

Household Economic Disaster Recovery: Canadian Approaches

Brenda Murphy¹

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Abstract:

Recovery from disasters is considered to be the fourth pillar of disaster management, after mitigation, preparedness, and response. If undertaken proactively, recovery can also be part of an iterative process that increases the resiliency towards future events. In the *Emergency Management Framework for Canada* (PSC, 2005) the purpose of the recovery phase is to repair or restore the damage from a disaster to an acceptable level through a variety of measures including counselling, reconstruction and *financial assistance*. The framework asserts that long-term resiliency is strongly tied to the mitigation efforts undertaken during the recovery phase. This chapter focuses on the economic aspects of household disaster recovery within a Canadian context. It outlines the many sources of recovery funding including government assistance, insurance, fund raising/donations and self-funding. Three of the issues that will be highlighted in the chapter concern the key role of private insurance; the need to adopt a more inclusive ‘all hazards’ approach to disaster recovery funding; and the need for equitable access to economic recovery resources. It argues that household financial recovery will inevitably involve personal resources – the idea that government funds will cover all losses is a myth that disaster managers must actively work to dispel. The chapter concludes with a case study about the Pine Lake, Alberta 2000 tornado.

¹ Wilfred Laurier University, bmurphy@wlu.ca

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Introduction

Disaster recovery is usually considered the fourth pillar of emergency management, after planning/mitigation, preparedness, and response. Household recovery takes many forms. Among other things, it requires recuperation from the physical and psychosocial impacts of the event; recovery from income disruption and job loss; the re-building and repair of homes and other infrastructure; and activities to recoup the financial losses associated with all of these impacts.

In the *Emergency Management Framework for Canada*, published by Public Safety Canada, the purpose of the recovery phase is:

To repair or restore conditions to an acceptable level through measures taken after a disaster, for example return of evacuees, trauma counselling, reconstruction, economic impact studies and financial assistance. There is a strong relationship between long-term recovery and prevention and mitigation of future disasters (PSC 2005, 4).

Thus, while recovery is often defined as the restoration of an affected area and its population to the pre-disaster condition, more recent definitions tend to emphasize the iterative nature of the disaster management cycle and the impact of the recovery process on future vulnerability. In this approach, disaster recovery is not just about returning to some pre-existing ‘normal’ level; it is also about assessing

the vulnerabilities that may have exacerbated the disaster outcomes and developing mitigation approaches that increase future resiliency. These issues will be highlighted in the final section of the paper.

This paper focuses on household level, financial aspects of disaster recovery within a Canadian context. Clearly, households will access a wide variety of economic sources to offset the financial costs of disasters, including health benefits, unemployment insurance, welfare and so on. Further, the business community also accesses various financial mechanisms in the wake of disaster. However, such a broad review is well beyond the purview of this paper. Instead, this paper is particularly centred on describing and assessing Canadian approaches to dealing with the economic losses associated with household property damage and destruction and some aspects of income support (as related to rural properties). It outlines and describes government aid programs available in the wake of disasters as well as the other avenues of assistance including insurance, fund raising, non-government and private sources as well as individual resources (e.g. savings and loans). Contrary to public myths, it demonstrates that government assistance will not completely cover the financial costs of disaster events. Government aid programs are designed to recoup the economic losses of key resources (e.g. primary residence) and recovery assistance is not standardized amongst jurisdictions or disaster types (e.g. natural, technological and biological). It argues that mitigation should be incorporated into the recovery phase and that an 'all hazards' approach to financial aid would facilitate more consistent and comprehensive support for households. Following an analysis of these key ideas and approaches, the paper provides an example of disaster financial recovery at the household level following the 2000 Pine Lake, Alberta tornado. In the conclusion, the paper outlines some of the broader mitigation and equity issues that influence the outcomes of household-level financial recovery.

Household Economic Disaster Recovery in Canada

The recovery phase of a disaster involves a complex set of issues and decisions including demolition of damaged structures, debris clearance, repair of homes, facilities and infrastructure, new construction, restoring businesses, resuming employment, rehabilitation of psychosocial and physical injuries, reimbursement for property losses and reassessment of hazard risk. The effects of recovery are long-term and will impact future levels of vulnerability or resiliency. Recovery is by far the most costly, least organized phase of the disaster management cycle as well as the phase involving the most diverse range of individuals, organizations and communities (Haddow and Bullock 2003, Coppola 2007). The requirement for adequate funding during recovery cannot be over stated. As Coppola (2007,

306) asserts: “Without ample funding, very little can be done to help a disaster-struck region rebuild”.

In Canada, household financial disaster assistance in the recovery phase can be provided through many sources including insurance², government aid, other agency assistance (e.g. Red Cross) , fundraising and donations, and resources internal to the household affected (e.g. savings). Table 1 outlines the aid resources that may be available. This section will describe these avenues of assistance and outline the inherent challenges and advantages associated with each one.

Insurance

Arguably, in a developed world context, the most important source of household financial assistance after a disaster is property insurance.³ Insurance is a method of sharing the losses of affected policy holders amongst all who have paid premiums. In this way “the losses of the few are paid for by the premiums of the many” (Baker 2002, 1). Insurance is a risk transfer mechanism in which premiums paid by the holder give the household the right to make a claim that falls within the terms of that policy. Households may hold different kinds of personal insurance – property, automobile, disability/life and health are among the most common.⁴ The insurance industry spreads its risk by investing in re-insurance though international retrocessionaires such as Munich Re⁵. Retrocessionaires further spread their risk through a second level of re-insurance.⁶ The interaction amongst all parties (households, insurers and re-insurers), along with government oversight and regulation, affects the rates, policy wordings, coverages, underwriting, and so on of all policy contracts.

² It is acknowledged, but beyond the purview of this paper, that there is a ‘moral hazard’ associated with insurance coverage. A moral hazard is a situation where someone takes a larger risk than they would otherwise because the individual is insulated from the full consequences of their actions. Researchers suggest that one of the negative side effects of insurance coverage is that people are more likely to take added risks including building in hurricane-prone areas and being less proactive protecting their private property (see Coppola 2007, esp. p. 193-5). Thanks to David Etkin for this insight.

³ Although Coppola (2007) states that less than ¼ of all disaster losses were covered by insurance, this is particularly a problem in developing countries.

⁴ Here I focus on the first two; life and health insurance is a large issue beyond the purview of this paper.

⁵ See <http://www.munichre.com/en/homepage/default.aspx>

⁶ See <http://www.scor.com/www/index.php?id=16&L=2>

However, even with risk diversification strategies in place, the insurance industry may have trouble providing insurance in areas prone to catastrophic losses since the costs for a worst-case scenario (low probability, high impact event) may be beyond the capacities of the insurance companies involved (Miletti 1999). Before 1990, the insurance industry had never paid out more than \$1B in insured losses. Since that time, in the USA, Hurricane Andrew in 1992 alone cost \$15.5B, while the 1994 Northridge earthquake cost \$12.5B in insured losses (Miletti 1999, 170).

In Canada, the most expensive event to date has been the 1998 Ice storm that hit parts of Québec and Ontario. Combined, the insured losses for this event amounted to almost \$2B. Other events have included the 2005 Toronto, Ontario wind/rainstorm (\$510M), 2005 Alberta flooding (\$305M), 1996 Québec Saguenay floods, (\$250M), the 1997 Manitoba Red River floods, (\$235M) (Insurance Bureau of Canada 2008, 20).⁷ In the future it is predicted that losses of \$50B or even \$100B are now a likely possibility (Miletti 1999, 170). This may mean that residents in disaster-prone regions may have trouble obtaining insurance, or may have to pay higher premiums for that insurance. In some cases, such as after Hurricane Andrew in the United States, insurance companies have gone bankrupt and have been unable to fulfill their obligations (Peacock et al 1997). In Canada, to protect against such an eventuality, most insurance companies must belong to the Property and Casualty Insurance Compensation Corporation. This organization provides some basic coverage, should an insurer become insolvent (Insurance Bureau of Canada 2008).

Table 1: Types of Household Economic Assistance during Recovery

Type of Assistance	Description
Insurance	Household insurance policies wherein yearly premiums are paid and against which a claim can be made. This is the cornerstone of financial recovery in all developed countries.
Existing government programs	Government programs that incorporate disaster financial assistance into their mandate, e.g. AgriStability program
Disaster Financial Assistance Arrangements (DFAA) and provincial assistance programs	Formal government agreements that specify the type/level of financial assistance that will be provided after a disaster, the criteria and process to access the assistance and the government cost sharing formula

⁷ At this time, spring 2009, it remains to be seen what the costs of the 2009 Manitoba flood will be, although it is expected that the mitigation measures implemented over the last few years will reduce both insured losses and government aid expenditures.

Ad hoc government disaster assistance and loans	Case-by-case government assistance and loan agreements put into place in the wake of particular disaster events
Non-government and business support	NGOs and businesses that provide disaster aid either as part of their mission (e.g. Red Cross) or that come forward with aid on an ad hoc basis (e.g. Wal-Mart)
Fundraising	On-going fundraising by organizations such as the Red Cross or targeted fundraising in the wake of a disaster by disaster oriented agencies, other organizations (e.g. church) or emergent groups
In-kind and goods oriented support	Donation of goods and services such as clothes, medical supplies, debris removal and home reconstruction
Self-funding and personal loans	Use of household's savings and credit to finance recovery

Canada has a diversified insurance industry with over 230 companies and 40 reinsurers involved in the property and casualty insurance industry (Baker 2002). This helps to spread the risk and costs of devastating disasters and prevent insolvency. Nevertheless, the viability and profitability of the insurance industry is profoundly affected by society's approaches to disaster mitigation and prevention, as well as the changing context of disasters such as the impacts of climate change, technology dependence and the deterioration of urban infrastructure. For this reason, the insurance industry world-wide has been significantly involved in lobbying and research efforts to increase disaster resiliency (Insurance Bureau of Canada 2008, Mileti 1999).

Another way the insurance industry can reduce its losses and encourage mitigation is to create financial incentives for policy holders to undertake loss reduction strategies such as retrofitting a structure to withstand high winds or an earthquake.⁸ These incentives might include rate discounts, lower deductibles and higher coverage limits.

In Canada, as a general rule, after a disaster government financial assistance only covers uninsurable losses for essential property, infrastructure and services, where costs cannot be recouped from any other source. Where insurance could have been purchased, and where such insurance is affordable and available (e.g. property insurance, crop insurance), coverage is generally not provided by government assistance programs (although exceptions do occur, e.g. see Table 2 below, NWT). This provision is important since providing government grants and loans to disaster victims who could have acquired adequate insurance, downloads the costs of disaster recovery onto taxpayers and discourages victims

⁸ For instance, see the work being undertaken by the Institute for Catastrophic Loss Reduction <http://www.iclr.org/research/studies/housing.htm>

from developing sustainable long-term loss recovery approaches. The prevailing public impression that government disaster assistance will cover disaster recovery costs is simply incorrect and must be actively discouraged (Mileti 1999).

Insurance is only available for hazards that can be reasonably predicted and where the potential losses can be spread widely. Thus, insurance is generally available for such natural hazards as wind events⁹, ice storms, wildfires, winter storms, lightning and hail. Coverage of technological or health-related disasters is mostly non-existent since, it has been argued, the frequency and magnitude of such events are not easily predicted.¹⁰ Within natural hazards, events such as earthquakes, hurricanes, and overland floods¹¹ are often considered ‘special perils’ requiring additional coverage (Mileti 1999). Some jurisdictions, such as the USA have government-supported national programs covering predominant perils such as flooding and earthquakes (e.g. the National Flood Insurance Program).

A further issue is that even when insurance is available and when property owners have basic coverage in place, the majority do not buy the policies for special perils. To wit, in the USA “only about 20 percent of homes exposed to floods are insured for them” (Mileti 1999, 8). It is suggested that the costs of the premiums, the myth of adequate government assistance, and lack of knowledge of available insurance all contribute to this lack of adequate insurance coverage.¹² Likewise, in Canada, only about 45% of British Columbia homes in high risk areas have earthquake insurance. Yet, Munich Re has suggested that the insured losses from an earthquake in the Vancouver region could range from \$6.7-\$12B (Baker 2002, 7). Research about earthquake insurance in British Columbia suggests that similar reasons are given for the lack of household participation in the special perils insurance program (McIntyre and Mustel Research Ltd, 2000, 4).

As mentioned, insurance is less available for technological/socially-caused disasters such as terrorism attacks, civil unrest¹³ or nuclear accidents. Insurance for these types of disasters is sometimes subsidized or supported by government. In Canada, for instance, nuclear accidents are governed by the Nuclear Liability

⁹ All wind damage, including hurricane and tornado damage, is covered by insurance policies.

¹⁰ This argument is challenged by many, including Mileti, 1999.

¹¹ Overland floods are colloquially defined as water that seeps through walls or comes in through the windows. Water that comes up through the sewers may be covered if the homeowner has requested sewer backup on their insurance policy. The one exception to the overland flood rule involves flooding due to an infrastructure failure (e.g. water main break). This is covered by insurance.

¹² For the Canadian flood insurance situation see <http://www.cbc.ca/canada/british-columbia/story/2009/01/08/bc-flood-no-insurance.html>

¹³ For localized cases of ‘unrest’ such as a riot after a sports event, insurance will generally be available through the vandalism clause in the policy.

Act¹⁴ which limits the liability of nuclear installation operators (including hospitals and universities) to \$75M – losses above this amount would be covered by taxpayers through the federal government (Insurance Bureau of Canada 2008). Prior to the 9/11 attacks on the World Trade Center, most policies in Canada and the USA covered terrorism. But with insured losses of over \$30B, that coverage was removed from policies, post 9/11 (Kunreuther et al. 2005, 210). Currently, in Canada only limited commercial coverage is available for damage from terrorism.¹⁵ In contrast, the USA has put into place the American Terrorism Risk Insurance Program through the Treasury Department. This is a risk sharing arrangement between the federal government and insurers wherein commercial coverage is made available, with the government covering losses above a specified threshold.¹⁶

The bottom line is that for Canadians, insurance is the foremost and key source of financial recovery assistance following a disaster. Households need to put into place whatever insurance coverage is reasonably available for their jurisdiction and local area; government aid will not necessarily bail them out if such coverage is not in place! Households also need to be aware of the limitations of basic coverage and should invest in special perils insurance, if it is appropriate and available for their region. Beyond that, households also need to be aware that some perils are simply not covered by any insurance policies, and, as will be outlined below, this does not always mean that associated losses will be reimbursed through some other source.

Economic Assistance from Existing Government Programs

In Canada, existing government programs and services are in place to help with some aspects of financial hardship following disasters. These may include income support through unemployment insurance and welfare programs. Of special note is the approach to financial aid for Canada's Aboriginal peoples. When a disaster event strikes a reserve, or other recognized Aboriginal territory, the department of Indian and Northern Affairs is mandated to handle the recovery efforts, including financial aid.¹⁷ In this paper I focus on two key programs that offer assistance associated with property losses in rural spaces – the new Canadian AgriStability Program (formerly Canadian Agricultural Income Stabilization Program) and the Canadian Food Inspection Agency (CFIA) program that compensates farmers for crops and animals lost to disease outbreaks.

¹⁴ As of 2009 the act is being revised, but new legislation is not yet in effect.

¹⁵ See <http://www.abc.ca/en/terrorism>

¹⁶ See http://www.naic.org/topics/topic_tria.htm

¹⁷ See for instance, <http://www.ainc-inac.gc.ca/ai/scr/bc/proser/fna/cma/index-eng.asp>

The CFIA provides compensation to owners of animals and crops ordered destroyed as part of CFIA's efforts to control or eradicate farm product diseases that threaten livestock, crops and human health. The compensation encourages owners to report diseases immediately in order to prevent disease spread and assist in the recovery of lost agricultural products. Compensation is awarded based on market value and the specific characteristics of the crop/herd involved.¹⁸ Recently CFIA has been involved in a number of important outbreaks including the potato wart fungus outbreak on Prince Edward Island, the avian influenza outbreak in British Columbia and the Canada-wide Bovine Spongiform Encephalopathy (BSE) outbreak.

In the case of the potato wart, a large area surrounding the fields where the fungus was first detected was placed into quarantine to prevent the spread of the disease. In the 2001-2 fiscal year, CFIA spent \$600,000 in compensation payments related to plant disease outbreaks including potato wart and plum pox virus (CFIA 2002).

Avian Influenza (AI) is spread directly from bird to bird, and through contaminated feed, water, and equipment. It affects both wild and domestic populations of fowl including chickens, geese, ducks, etc. Not only is it a deadly disease for these animal populations, but there is also concern that the AI virus could mutate into a form that would be contagious to human beings. The AI virus, H5N1, is now firmly entrenched in Asia and is thought to have infected a few people who have had direct contact with diseased birds. If the AI virus was to mutate into a form that could be passed from one person to the next, a potential pandemic could occur.¹⁹ Due to these factors, AI virus control tends to be very aggressive. In British Columbia (2004), the AI virus was detected in the Lower Mainland region leading to a massive cull on 125 poultry operations. This affected all sectors of the poultry industry and led to \$2.4M in CFIA compensation payments, with total losses to the industry estimated at \$380M (Serecon Management Consulting Inc. 2004, 2).

In May 2003, the first of three cases of BSE (also known as mad cow disease) was detected in Canadian cattle. BSE is a disease monitored and controlled by CFIA because it kills cattle and because of its alleged connection to Creutzfeld-Jakob disease in humans. The export of Canadian beef to such jurisdictions as the USA and Mexico was immediately halted sending the beef industry into a financial crisis. Across Canada, a series of joint federal-provincial programs were initiated resulting in a total of \$3B in compensation to the industry

¹⁸ See <http://www.inspection.gc.ca/english/anima/heasan/disemala/comp/compense.shtml>

¹⁹ Ironically, as this manuscript is being finalized, Winter 2010, the world is under a Code 6 pandemic alert for the H1N1 virus (a virus that mutated from pigs in Mexico).

for animals culled, losses to the packing plants and other losses.²⁰ In 2004 alone, CFIA paid out \$4M in compensation for the BSE outbreak (CFIA 2004, 127).

Currently, not all agricultural disease outbreaks and subsequent culls are covered by CFIA. For instance, when infectious salmon anemia hit New Brunswick's salmon aquaculture industry in 2005, compensation for destroyed fish and other components of the affected industry was provided by an ad hoc, one time federal government compensation package valued at \$20M.²¹ Currently, aquaculture is not part of CFIA's mandate.

The second program, the federal 2007 Canadian AgriStability program, provides security to farmers based on a whole-farm basis. This is part of a new agriculture business risk management framework agreement called 'Growing Forward'.²² Producers participate in the program by making yearly payments into an account. This program is basically a type of federally-sponsored crop insurance. The program measures the farm's overall costs and revenues and if the net production revenues decrease relative to a pre-determined reference level, then farmers can make a claim for compensation.²³ Two problems with these types of programs are that 1) compensation received through CFIA and other disaster relief programs is considered as income, sometimes negating the support available through the insurance program, and 2) since this is a 'whole farm' approach, if one part of the farming enterprise sustains a loss, but another shows a profit, the program may not cover the incurred losses (Auditor General, Alberta 2004).

However, despite these limitations the AgriStability program is still an important source of security and insurance for farmers that can offset the vagaries of yearly weather extremes and disasters. Unlike property insurance and government disaster financial aid approaches, it is notable for its focus on net income and damage, rather than the source of the perturbation. This is an 'all hazards' approach often lacking with other financial aid packages and programs that provides at least some measure of security for agricultural operations.

Government Disaster Financial Assistance

Approaches to government financial assistance in the wake of disasters varies significantly around the globe; the Canadian approach is far from typical. In the UK, for instance, the Bellwin Scheme pays 85% of the extraordinary costs associated with a disaster, after those costs exceed a threshold, typically .2% of the budgeted revenue of the local authority (Zeta Group 2005). The allowable

²⁰ <http://www.cbc.ca/news/background/madcow/index.html>

²¹ <http://cbc.ca/canada/story/2005/07/112/salmon050712.html>

²² <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1173969168670&lang=eng>

²³ <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1200508680358&lang=eng>

expenditures relate to public infrastructure repairs as well as safety and disaster-related services. The affected local authority leads the disaster efforts, contributes some funding, launches an appeal for donations, coordinates volunteer groups and provides information. Only in extraordinary circumstances does the federal government provide compensation to disaster-affected households.²⁴ In France, insurance is the cornerstone of financial assistance, with the national government acting as the re-insurer (Zeta Group 2005). Coverage for additional perils is mandatory. If a disaster is declared by the government the additional coverage is used to provide comprehensive payouts to those affected through the insurance fund with the government guaranteeing sufficient funds to meet all claims.²⁵ In the USA, the Federal Response Plan governs response and recovery efforts, with a shared approach amongst various levels of government and other agencies (Haddow and Bullock 2003). As in Canada, insurance is a key source of aid, as are volunteer services and donations. The Americans have specific programs in place to facilitate various aspects of financial recovery. These include the Disaster Housing Program, the Individual and Family Grant Program (average grant \$2,000-\$4,000), Small Business Administration Loans to homeowners and businesses, and Public Assistance Program managed by the Federal Emergency Management Agency (FEMA). This latter program provides financial assistance to state and local governments and some nonprofit organizations to recoup 75% of the losses associated with disasters and develop mitigation measures. Since the grant program offers such limited funding, many homeowners in the USA finance their disaster recovery through loans or rely on donations.

In Canada, the approach to financial aid is quite different from those described above. The Disaster Financial Assistance Arrangements (DFAA) is an agreement reached between the federal government and the provinces/territories (P/T) whereby financial assistance is provided to the P/T governments for expenses incurred in the wake of particularly damaging *natural* disaster events (not technological or biological). According to the 2008 Guidelines for the DFAA, the agreements are intended to support the provinces in:

- providing or reinstating the necessities of life to individuals, including help to repair and restore damaged homes;
- re-establishing or maintaining the viability of small businesses and working farms;
- repairing, rebuilding and restoring public works and the essential community services specified in these Guidelines to their pre-disaster capabilities; and

²⁴ www.communities.gov.uk/fire/resilienceresponse/floodrecovery/faqs/localauthorities/bellwin

²⁵ <http://www.ccr.fr/fr/entreprise-activite.html>

- funding limited mitigation measures to reduce the future vulnerability of repaired or replaced infrastructure .²⁶

Particularly notable is this last item – under the new guidelines mitigation costs to reduce the threat from future disasters of no more than 15% of the ‘estimated cost of repair to pre-disaster condition’ may be eligible under DFAA. This is subject to Public Safety Canada (PSC) approval and audit. This is a significant addition to DFAA. Previously funding could only be used to return the area to a pre-disaster condition; mitigation was either undertaken by the P/T authorities or involved the federal government on an ad hoc basis. A good example of ad hoc mitigation is the over \$800M that has been spent to help flood proof some parts of the Red River, especially around the City of Winnipeg.²⁷ Various projects have been undertaken including development of the Winnipeg floodway and the installation of dykes around vulnerable communities. Funding for these projects has usually involved a partnership between the federal government and the province of Manitoba. In the recent 2009 flood, earth dykes recently built to protect the community of Morris prevented flooding and Prime Minister Harper was quoted as saying: "It's much cheaper for the federal government to contribute to some of these mitigation measures ... than to contribute to all the various disaster relief actions every single year."²⁸

When a disaster occurs that qualifies under DFAA, the monies are handled by PSC, and are paid to the affected P/T, not the local governments, individuals or organizations who have incurred the expenses. Federal aid is available only when the response and recovery costs incurred by the P/T governments exceed a particular threshold, specifically \$1 of loss per capita for that jurisdiction. Once that threshold is met, DFAA will pay 50% of P/T costs for the next \$2 per capita. Beyond those thresholds, the DFAA will pay 75% of the next \$2 and 90% of the remainder. Advance and interim payments may be available for the reconstruction of major infrastructure.²⁹

Since 1970, the DFAA have provided \$1.6B in financial assistance (Coppola 2007, 307). Federal assistance is only provided after P/T expenditures have been audited. Although the P/T authorities may deliver any type of assistance they desire, the DFAA cover only specific costs for natural disasters. As outlined in the next section, coverage for technological and biological/health-related disasters are handled on a case-by-case basis. Note that luxury items and

²⁶ <http://www.publicsafety.gc.ca/prg/em/dfaa/dfaa-guide-2008-eng.aspx>

²⁷ <http://www.cbc.ca/canada/manitoba/story/2009/04/14/mb-flood-crest-unclear.html>

²⁸ <http://www.cbc.ca/canada/manitoba/story/2009/04/14/mb-flood-harper-funding.html>

²⁹ <http://www.publicsafety.gc.ca/prg/em/dfaa/index-en.asp>

insurable costs are specifically excluded³⁰. Examples of the eligible and ineligible costs are provided by Public Safety Canada³¹ (see Figure 1). In Canada, the local level of government is the first to be involved with the response and recovery efforts. Once a disaster is deemed to be beyond the coping capacity of local level responders then provincial assistance begins. Households and municipalities receive their financial assistance from the P/T authorities. Each P/T government designs its own disaster financial assistance approach for the citizens and organisations of that jurisdiction and initially incurs the costs in the event of a disaster. For natural disasters, the federal government does not get involved until the DFAA thresholds are met. Although currently being negotiated, at this time there are no clear guidelines outlining when the federal government provides assistance in biological or technological disasters.

Although each P/T authority has a different set of policies regarding such things as items covered, deductibles, fundraising and sector coverage, there is significant harmonization with the guidelines laid out by the federal DFAA, since a consistent structure across jurisdictions tends to be less confusing for those applying for assistance. Despite this harmonization, considerable differences exist amongst P/T jurisdictional approaches. In 2009, for instance, the Red River flood provides a cogent example – the maximum amount that is available for households is \$100,000. However, given the magnitude of the flood event, there are calls for additional ad hoc assistance.³² Typically, a summary of each P/T financial assistance approach is provided in the emergency management section of the jurisdictions' website. Two examples are provided here for illustration.

³⁰ There are exceptions – for instance after the Pine Lake, Alberta tornado damage to cottages was covered.

³¹ Ibid

³² <http://www.cbc.ca/canada/manitoba/story/2009/04/14/mb-flood-crest-unclear.html>

Figure 1: Cost Eligibility

Examples of provincial/territorial expenses that may be eligible for cost sharing under the DFAA

- Evacuation, transportation, emergency food, shelter and clothing
- Emergency provision of essential community services
- Security measures including the removal of valuable assets and hazardous materials from
- A threatened area
- Repairs to public buildings and related equipment
- Repairs to public infrastructure such as roads and bridges
- Removal of damaged structures constituting a threat to public safety
- Restoration, replacement or repairs to an individual's dwelling (principal residence only)
- Restoration, replacement or repairs to essential personal furnishings, appliances and
- clothing
- Restoration of small businesses and farmsteads including buildings and equipment
- Costs of damage inspection, appraisal and clean up

Examples of expenses that would NOT be eligible for reimbursement

- Repairs to a non-primary dwelling (e.g. cottage or ski chalet)
- Repairs that are eligible for reimbursement through insurance
- Costs that are covered in whole or in part by another government program (e.g. crop
- insurance)
- Normal operating expenses of a government department or agency
- Assistance to large businesses and crown corporations
- Loss of income and economic recovery
- Forest fire fighting

In Ontario, financial assistance to homeowners, farmers and small businesses is provided by the Ontario Disaster Relief Assistance Program (ODRAP). As with the DFAA, the ODRAP covers natural disasters, recoups the costs of essential items only, but is not intended as an alternative to adequate

insurance coverage.³³ Should a disaster be declared that is large enough to warrant provincial involvement, then the municipality sets up a Disaster Relief Committee that is required to raise funds for the relief efforts. For every dollar raised by the committee, ODRAP will commit up to two dollars of additional financial assistance. 90% of eligible costs can be covered in this way. The minister has the authority to waive the fund raising requirement under special conditions such as in the case of remote settlements.³⁴ The following are the types of costs covered under ODRAP³⁵ (see Figure 2).

Figure 2: List of Costs Covered by ODRAP

- Eligible Losses and Costs:**
- restoration, repairs, or replacement to pre-disaster condition of a principal, year-round residence, farm buildings and principal business enterprise building
 - essential furnishing of a private residence including refrigerator, freezer, furnace, stove, clothes washer and dryer, television
 - tools or other items essential to the claimant's livelihood, including farm machinery and equipment
 - for farms, replacement cost only of orchard trees
 - for business enterprises, replacement of inventory at cost
 - livestock fencing
 - restoration, repair, or replacement to pre-disaster condition of churches, cemeteries, private schools, private clubs and other associations
 - emergency expenses (e. g. evacuation costs, food and shelter, essential clothing)
 - perishable food
 - heat and light supplies (e. g. fuel for light and heat, heaters)

In British Columbia, the Disaster Financial Assistance Program is available to homeowners, residential tenants, small businesses, farm operators and not for profit charities. Assistance is available for essential items only, with 80% of eligible damage covered, up to a maximum of \$300,000.³⁶ Unlike most Canadian jurisdictions, British Columbia takes an ‘all hazards’ approach to

³³ <http://www.mah.gov.on.ca/Page237.aspx>

³⁴ This occurred in northwestern Ontario in 2002, see <http://www.mah.gov.on.ca/Page603.aspx>

³⁵ <http://www.mah.gov.on.ca/Page240.aspx>

³⁶ http://www.pep.bc.ca/dfa_claims/SummaryofDFA.pdf

disaster management; all types of disasters -- natural, biological and technological -- are eligible for compensation.

Since the federal threshold is only reached in the largest disaster events, such as the 1998 Ice storm, the P/T governments are typically the authorities that are involved with household disaster compensation.³⁷ An example of provincial-level financial aid is the joint ODRAP-community response after a large flood in Peterborough, Ontario, 2004. In the aftermath of the flood, the relief committee raised \$3.3M, matched 2 to 1 by the province. A total of about \$9.6M in compensation payments were eventually distributed to flood victims.³⁸

Finally, beyond ODRAP, or any P/T authority, the capacity of communities, such as municipalities, to adequately deal with the economic aspects of disasters is worth emphasizing. First, in Canada, local governments bear the brunt of responsibility for adequately mitigating, preparing, responding, and recovering from disasters, yet not all local jurisdictions are equally resourced. Thus, some jurisdictions have more capacity to deal with disasters (e.g. Winnipeg). Second, as demonstrated by Peterborough's fundraising efforts and subsequent sections of this paper, particularly in the response and recovery stages, community capacity to deal with disasters is also tied to leveraging support through the relationships that exist, or can be developed, either within the community or between communities.

As this discussion makes clear, disaster financial assistance provided by various levels of government and different jurisdictions is far from standardized. Households should become familiar with the type of assistance available in their local area and understand what hazards are covered and what expenses will be eligible for compensation. This information should help households better understand how they can better prepare for disaster situations and what government aid they can expect to receive should disaster strike.

Ad Hoc Government Assistance

Beyond the government assistance programs, existing government programs and insurance, financial disaster assistance to households sometimes may also be provided by various government agencies and jurisdictions on a case-by-case or ad hoc basis. The BSE, Avian flu and potato wart disease outbreaks are all examples where the federal and provincial governments provided ad hoc funding to offset the costs of these disasters. This ad hoc funding is necessary since the DFAA only cover natural disasters and disasters may have extenuating

³⁷ Since smaller provinces have smaller populations and thus, much lower thresholds, more populous provinces, such as Ontario and British Columbia, have argued that the DFAA formula disadvantages them. Thanks to an unanimous reviewer for this insight.

³⁸ <http://www.mah.gov.on.ca/Page629.aspx>

circumstances that warrant additional government financial assistance (e.g. affected group may not be sufficiently covered within existing programs). Events such as biological disasters do not qualify for DFAA assistance (e.g. SARS,) nor do technological disasters such as terrorism, chemical fires and transportation accidents. Further, the majority of P/T authorities do not typically have a consistent financial aid policy for these so called ‘non-natural’³⁹ disasters. Thus, while government financial assistance for natural disasters in Canada is relatively well defined, that is not yet the case for biological and technological disasters.

In other words, most Canadian jurisdictions have not yet adopted an ‘all hazards’ approach, e.g. an approach to compensation that is inclusive of all types of disasters with a focus on the outcomes of the disaster event, rather than the source of the perturbation. This is out of step with *The Emergency Management Framework for Canada* established by the federal, provincial and territorial governments (F/P/T) put in place to enable consolidation of inter-jurisdictional collaboration. The framework advocates for the adoption of a “comprehensive all-hazards approach to coordinate and integrate prevention and mitigation, preparedness, response and recovery functions to maximize the safety of Canadians” (PSC 2005,5). Canadians are still some way from meeting that goal.⁴⁰ Ad hoc government disaster financial assistance sometimes is also provided following a natural disaster when extenuating circumstances require additional government support beyond DFAA and provincial programs. For instance, after the 1998 Ice storm, the federal and Ontario governments implemented a tree re-planting project to help affected property owners recover from the devastating damage in their woodlots, including stands of sugar maples.

Table 2 provides examples of some Canadian disaster events. The table demonstrates many of the ideas covered in the last two sections of the paper. Note in particular that 1) ad hoc compensation often involves government functions and programs beyond disaster management, such as infrastructure, tourism and environment, 2) not all events received financial assistance (Blackout), 3) some events involved only provincial response (Walkerton), 4) response to Aboriginal communities involves the federal department of Indian and Northern Affairs (Kashachewan), 5) lack of insurance coverage is a problem in some communities (power plant fire), and 6) non-natural disasters receive uneven, ad hoc financial assistance (e.g. SARS).

³⁹ This is the terminology used by the F/P/T authorities. It is problematic, since biological disasters such as disease outbreaks clearly originate from ‘natural’ causes (e.g. viruses and bacteria!). This nomenclature is also out of step with the disaster management literature definitions of disaster types.

⁴⁰ That said, recently there have been high-level discussions amongst the F/P/T authorities to work towards developing more consistent approaches.

Table 2: Examples of Ad Hoc Financial Compensation for ‘Non- Natural’ Disasters

Prov/ Terr	Disaster Type	Event	Year	Description/Type of Aid Provided
QUE	Civil Unrest	Oka Crisis	1990	Native territorial claims. Protest closed bridges to Montreal. Aid to cover costs to households, local and provincial governments.
ON	Fire/accident	Hagersville Tire Fire	1990	Large and uncontrolled fire at Tyre King Recycling site. National Contaminated Site Remediation Program, Ontario Environmental Clean-up Fund, Provincial Liability Fund, Ground Water Monitoring Fund and financial assistance through existing provincial program.
ON	Fire/accident	Plastimet Fire	1997	Fire at warehouse in Hamilton. Fire suppression activities continued for four days. Some ongoing concerns regarding the smoke’s toxicity, especially for firefighters. Federal Environmental Clean-up Fund and financial assistance through existing provincial program.
ON	Human Health Disease Outbreak	Walkerton E-coli Outbreak	2000	Major rainfall event caused e-coli from manure on an adjacent farm to seep into the Town of Brockton’s water supply system. Provincial recovery strategy that addressed municipal, social, health and economic needs during response and recovery period.
PEI	Plant Health Disease Outbreak	Potato Wart	2000	Fungal disease that appears to be restricted to 0.4 hectare of a 30 hectare potato field. Negative results all except for one particular spot in field. Potato Diversion Program and Potato Disposal Adjustment Program.
SK	Human Health Disease Outbreak	Cryptospori-dium	2001	Waterborne disease outbreak in North Battleford affected up to 7000 people. Water and sewer related projects were funded through Canada-Saskatchewan Infrastructure Program.
NS, YK, NWT	Terrorism	Sept 11, 2001	2001	Terrorist attacks required immediate landing of dozens of airplanes and accommodation of passengers. Aid to cover costs of response.

CA	Animal Health Disease Outbreak	BSE	2003	One cow in western Canada tested positive for BSE. The US and other borders were closed to Canadian ruminants and ruminant products. This resulted in an economic crisis, not an actual disease crisis. Various programs including winter feed assistance and support for packing industry.
ON	Major Infrastructure Failure	Power outage	2003	Originating in Ohio, a series of power infrastructure failures caused a massive electrical outage affecting most of Ontario, particularly in the southern and eastern part of the province. Little government aid provided.
ON	Human Health Disease Outbreak	SARS	2003	An epidemic posed a danger to the health of the population including death and illness, massive social and economic disruption. One time \$300,000 payment by federal government. Industry Canada provided tourist support, most response costs handled by province.
BC	Animal Health Disease Outbreak	Avian Influenza (AI)	2004	First AI outbreak of its kind since 1960s, The highly pathogenic AI strain (H7N3) infected a flock of chickens at a farm north of Abbotsford, BC., in early February 2004. Compensation through CFIA.
NWT	Major Infrastructure Failure	Fire-power plant	2004	A fire totally destroyed the power plant, which is the sole source of electricity to Fort McPherson. Territory provided assistance to local government, businesses and individuals affected. As insurance was not widely subscribed in community, all costs covered where needed.
ON	Human Health Disease Outbreak	Kashechewan water crisis	2005	Breakdown of water treatment facilities led to evacuation of entire community in very remote area. Costs initially incurred by province, to be repaid by federal department of Indian and Northern Affairs.
ON	Civil Unrest	Caledonia Protest	2006	Protest on Douglas Creek Estate lands. Occupation of DCE lands by protesters due to unsettled First Nations land claim issues, since Feb 26, 2006. Aid to cover costs to households, local and provincial governments.
ON	Other Major Event/ Emergency	Canadian Lebanese repatriation	2006	Breakout of civil war in Lebanon, family of Canadians killed, other lives threatened. Requests for assistance. Provincial aid to facilitate repatriation of Canadians.

Organizational Support, Fundraising, In-Kind Support, Self Funding

This section groups together the other types of financial assistance, since these often overlap. For instance, Ontario's ODRAP program blends both fundraising and direct government financial support and organizations such as the Red Cross may be involved in various types of assistance including fundraising, in-kind and goods-oriented support. It is particularly within the realm of such volunteer activity that community relationships – both internal and external – can be leveraged for disaster response and recovery. Moreover, since it is inevitable that despite all of the funding sources listed above some of the costs will ultimately be borne by the affected households, self funding through savings and personal loans will also be an important component of disaster recovery. A caveat is necessary -- although we know that self-funding is important, little information is available regarding the extent to which Canadian households typically contribute to their own financial recovery after a disaster. Evidence suggests that wealthier households are more likely to have adequate insurance and the personal financial resources to fund recovery (Peacock et al. 1997, Mileti 1999). It is more likely to be the poorest people who will need the most financial assistance in the wake of a disaster and that the funds available through insurance will far exceed that provided through other sources.⁴¹ Fundraising and other forms of volunteerism are key components of disaster financial assistance. Coppola (2007, 308) asserts:

The majority of relief effort funds often are philanthropic in origin. The world community as a whole is much better able to absorb the impacts of individual disasters than any single community (which is related to the concept of risk spreading...). Even the United States, the world's richest nation, depended heavily on donated funds (measured in billions of dollars in the recovery for both the Sept. 11th terrorist attacks in 2001 and Hurricane Katrina in 2005.

He states that the sources of donated funds include other governments, nonprofit organizations, businesses and private citizens. In-kind donations involve recovery support in a non-cash form such as the donation of supplies, services and personnel as well as logistical support. Examples include clothing, food, medical supplies, government teams that supply primary medical care or clean drinking water (e.g. Canada's DART team⁴²), search and rescue teams, goods transport, volunteer debris removal or homebuilding (e.g. Habitat for Humanity⁴³). In-kind

⁴¹ For instance, after the Peterborough flood \$85M was paid out in insurance, ODRAP aid was \$9.6M.

⁴² http://www.cfjhg.forces.gc.ca/dart/main_e.asp

⁴³ <http://habitat.ca/index.php>

support can be provided through a host of pathways, including dedicated disaster organizations (e.g. Red Cross) and ad hoc volunteerism by both private citizens and organizations (e.g. Pine Lake case study below).

For instance, Hurricane Katrina destroyed 455,000 housing units, with nearly 156,000 of those units belonging to families with yearly incomes of less than \$20,000. After the hurricane, Habitat for Humanity launched an emergency appeal for funds and volunteers. The organization has launched a program called “Operation Home Delivery” to help the New Orleans area affiliates recover from the disaster, replace 250 destroyed Habitat homes, mobilize various agencies and governments to find solutions to the housing crisis and implement the “House in the Box” program that will build homes and ship them to the devastated area.⁴⁴ Another example is Wal-Mart’s disaster relief efforts. Through the Wal-Mart Foundation it provides funds, shelter, and non-perishable items following disasters. Since 2007, Wal-Mart has donated over \$10M in disaster preparedness and relief. After a Louisiana tornado in 2004, for instance, Wal-Mart donated \$8,000 to the American Red Cross and volunteers from the local store helped search for survivors.⁴⁵

In Canada, key sources of fund raising and volunteers after a disaster are provided by the Canadian Red Cross, St. John’s Ambulance⁴⁶, the Salvation Army⁴⁷ and the Mennonite Central Committee (in particular Disaster Services)⁴⁸. For instance, in 2006 alone, 5,000 Red Cross volunteers helped 52,000 people from across Canada to deal with a range of disasters including floods, fires, and receiving Lebanese Canadian refugees into Canada (Canadian Red Cross Society 2006-2007). Table 3 outlines some of the contributions made by the Red Cross and other volunteers for a few Canadian disasters. Particularly significant is the amount of money raised for such events as the Saguenay flood and the Ice Storm. This list, even though it is far from complete, indicates the degree to which fundraising and the work of volunteers are an integral component of the response and recovery efforts for all types of disasters. A caveat to this type of economic support is that the reliance on public donations related to particular disaster events means that the funding available for NGOs to effectively respond to disasters is unstable; NGOs never really know how much they will be able to raise. This funding instability may be further compounded by their specific responsibility to meet the needs of high risk and vulnerable populations (e.g. elderly).⁴⁹

⁴⁴ <http://habitat.ca/hurricanekatrinareponsep911.php>

⁴⁵ <http://walmartstores.com/CommunityGiving/242.aspx>

⁴⁶ www.sja.ca/Canada/CommunityServices/Programs/Pages/EmergencyPreparednessProgram.aspx

⁴⁷ http://www.salvationarmyusa.org/usn/www_usn_2.nsf/vw-text-dynamic-arrays/3C5471700B61E262802573DF0063B7C8?openDocument

⁴⁸ <http://mcc.org/>

⁴⁹ Thank you to a unanimous reviewer for this insight.

Table 3: Fundraising and Volunteer Activities

Jurisdiction	Event	Fundraising and Volunteer Activities
Canada Wide	September 11/2001	Volunteers provided support at 312 reception centres across the country to 33,346 passengers. They provided blankets, toiletries, meals, and water. Also provided help at border crossings for those stranded (e.g. truck drivers).
British Columbia	Firestorm 2003	In some communities some homeowners (mobile homes) did not carry insurance due to the cost, they were assisted through non-profit organizations and a special fund that included contributions by the provincial government, non-profit organizations and the public. \$4M contributed by Red Cross, help delivered by 750 volunteers.
Alberta	Edmonton Tornado 1987	The Canadian Red Cross, Salvation Army, Edmonton Emergency Relief Services Society, Edmonton Food Bank, Mennonite Disaster Services, Christian Disaster Relief and the Christian Reformed World Relief Committee all participated extensively in the Victims Services aspect of the event. Some of their services involved monetary and other donations from the public and some of the services involved funding from within their organizations. Their initiatives were, for the most part, independent of government funding.
Alberta	BSE 2003	A significant amount of private sector fundraising took place on a local basis to help those impacted by the event on a local basis.
Alberta	Pine Lake Tornado 2000	The Canadian Red Cross, Salvation Army and Mennonite Disaster Services participated extensively in the Victims Services aspect of the event. Some of their services involved monetary and other donations from the public and some of the services involved funding from within their organizations. Their initiatives were, for the most part, independent of government funding.
Manitoba	Flooding 1997	\$26M and \$3M approximately in public donations to the Red Cross and Salvation Army, respectively
Ontario	Kashechewan 2005	Responded to evacuation of half of the community. Provided registration and inquiry services in Sudbury and other locations, managed shelters, provided social services, clothing, etc.
Ontario	Lebanese Repatriation 2006	Red Cross involvement in receiving refugees back to Canada.

Ontario	SARS 2003	Red Cross, Salvation Army and St. John's Ambulance distributed Health Kits to people isolated in quarantine
Ontario	Walkerton E coli 2000	Significant fund raising occurred. Included funds raised by Kinsmen/Kinettes, the Knights of Columbus, etc.
Ontario	Ice Storm 1998	Total fundraising by Red Cross \$4M and fundraising by volunteers \$4.8 M.
Québec	Saguenay Flood 1996	Since 1996, 1700 volunteers have provided assistance to 18,800 people. \$27M was raised.

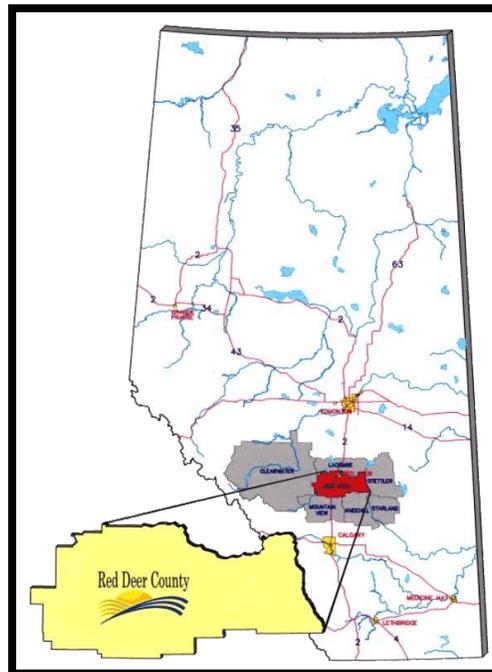
As this section illustrates, disaster financial assistance for households includes a myriad of other sources beyond insurance or official government programs. Of particular note is the amount of fund raising and other types of support that is provided by volunteers and by the affected community for their own members (e.g. Peterborough). This type of community assistance is said to be dependent on the quality of social capital relationships that exist within and between communities. Within the context of disaster response and recovery, social capital is the network of relationships and levels of trust that a community can utilise in an emergency situation to expedite its successful recovery (Murphy 2007). These relationships are clearly important, as will be demonstrated in the following case study.

Pine Lake Tornado, 2000

This section provides a case study that illustrates some aspects of disaster recovery at the household level. This information is pulled from a larger study funded by the Institute of Catastrophic Loss Reduction on household emergency preparedness (Murphy et al. 2005). Amongst other things, the study undertook a survey of people affected by the Pine Lake tornado. Some of the survey questions were related to disaster recovery, including the financial component. The survey was administered in 2003, three years after the disaster occurred – a period of time that was expected to have resulted in significant recovery.

In July 2000 an F3 tornado hit Pine Lake, Alberta, which is situated in Red Deer County (see Figure 3). The disaster event, ranked as the fifth most deadly tornado in Canadian history, resulted in 12 fatalities and 140 physical injuries. Disaster recovery financial assistance included insurance, government support, donations, in-kind support and personal financing. Of particular interest are the details regarding how households perceived the process and outcomes of the financial aid that was provided. Typically, this is always a contentious aspect of the recovery period; not everyone feels that they have been treated fairly or have received the compensation they deserve (Peacock et al. 1997, Coppola 2007). Further, the case study outlines that residual household costs remained even after well funded, DFAA-supported recovery efforts. In total, insured losses for the Pine Lake tornado amounted to just over \$10M, with overall economic losses of \$30.5M. In total, 532 property and 468 automobile claims were filed (Murphy et al. 2005). This DFAA eligible event resulted in 710 individual and small business applications for government financial aid. DFAA eligible costs amounted to \$6.7M.⁵⁰

Figure 3: Red Deer County⁵¹



⁵⁰ <http://www.landlink.ca/about/drp/projects.htm>

⁵¹ Source: http://www.reddeercountry.ab.ca/visitor/index.php?main_id=226

The survey asked if respondents had recovered from the tornado. As expected, 71% stated that they had recovered, however that left 29% of participants dealing with residual effects. Of those who continued to suffer effects, residents noted anxiety (11%) and financial costs (6%) as the main long-term impacts (Murphy et al. 2005, 59). Respondents stated that the main sources of financial assistance were government aid (15%), insurance (15%), personal funds (11%), and funds donated to the community (5%).

When asked about the process and outcomes associated with recovering from their financial losses, 22% of respondents felt the process and outcomes were fair and equitable, 22% were neutral on the question and 56% disagreed. The majority of complaints were related to the outcomes, rather than the process. Households complained that the provincial government took a very narrow definition of tornado-affected properties. Those deemed to be only 'high wind affected' or outside the path of the tornado (both parameters determined by the government) were not eligible for compensation. In some cases this meant that neighbours immediately adjacent to each other had different access to government compensation. On a more positive note:

Those who did qualify for aid, particularly affected farmers, were quite pleased with the compensation they received and the way in which their concerns were handled by the provincial government. Similarly, most seemed pleased with their treatment by insurance adjusters (Murphy et al. 2005, 59).

When specifically asked for comments about the insurance process and settlements affected households, even the farmers who were generally pleased with their treatment, had residual concerns and costs. Their comments included: 1) although insurance may have fully covered the primary residence, outbuildings, landscape features (e.g. large trees) and barns were not necessarily covered, 2) some items were only covered at their depreciated present value, rather than at replacement value, and 3) some items were underinsured. Ultimately, if these residual insurance costs were not picked up by government assistance or some other source, the household was left to either finance the expenditure themselves, or make do without the destroyed/damaged property. Further, even after going through the recovery process, and extensive interaction with insurance and government officials, there seemed to be a great deal of confusion amongst respondents regarding what is and is not covered by insurance policies (Murphy et al. 2005).

The study inquired about the type of in-kind and financial aid given and received by household members within their community. Respondents indicated that in-kind services such as search and rescue, and debris clearing; psychosocial

support such as cooking, babysitting, checking in on victims, and providing advice; and financial support were all key components of the assistance given and received by households. This is an example of the value of social capital networks during disaster response and recovery. Beyond the household level, other types of response/recovery efforts also occurred. In the response period, the Red Cross immediately set up a victim registration centre and the nearby Mennonite community came bearing huge quantities of food for both victims and responders. During the recovery period, businesses donated significant quantities of supplies, the local oil refinery sent their emergency response team and the nearby prison offered a team of prisoners to help with debris clearance. A local resident spearheaded the development of a volunteer organisation called “Trees Please” that solicited the donation of trees, equipment and labour. They successfully replaced hundreds of trees in the affected area as well as further fostering positive social relationships within the community.

Conclusion

This paper has outlined the various sources of financial assistance that are available to Canadian households in the wake of a disaster. These include insurance, existing government programs, government aid (both formal agreements and ad hoc), organizational assistance, fundraising, in-kind donations and self-funding. The case study of the Pine Lake tornado further highlighted some of the issues and problems associated with an actual recovery process including insurance gaps, lack of knowledge and friction regarding funding allocation. It also outlined the ways in which strong social networks can contribute to the recovery efforts.

In Canada, insurance is viewed as the householder’s responsibility and government disaster financial assistance is typically not available for insurable property. Special perils insurance is sometimes available for particular hazards. Households may be able to access various types of government funding during the recovery period. The AgriStability program and CFIA offer support in rural areas, the F/P/T authorities have formal plans and agreements regarding natural disaster financial assistance and ad hoc funding is often forthcoming for ‘non-natural disasters’ and extraordinary natural disasters. All of these avenues of government assistance have specific criteria and limits attached to them; it is unlikely that any of these sources of aid will fully cover a household’s recovery expenditures. Finally, fund-raising and in-kind donations often offset some of the costs not covered by other sources. However, residual costs will almost always remain – these must be self-funded by the household, either through savings or loans.

Sometimes, the household or community may not have the resources to return to the pre-disaster level, much less to mitigate future risk. DFAA’s new

provision to allow some funding to be allocated towards mitigation will begin to address this problem, but many challenges remain to ensure that recovery attains *The Emergency Management Framework for Canada's* vision of reducing long-term vulnerability and increasing resiliency. Coppola (2007, 330) outlines barriers and challenges associated with holistic disaster recovery. The barriers are:

- Degree of damage and whether or not processes and outcomes associated with recovery lead to risk reduction
- Rules, regulations and policies that may limit opportunities and curtail creative opportunities
- Political and financial tensions associated with property rights, development, insurance, land use and substandard housing that can compromise sustainable community redevelopment decision-making
- The rush to 'return to normal' rather than thinking through opportunities for risk reduction
- Lack of awareness and vision regarding redevelopment possibilities
- Changing contexts for government officials in the wake of disaster including the need to adjust roles, procedures and priorities, increased workloads, increased public scrutiny, and (often) deteriorating public confidence
- Inability to break down extraordinary disaster recovery problems into manageable components that can be addressed with available knowledge and resources
- Lack of systematic communication between decision-makers, various agencies and stakeholders
- Lack of political will and leadership to 'do the right thing' for long-term sustainability rather than focusing on the 'quick fix'.
- Inordinate impact of disaster on marginalized communities and inequity in the distribution of recovery goods and services

In terms of this last point related to equity, the recovery period should be seen as an opportunity to address the underlying vulnerability in marginalized communities (Coppola 2007, Peacock et al. 1997). This may prove to be especially difficult due to ingrained political views, racism, sexism and other biases. Yet, it is vital to the recovery efforts since poverty and various forms of discrimination mean that some groups are more likely to sustain higher levels of damage due to such factors as substandard housing in hazard-prone areas. They may also lack the financial resources needed to deal with a disaster including insurance, personal savings and credit.

The key challenge is to overcome these barriers and to recognize recovery as an 'opportunity in disguise' – an opportunity to develop recovery strategies that

enhance the economic prospects of the affected community, mitigate the risks *and* enhance quality of life. Since communities are typically more willing to invest in disaster mitigation measures in the immediate post-disaster period, whilst memories of the disaster are still fresh in their minds, the recovery period is an important window of opportunity in the disaster management cycle (Miletti 1999, Coppola 2007).

If the above hurdles can be overcome, the recovery period can be a period of economic and community revitalization and modernization. Reconstruction funds can be used to replace outdated infrastructure and homes, land use planning zones can locate new structures in less hazard-prone areas and replaced/repared structures can be designed to be more resilient to potential hazards (Brown et al. 1997). For Canadians, initiatives such as these, combined with adequate, ‘all hazards’ approaches to financial assistance, have the potential to reduce vulnerability and enhance long-term household resiliency. What we need now is the political will and buy-in from Canadians to make it happen.

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