2017 Global Platform for Disaster Risk Reduction

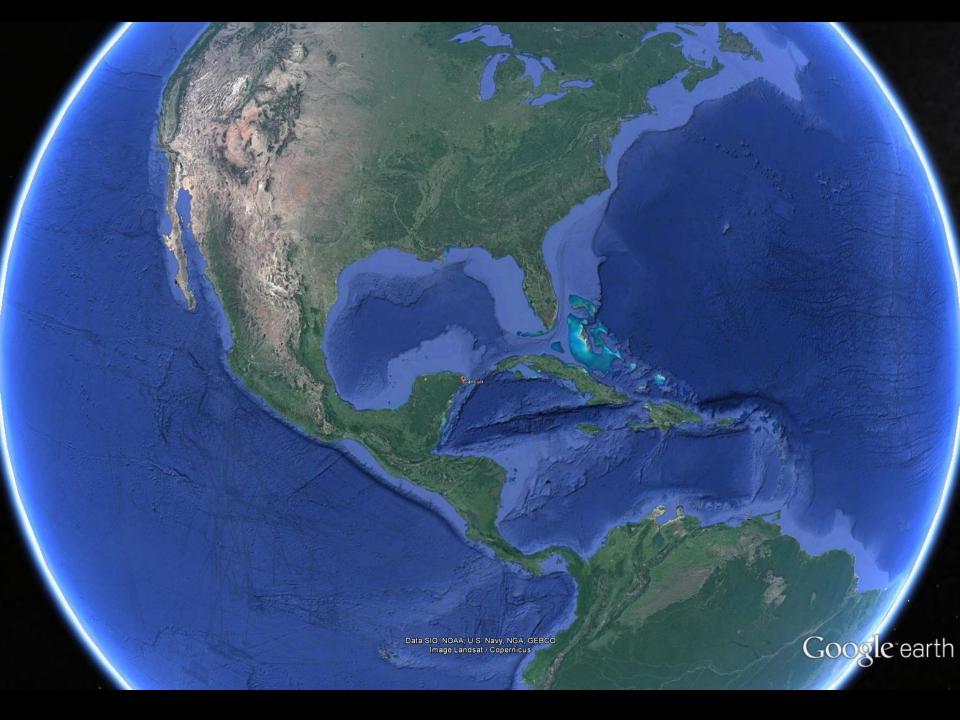
Ensuring Risk-Resilient Critical Infrastructure, NATECH, Global Open Data

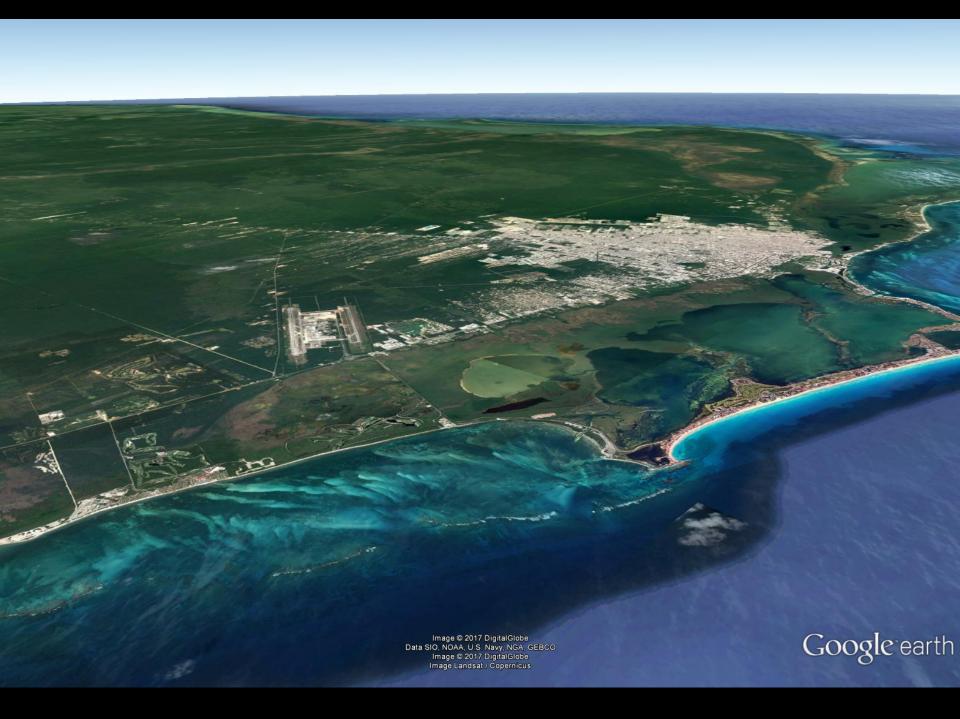
...and musings on Aotearoa/New Zealand's data ecosystems

Matthew Hughes

Department of Civil and Natural Resources Engineering

matthew.hughes@canterbury.ac.nz





News & Media

COMMITMENT TO ACTION

#MEXICOGP2017

#SWITCH2SENDAL

Partners



SENDAI INDICATORS 'ONLY THE BEGINNING'

On 3 February, the UN General Assembly took a key step for assessing losses in disasters and progress in reducing their impacts, giving a significant boost to efforts to meet the first deadline set by the Sendai Framework for Disaster Risk Reduction.

OUTCOME DOCUMENTS



The Cancun High-Level Communiqué PDF (EN



Chair's summary: From commitment to action

VIEW









#switch2sendai

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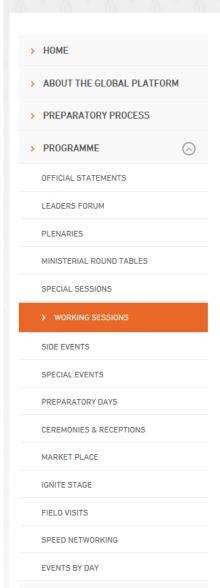
Maria Maria Maria



The 2015-2030 Sendai Targets

- A. Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020–2030 compared to the period 2005–2015;
- B. Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015;
- C. Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030;
- D. Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030;
- E. Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020;
- F. Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030;
- G. Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.

Home > Programme > Working sessions



Ensuring Risk-Resilient Critical Infrastructure

≅ 24 MAY 2017	① 10:00 - 11:30	Q	ARENA E	
ORGANIZER(S) United Nations Office for Disaster Risk Reduction (UNISDR)		CONTACT Mr. Sanjaya Bhatia (bhatia1@un.org)		
PARTICIPATION: PUBLIC ACCESSIBLE: YES	PRIMARY FLOOR LANGUAGE: ENGLISH INTERPRETATION: YES [FR, ES] ISL INTERPRETATION: YES		 ✔ LIVE BROADCAST: NO ☆ REMOTE PARTICIPATION: NO 	

Critical infrastructure are the physical structures, facilities, networks and other assets which provide services essential to the social and economic functioning of a community or society. Hence, they form an essential component for the efficient functioning, and delivery, of basic services provided by and in cities, towns and rural areas. Destruction, disruptions or interruptions in critical infrastructure, including health and education facilities, could lead to cascading effects across sectors and sometimes across borders. Hence, the Sendai Framework, the 2030 Agenda for Sustainable Development and the Paris Agreement explicitly highlight protection and resilience of critical infrastructure as a high priority of governments.

The working session will focus on current levels of progress and success stories, and demonstrate the available tools and technologies for risk assessment and mitigation. The session will also call for the establishment of a community of practice and an online platform, aiming to enhance partnerships and commitments for implementation.

http://www.unisdr.org/conferences/2017/globalplatform/en/programme/working-sessions/view/586

Background and Rationale

What is at stake: Critical infrastructure is essential for the efficient functioning, and delivery, of basic services provided to cities, towns and rural areas. Destruction, disruptions or interruptions in critical infrastructure, including health and education facilities, could lead to *cascading effects* across sectors and sometimes across borders, leading to disruption of basic services to communities, causing significant harm to the population's well-being and significant direct and indirect economic impacts. *The economic costs of damage to critical infrastructure is very high*, resulting in delays in achievement of the development agenda and the *SDGs*

Aging infrastructure further complicates the situation. Many governments have invested heavily on infrastructure in the last hundred years or so and the life span of this infrastructure is ending. Moreover, such infrastructure is under pressure from increasing populations, social change, changes in technology and in many cases has been unable to function even in disasters of relatively low magnitude. Hence, investing in new and upgrading existing infrastructure is imperative. At the same time, it is essential to ensure that the new investments are risk sensitive.

Background and Rationale

Changes in human lifestyles and the impacts of technology means any disruptions in electrical supply can become critical for the current mode of living. E.g., Damage in communication infrastructure may cripple information flow, especially affecting social media. Similarly with more adaptation to greener technologies (to reduce climate risk) - infrastructure needs to adapt as well e.g. Electric cars need more charging stations

Finally, there may be a *domino effect and pressure on other infrastructure* because of impact on one system – even a relatively small flooding in downtown can cripple the service industry significantly over the entire city.

Background and Rationale

What is the opportunity: Sendai Framework, sustainable development goals 2030, and Paris Agreement all explicitly highlight that *protection and resilience* of critical infrastructure should be a high priority of governments. The vulnerability of critical infrastructure is also of concern in the governments' national security agenda. Annual infrastructure spending requirements are estimated to increase from today's USD 2.6 trillion to around USD 4.3 trillion by 2030 (Swiss RE and IIF 2014). It is imperative that all critical infrastructures incorporate disaster and climate risk assessment and mitigation measures to understand risks, plan for safety interventions, ensure the continuity of operations and reduce losses.

The Sendai Framework refers to critical infrastructure in Priority for Action 4 as accounting for "water, transportation and telecommunications infrastructure, educational facilities, hospitals and other health facilities". Furthermore, critical infrastructure is generally defined as "the physical structures, facilities, networks and other assets which provide services that are essential to the social and economic functioning of a community or society" in the final report of the Open-ended Intergovernmental Expert Working Group on Indicators and Terminology Relating to Disaster Risk Reduction. The session will use the same definition.

Background and Rationale

State of Play

There is vast diversity in the way this issue is being approached and implemented (if at all) in different nations. *From the resilience and risk management perspectives, it is a complex management issue as the entire life cycle of critical infrastructure could span many stakeholders, sectors and activities.*E.g., with privately operated critical infrastructure, the government has to set clear public policies, legislation and regulatory framework on the requirements for resilience, including measures for system robustness, back-up capacity, rapid recovery and adaptability to new risks that will apply to different phases of the infrastructures life cycle. Further complexities arise when national and local governments share the policy-setting, monitoring and enforcement responsibilities (OECD 2014).

Session Objectives

- Establish a platform for critical infrastructure to ensure investments in resilient infrastructure by banks (WB, ADB, IADB, AIIB, OECD, etc.), governments, builders, architects, businesses (ISO and Insurance), and other stakeholders. The session will attempt to focus on current level of progresses and success stories, as a demonstration of the plethora of tools and technologies already available for risk assessment and mitigation no need to reinvent the wheel. For example, Engineers Canada has established PIEVC a protocol to assess the vulnerabilities of infrastructure to extreme weather events and future changes in climate. https://pievc.ca/
- Partnerships and commitments to implementation: ARISE, ISO, Geneva Association, Worldwide Initiative for Safe Schools (WISS), GAD3RES etc. (see list of networks in annex)
- An online platform to compile best practices, tools, guidelines as a Wiki, development of standards for resilience of critical infrastructure, for better sharing of practices on building codes including their implementation, call for regulatory framework and monitoring to ensure that standards and building codes are enforced, risk transfer, safe schools and hospitals, etc.
- Training modules, both face to face and online, to reach stakeholders

Session Objectives

In addition possible deliverables include:

- Make a call to conduct disaster risk assessments of all existing and new critical
 infrastructure (including schools and hospitals), improve building practices &
 standards and foster the enforcement of building codes; make a call for business
 continuity planning and for greater adoption of risk informed insurance
 mechanisms, explore how DRR could be incorporated into the education
 (and professional development) of those who deliver critical infrastructure
- A call to the international development community and funding mechanisms to build these standards as conditions for their engagement, loans and grants.
- Promoting the important role of risk financing and risk transfer (including insurance) in building economic resilience

Videos

Ensuring Risk-Resilient Critical Infrastructure



ADD A BACKGROUND PAPER OR PRESENTATION

% BACK TO LIST >













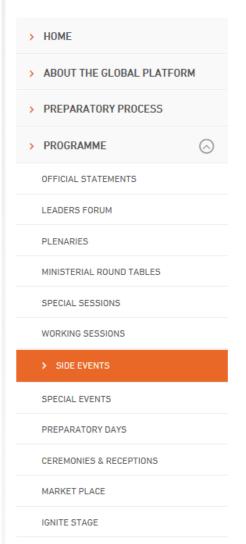




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COMMITMENT TO ACTION

> Programme > Side events



FIELD VISITS

Technological Hazards: Engaging a New Community in DRR

₩ 26 MAY 2017	13:00 - 13:55	•	EXP0 3	view map
ORGANIZER(S) European Commission and the European Commission Joint Research Centre with UNEP, OCHA, DPRI and OECD		CONTACT Elisabeth Krausmann (elisabeth.krausmann@ec.europa.eu)		
PARTICIPATION: PUBLIC ACCESSIBLE: YES	PRIMARY FLOOR LANGUAGE INTERPRETATION: NO ISL INTERPRETATION: NO	:: ENGLISH	 ✔ LIVE BROADCAST: NO ★ REMOTE PARTICIPATION: NO 	

Urbanization and industrialization are increasing the risk of technological accidents from man-made causes or natural hazards (so-called Natech accidents). However, there is no overarching framework for managing technological risks which are handled by specific communities often in isolation from broader risk-reduction efforts. The side event will explore future needs to support technological and Natech risk reduction in the context of the Sendai Framework. Participants will discuss the risks of technological accidents and criticalinfrastructure disruptions, and identify options for better integrating technological risks in disaster risk reduction and sustainable development efforts, with a focus on prevention and preparedness. The side event will also see the launch of the Words into Action: Sendai Implementation Guide on Technological/Man-Made Hazards.



Natech Risk Assessment and Management 1st Edition

Reducing the Risk of Natural-Hazard Impact on Hazardous Installations

View on ScienceDirect ↗

Authors: Elisabeth Krausmann, Ana Cruz, Ernesto Salzano



eBook ISBN: 9780128038796 Paperback ISBN: 9780128038079

Imprint: Elsevier Published Date: 28th October 2016

Page Count: 268

Description

Natech Risk Assessment and Management: Reducing the Risk of Natural-Hazard Impact on Hazardous Installations covers the entire spectrum of issues pertinent to Natech risk assessment and management. After a thorough introduction of the topic that includes definitions of terms, authors Krausmann, Cruz, and Salzano discuss various examples of international frameworks and provide a detailed view of the implementation of Natech Risk Management in the EU and OECD.

There is a dedicated chapter on natural-hazard prediction and measurement from an engineering perspective, as well as a consideration of the impact of climate change on Natech risk. The authors also discuss selected Natech accidents, including recent examples, and provide specific 'lessons learned' from each, as well as an analysis of all essential elements of Natech risk assessment, such as plant layout, substance hazards, and equipment vulnerability. View more >

Key Features

- Teaches chemical engineers and safety managers how to safeguard chemical processing plants and pipelines against natural disasters
- Includes international regulations and explains how to conduct a natural

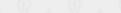






Secure Checkout

Personal information is secured with SSL technology.

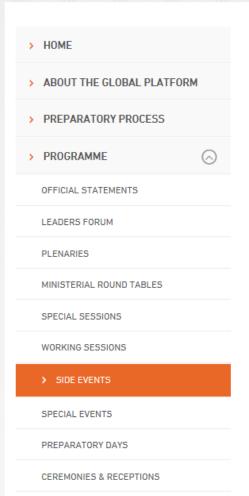


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Programme > Side events



Global open data for monitoring the Sendai targets

■ 25 MAY 2017	① 13:00 - 13:55	♀ 9	SUNRISE 9		
ORGANIZER(S) European Commission, Joint Research Centre.		CONTACT Daniele Ehrlich (daniele.ehrlich@ec.europa.eu).			
PARTICIPATION: PUBLIC ACCESSIBLE: YES	PRIMARY FLOOR LANGUAGE INTERPRETATION: NO Primary Floor Language ISL INTERPRETATION: NO	F LIVE BROADCAST: NO REMOTE PARTICIPATION: NO			

The session brings together institutions using global spatial datasets for generating indicators used to monitoring disaster risk as well as targets of International Framework Agreements. The session aims to communicating the wealth of disaster risk information made available through new data analytics technologies applied to open and free data sources including Earth Observation. The session will show that "no one is left behind" in monitoring some Sendai targets. Finally, the session aims to inform on the value of geo-spatial data and technologies and to promote their use as a coordinating and standardizing platform for the disaster risk community.

PUBLICATIONS

POLICY

2017 NEWS



ABOUT V EVENTS V MEMBERSHIP V INITIATIVES V TASK GROUP



NCS & RCS

ICOES



SCIENTIFIC ADVICE ON REDUCING DISASTER RISKS

OPPORTUNITIES



OECD GSF Project on Sustainable Business Models for Data Repositories

News & Articles

Open community session: contribute to the FAIR data expert group

The European Commission's FAIR data expert group is hosting its firs Monday 3rd July from 14:00-16:00 CEST. You may already have seen the call for contributions and the public GitHub. We realise GitHub may be an unfamiliar platform for some, so wanted to offer multiple fora in which you can get involved.

If you would like to feed into discussion, please sign in to the GoToWebinar on 3rd July. No pre-registration is required - just come along and share your ideas on the day. There will be a short introduction to the group and our objectives, but there's not a formal presentation and strict agenda. This session will be driven by you and your contributions, so drop in at any time during the also leave whenever you like - this is going to be freeform.

The aim is to provide a forum where you can discuss ideas directly wit each other. At the Research Data Network in the UK, Alice Motes spol Postdoctoral Fellowship Programme. When she asked if there was de-UK, there was consensus in the room that it would be great. Mary Don postdocs in the library to understand the data management side of thir

Integrated Research on Disaster Risk (IRDR) is a decade-long research programme co-sponsored by the International Council for Science (ICSU), the International Social Science Council (ISSC), and the United Nations Office for Disaster Risk Reduction (UNISDR). It is a global, multi-disciplinary approach to dealing with the challenges brought by natural disasters, mitigating their impacts, and improving related policy-making mechanisms. Core funding for IRDR is provided by the China Association for Science and Technology. IRDR International Programme Office is

HOME

ABOUT

Co-Sponsors, Core Donor & IPO Host

and Digital Earth (RADI) Chinese

hosted by Institute of Remote Sensing



Academy of Sciences.







"To develop trans-disciplinary, multi-sectorial alliances for in-depth, practical disaster risk reduction research studies, and the implementation of effective evidence-based disaster risk policies and practices."



Recent News

International Expert Forum on "Mainstreaming Resilience and Disaster Risk Reduction in Education"

June 26, 2017

[ONLINE SURVEY] ASDMP: ASEAN Science-Based Disaster Management Project

June 13, 2017

IRDR Communication Strategy and IRDR ICoE Collaboration Plan Were Highlighted in 17th IRDR Scientific Committee Meeting

June 12, 2017

IRDR joins the Sendai Partnership for Implementation of SFDRR on Landslides

June 1, 2017

Bapon Dives into Climate Resilience in Cozumel, Mexico

June 1, 2017

ICoE-CCOUC delivered two presentations in IGNITE stage of Global Platform

Opportunities

2017 AI-SOCD: Call for application

April 28, 2017

IRDR Young Scientists Programme: Call for application (2nd Batch)

April 19, 2017

IRDR Publications

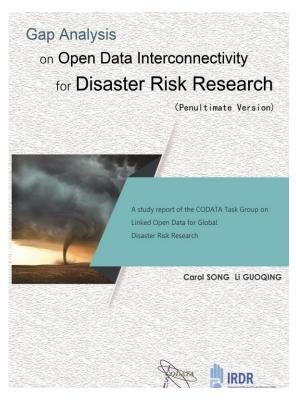








http://www.codata.org/



Challenges for disaster researchers/stakeholders:

- Massive quantity of data;
- Distributed nature of data;
- Heterogeneity and diversity of data;
- Lack of data sharing due to both policy and technology limitations, it is often difficult to share and access data across disciplines, organisations, and distant geographic locations.

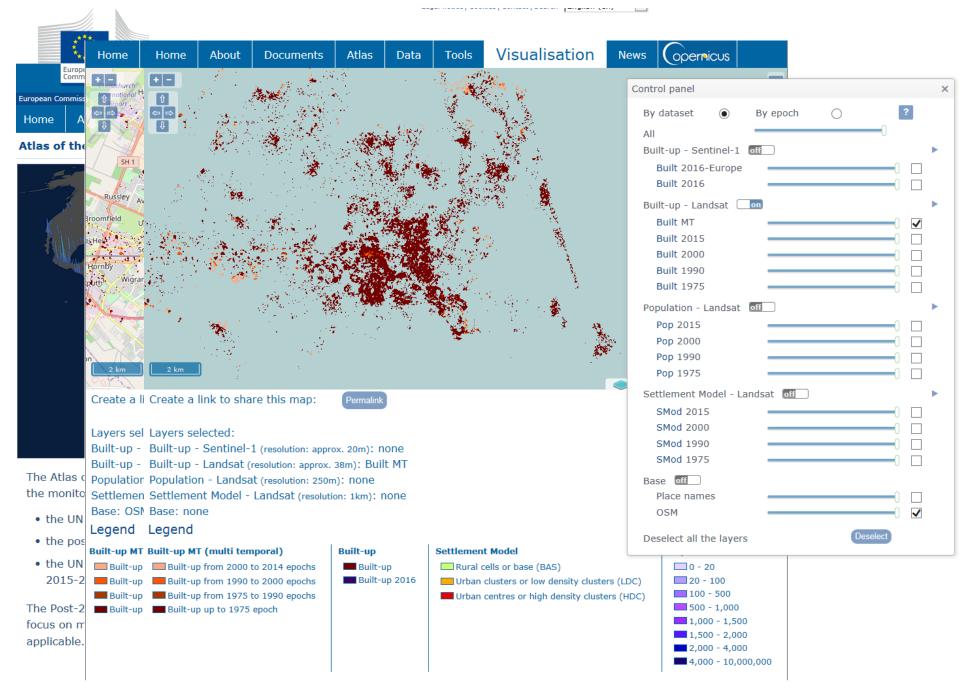
The reality of utilising all relevant data closer today than ever:

- Progress in cyber infrastructure (e.g. computing, data management/federation/movement);
- Maturation of the Internet and web technologies.

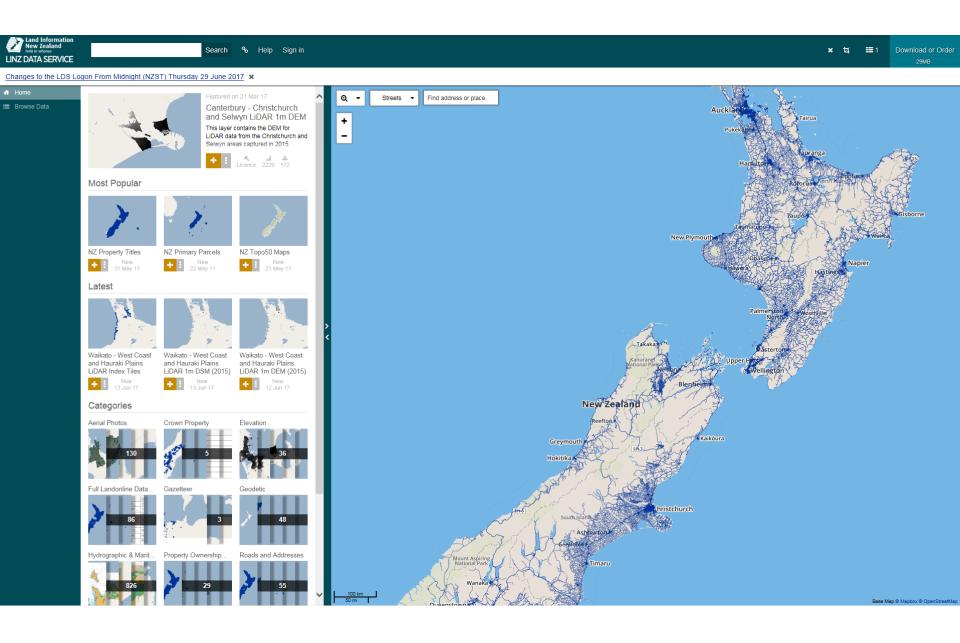
Open access and sharing of data is more than a concept:

 Needs implementation at both policy and technology levels, thus requiring collaboration among disciplines and cooperation among international groups and organisations.

In the area of disaster research, the international community has come to a consensus on the openness of relevant data to support disaster research, and, as a result, many data banks are available now. Due to reasons related to technology, policy and culture, various data are yet to be effectively connected, which has led to the low utilisation rate of open data.



Land Information New Zealand – LINZ Data service



Koordinates





Christchurch City Results

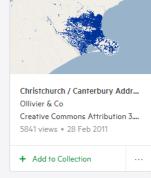
45 results, showing 1 - 12

Most Popular \$





















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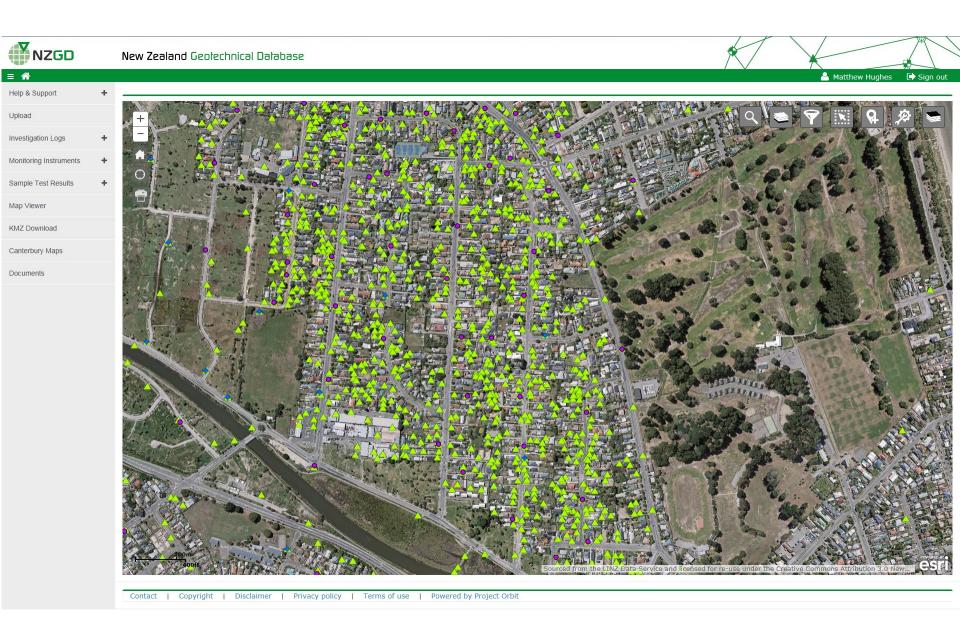
Creative Commons Attribution 3.... 4562 views • 03 Dec 2014 + Add to Collection



Christchurch / Canterbury Histo... NZ Transport Agency Ollivier & Co Creative Commons Attribution 3.... Creative Commons Attribution 3.... 2048 views • 20 Jun 2012 1883 views • 28 Feb 2011 + Add to Collection + Add to Collection

https://koordinates.com/

New Zealand Geotechnical Database



14th November 2016 Kaikoura Earthquake - geospatial web portal hosted by EQC/T&T



RiskScape



HOW IT WORKS

GET STARTED

ABOUT THE PROJECT

NEWS

CONTACT US







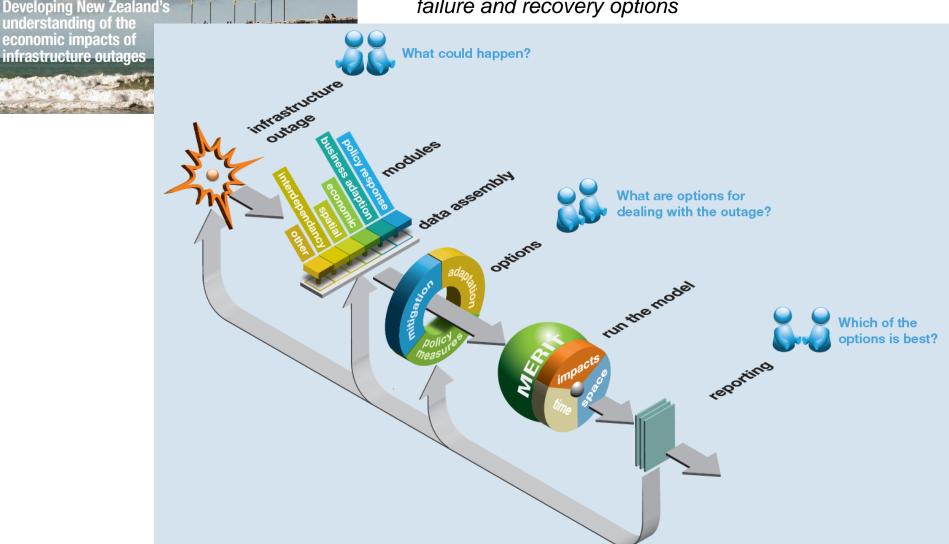


Measuring the Economics of Resilient Infrastructure Tool (MERIT)



understanding of the economic impacts of Resilient Organisations & Market Economics Ltd

High resolution assessment across space and through time of the economic consequences of infrastructure failure and recovery options









National

RESILIENCE & DATA IN NEW ZEALAND: THE DATA INTEGRATION AND VISUALISATION EN MASSE (DIVE) PLATFORM 2016 SUMMARY

Joanne R. Stevenson, Ph.D. & John Vargo, Ph.D. ¹ Chris Thomson, Ph.D. ² & Lucy-Jane Walsh²

Resilient Organisations Research Report 2017/01

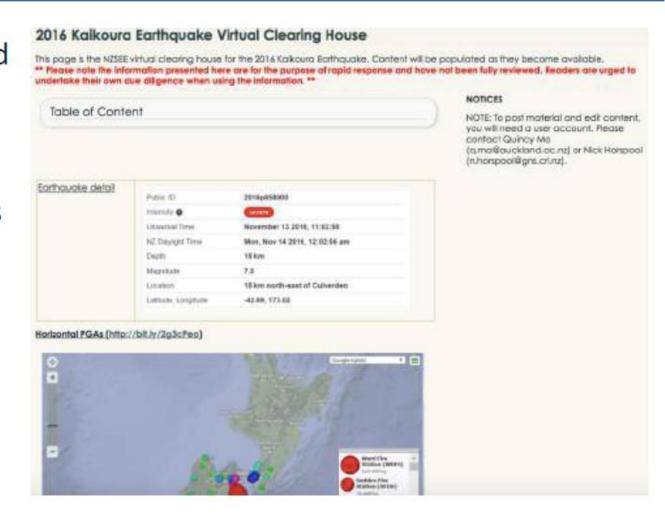
April 2017

Resilient Organisations Ltd.¹

University of Canterbury Digital Lab²

Use Case 4: Kaikoura Earthquakes

- Capturing planned and ongoing research/ data collection
- Parallel databases
- Sourcing, uploading, and managing data quality is a lot of work



Use Case 4: Conclusions

- There is a great need to capture ongoing and planned research
- Sourcing, uploading, and capturing high quality metadata data is a lot of work
 - How can better automate and/or distribute this burden
- Visualising metadata can make it more searchable