CREATING PUBLIC ASSETS AND BUILDING AN ARTICULATED R&D+i SYSTEM FOR A RESILIENT CHILE
Chile and disasters
A country highly exposed to natural hazards
The occurrence of disasters in Chile

About 54% of Chilean population and 12.9% of its total surface area is exposed to 3 or more hazards.

Number of extreme events in Chile over the last decade 2008 - 2018

- **6** VOLCANIC ERUPTIONS
- **4** EARTHQUAKES Mw 7 or more
- **4** TSUNAMIS
- **2** MUDSLIDES
- **648** WILDFIRES

Earthquakes: mainshocks according to CSN database; Tsunamis: intermediate and major, i.e. wave height > 1m, in accordance with NOAA and SHOA database; Volcanic eruptions: as reported by Chile. Volcanic Territory (Sernageomin, 2018); Mudslides: only major as reported by Sernageomin; Wildfires: major as reported by Conaf, i.e. events that produced damage over 200 ha or more.

References: CSN, SHOA, NOAA, Sernageomin, Conaf, EM-DAT, July 2019; Dilley, 2005
The impact of disasters in Chile

- Over 13 million people in Chile have experienced a disaster in the last ten years leading to:
  - over 4 million victims affected
  - at least 800 fatalities

The impact of disasters in Chile

- Losses by disaster as a percentage of GDP (annual average for the period 1980–2011)

- Chile has spent on average 3 billion dollars a year on disasters.

- The Mw 8.8 2010 earthquake caused 30 billion dollars losses by itself.

Reference: G20/OECD, 2012
Chile after 2010 Earthquake
Towards a resilience approach
Change in focus: from emergency response to disaster resilience

- Earthquake and tsunami on **February 27, 2010**
The origin of the strategy for a resilient Chile

- National DRM Platform (2012)
- National DRM Policy (2014)
- National Strategic Plan for DRM (2015)

- Mandate to drive an R&D in Disasters Agenda (2015)

Commission of over 80 experts from the industry, government, academy and civil society.
Five priority actions for a resilient Chile

The 5 ENABLING CONDITIONS of the Creden Strategy:

1. Institutional framework for R&D+i in disaster resilience
2. Data and information integration
3. Development of advanced human capital on resilience
4. Development of infrastructure for scientific discovery and innovation in resilience
5. Scientific outreach and dissemination
An R&D agenda with 14 tasks

The **14 TASKS** of the Creden Strategy:
From Creden to the Institute

- **2016**: CREDEN
  - **JANUARY 19**: First Creden meeting

- **2017**: DESIGN OF ITREND
  - **DECEMBER 21**: Delivery of Creden Strategy
  - **AUGUST 25**: Resilient Chile Seminar

- **2018**: LAUNCH OF ITREND
  - **DECEMBER**: Project approved

- **2019**: ITREND OPERATING
  - **DECEMBER 12**: Inauguration Seminar

- **2020**: Creation of a new legal entity
The Institute’s purpose

**Mission**

The Institute seeks to transform Chile into an international role model on disaster resilience. The creation of public assets, the organization of R&D efforts, reducing the economic, social and environmental costs of disasters and driving the development of an innovative industry with export purpose.

**Vision**

- Transforming Chile on a regional role model on disaster resilience known for its foresight, response and recovery capacities in a period of 20 years.

- Transforming Chile on a global attraction pole known for its industry and its ability to provide high-value and sophisticated solutions for disaster resilient societies.
The Institute’s contribution

- Assembling the R&D system
  1. Creation of public assets
  2. Creation of R&D capacities
  3. Driving a resilient economy
The Institute’s contribution

1. Creation of public assets
   - Tools for measuring and analyzing resilience
   - Technical inputs for resilience regulation
   - Educational and sensitivity resources on resilience
The Institute’s contribution

2 | Creation of R&D capacities

- Resilience experts
- Data infrastructure for resilience
- Experimental platforms for resilience
The Institute’s contribution

3 | Promoting a resilient economy

- Innovation for operational continuity
- Innovative products and services for resilience
- New endeavors for resilience
National strategy: scope

- The main natural threats of Chile

- Earthquakes
- Tsunami
- Volcanic eruptions
- Extreme weather events
- Wildfires
- Mudslides
Change in focus: from emergency towards resilience

- Implementation of the Onemi Chile Prepared Plan (PlanChile Preparado)
- Creation of the National Seismological Center through an agreement with the University of Chile and Onemi
- Creation of Proyecta Memoria Foundation
- Installation of SHOA’s Decision Support System for monitoring tsunamis
- Launching of the Risk and Disaster Reduction Program (CITRID) of University of Chile
- Creation of the Presidential Commission for Natural Disasters Resilience (Creden)
- National DRM Policy is approved
- Creation of the Advisory Commission for Disaster Risk Reduction and Reconstruction
- Creation of the Department for Risk Management in Disaster Emergencies within the Ministry of Health
- Creation of the Chilean Institute for Disaster Resilience.

2010
- New procedure and communication protocols between Onemi and SHOA
- Creation of Desafío Levantemos Chile NGO
- 75 UN recommendations for appropriate risk management in Chile

2011
- Creation of the Research Center for Integrated Disaster Risk Management (CIGIDEN)
- A bill is drafted establishing a National Emergency and Civil Protection System, and the National Civil Protection Agency is created.

2012
- Creation of the Climate Science and Resilience Center (CR3)

2013
- Signature of the Sendai Framework for Disaster Risk Reduction 2015-2030
- Establishment of the Disaster Risk Reduction Platform (Resolution Nº402)
- National Strategic Plan for DRM 2015-2018 for ONEMI
- Creation of the Advisory Commission for Reconstruction

2014
- Creation of the National Seismological Center through an agreement with the University of Chile and Onemi

2015
- Creation of the Presidential Commission for Natural Disasters Resilience (Creden)
- National DRM Policy is approved
- Creation of the Advisory Commission for Disaster Risk Reduction and Reconstruction

2016
- Creation of the Advisory Commission for Disaster Risk Reduction and Reconstruction
- Creation of the Department for Risk Management in Disaster Emergencies within the Ministry of Health
- Creation of the Chilean Institute for Disaster Resilience.

2017
- Promulgation of the ONEMI National Emergency Plan
- Creation of Movidos x Chile Network

2018
- Creation of the Presidential Commission for Natural Disasters Resilience (Creden)
- National DRM Policy is approved
- Creation of the Advisory Commission for Disaster Risk Reduction and Reconstruction

2019
- Creation of the Department for Risk Management in Disaster Emergencies within the Ministry of Health
- Creation of the Chilean Institute for Disaster Resilience.

- Launching of the National Strategic Plan for DRR 2019-2030 (ONEMI)