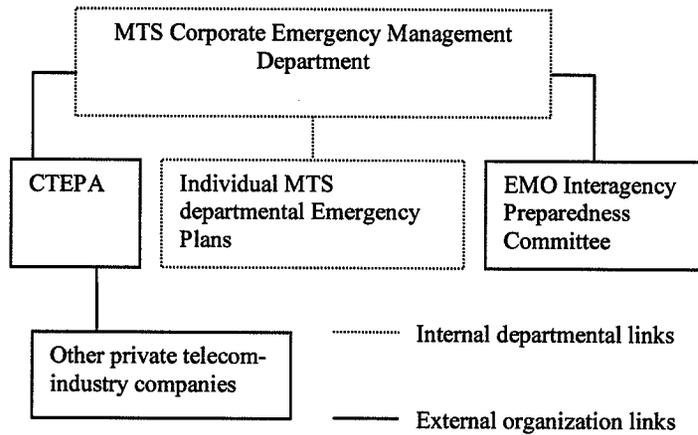


Figure 4.3 MTS Corporate Emergency Management Department links to internal departments, industry competitors and provincial emergency management operators.

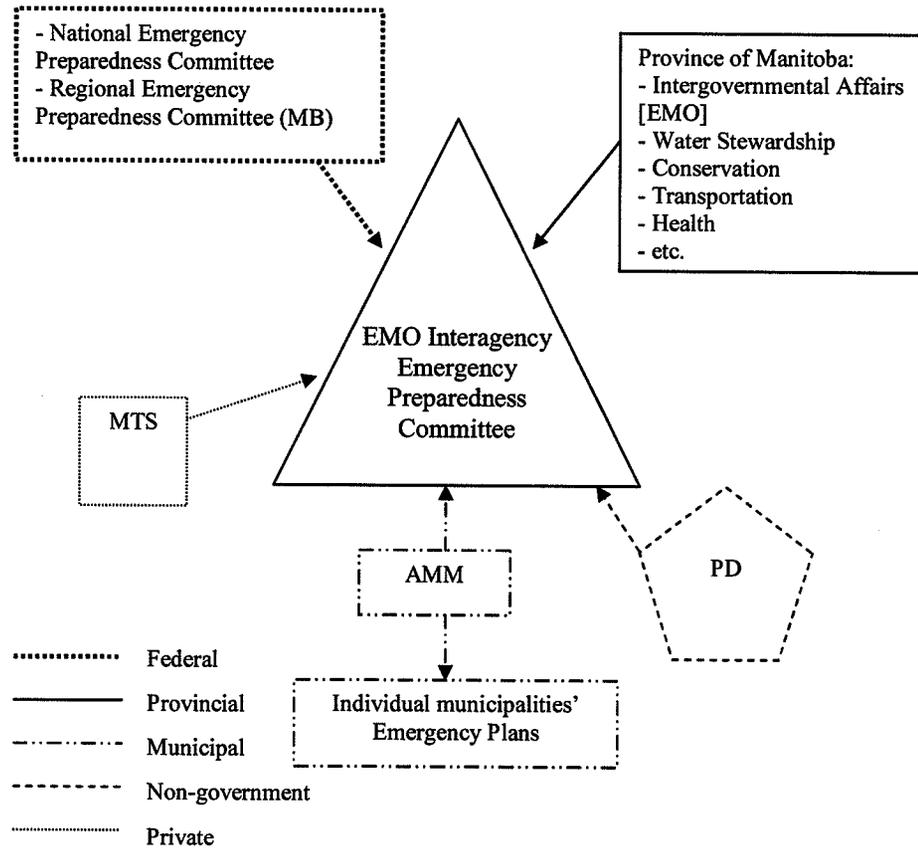


Figure 4.4 EMO Interagency Emergency Preparedness Committee linkages with internal and external organizations.

Emergency Measures Organizations - Inter Agency Emergency Preparedness Committee
The public sectors' involvement in emergency management extends to all facets

mitigation/reduction, preparedness, response and recovery. Active since 1997, the EMO Inter Agency Emergency Preparedness Committee (EMO) is an information sharing group composed primarily of provincial government department representatives responsible for emergency management (see Figure 4.4). Other members include Partners in Disaster, the local NGO representatives, and MTS, the provincial telecommunication's provider, the City of Winnipeg and Public Safety and Emergency Preparedness Canada (PSEPC) regional. The EMO's primary functions are information sharing by engaging guest speakers, discussing points of interest, and identifying gaps within agencies to become more effective. Meetings are held once a month for 10 months of the year, bringing institutional representatives responsible for emergency management together from many organizations to familiarize themselves with each other and their respective institutions before an emergency or disaster; therefore in the event of a crisis people know each other and know the responsibilities of each organization. Main purpose is to share information related to emergency and disaster management to inter-governmental departments and agencies, NGOs, and develop trust between organizations, familiarity with organizational representatives, and share information with other groups.

RM of East St. Paul, Emergency Preparedness Committee

In 2002, the government of Manitoba made it mandatory for all municipalities to complete and maintain an emergency plan to provincial standards. The rural municipality of East St. Paul's is an example of one rural municipality that places great importance on emergency management. East St. Paul EPC was "only the 2nd [municipality] in the province to receive our certificate of excellence for meeting the 16 mandatory requirements and the 30 optional ones".

Like all emergency management committees in municipalities across Manitoba, the East St. Paul 'Emergency Preparedness Committee' (EPC) is responsible for developing, maintaining and exercising the Emergency Plan. Active since 1995, East St. Paul's EPC has a comprehensive plan that meets all provincial requirements and exceeds them in many ways. Led by the Emergency Coordinator, the mandate, membership and involvement of the committee and community at large has significantly evolved since its' inception resulting in a plan that is detailed, thoughtful and active. The purpose of EPC is to be prepared for an incident that overtaxes first responders (i.e., public works, police, fire) and provide additional assistance to deal with the incident. Their emergency plan details the chain of command and contact information necessary for preparing for, responding to, and recovering from an emergency. The committee is composed of municipal officials and volunteers and conducts meetings and training sessions regularly. Mutual aid agreements using memorandums of understanding have been created with surrounding municipalities in support of larger scale events (see Figure 4.5). Educating the public, networking and resource development are also important aspects of the EPC's functions. It should be noted that the East St. Paul EPC committee is not representative of all municipal emergency preparedness committees; many municipalities have only produced the minimum requirements outlined in the Provincial mandate.

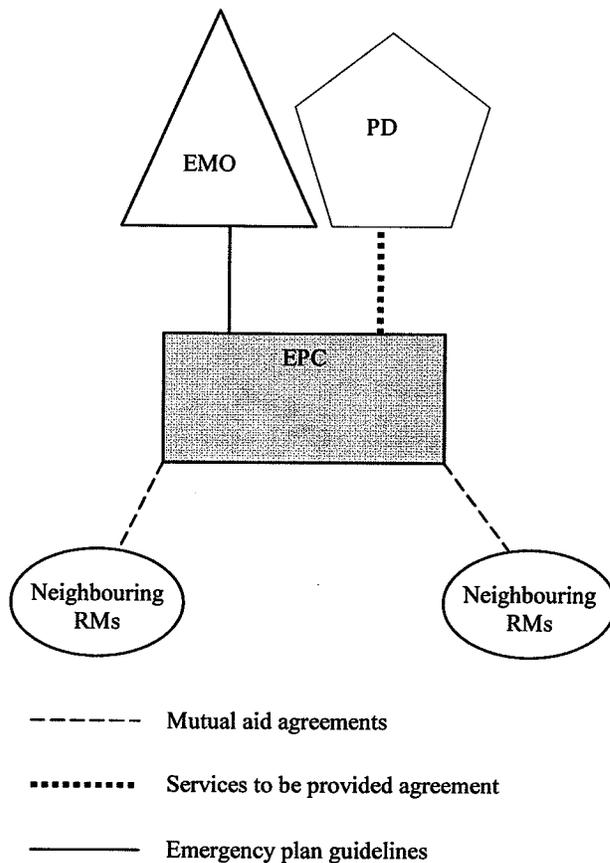


Figure 4.5 Rural municipality of East St. Paul Emergency Preparedness Committee: organizational linkages and functions to provincial and non-government organizations as well as neighbouring municipalities.

4.1.2 Typology of Partnerships

There are several typologies for partnerships and typology can be assigned depending on purpose and characteristics of the partnership. Using the power sharing as the basis for classifying these five partnerships can be described as one of four types: consultative, contributory, operational and collaborative. It is important to note that in the context of the literature review, the partnerships described fall within the public sector. I am extending the definition to include the non-government and private sector partnerships as well.

Table 4.1 illustrates the type of partnership identified. EMO is a consultative partnership because it engages organizations and sources of information external to its own organization for input on policy, program development, delivery, evaluation and adjustment and to validate its decisions related to emergency management.

MTS is an example of a contributory type of partnership, where partners support emergency preparedness activities of other telecommunications companies, without any direct control or involvement in how partner organizations develop their plans, policies and procedures. All partners contribute to the development of 'best-practices' for emergency management thereby influencing the industry while individual partners retain their own control. EPP is also considered contributory partnership because it will share information and assist in the direction of change but will not necessarily have any operational involvement in implementation. RM is an operational partnership, where all partners work cooperatively to share resources and exchange information in order to achieve similar goals and objectives. PD is a collaborative partnership, where each partner is encouraged to exercise power in decision-making in policy development, planning, program design and delivery, evaluation and adjustment.

Table 4.1 Typology of Partnerships in Flood Emergency Management in the Red River Valley.

Consultative	Contributory	Operational	Collaborative
EMO Interagency Emergency Preparedness Committee (EMO)	MTS-Corporate Emergency Management Department (MTS); Elm Park Peninsula Flood Protection Committee (EPP)	RM St. Paul, Emergency Preparedness Committee (EPC)	Partners in Disaster (PD)

4.2 ANALYSIS OF PARTNERSHIPS USING INDICATORS BASED ON CHARACTERISTICS OF SUCCESSFUL PARTNERSHIPS

In this section partnerships are assessed using the characteristics of successful partnerships summarized in the literature review (chapter 2) and outlined in the matrix found in

the methods chapter. Partnership development can occur due to any number of reasons; for example, resource maximization, information sharing, and influence on decision-making. Most partnerships are created as a result of individuals representing a particular segment of society or representatives of an organization in order to achieve common goals and objectives, carry out activities and establish cooperation/coordination. Every partnership is unique in form, function, duration, flexibility, etc. Table 4.2 provides a description of what each partnership relative the performance indicators. In the remainder of this section, I evaluate how adequate or inadequate the partnerships are relative to the indicators and provide an overall assessment of the partnerships' capacity for success.

The East St. Paul EPC has been active for over 10 years and in that time has evolved to accommodate the changing environment of emergency management in Manitoba. Several mechanisms such as regular meetings, training exercises and reviews of emergency plans are in place for monitoring and feedback which helps to maintain partner interest in non-disaster times. All roles and responsibilities of committee members are clearly outlined and understood and recorded in the emergency plan. Committee members work on behalf of the municipality that ultimately assumes any accountability related to EPC decisions, actions and activities. Communication and linkages both internal and external to the EPC are viewed as critical and significant efforts are made to ensure dialogue, relationships and agreements are maintained. There is a clear leader that generally seeks consensus in decision-making, which could be interpreted as the weakest indicator in this partnership; although consensus is generally sought, decisions are ultimately made by the coordinator (leader).

The first intimation of the EMO Interagency Emergency Preparedness Committee was a function of the emergency response and recovery to the 1997 'Flood of the Century'. Despite

the somewhat ad hoc beginning, the key members of the committee recognized the value of maintaining the communication and institutional linkages forged during in this event as well as the importance of integrating lessons learned from experience and training. The recognition of these needs by all organizations sitting on the committee has resulted in a partnership that is sustainable and is able to evolve over time. The primary function of this partnership is to share information, therefore the way in which decisions are played a minor role. This function also minimizes the concern of accountability within the partnership; each member is accountable to their own organization.

Partners in Disaster contain elements of all the indicators of success. Similar to EMO there is a partnership chair, but no single leader. Different leaders will emerge depending on the requirements of the disaster recovery efforts. The partnership is evolving and shows signs of sustainability and longevity (become more formalized). Partnership accountability is minimal, as each member is responsible to their member organization. Opportunities for learning and debriefing follow every event (post-mortem) and lessons are implemented into preparedness activities, thereby enhancing the performance of the partnership. Linkages and communication among partners and with organizations outside the partnership are critical to the maintenance and functioning of this partnership and great effort in maintaining these relationships is made.

The community-based partnership in Elm Park (EPP) was successful in achieving its original seven objectives set by the committee. It began with a natural champion from the community with a professional background and interest in flood mitigation and later engaged a clear leader that directed members towards achieving the defined partnership objectives. To achieve the objectives linkages were made with organizations that would assist in or were required for these goals. The committee did not assume any level of accountability, as it strictly

directed change in favour of its objectives, and did not directly implement the changes. As the objectives were achieved, the leader for many years resigned leaving no clear replacement, only two reluctant co-chairs. The evolving committee has outlined a direction for moving forward; however, maintaining interest and support during non-disaster times is proving difficult. The longevity and sustainability of EPP with new leadership, goals and objectives remains uncertain.

All the indicators for MTS point towards significant capacity for success. Roles and responsibilities are clearly outlined in formal bi-laws and 'key' positions (e.g., chair) are rotated among all partner members. Industry partners (competitors) share best practices for emergency management (a form of feedback and monitoring within the industry), which may be integrated by member organizations as appropriate; this receives strong support from organizations, such as government, that depend on a key utility such as communications in an emergency.

Due to the nature of emergency management, the preparedness function of the cycle plays a critical and large role in determining the likelihood of success in an emergency. The evaluation of the case study partnerships using indicators from the literature illustrates that these partnerships, with the exception of EPP, have significant capacity for success in the event of future emergency response and recovery activities.

Table 4.2 Using performance indicators, compiled from literature highlighting characteristics of success, the results of each partnership are highlighted below.

	EPC	EMO	PD	EPP	MTS
Longevity and sustainability	Permanent position for Emergency Coordinator in the municipality. Mandate from province to ensure Emergency Plan maintained and updated.	Lessons learned in past disasters outlined importance of maintaining relationships and communication links in non-disaster times.	Group membership maintained with minimal turnover. Development of a more formalized group structure and position within government emergency operations likely to secure longevity of group.	Recognizes and states the importance of continuity of committee membership, key members trying to maintain 'nucleus'	Industry and government support the coordination policies and sharing of best practices to ensure service regionally and nationally. Facilitated approach to involvement of business sectors.
Evolution	Emergency plan and preparedness activities require regular reviews and updates. Level of sophistication for group constantly increasing. Function of personnel changed.	Created out of need with small member list during emergency. Developed into committee of interagency members. Small informal 'kitchen table committee', followed by coordinated and defined activities.	Initial concept from national level, informal integration regionally among a few NGOs and developed into a more formalized regional affiliation with PD partners, municipalities (booklet) and EMO.	mandate and priorities change over time as goals and objectives are achieved; nucleus of members maintained as committee members, goals and objectives change	Creation of program to oversee emergency management plans in MTS led to industry wide involvement to include all competitors.
Monitoring and feedback mechanisms	Annual review of emergency plans, participating in table top and field exercises, discussions in regular meetings. Information, resources and or feedback provided to RM is shared with community.	Regular reviews of emergency plans by municipalities, businesses and government agencies. Integrating lessons learned following a disaster.	Following an event there is an opportunity for a debriefing session (post-mortem) and discussion of lessons learned. Lessons from recovery are implemented into preparedness.	No defined criteria or mechanisms. The completion of goals and objectives provide good indication of success/failure.	Members present corporate emergency plans to group to discuss, compare and learn from.
Roles and Responsibilities	Clearly understood and outlined in the emergency plan which is also reviewed and updated annually (at least).	Individuals perform roles and responsibilities of parent organization. EMO has leads information sharing.	Clearly outlined and well understood; accessible to public and other organizations via partnership booklet.	Well known within the committee; objectives provided guidance. Nothing formally written.	Clearly outlined in bi-laws of industry group and well understood by members.
Leadership	Emergency coordinator, hired position.	Chair of meeting, champion of purpose.	No single leader in PD because every emergency is different. Different leaders will emerge depending on the requirements of the disaster recovery efforts.	Natural leader from community based on professional involvement in flood mitigation. Subsequent leaders, although reluctant, assume role due to its importance and proven success in times of disaster.	Rotating 'key' positions. Head of program within MTS provides strong leadership.

	EPC	EMO	PD	EPP	MTS
Decision-making	Generally consensus. Recommendation put forward followed by discussion.	No decisions are made at interagency meetings, only information sharing. People from the group make decisions in disaster times at a provincial scale.	Equally, respectively. Discussion followed by agreement. Consensus.	Consensus-agreement by committee	Few decisions made, mostly information delivery. When necessary, decisions made by consensus in group.
Institutional Linkages	Maintaining partnerships and networks important. Formal MOUs with several organizations for mutual aid, etc. Link to NGOs, municipalities, provincial and municipal governments (EMO, Health)	Provincial essential services, private./semi private industry, federal agencies, municipal association. Primary function is to network.	Municipal, provincial, federal, national & international. Several partners belong to international organizations. Linkages among the partner organizations.	City, provincial, federal links. No NGO involved. Explored possible links with other CBO, but no similar groups for alliance. Chair personally participated in other committees to maintain liaison and relationships.	Signed mutual aid agreements for resource sharing in emergencies. Network and link to federal, provincial and municipal governments, other industry partners.
Communication: among partners; with outside groups	Inside: clear and consistent; cordial, polite, non-partisan Outside: meetings, annual contact to review agreements.	Inside: Informal among partners. Provides opportunity to get to know and understand one another in non-disaster times.	Inside: open & clear, combination of formal and informal meetings Outside: departmental or organizational reps. present at meetings; partnership booklet external groups.	Inside: clear and consistent among members. Outside: informal discussion in community. Formal newsletters. Community at large meetings.	Inside: regular meetings & projects, information sharing, emergency communication committee Outside: participate on inter-agency groups/committees.
Accountability	Municipality ultimately responsible. Group members working on behalf of municipality.	No direct partnership accountability. Members accountable to individual organizations.	No partnership accountability. Each member responsible to individual organizations. Volunteers working with partners in SOE covered under provincial workers compensation.	Legal representation on committee as member provided advice. Some functions of committee best addressed by City of Winnipeg	No partnership accountability because each member responsible for actions/issues

4.3 ANALYSIS OF INTERPERSONAL RELATIONSHIPS AND NETWORKING

Interpersonal relationships and networking are seen to be important in creating and maintaining successful partnerships. The partnerships assessed in this research outlined several examples of the importance of interpersonal relationships and networking with outside organizations. The following section highlights some of these examples.

4.3.1 Interpersonal Relationships

Learning about individuals and developing a rapport with them in non disaster times is important for the feeling of comfort and the growth of trust that make operations in a disaster time less difficult. Over time, increased levels of comfort have formed as partnerships develop and evolve resulting in stronger relationships. The development and maintenance of strong interpersonal relationships is also a function to trust. Trust must be harnessed among individuals and institutions. The volume of literature on trust theory that studies is evaluates and assesses trust theory in relation to organizational and institutional issues is significant. Kramer (1999) presents a summary of trust literature as it relates to organizational behaviour and highlights the extensive interest among social scientists in trust theory. Although going into trust in depth is beyond the scope of this thesis, it is important to note that trust, in this case study, does play a key role in the development of partnerships that can with stand the challenges presented in emergency management. The longevity of a partnership will build also stronger interpersonal relationships. This can be seen in all cases studied in this thesis, with the exception of EPP, where the longevity of the partnership is in question due to changes in leadership.

Leadership is an important factor in developing and maintaining not only the partnership in general but interpersonal relationships that sustain partner member interest and focus.

4.3.2 *Networking*

The linkages and networking between organizations within and without a partnership are important for its development, success and longevity. There is no need for one institution to play all the roles in emergency management, nor does any one possess the expertise to do so. Networking and linkages promote an integrated emergency management system, where the efforts of many disciplines are necessary to reduce the consequences of disasters (Petak, 1985). EPC member states "Networking is the biggest component of committee to bring and share information/resources". From the partnerships assessed in this research the extent of networking related directly to the scale of the partnership. For example, a community-based partnership (EPP) has limited scope with respect to mandate, resources, influence and related organizational networks, where as a provincially led partnership (EMO) or an internationally guided partnerships (PD) are boarder in scale and scope and engages many organizations thereby creating significant networks of resources, information, and action. The following figures depict the various horizontal and vertical linkages found in each of the five partnerships evaluated in the multiple case study.

It is interesting to note that accountability within these networked partnerships is not a significant concern due to the nature of the partnerships. The primary purpose for the partnerships in the multiple case study is information sharing. As partner members, individuals are acting on behalf of their parent organizations, which therefore ultimately make decisions and hold the accountability.

CHAPTER 5 DISCUSSION

5.1 PARTNERSHIPS IN FLOOD EMERGENCY MANAGEMENT IN MANITOBA

Emergency Management in Manitoba has evolved overtime. The organizations working in relative 'silos' have been proven ineffective and there are organizations working together in partnership in order to more effectively prepare, respond, recover and mitigate and prevention of hazards and disasters. This chapter provides a discussion about partnerships in emergency management, the various types and characteristics that make them successful and the implications of this research on emergency management in general, that is beyond the thesis focus of flood emergency management.

5.1.1 *Types of Partnerships in Manitoba's Emergency Management Community*

"Partnerships can be of many different kinds. They can range from the personal or informal through to voluntary or legally binding arrangements. They may be short-term and project specific, or long-term and broad in scope. They may involve sharing of work or financial costs, or the sharing only of information." (Mitchell, 1997; p. 157).

As revealed in Chapter 2, there is a great variety of types of partnerships and as a result they are difficult to classify into a few categories. One of the more useful factors for classifying partnership types is the concept of power (Kernaghan, 1997; Mitchell, 1997). In this context, power is to be understood be primarily influential in nature versus coercive or legal. This form of power is considered 'soft' where influence depends upon information sharing, communication, consensus-seeking, and conflict resolution, for example. The degree by which power (i.e. influence) is shared among partner organizations is said to indicate the level of

'meaningful' participation and empowerment (Kernaghan, 1997; Mitchell, 1997). Power-sharing partnerships, as indicated in Chapter 2, are classified under four different types ranging from highest to lowest level of power-sharing: collaborative, consultative, operational, and contributory.

The partnerships assessed in this thesis were categorized into one of four power-sharing types (Chapter 4), and engage in different levels of power-sharing. However, given the nature and purpose of these partnerships, which in non-disaster times is to network, build trust, coordinate activities, share expertise and information, among other things, it can be said that the basis for these partnerships is not so much power as information.

In the context of emergency management, especially in non-disaster times, information *is* power. Information provides the means by which emergency management planning and coordination are based in advance of disaster. In Manitoba's case, the primary function of emergency management partnership is information sharing. The exception to this might be EPP because the focused objectives related to influencing decisions, etc. and is directly linked to power and influence, more so than information.

The degree to which these power/information sharing partnerships are formalized appears to depend on what sector the member organizations are from. For example, the MTS CETPA, a partnership with members from competing private sector companies, has formal by-laws and members are required to sign a non-disclosure agreement to protect the information shared from being used in a way to give anyone a competitive advantage. Partners in Disaster, composed of NGOs, has a formal book to communicate to external clients such as rural municipalities, see Figure 5.1, however it has a fairly informal internal arrangement among member organizations. Formalized arrangements are more likely to be present when a

partnership engages members from a similar private-sector organization and/or when a partnership of a predominant sector (e.g., NGO) engages an organization or group from a different sector. In addition, formal arrangements often indicate commitment and detail accountability (Kernaghan, 1997), which can be seen in both the aforementioned partnerships.

Less formal or informal partnerships are more likely when organizations come together and the risk of sharing information or power is minimal. For example, the inter-agency group led by EMO is composed primarily of government departments and, at the time of data collection, does not have any formal agreements with any member organizations. However, even the most mutually dependent of partnerships, such as the EMO Interagency group, must be cultivated in a careful, ongoing and consistent manner in order to be successful in the long term. It is interesting to note that at the time of data collection, discussions were under way between EMO and PD to formalize their role in the recovery aspect of EMO's emergency management plans.



Figure 5.1 Cover page of PD booklet designed to explain roles and functions of PD members.

5.1.2 Role of cross-scale institutional linkages in emergency management

Governments are facing ever increasing constraints in terms of their ability to act due to increasing demands, accountability to the public, limited resources, and low public confidence (Paterson, 1998). Partnerships with organizations and groups outside of the public and private sectors provide an opportunity for governments to build trust in the eyes of the public and address resource restraints. And all stakeholders whose contribution is necessary for achieving the partnership's goal must be engaged (Kernaghan, 1997). A member from EPC interviewed stated "maintaining partnerships and networking partnerships is incredibly important to me in order to effectively do my job". These partnerships create linkages with interdepartmental groups that have information critical for effective decision making within the individual member organizations.

Land use mitigation strategies, for example, are most likely to be successful when solutions are crafted, broadly supported, and implemented at the local level, with capacity-building support from higher levels of government and other organizations (Paterson, 1998).

Similar benefits of the cross-scale linkages outlined in land use planning and mitigation can be seen in emergency management. In this case study, all emergency management partnerships assessed linked across-scales. The partnerships engage organizations from a similar scale as 'core' members as well as link with stakeholders across scales that are required to achieve the partnership objectives and goals. For example, the leader of EPP personally participated in other committees (i.e., public review board for flood protection, floodway expansion), because he it was "important in order to maintain liaison and relationship with people in bureaucracy".

5.1.3 *Interpersonal Relationships and their role in Partnerships*

Compatibility between participants is one element for successful partnerships (Mitchell, 1997).

People play a pivotal role in the success of any organization. Partnerships, because of their nature as an assembly of representatives or members from various organizations, may often see how critical people are to their success in a much magnified way.

“The heart of partnership working is building relationships and trust.” Wilcox, 2004.

As outlined in section 4.3.1, effective emergency management depends on developing understanding and trust among partner organizations in non-disaster times, where personnel from different government departments, NGOs and private industry can learn about one another, their roles and responsibilities in emergencies and disasters and build a relationship that can be useful in a disaster. Research has shown that the development of trust is largely built on a historical basis (Kramer, 1999). For example, by holding regular meetings to share information and interact with other departments and sectors (private and non-government), EMO Interagency Committee provides the opportunity for personnel on the committee to learn about each other in non-disaster times. This personalized knowledge about other organizational members represents one possible foundation for trust and relationship building, which in non-disaster times greatly assists in a response to an emergency or disaster because trust and understanding in the individual and their related organization is established and facilitates more effective decision making and coordination.

However, building and maintaining relationships and trust often requires more than solely formal meetings. For example, some East St. Paul Emergency Preparedness committee members have, over time, learned about one another and now engage in social and community

activities together. Partners must also be open and honest with each other and try to be empathetic. It is this development of strong interpersonal relationships among members that also enhances the longevity of the partnership. Relationships are a characteristic of successful partnerships and require sufficient time to be cultivated.

In addition to trust, successful partnerships require and often share values. Values are a fundamental component in building partner relationships; however, they are often hidden due to their nature (emotive, political, difficult to express). The member organizations in Partners in Disaster have similar values and therefore a good basis upon which to build their relationships.

To illustrate this example, below are a few excerpts taken from some of the member organizations' mission statements. Values found in common are highlighted.

Canadian Red Cross: The Canadian Red Cross mission is to improve the lives of vulnerable people by mobilizing the power of humanity in Canada and around the world. Values - Our actions and decisions will be based upon: **humanitarian values**, as expressed in our Fundamental Principles; **respect**, dignity and **care for one another** within and outside of Red Cross, and **integrity**, accountability, **effectiveness**, and transparency.

Salvation Army: The Salvation Army exists to share the love of Jesus Christ, meet human needs and be a transforming influence in the communities of our world. CORE VALUES: Salvation, Holiness, Intimacy with God, **Compassion**, **Respect**, Excellence, **Integrity**, Relevance, **Co-operation**, Celebration”.

Christian Reformed World Relief Committee: Mission - To engage God's people in **redeeming resources** and **developing gifts** in collaborative activities of love, mercy, justice, and **compassion**.

St. John's Ambulance: Our mission is to enable Canadians to **improve their health, safety and quality of life** by providing training and community service.

Upon reviewing these statements, it is evident that these organizations have similar values (religious, philosophical) upon which to build and maintain successful relationships. In the Elm Park community in Winnipeg, shared values among the property owners are evident in the desire to protect and maintain the integrity of the community and its individual home owners.

5.1.4 Constraints and opportunities for Partnerships in Flood Emergency Management

Partnerships face several constraints and are also posed for many opportunities within in flood emergency management in Manitoba. One of the constraints is the limited funding available for operating partnerships. The partnerships assessed in this thesis did not have specific funds available to direct towards general partnership activities, goals, objectives. Rather, costs incurred as a result of partnership activities (e.g., printing of the PD Booklet or travel for the annual MTS CTEPA face-to-face meetings) are absorbed by one partner or is shared among partnership members. In general these partnerships were developed primarily for information sharing, which reduces the requirement for ongoing funding.

Another constraint in flood emergency management relates to challenges regarding human resources. Many organizations are facing a decline the work force having experience due to significant retirements as well as ongoing employee turnover; effort to find sufficient replacements is modest. In addition, partnerships are constrained by the nature of emergency management (relatively little activity in disaster or emergency environment), thereby creating the challenge of maintaining interest, motivation and momentum in the partnership during non-

disaster times. This can be addressed through planning, networking and training (e.g., table top or mock exercises).

Opportunities for partnerships in flood emergency management can be found in a few divergent areas. One opportunity for partnerships is in structural flood protection projects created between the government and private industry in order to provide public infrastructure projects through the appropriate allocation of resources and risks among the partners. Another opportunity for partnerships in emergency management lies with member organizations. Organizations are provided a 'window' into other organizations, agencies and departments with like goals and opportunities, thereby fostering greater understanding of partner organizations. An additional opportunity partnerships have in emergency management is taking advantage of the passion within the world of emergency management itself. Individuals involved in emergency and disaster management are very enthusiastic and this can be utilized in engaging and maintaining partnership members.

5.2 IMPLICATIONS OF RESEARCH TO BROADER EMERGENCY MANAGEMENT COMMUNITY: BEYOND FLOODING IN MANITOBA, CANADA

The four interdependent components of emergency management cycle (prevention and mitigation, preparedness, response and recovery) may be undertaken sequentially or concurrently, but they are not independent of each other (Public Safety Canada, 2007).

Linkages, coordination and collaboration between these components are critical to ensure the ability for government to be effective. Linkages formed across scales both horizontally and vertically are also important.

5.2.1 'All-hazards approach' to emergency management broadens scope

This research presented a case study of partnerships in emergency management focusing specifically on flooding in the Red River valley. However, the emergency management system in Canada has adopted an 'all-hazards approach' that addresses both natural and human-induced hazards and disasters, so to focus solely on flooding provides only a portion of the emergency management picture in the Red River Valley Manitoba.

An all-hazards approach requires organizations to plan and prepared for all types of hazards and disasters, not just flooding per se. The general principles in emergency management are broad enough to allow organizations to plan and prepare for all types of hazards and disasters, particularly because of similarities in impact and required responses in many types of disasters.

Upon closer examination of the scope of hazards and disasters discussed in the interview process it was quickly discovered that all partnerships examined in this research, with the exception of the community based Elm Park Peninsula Flood Protection Committee, used an all hazards approach to emergency management. Emergency management in Manitoba may have regional focus based on likeliness in experiencing a particular type of hazard; however, the system supports a more comprehensive view of disasters.

The partnerships that formed in the Red River Valley to address emergency management take a comprehensive, all-hazards approach to hazards and disasters in the province, and as a result are situated in positive position to address any variety of events that arise.

5.2.2 *Actions to further the use of partnerships in emergency management*

Research from several natural hazards studies support the notion that partnerships in emergency management has a future (*list authors*). Non-government groups, for example, play a significant role in creating pressure and support for land use measures to hazards mitigation, one of the four key areas in emergency management (Paterson, 1998). Although Paterson, in his book *Cooperating with Nature* (1998), focuses on third sector partnerships for land use approaches in hazards mitigation, he highlights some of the more promising partnership areas government planners, policy analysts and decision-makers can engage, such as existing response and preparedness organizations within the hazards field (e.g., Red Cross). My research provides insights into a different NGO-government structure and relationships. PD and its link into a government information sharing structure has proven to be very effective in emergency management specifically for preparedness and response and recovery. Exploration into partnerships with respect to structural flood mitigation however was not within the scope of my research; the non-structural mitigation measures that have been undertaken by the government of Manitoba with the mandatory emergency preparedness plans are expected to mitigate significant losses of life and property damage. With further effort to integrate land use planning and policy in municipal government would likely significantly reduce additional property losses.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 SUMMARY AND CONCLUSIONS

This research addresses the current need to assess institutional partnerships in flood emergency management in the Red River Valley, Manitoba. The partnerships are agreements between two or more organizations to achieve a common goal or objective. The purpose of this research was to assess partnerships that exist in flood emergency management at present among government and non-government organizations. The objectives of this research were:

1. to identify and examine the types of institutional partnerships that exist to address flood emergency management in the Red River valley, Manitoba.
2. to assess partnerships in flood emergency management using characteristics of successful partnerships as indicators (based on literature).
3. to determine the role of interpersonal relationships and networking in flood emergency management partnerships and with other water management agencies.
4. to formulate policy recommendations concerning the institutional roles, including cross-scale partnerships, in flood emergency management.

The data for this research were collected using two methods, multi-phase Delphi technique and multiple-case study, and two data gathering strategies, individual semi-structure interviews and mail-out surveys. The data collected using two methods enabled issues concerning flood emergency management and partnerships to be explored at both macro and micro scales. The multi-phase Delphi technique employed a series of semi-structured interviews followed by a series of mail-out questionnaires, to a broad audience in the Red River Valley. This method facilitated the initial selection of partnerships that were studied in second method at the micro

scale. Using a series of 15 face-to-face interviews with 10 organizations engaged in five partnerships related to flood emergency management, the multiple-case study was explored. The partnerships were then assessed through data analysis. As a result I have drawn a number of conclusions below.

Institutional partnerships were identified and found to possess the potential to be effective in flood emergency management in the Red River Valley, Manitoba. Of the several partnerships identified, only five partnerships were assessed in detail in this study: Partners In Disaster, Elm Park Peninsula Flood Committee, EMO Interagency Emergency Preparedness Committee, the RM of East St. Paul-Emergency Preparedness Committee and MTS-CTEPA. The degree of formality among these partnerships varied; at the time of data collection.

The literature review outlined many known benefits to organizations that engage in partnerships; however, the literature did not consider partnerships in the emergency management context. From the literature, a list of indicators for successful partnerships was created. Partnerships are most successful/effective when they are long term and sustainable, evolve over time, open to monitoring and feedback, engage informed decision-making, create and maintain linkages with other institutions, communicate well among partners and with groups outside the partnerships, and are accountable to their individual organizations through existing structures. Using these indicators, the five partnerships mentioned above were assessed; the indicators revealed that four of the five



Figure 6.1 Image captured in Rosenort during 1997 ‘Flood of the Century’ speaks to how emergency management is not an individual or single organization’s responsibility, but rather it should be a collective. (Hirst, 1997).

partnerships were found likely to be successful in the event of a future emergency or disaster.

The fifth partnership, EPP, although successful in achieving its original goals and objectives, may not be successful in the future due to changes in leadership, goals and objectives and a loss of momentum.

The role interpersonal relationships and networking play in flood emergency management partnerships is significant and complex. Partnerships are based on relationships which require trust and commitment, both of which need sufficient time to mature. The partnerships assessed in this research recognize the importance of these two factors and allocate significant time and effort to developing and maintaining them.



Figure 6.2 Temporary ring-dike around a house near Emerson, MB 'sandbag barge' next to a hill of packed snow 'iceberg' in the 'Red Sea'. (Hirst, 1997).

There is no single organization that has the resources or expertise to address all factors related to emergency management (see Figure 6.1 and 6.2). This 'silo' approach, so commonly seen in government agencies, is ineffective in emergency management; collaboration, cooperation and partnership are required.

This thesis is limited in scope and does not provide a comprehensive assessment of partnerships in Manitoba. The exclusion of examples of Public-Private partnerships and CBO/government partnerships as well as examples of partnerships engaged in resources sharing agreements limit the scope from providing a complete picture of all partnerships in Manitoba. It is recommended that additional research be conducted to follow up on partnerships in these areas. Also, further research assessing partnerships during or immediately following a disaster or emergency would be beneficial for evaluation of its effectiveness.

Finally, it should be mentioned that the sources of this information were key partnership member informants, many of which are in high level positions within their parent organizations. This narrow and specific respondent base from the multiple case study component of the data

collection may create some bias to the responses provided with respect to the outlook of the partnerships' dynamics. The wider policy environment within emergency management was not explored.

6.2 RECOMMENDATIONS

The partnerships assessed in this research captures the capacity for success of emergency management partnerships at a small scale, found the southern portion of Manitoba, these partnerships exemplify the capacity for success in the context of flood emergency management. These partnerships illustrated the various characteristics and indicators of successful partnerships (see Figure 3.3). These indicators for successful partnerships should be achieved in order to develop capacity for successful operations and activities in emergency and disaster situations. Some specific recommendations are given below, based on the findings of this study:

- Links beyond emergency management organizations should be established in order for partnerships to remain viable over the long term. Also, establishing links between emergency management, water resource and land-based management institutions could provide synergy and direct improvements to information and communication sharing, particularly in the event of extreme floodplain hazards.
- Further research exploring the roles, responsibilities and stages of development of partnerships in the emergency management environment during non-hazard as well as during disaster times should be undertaken. Understanding the dynamics of the partners and the stages of partnership development will allow a partnership to remain current and adaptive, which will enable long-term planning, cooperation, and sustainability. Clarifying roles more specifically may encourage opportunities for the emergence of

new partnerships to fill existing partnership gaps, and may increase member credibility under changing roles and responsibilities.

- Formal partnership arrangements should be created among organizations to facilitate longevity and sustainability. Although some literature suggests that formal agreements decrease effectiveness, the interview data acknowledged that informal information and communication may struggle to endure in a multi-jurisdictional environment such as emergency management. Formal agreements can act to build trust among partner members given that they remain flexible and adaptable to changing working environments over time.
- The capacity to monitor and evaluate partnership goals, objectives and activities should be developed within partnerships. A formal process for monitoring and evaluating initiatives and actions can provide the public and potential partners with a clear and transparent picture of the contribution to overall goals, and can also allow these partnerships to expand/narrow and redefine their goals as necessary.

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APPENDIX I. MUTLI-PHASE DELPHI SURVEY INSTRUMENTS

The following is a portion of the multi-phase Delphi interview and survey instruments. The institutional representative questions and statements pertinent to the partnership and institutional arrangements component are included below. The broader risk perception and floodplain management components to this study have not been included.

Phase I: Face-to-Face Interviews – *Institutional representatives*

Part 1 – Idea Generating Strategy

Purpose: to allow the respondent to express the comments/concerns/experiences of their institution in regards to flooding and floodplain management.

Flooding has proven to be an ongoing problem and will continue to be. Could you please provide a list of major issues that are important to your institution with respect to flooding and floodplain management? Please elaborate based on your experience with:

- a) Past flood events, such as 1997 flood, and
- b) Current flood management issues, such as the Floodway expansion proposal.

Part 2 – Partnerships and institutional arrangements

Purpose: to identify partnerships known to the respondents and to indicate the benefits and challenges associated with specific partnership examples as well as partnerships in general with respect to flooding and floodplain management.

Formal and informal arrangements in flood emergency and floodplain management, such as partnership, are present in the Red River valley. What if any partnerships are you aware of that are involved in flooding and flood emergency management partnerships?

What are the benefits and challenges associated with partnerships in flooding, floodplain management and emergency management?

Phase II: Delphi survey instrument for institutional representatives.

Questions 10 through 12 below.

Phase III: Delphi survey instrument for institutional representatives.

Questions 4 and 5 below.

CURA – Flood Research Partnership

Flood-Risk Perception: Narrowing the Communication Gap between the Stakeholders

Phase II: Delphi Survey for Institutional Representatives

Interview Identification Number _____

This questionnaire is to help in the understanding of flood risk, perception, and risk communication among stakeholders of the Red River Basin. Please note that these questions were generated from the 74 face-to-face interviews that were conducted in the summer.

- * No one else will ever know how you answer the questions.
 - * Please answer all of the questions. If you do not wish to answer a question, simply indicate no comment and move on to the next.
 - * When you finish the questionnaire, please put it in the envelope provided. Postage is pre-paid and the self-addressed envelope is enclosed for you to return.
 - * This questionnaire is phase 2 of a total of 3 phases. You have already completed phase 1 (the interview) and phase 3 is forthcoming in the new year (February 2004).
 - * Please return by mail no later than December 15, 2003. This timeline will help us to complete this research in time (by spring 2004).
 - * Your cooperation is greatly appreciated.
 - * If you have any questions please contact Mike Olczyk or Rob Stewart at the Natural Resources Institute at 474-9455 and leave a message.
-

Thank you for your time.

- 10. Although the 1997 flood experience provided evidence of partnership building between government and non-government organizations (e.g. the Province and the Salvation Army), these partnerships do not include local communities as effective partners.

(Please mark only one option with an 'X'. If you cannot evaluate the statement then please leave it blank and move to question 20.)

Strongly Agree _____ Agree _____ Disagree _____ Strongly Disagree _____

Please briefly explain the reasons for your agreement or disagreement with the above statement? If you would you like to add an alternative statement, please state below.

- 11. Recent experience has clearly demonstrated that local community groups (e.g. the Elm Park Peninsula Flood Committee) provide effective support networks for floodplain residents by building trust, disseminating information, and raising diverse concerns for grassroots level management. The formation of such groups and their partnerships should be encouraged and supported by governments.

(Please mark only one option with an 'X'. If you cannot evaluate the statement then please leave it blank.)

Strongly Agree _____ Agree _____ Disagree _____ Strongly Disagree _____

Please briefly explain the reasons for your agreement or disagreement with the above statement? If you would you like to add an alternative statement, please state below.

12. a) What are the barriers that hamper effective flood and floodplain partnerships between communities and government agencies? Please list below.

b) What factors help create and maintain effective flood and floodplain partnerships between communities and governmental agencies? Please list below.

CURA – Flood Research Partnership

Flood-Risk Perception: Narrowing the Communication Gap between the Stakeholders
Phase III: Delphi Survey for Institutional Representatives

Interview Identification Number _____

This questionnaire is to help understand flood-risk perception and risk communication among stakeholders of the Red River Basin. Please note: the original statements were generated from the 19 face-to-face interviews that were conducted in the summer of 2003. The summary response tables were generated from the information collected in the last mail-out survey (December 2003)(total number of respondents = 16) and provide a summary of all the responses to the particular statements.

There are 12 questions in this survey. At the top of each page is the original statement we presented in the last mail-out survey. Following each statement is a table containing the total percentage of all institutional representatives that had agreement or disagreement with the statement and a summary of all the responses to the statement. Please review the information in the tables and record any comments that you may have about each summary response in the space provided. After reviewing each summary response table, please reevaluate the original statement and indicate your agreement or disagreement. If you require any additional space to comment on the summary responses please write on the back of the page or use the space on the last page of the survey.

- * No one else will ever know how you answer the questions.
- * Please answer all of the questions. If you do not wish to answer a question, simply indicate no comment and move on to the next.
- * When you finish the survey, please put it in the return marked envelope that is provided. Postage is pre-paid.
- * **Please return by mail no later than March 26, 2004.** This will help us to complete this research in time (by summer 2004).
- * This survey is part 3 of a total of 3 parts, and returning this survey will complete your involvement in our study.
- * Your cooperation is greatly appreciated.
- * If you have any questions please leave a message for Mike Olczyk or Rob Stewart at the Natural Resources Institute at 474-9455.

Thank you for your time and patience.

Question 4

Although the 1997 flood experience provided evidence of partnership building between government and non-government organizations (e.g. the Province and the Salvation Army), these partnerships do not include local communities as effective partners.

The table below provides a summary of all institutional representatives' responses to the above statement that was asked in the previous survey. Please review and comment on any or all of the following summary responses in the space provided (blank column).

	%	<u>Summary Responses</u>	<u>Please review and comment on the summary responses in the spaces below</u>
Strongly Agree	6%	Due to inequality in the distribution of government and NGO disaster assistance (financial), greater efforts should be made to work together to share resources and expertise.	
Agree	19%	The practicality of partnering all local communities with non-government and government organizations is difficult. A regional coordinating resource agency would be useful to respond to and distribute resources based on local needs.	
Disagree	50%	Examples of effective partnerships involving local communities and other organizations are evident in the past as well the present. Current legislative requirements are further developing these partnerships.	
Strongly Disagree	6%	The partnerships are in place and working. However, during emergency response and recovery the scope to involve local communities and individuals is limited.	
No Response	19%	No comments.	

After reviewing the above summary responses, what is your position regarding the following original statement?

Although the 1997 flood experience provided evidence of partnership building between government and non-government organizations (e.g. the Province and the Salvation Army), these partnerships do not include local communities as effective partners.

(Please mark only one option with an 'X'. If you cannot evaluate the statement then please mark no comment).

Strongly Agree _____ Agree _____ Disagree _____ Strongly Disagree _____ No Comment _____

Question 5

Recent experience has clearly demonstrated that local community groups (e.g. the Elm Park Peninsula Flood Committee) provide effective support networks for floodplain residents by building trust, disseminating information, and raising diverse concerns for grassroots level management. The formation of such groups and their partnerships should be encouraged and supported by governments.

The table below provides a summary of all institutional representatives' responses to the above statement that was asked in the previous survey. Please review and comment on any or all of the following summary responses in the space provided (blank column).

	<u>%</u>	<u>Summary Responses</u>	<u>Please review and comment on the summary responses in the spaces below</u>
Strongly Agree	13%	Local groups promote participation, education, motivation, and 'ownership' in flood related issues and give residents the ability to have a strong local voice in management.	
Agree	44%	Coordinated links between local community groups and government are needed to ensure information exchange, logical problem solving and clarity in group perceptions.	
Disagree	19%	While these partnerships are necessary in floodplain management, they have limited scope. For example, in an emergency, when lives must be protected, governments cannot rely heavily on partnerships, and should take the lead in decision-making.	
Strongly Disagree	0%	No comments.	
No Response	24%	No comments.	

After reviewing the above summary responses, what is your position regarding the following original statement?

Recent experience has clearly demonstrated that local community groups (e.g. the Elm Park Peninsula Flood Committee) provide effective support networks for floodplain residents by building trust, disseminating information, and raising diverse concerns for grassroots level management. The formation of such groups and their partnerships should be encouraged and supported by governments.

(Please mark only one option with an 'X'. If you cannot evaluate the statement then please mark no comment).

Strongly Agree _____ Agree _____ Disagree _____ Strongly Disagree _____ No Comment _____

APPENDIX II. MULTIPLE CASE STUDY INSTRUMENT

Interview Schedule

Consists of both open and closed questions.

Name	
Date	
Location	

	Yes	No
Consent form signed		
Summary of finding requested, mailing address		
Review of interview text prior to publication		
Follow-up w group workshop		

SECTION I – Partnership background

Background/Role

1. What is the overall role of City of Winnipeg Emergency Preparedness Program in MB Emergency Management? What partnership are City of Winnipeg EPP involved in for MB Emergency management programming/operations?

Of the partnerships you are involved in I would like to explore a few in greater detail.

2. What activities does your partnership undertake? {moved from 10}
3. How long has this partnership been operating and active in flood and/or emergency management?
4. How has it evolved?
5. Why did you become involved in the partnership? Please provide specific reasons.

Structure

6. Today, how is your partnership administratively organized? i.e., managing structure
7. Is there clear leader or champion of this partnership? If so, who plays the role of leader?
8. Is there flexibility within the leadership and partner roles?
9. Are partner responsibilities clearly outlined/understood by all partners? Is there a specific role that you play?
10. Does the partnership have a formal mandate outlining specific goals, objectives, operating principles?
11. Do all the partners feel these goals, objectives and operating principles are well defined, attainable, and understood?
12. Is there an operating plan to achieve/carry-out those goals, objectives and carry out activities?
13. If current conditions and terms of the partnership are terminated, is there anything in place (formally or informally) that would sustain the partnership or make a mandate change?
14. How are decisions made in the partnership? i.e., involvement of all partners or a select in the group, overall good agreement, is there conflict.

Dynamics

15. What types of organizations, groups does your partnership link with: similar levels of organizations (local, local) or with different levels of organizations (local, regional, national)?
16. How do the partners communicate within the partnership among themselves (is there clear and consistent communication)?, with outside groups?
17. How would you describe your relationships with your fellow partnership members? (i.e., relaxed/informal, rigid/formal, personal/professional)
18. Do you have a better understanding of other stakeholder perspectives with your involvement in the partnership?

SECTION II – Partnership effectiveness

19. How has your partnership improved the ability of flood prone residents to better manage (prepare, for, respond to, recover from, and mitigate against) flood threats and emergencies?
20. Has your partnership been able to complete and follow through with activities?
21. Do you have criteria for measuring success within your partnership and the activities it undertakes?
22. Do you monitor the activities of your partnership? If so, **how do you incorporate change or learning based on the feedback** gathered from the monitoring?
23. How does your partnership address accountability and/or liability concerns and issues? (accountable to individual organizations, the government?)
24. Have there been any financial resource benefits/challenges in your partnership?
25. What, if any, challenges face this partnership today? In the future?
26. What specific benefits has this partnership brought in to you?
27. Is there anything you would like to add to your responses about your organizational partnership?
28. May I contact you again to inquire about further participation with my research?

APPENDIX III. ETHICS COMMITTEE APPROVAL



UNIVERSITY
OF MANITOBA

RESEARCH SERVICES &
PROGRAMS
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APPROVAL CERTIFICATE

18 April 2005

TO: Nancy Powell Quinn (Program Advisor: Dr. E. Haque)
Principal Investigator

FROM: Wayne Taylor, Chair
Joint-Faculty Research Ethics Board (JFREB)

Re: Protocol #J2005:024
"The Role and Effectiveness of Partnerships in Flood Emergency
Management, Red River Valley, Manitoba"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note that, if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

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APPENDIX IV. CONSENT FORM TEMPLATE



UNIVERSITY
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Natural Resources Institute
Clayton H. Riddell Faculty of Environment, Earth,
and Resources

INFORMED CONSENT TO PARTICIPATE IN THE STUDY

Project Title: The Role and Effectiveness of Partnerships in Flood Emergency Management, Red River Valley, Manitoba
Researcher: Nancy Powell Quinn

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The purpose of this research will be to evaluate the role and effectiveness of partnerships in public, private, and non-profit sectors in flood emergency management in the Red River Valley, Manitoba, at both broad and narrow scales. This research will explore the use of partnerships among government agencies, private businesses, and volunteer organizations.

The research will involve two components. The first component will be an interview approximately one hour in length discussing partnership structure, dynamics, effectiveness, and future success considerations. The second component will ask interviewees to participate, voluntarily, in a group discussion focusing on key issues surrounding effective partnerships in flood emergency management and future networking potential of partnerships beyond flood emergency management. A workbook will be provided to all participants prior to the group discussion. It is designed to develop thoughts on partnerships and to facilitate discussion. The workbook will be collected after the workshop and used as a record of participant views. It is expected that the focus group discussion, including recording thoughts in workbook prior to the discussion, will be approximately 2.5 hours.

You are under no obligation to participate in the focus group discussion. Participant identity will be known during the focus group discussion, however participation is completely voluntary, and therefore if you do not want to forego anonymity, you do not have to participate. If you choose to participate please discuss your opinions openly and freely. To act as a back up source of information to written field notes and to ensure accurate representation of your responses a tape recording device will be utilized during the interview and focus group discussion. You are under no obligation to be recorded and may refuse. Although your name as a participant will not be used directly in the research, your institutional affiliation will be used. Your responses will be held in strict confidence and all data collected throughout this research will be stored in a secure location and only accessible to the lead researcher. If you would like to be informed of the findings of this study and/or review the parts of your interview and focus group that will end up in the final report, please indicate a name and mailing address in order to forward a summary to you.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Nancy Powell Quinn, Graduate Researcher, Natural Resources Institute, University of Manitoba (204-295-0973), or Dr. Emdad Haque, Director, Natural Resources Institute, University of Manitoba (204-474-6395).

This research has been approved by the Joint-Faculty Research Ethics Board (JFREB). If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat at 474-7122, or e-mail margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Participant's Signature

Date

Researcher and/or Delegate's Signature

Date

APPENDIX V. GLOSSARY OF TERMS

MFC	Manitoba Federal Council
PSEPC	Public Safety and Emergency Preparedness Canada
EOC	Emergency Operations Centre
EMO	EMO Interagency Emergency Preparedness Committee
EPC	RM St. Paul, Emergency Preparedness Committee
MTS	MTS-Corporate Emergency Management Department
CTEPA	Canadian Telecommunications Emergency Preparedness Association
EPP	Elm Park Peninsula Flood Protection Committee
PD	Partners in Disaster
SOE	State of Emergency
EM	Emergency Management