



Itrend

Chilean Institute for
Disaster **Resilience**

CREATING PUBLIC ASSETS AND BUILDING AN ARTICULATED R&D+i SYSTEM FOR A RESILIENT CHILE

1

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



Physical impact



Environmental impact



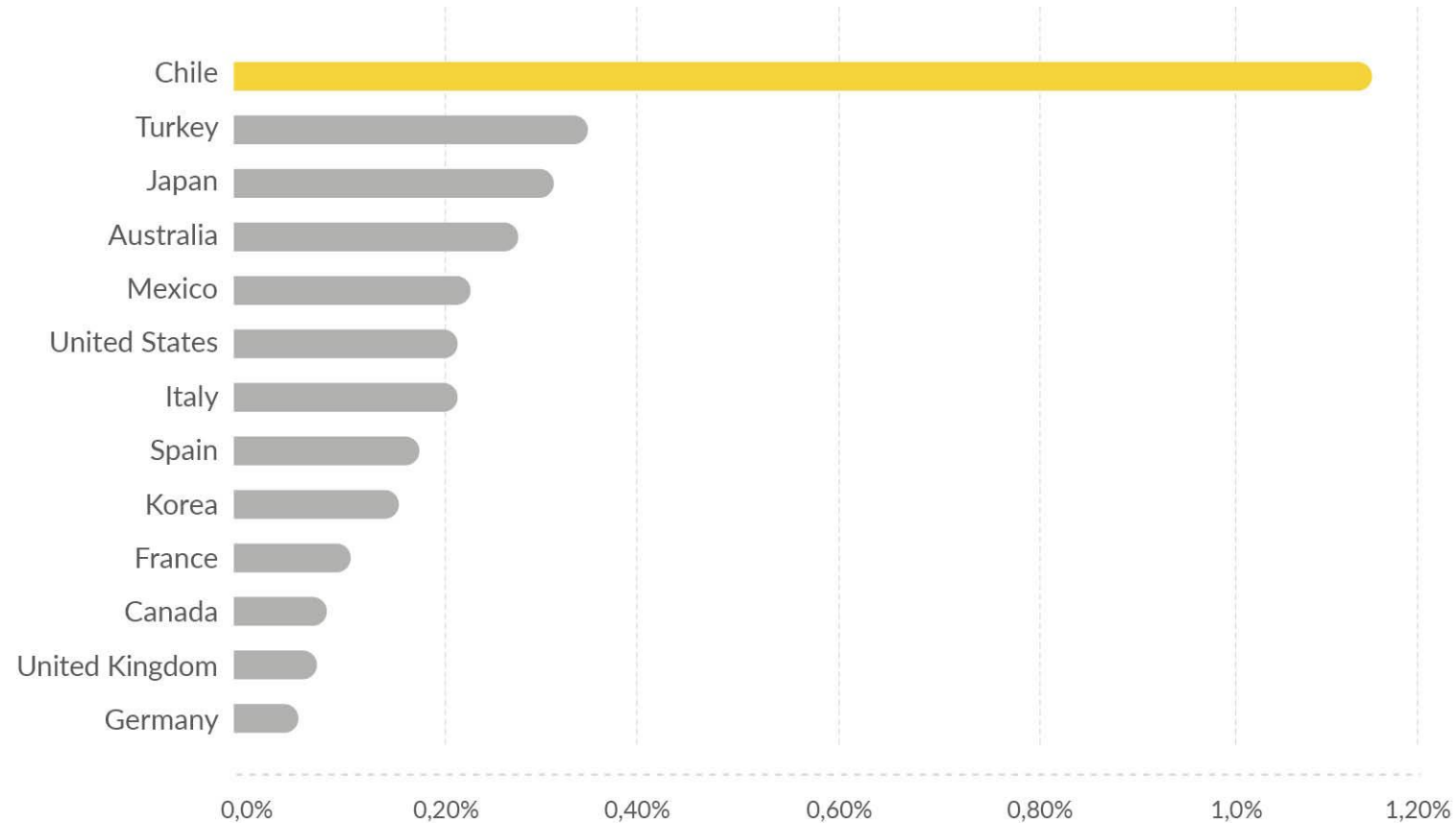
Psychosocial impact



Human impact

- ▶ 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.



2

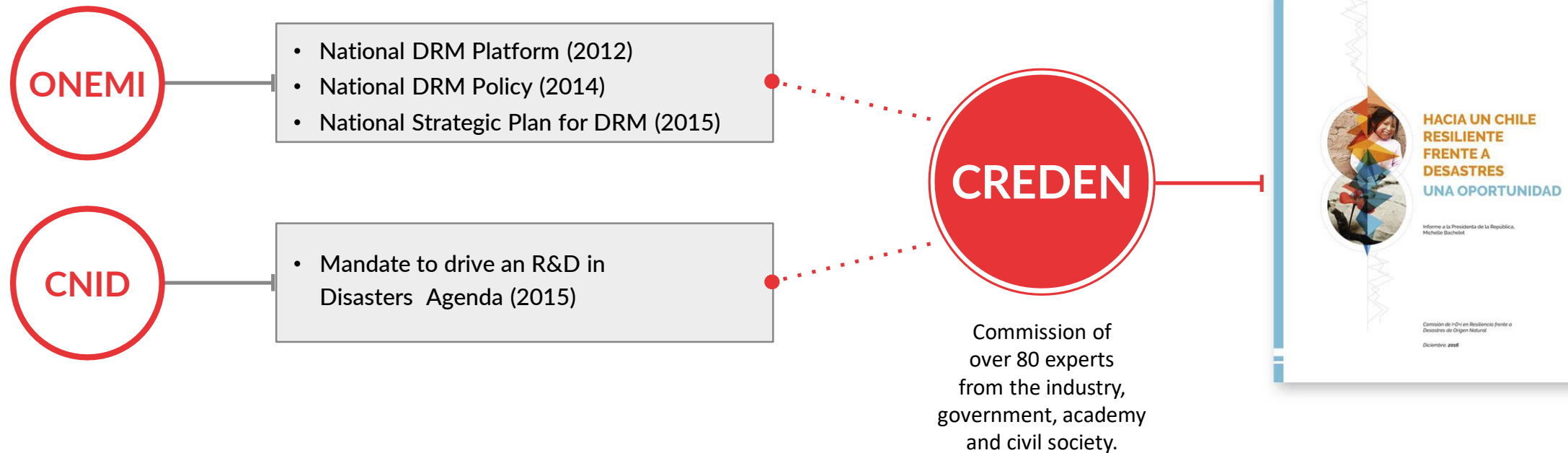
Chile after 2010 Earthquake
Towards a resilience approach

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



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.

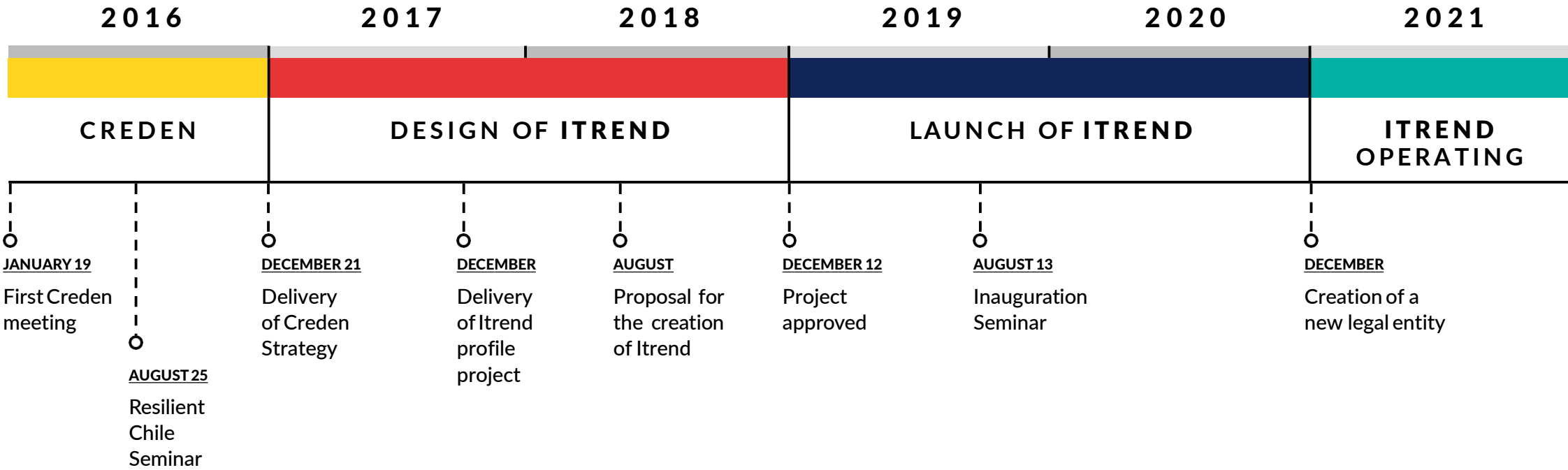
Scientific outreach and dissemination

An R&D agenda with 14 tasks

► The **14 TASKS** of the Creden Strategy:



From Creden to the Institute



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



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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

