Institute for Catastrophic Loss Reduction
Building resilient communities

CATtales

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Inside this issue

New ICLR report

The governance of climate change adaptation in Canada

ICLR has released *The governance of climate change adaptation in Canada,* the latest report in its research paper series.

The 2015 Paris Agreement on Climate Change, which has been ratified by Canada and 169 other countries, has two core commitments (United Nations, 2015, 3):

(a) Hold the increase of the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; and,

(b) Increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.

The first refers to climate change mitigation, the process of reducing greenhouse gas emissions to reduce future climate change. The second core commitment refers to climate change adaptation, defined by the Intergovernmental Panel on Climate Change (IPCC) (2014, 118) as: "The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects."

In March 2017, two expert workshops were held in Toronto and Ottawa with participants from government, academia, private sector, and non-governmental organizations on the topic of climate change adaptation and governance in Canada. Particular attention was given to Canada-wide strategies for adaptation, risk reduction, and the intersection between them. This report is the product of those workshops and deals with both adaptation as a set of actions and their governance.

Climate change adaptation is the process of preparing for actual, or projected, changes in climate averages and extremes. Climate change adaptation is considered here in terms of five cyclical stages:

1) identification of climate change hazards and their impacts;
2) assessments of risk exposure and vulnerability;
3) consideration and deliberation of adaptation options;
4) implementation; and,
5) monitoring and assessment of the implemented options.

As will be seen, these stages overlap with the responsibilities and interests of a multitude of actors, making the adaptation process complex. Further, all stages of the adaptation cycle rely on interpretations and values ►

pertaining to: what constitutes a hazard; how vulnerability is determined; what are acceptable interventions; and the determinants of success. These issues make adaptation both complex and political in nature. Adaptation is then a 'cross-cutting' problem, and the process of identifying the most effective roles for various actors, and the best policy instruments to use to reach certain goals, are not only value-laden, but complex and uncertain.

Recognizing the processes of policy development and program delivery within the structures of Canadian federalism has long been a focus of Canadian policy researchers. Questions surrounding such processes specifically regarding climate change adaptation in the Canadian system have been summarized by Dickenson & Burton (2011, 104): "When a new issue such as adaptation to climate emerges, there is almost always some uncertainty about how the needed policies and actions will be identified, developed, and shared. Important parts of the climate change adaptation (and mitigation) debate still remain unanswered and even unaddressed: who will pay what share of the costs for adaptation of different kinds, in different places and in relation to what risks." The workshops engaged directly these same processes regarding climate change adaptation.

Broadly speaking, these processes are usually captured by the term 'governance' which denotes how a society attempts to coordinate a response to issues where there are multiple, government or otherwise, organizations that have some form of jurisdictional authority or responsibility. Many large-scale issues facing Canadians have established processes in the federal system, such as various issues in health care, law enforcement, and natural resources management. For these examples, there are relatively well understood 'governance modes' operating, made up of multiple actors across multiple jurisdictions. What is expected of an effective, or appropriate, governance process is that there is general agreement on the roles and responsibilities of actors involved, appropriate instruments, and desired outcomes. No such effective governance mode is currently clearly identifiable for adaptation at a broad scale. There are pockets of effective action, including efforts from numerous actors including Health Canada, the City of Toronto, the City of Mississauga and others, but an overall Canadian approach to adaptation remains unclear.

Review of the workshop data indicated two core findings:

1) Building on existing successes, even if presently not connected to one another, will be crucial to furthering effective adaptation governance; and
2) Barriers to effective adaptation governance are often structural, but not necessarily insurmountable. Effective coordination of efforts to reduce duplication, increase efficiency, and promote widespread action through all stages of the adaptation cycle are fully possible within current Canadian federalism. However, motivation and expectations in political and economic systems need adjustment.

Other key findings include that there is no single instrument or strategy that solves the climate change adaptation problem. The selection of instruments and strategies spanning across the entire system will, therefore, likely dictate the successes and failures of individual climate adaptation initiatives. Specific instruments and their potential uses are summarized in tables throughout the report. Also of note was that the semantics of adaptation terminology were a topic of significant discussion. Differences in use of words, as well as meanings for the same word (eg. mitigation, risk, resilience), has led to communication and operational challenges according to workshop participants.

This report provides not only a state-of-play on adaptation governance in Canada, but also an effective introduction to the issues at its core. The insights of the expert workshop participants, as well as the additional research, provide a valuable reference document and resource for practitioners throughout Canada. **CT**

The governance of climate change adaptation in Canada can be downloaded for free at www.iclr.org

Toronto Star lawsuit against Ontario government finds tribunal secrecy unconstitutional

Ruling may lead to more transparency regarding building code rulings

A decision by Ontario Superior Court Justice Edward M. Morgan was released on April 27, 2018, in a case where *The Toronto Star* newspaper challenged the application of the Freedom of Information and Protection of Privacy Act (FIPPA) to 14 administrative tribunals, all of which are designated as "institutions" in the Schedule to the FIPPA General Regulation. Among other things, FIPPA sets out terms on which access is granted to documents held by government and wider public sector institutions. The Toronto Star contended that, by applying FIPPA to tribunals that preside over adversarial processes, adjudicate disputes, and act judicially or quasi-judicially, FIPPA violates the open courts principle embedded in s. 2(b) of the Canadian Charter of Rights and Freedoms.

The learned Justice issued a declaration that the application of ss. 21(1) to (3) and related sections of FIPPA pertaining to the presumption of non-disclosure of "personal information" to Adjudicative Records held by the institutions named in the Notice of Application infringes s. 2(b) of the Charter and is not justified under s. 1. It is therefore of no force or effect.

Ontario Superior Court Justice Edward M. Morgan's ruling applies only to requests for Adjudicative Records from the 14 institutions named in the Toronto Star's Application and, by extension, any other analogous institution listed in the Schedule to FIPPA that operates in an adjudicative capacity and that holds Adjudicative Records. Therefore, the ruling applies to the Building Code Commission.

The impact of this decision is that the Building Code Commission will have to be more open to requests for information from the public. It will not be necessary to file FOI requests to obtain BCC rulings. The BCC will have to release All BCC decisions in a timely manner, as well as the Applicant's and Respondernt's written arguements.

The learned Justice suspended the declaration of invalidity of this aspect of FIPPA 12 months in order to allow the government to change its rules. The citation for this case is: *Toronto Star v. AG Ontario, 2018 ONSC 2586*. **CT**

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100 catastrophes from 2008-2018 cost the Canadian insurance industry $17.4 billion[1]

April marked the month that Canada exceeded 100 catastrophes[2] over the span of a decade. The top four costliest events occurred in the latter half of the decade, all of which had eye-opening impacts on the Canadian insurance industry.

Top 5 costliest Canadian catastrophes since 2008:

1. **2016 Fort McMurray Wildfire**
2. **2013 Southern Alberta Flood**
3. **2013 Greater Toronto Area Flooding**
4. **2014 Central Alberta Hailstorms**
5. **2011 Slave Lake Fire**

CatIQ's loss index platform contains insured loss catastrophe (CAT) data extending back to 2008. The most recent CAT came in the form of an ice storm that downed trees, powerlines and caused flooding across southern Ontario, but also led to tens of thousands without power in Quebec. Over the past decade, there have been other ice storm CATs, with December 2013 being the most memorable and ranking as the 12th costliest event in the CatIQ database.

The Canadian industry reached $1.4 billion in insured losses[1] in 2017. It is becoming increasingly common for Canadian annual insured losses from CATs to exceed $1 billion as severe weather events become more frequent, and 2018 is off to a costly start. CatIQ reports that Canadian insurance industry CAT losses amounted to C$17.4 billion[1] since 2008. **CT**

1 Total loss includes catastrophes and notable events, where a notable event is defined as between $10 and $25 million.
2. A catastrophe (CAT) is defined as an industry loss of $25 million or greater.

Natural and man-made events lead to record insured and total losses in 2017: Swiss Re sigma

At USD 144 billion, the insured losses from natural and man-made disasters worldwide in 2017 were the highest ever recorded in a single year.

The main driver of the high insured losses was an active hurricane season in the North Atlantic. In particular, three major hurricanes – Harvey, Irma and Maria (HIM), which all reached category 4+ intensity[1] – left a trail of destruction across the Caribbean Islands, Puerto Rico, Texas and parts of western Florida.

It's about storm frequency too

HIM struck multiple locations in quick succession and impacted many lines of business. The storms resulted in combined economic losses of USD 217 billion, and insured losses of USD 92 billion. From a risk management perspective, the HIM experience highlights that hurricane frequency is as crucial a factor to measure as severity of a single storm in modelling loss scenarios. So too are secondary risk factors like the excessive rainfall that can come with hurricanes: Harvey is a case in point, with its very heavy rains leading to widespread and destructive flooding in Houston.

Economic losses from all disaster events – both natural and man-made catastrophes – were USD 337 billion last year. Natural catastrophe-related economic losses made up the bulk of these losses, at around USD 330 billion in 2017, coming mostly from hurricanes, severe storms, wildfires, floods and other weather events in North America, the Caribbean and Europe. Man-made disasters are estimated to have caused the remaining USD 7 billion of the economic losses, down from USD 10 billion in 2016.

Global catastrophe protection gap of USD 193 billion

The total insured losses covered more than two fifths of the economic losses from last year's disaster events, pointing to a global catastrophe protection gap of around USD 193 billion, significantly more than USD 124 billion in 2016. Insured claims were up from USD 56 billion in 2016, and above the inflation-adjusted annual average of the previous 10-years (USD 58 billion). Overall, natural catastrophes globally resulted in claims of close to USD 138 billion, much higher than the previous 10-year annual average (USD 50 billion). Insured losses from man-made disasters were around USD 6 billion, down from USD 8 billion in 2016.

In other major disasters, wildfires ravaged parts of California in particular, as well as regions outside of the U.S. Insured losses from wildfires worldwide last year were the highest ever recorded, totaling USD 14 billion. Projected changes in climate, including warmer temperatures and prolonged periods of drought, are expected to continue to increase the frequency and severity of large fire events. There were also a number of severe precipitation events in 2017, in different regions. These highlighted the vulnerability of an increasingly urbanized world to flood events. Houston, which suffered major flooding on account of the severe precipitation that came with Hurricane Harvey, is a primary example, as is the flooding of the Yangtze River in China due to heavy rains. Related losses due to the latter were estimated to be USD 6 billion, making it the costliest disaster event of the year in Asia. And last year's monsoon season inflicted heavy losses and loss of life across Nepal, Bangladesh and India. **CT**

References

1. The Saffir-Simpson scale rates hurricane intensity from category 1 to 5, according to sustained wind speeds in a hurricane. Storms rated category 3 and above are considered major hurricanes. See https://www.nhc.noaa.gov/aboutsshws.php

Big data? How about starting with just 'data'?

By Glenn McGillivray, Managing Director, ICLR

We live in an age of 'Big Data'. And while it seems to me that the actual term is being used less and less these days (indicating, perhaps, that the concept has become mainstreamed), the overall notion is alive and well and thriving in some Canadian p&c insurance companies.

There are many sides to Big Data, but one of the foundational concepts is the idea that there is a wealth of untapped and unstructured information available, both within organizations and elsewhere, that could be mined in order to identify key business trends and the like. Much of these data can be found in non-traditional places and, sometimes, have to be analyzed using non-traditional means.

The concept is intriguing: Going to non-traditional sources of data that might be able to confirm old assumptions or tell you wholly new things about your insureds, about individual or entire categories of risks, about the industry and so on – data that probably went ignored for many decades because no one saw its intrinsic value or had the means to collect and analyze it.

But my thinking is that before we plow headlong into this brave new world, shouldn't we first try to do the best we can with traditional industry data?

The truth is we have a big problem with data quality in the Canadian p&c insurance industry. I mean, for a G7 country with an industry that wrote $53 billion in DWP in 2016 (all private insurers, IBC Facts Book 2017) we make some really big decisions based on often very lousy inputs. Garbage in garbage out.

Take disaster data for one. Systematically collected insured catastrophe data has only been collected in this country for about a decade. The cat data that goes back further than this, while helpful to show an overall tendency, has been cobbled together from various sources and is not very robust.

Then there is the normal, everyday data that insurers depend on. Data about individual insureds and risks gleaned by some brokers during the normal course of their interactions with clients often has more holes it in than a block of Swiss cheese.

The same can be said of information collected by some claims adjusters. It is commonplace to see individual claims in company claims management systems with key fields being left blank (including entire claims notes fields). As a result, fields either remain unfilled, or will often default to ridiculous (and very unhelpful) presets – like setting a roof's age at 75 years for a home that is only 25 years old.

According to some sources (including a broker I know), these data quality issues could, at least partially, be responsible for the trend of insurers leaning on such data points as credit score to determine insurability and client desirability. Without access to proper information about the insured and the risk, it has been argued that insurers have been forced to turn to other data points to make business decisions. If this charge is even just partially true, brokers could be doing a great disservice to themselves and to their continued viability by remaining stingy on data provision.

Many companies, it seems, are not enforcing requirements that brokers and adjusters fill out all relevant fields in the underwriting and claims systems they use and, consequently, many insurers are flying blind with some of the business decisions they are making.

An additional, and really acute problem in my mind, is the issue of company claims coding and industry data aggregation.

A paper co-written by a colleague explains the issue quite well:

Historical loss data are widely used by numerous stakeholders within the insurance industry to help understand and assess ►

risk. Databases maintained by CGI's Insurance Information Services (IIS) for example, including the Habitational Information Tracking Systems (HITS) and Commercial Tracking System (CTS), are used to access personal and commercial property and liability claims information, including claims histories for specific properties.

Current loss codes, however, used by insurers to populate the CGI IIS HITS and CTS databases have limited ability to reflect the nuances of many types of personal and commercial property losses. Loss codes are highly aggregated, group many types of relatively distinct perils, and limit the ability of insurers to fully understand property level exposure to natural disaster risk based on historical claims. Aggregated loss codes also limit the ability of the insurance industry to participate in key public policy discussions surrounding mitigation of natural disaster risk and climate change adaptation.

The paper recommends refinements "aimed at increasing the granularity of the [loss] codes for pertinent insured perils" to collect more detailed claims information on:

- Plumbing failures resulting in water damage, including failures related to appliances, sprinkler systems and pipe freeze;
- Water damage associated with ice damming;
- Water damage associated with sump pump failure;
- Sewer backup, including differentiation between isolated and regional sewer backup events;
- Seepage and groundwater related water damage;
- Overland water influx;
- Structural/urban fire and wildland fire, and;
- Wind and hail.

Recently, I had the opportunity to see data from one insurance company's new product offering where the company used the launch as an opportunity to design their data system and set out their data collection methods from scratch. The company developed a very detailed range of risk and loss codes and sub-codes, and uses state-of-the-art GIS/heat mapping technology to plot exposures and losses. In a few years' time, when the new product becomes more ubiquitous, the company will have fantastic datasets on insureds, risks, and loss trends that will give it a significant edge over the competition.

It is not too late for the industry to change its ways with regard to data collection. But if it refuses to address the issue, it will hit the point of no return and every company will be on its own. The largest players will then have a key competitive edge simply because of the sheer volume of internal data and data analytics sources available to them.

It seems to me that it only makes sense for the industry to get its bread and butter data together first. Then, any findings from Big Data analysis can be used to augment and improve what companies already have and already know.

Before we go to wild and woolly places to get new – and new forms – of data, companies should first get their traditional data house in order. This will be particularly key if reliance on such data points as credit score prove not to be the long-term panacea that some hope they will be. **CT**

A simple roadmap to better company and industry data

1) Cat data: Companies should subscribe to CatIQ and feed data into the database when requested. Though we can't change cat data from the past, we can move forward in a systemized, coordinated way to ensure that future cat data is as close to unimpeachable as possible.

2) Underwriting data: Companies should work with producers to ensure that underwriting questionnaires are kept up-to-date and that all relevant information is fed into appropriate systems.

3) Claims data: Companies should work with claims adjusters, both internal and independent, and others to ensure that all proper information gets recorded into clams management systems.

4) Loss codes and data aggregation: Companies should get more granular with loss codes and sub-codes. Data fields labelled 'Other' should be shunned whenever possible. Ideally, a new industry standard should be set out and companies should adhere to it.

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Mission
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