

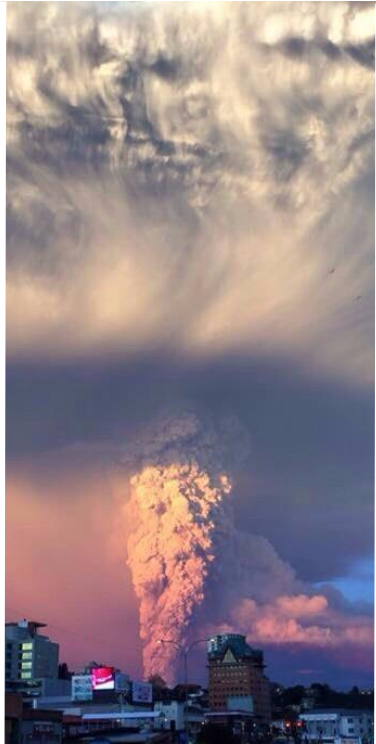
Articulación y tecnologías para avanzar en GRD, Instituto para la Resiliencia ante Desastres, Itrend.

Macarena Pérez García
Directora de Vinculación

12 de marzo, 2024



**Earthquake/Tsunami
(2010)**



**Volcanic Eruptions
(Calbuco, 2015)**



**Mud-slides
Atacama(2015)**

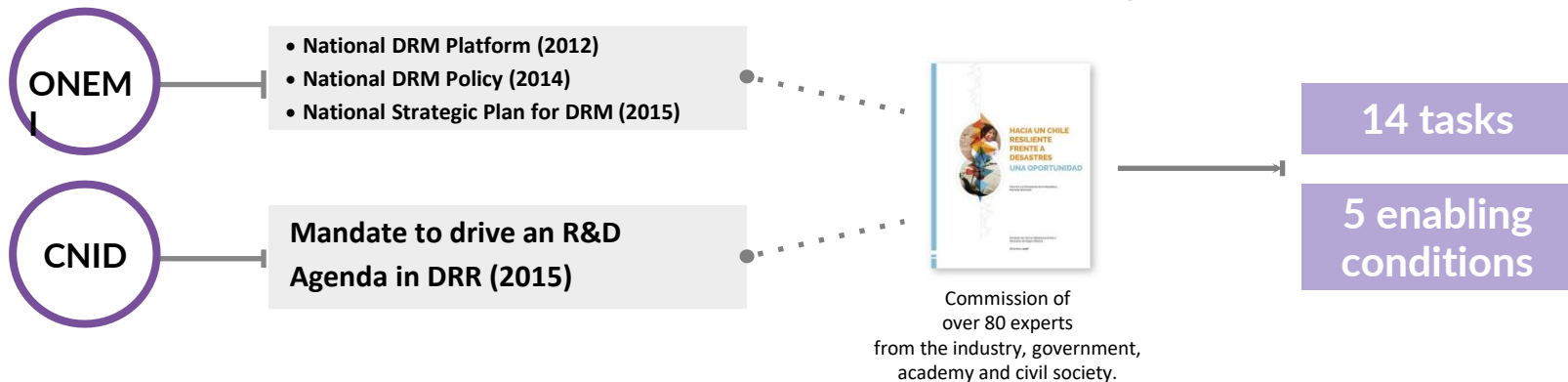


Drought (2010-2022)



Wildfires (2023-2024)

National Strategy



[Hazards considered]



Earthquakes



Tsunami



Volcanic eruptions



Extreme weather events



Wildfires



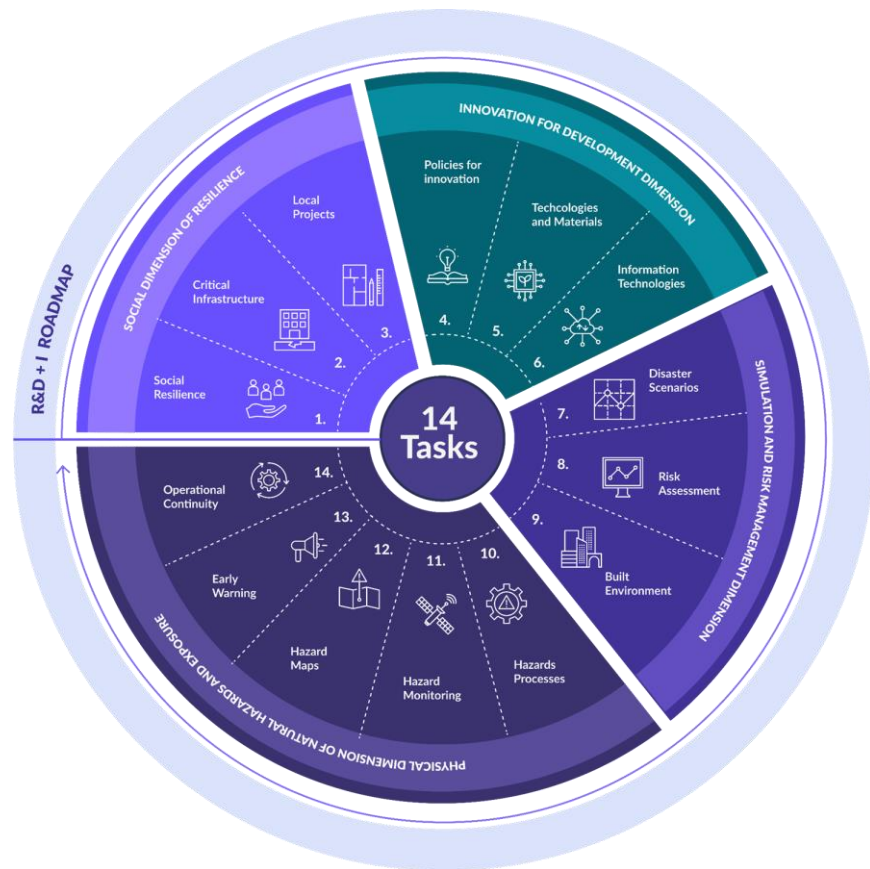
Mudslides

ITREND

Our Purpose

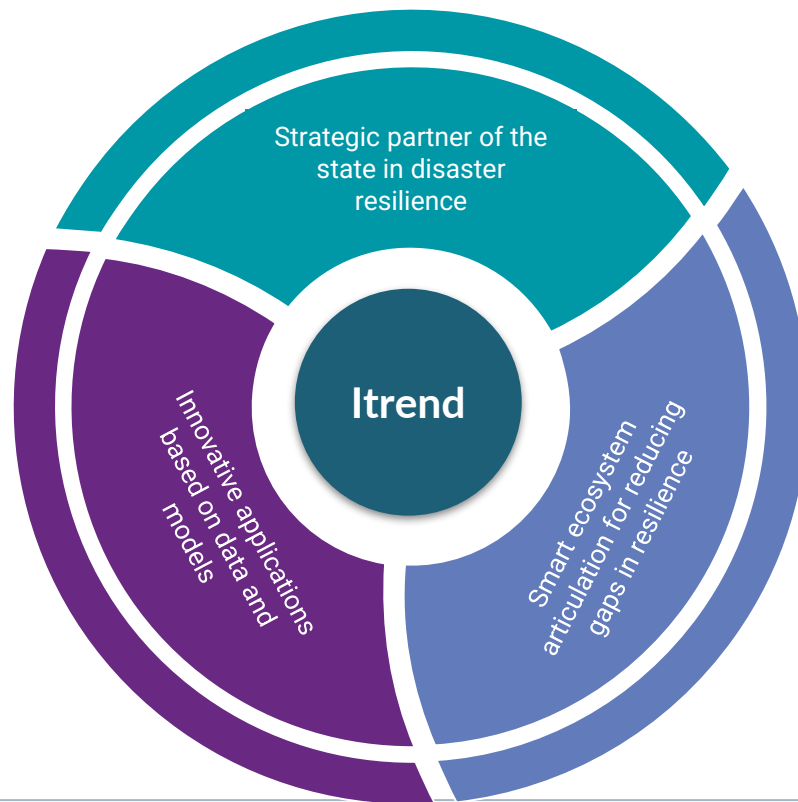
To create **public goods and services** and **articulate** research and scientific-based innovation capacities in Chile, to **reduce** the economic social and environmental **impact** of disasters, and translate this knowledge into an **opportunity** for the development of **future value** for our society.

- ▶ **Our focus** are shared concerns of societal interest in the area of disaster resilience to natural hazards
- ▶ **Our mandate** is to ensure the deployment of the Creden (2016) strategy and become an advocate for its implementation and evolution in time



Our Model

Itrend seeks to gradually trigger a **convergence process** of stakeholders around the goal of achieving larger resilience to natural hazards in Chile using scientific knowledge and technology, and from there begin creating new economic, social and environmental value



Resilience Drivers for Chile

1

New law 21.364

Establishes the national system for the prevention and response to disasters and the corresponding service SENAPRED (2021).

2

Base for the 2021 national strategy of the STKI (CTCI)

Document prepared by the Commission of STKI to prepare a national strategy, which identifies resilience as a strategic area

3

Climate change induced hazards

Beyond the historical Chilean large earthquakes, tsunamis, volcano hazards, climate change has brought other recurrent hazards such as drought, flash floods, mudslides, etc.

4

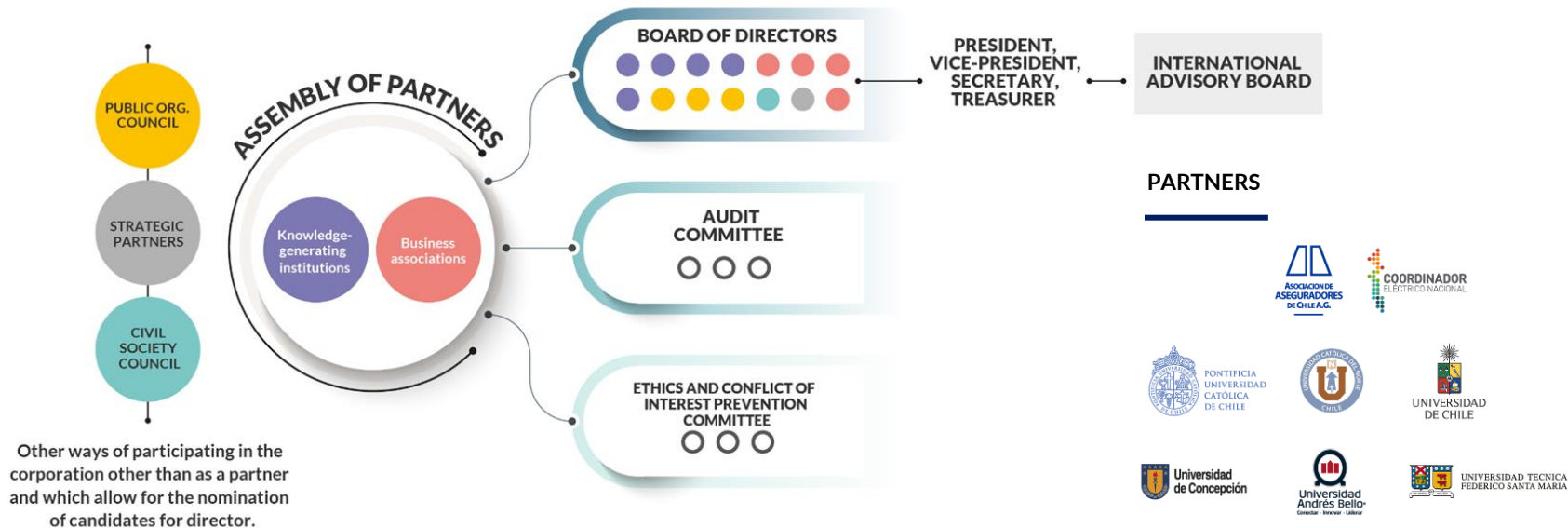
Population growth and poorly planned territorial expansion

Human exposure to hazards has grown as a result of the natural growth in population and the use of territories strongly affected by multiple historical and new hazards

(Government Driven)

(Society Driven)

Our Governance Structure



SUPPORT

Proyecto apoyado por



CTCI

Origin and Timeline



Phase 1



Project approved in December

Phase 2



Creation of a new legal entity in February

Phase 3



Technological and Research Public Institutes are organizations whose fundamental role is to provide public goods and services that solve market or systemic failures.

Who works with us?

State

- ❑ Ministry of Interior and Public Security
- ❑ Senapred
- ❑ Ministry of Science, Technology, Knowledge and Innovation
- ❑ International Development Bank

Academia

- ❑ National universities (6 of them founders and 4 in the board of directors)
- ❑ International universities (IAB)
- ❑ National and international research centers

Industry

- ❑ Chilean Association of Insurance Companies
- ❑ National Electric Coordinator
- ❑ National Association of Sanitary Service Companies

Civil Society

- ❑ PK-12 teachers in public schools
- ❑ Several Municipalities
- ❑ 11 Non-Governmental Organizations

Itrend's initiatives

Annual event + Itrend talks

Highlight the role of different technologies to anticipate the impact of wildfires and know the world's situation.

The second version of Resilient Chile considered the participation of multiple stakeholders and international experts, who shared their scientific and technological knowledge and innovative ideas that are being used to anticipate and mitigate the consequences of wildfires.

Format: Hybrid (Youtube channel 21.043 views)
Participants: 160
9 speakers: private sector, academia, civil society.



ITREND TALKS 2023

Total: 6
 Participants: 608
 Views: 23.892

CHARLAS ITREND
Análisis de riesgo multiamenaza en sistemas hospitalarios y eléctricos
 Expone: Ph.D. Luis Ceferino
 Director del Laboratorio de Análisis de Riesgo de Desastres NYU

22 junio 15:00 a 17:00 horas
 Universidad de Concepción
 sede Santiago (Marchant Pereira #10 piso 3)

Transmisión en vivo a través del canal de YouTube del Instituto para la Resiliencia ante Desastres

International network

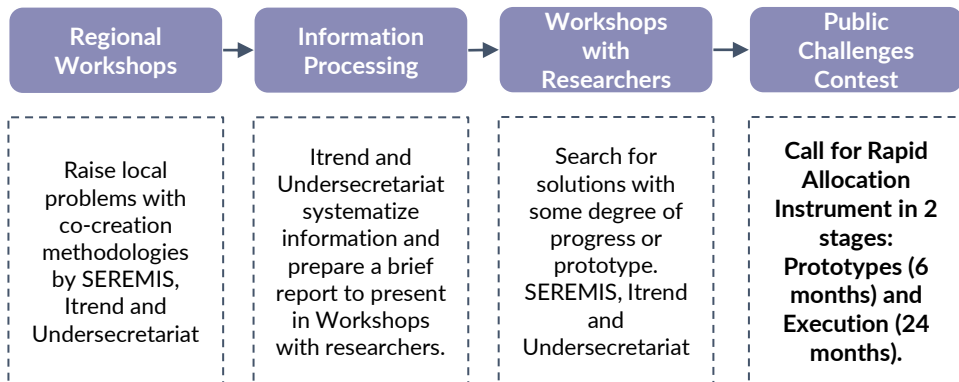
- Participation in the framework of the diploma course "Education and Resilience: Strategies for the development of management skills" carried out by UNDP-Mexico (Mexico, November 2023).
- Visit to the IDB in Washington DC (USA, August, 2023)
- Participation in Tech4DRR Initiative (USA, August-November 2023).
- Participation in the UNDRR Global Platform, as part of the Chilean delegation (Bali, May 2022).
- Itrend presentation at UCL (England) and QuakeCore (New Zealand).
- Presentation at Ignite Stage UNDRR Regional Platform Punta del Este, Uruguay (Feb. 2023).
- Participation in UNDRR group, Academic and Research Network.



Challenges for post-wildfire recovery

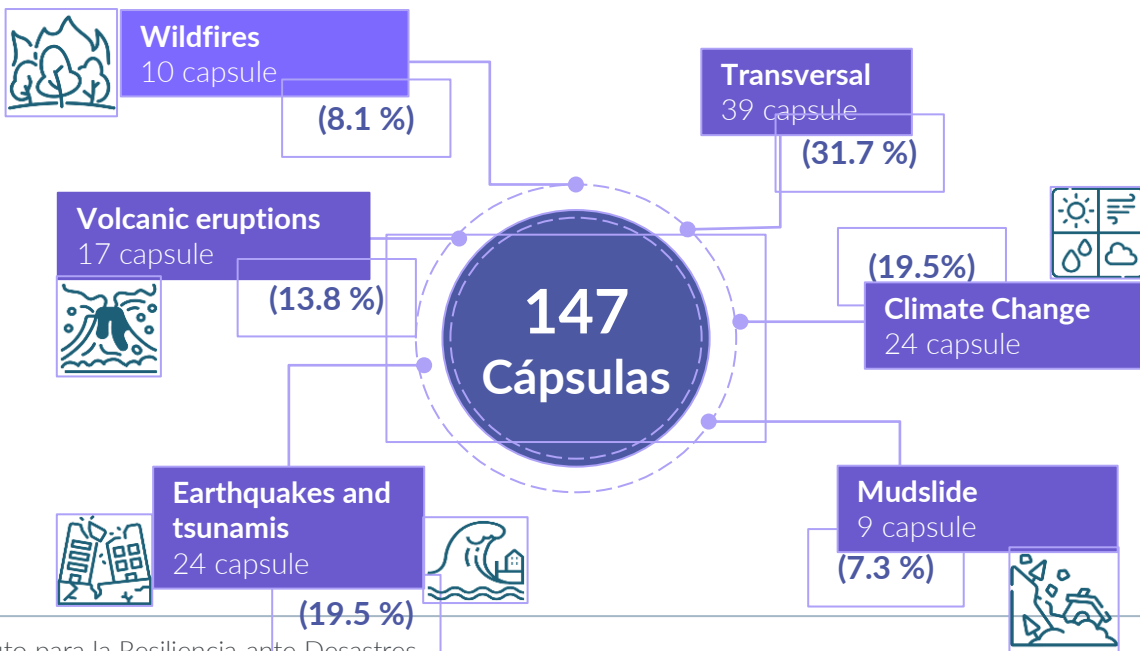
Objective:

- Establish, through an integrated vision of anticipation and convergence, the generation of data, models and applications that, in the medium and long term, prove to the country new capabilities from the CTCI.

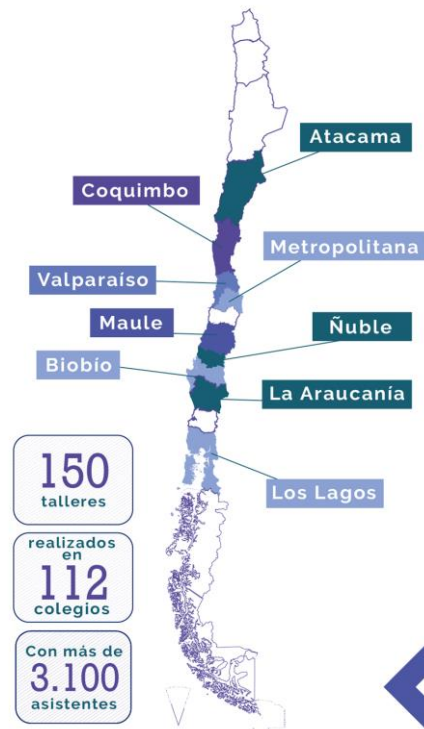


OUR INITIATIVE

A **free** and **open-access platform** designed for educators that provides material based on curricular contents and aims to encourage a culture of disaster resilience in the school community.



» Some figures (August 2021-October 2023)



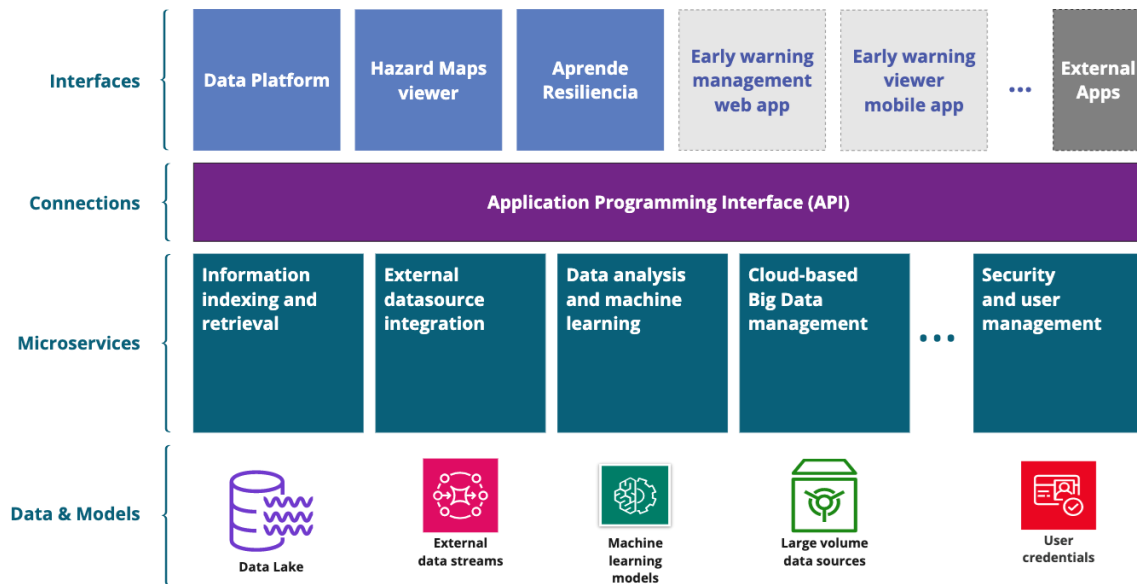
Digital Infrastructure

The problem:

Limited access, high fragmentation, inconsistency and a lack of systematization in the collection, processing and availability of data and information on disaster resilience.

The initiative:

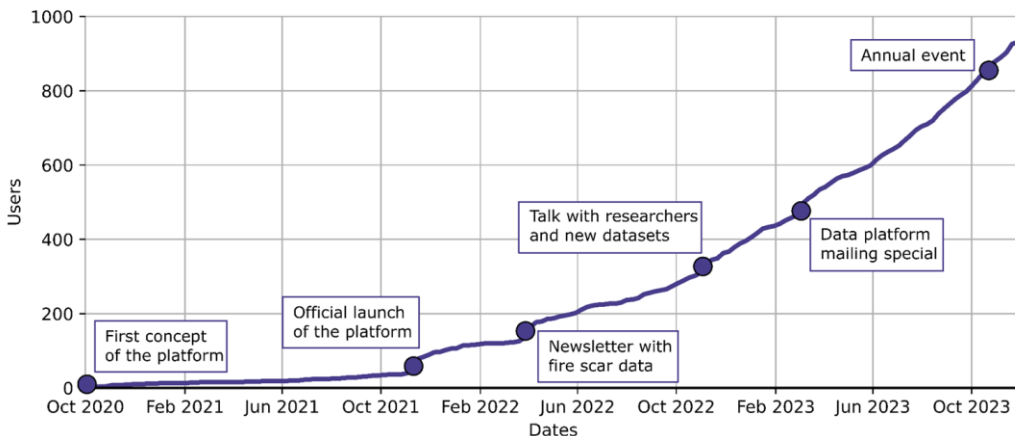
An enabling digital infrastructure at the service of the national and international R&D+i ecosystem for disaster resilience.



Resilience Data Platform (plataformadedatos.cl)

An **open-access platform** that integrates data and tools for analyses related to risk and natural disaster resilience.

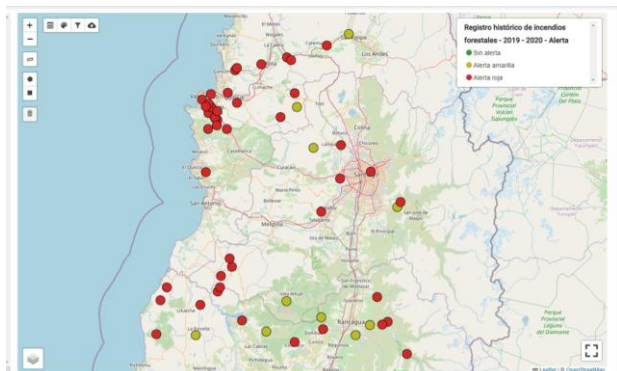
The data comes from several sources and has been curated and standardized in order to foster **research, development, innovation** and **entrepreneurship**.



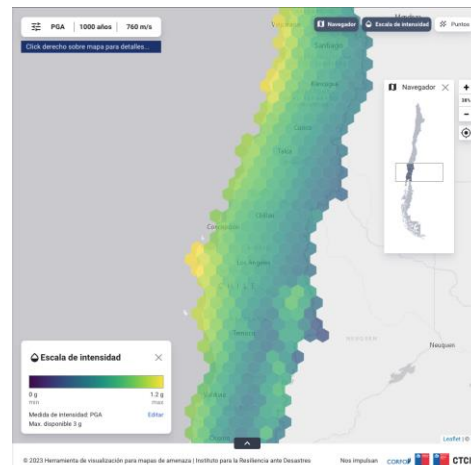
Evolution of the number of users of the data platform (Oct.2020-Nov.2023)



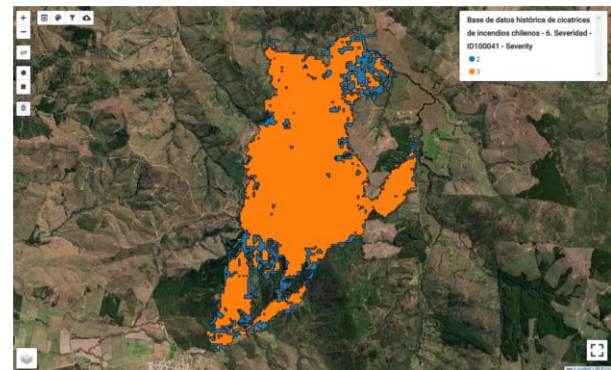
Collaboration for disaster resilience: some examples



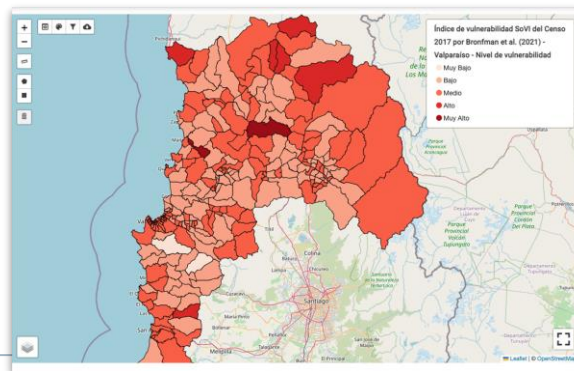
Visualization of the data set "Historical record of forest fires" for the 2019 - 2020 season.



Hazard maps visualization tool



Scar from a forest fire published in collaboration with (CR)2



Social Vulnerability Index. Sovi

Early warning management and viewer

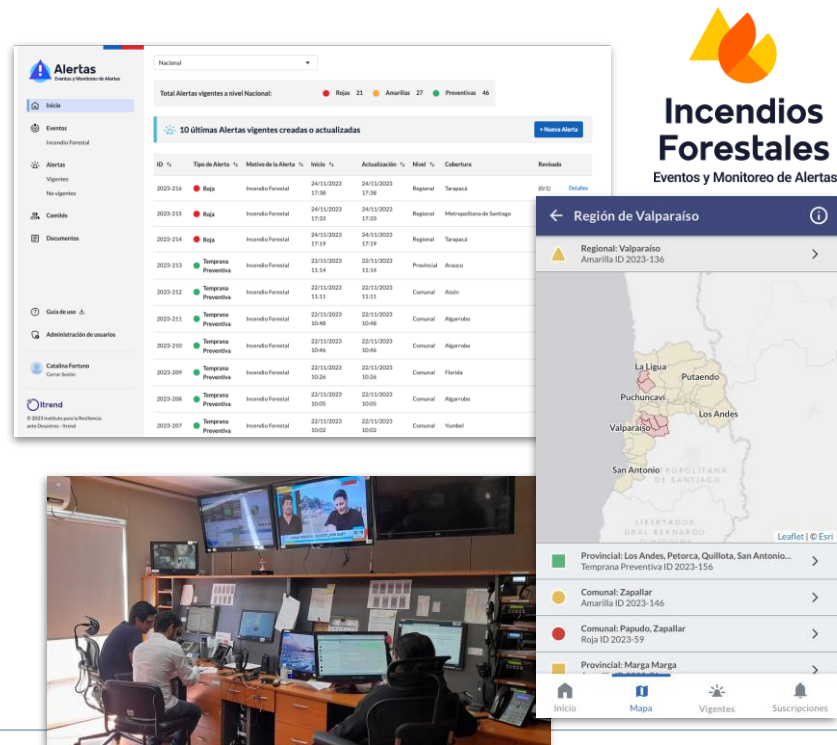
In collaboration with the Ministry of Interior and Public Security and SENAPRED

Problem

The current format for delivering information about hazard alerts makes it difficult to quickly access relevant data and also makes the follow-up of an alert very complex for the authorities as well as the Early Warning Unit (UAT).

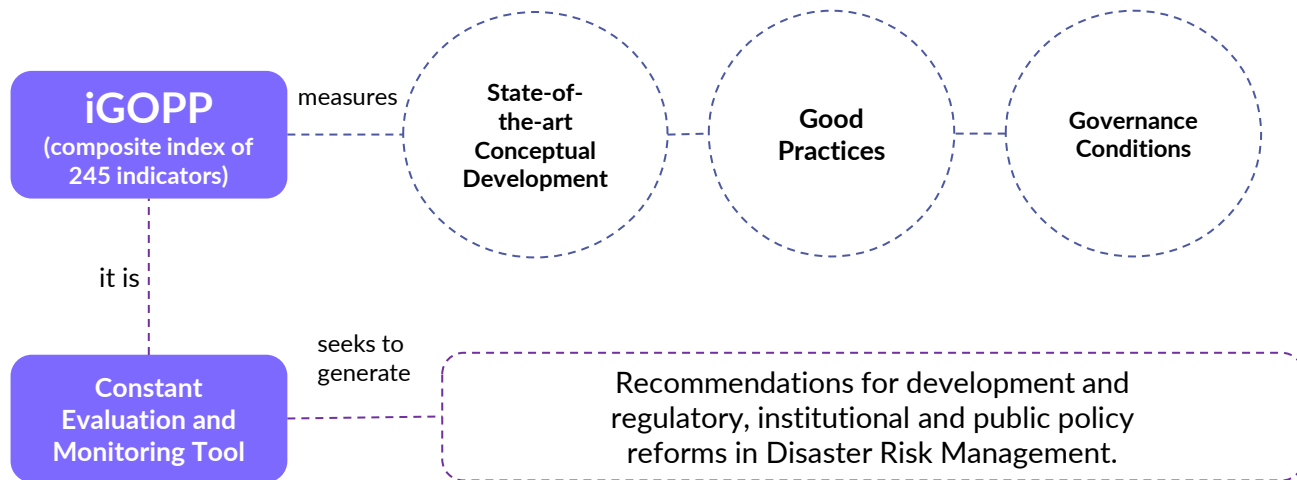
Proposal

Application (platform) for data acquisition and standardized generation of alerts to be operated by the technical team of the national UAT and that of the different regions in the country; the application allows the development of visualization tools **for the follow-up of alerts** by the relevant stakeholders.



Index of Governance and Public Policy in Disaster Risk Management (iGOPP)

Developed by the Inter-American Development Bank (IDB) and implemented in Chile by Itrend (2020-2021)



Study of Public Expenditure in Integral Disaster Risk Management

► Context:

The Index of Governance and Public Policy in Disaster Risk Management (iGOPP 2020) and Itrend's Public Organizations Council

● Objectives of the study:

- Present a **first characterization of public expenditure for comprehensive disaster risk management (GIRD)** in the budget of public entities.
- Provide an input to **generate awareness of the relevance** of the issue among decision-makers.
- Identify **policy recommendations** for planning, distributing and executing the public budget with the focus and distinctions of GIRD.
- Promote policy decision-making to **advance the disaster resilience building agenda**.

Summary of Key Findings:

- A comprehensive and transversal budget design with a GIRD approach is not identified. Limited number of programs and budget.
- Heterogeneity and lack of systematic ordering in the existence of assignments with a GIRD approach. Sectoral and bounded findings. Lack of a comprehensive financing mechanism.
- The main budgetary mechanism that exists is budgetary modification based on allocations specifically designed for the emergency response.
- Limited accountability requirements in the use of resources for GIRD.
- Modification of glosses year by year that hinders the continuity in the development of initiatives related to GIRD. (For example parametric insurance in Regional Government)



Public infrastructure risk and exposure model



Problem

The lack of available resources after a disaster forces the State to make budget reallocations and/or increase taxes to face the emergency and recovery.

In particular, there are no resources allocated for early repair and restoration of vital lines of critical infrastructure and the resources obtained are at the expense of future investment in infrastructure.

Objectives

- Obtain a georeferenced inventory of the country's public infrastructure exposed to natural threats
- Estimation of the seismic risk of this infrastructure.

The exposure model was generated from an extrapolation of the data obtained in the cadastre sample to the more than 14.000 public assets identified





What's ahead?

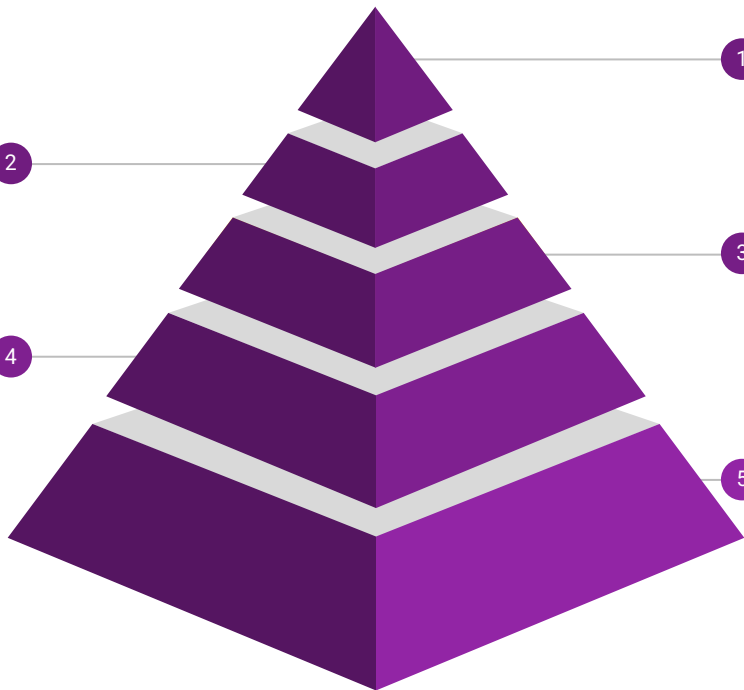
Itrend's value pyramid for Stage 2

New Enabling Capabilities for Resilient Industries

(Refining or incubating a new industry through pilot projects)

Active Collaborative Network

(Expand and sophisticate the ecosystem's collaborative network and position Itrend)



Long-term strategic vision

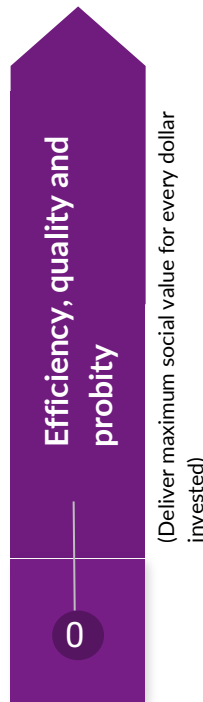
(Contributing to the technological and public policy convergence of resilience)

Technical and coordination partner

(Technical ally of the State to generate public goods and high-level coordination)

Provision of enabling technological inputs

(Generate data, models, and applications for evidence-based decisions)



“Itrend's hallmark is the ability to enhance the disaster resilience ecosystem by helping to resolve ecosystem failures so that it works in the best possible way, promoting collaboration, agility and talent, and achieving high standards in the provision and adoption of creative solutions efforts to increase the country's resilience”

What's ahead?

- 1** **New enabling digital infrastructure**
 Development of new applications and delivery of data and information
- 2** **International opportunities**
 Strategic partnerships for the development of new initiatives with international impact
- 3** **Public-private partnerships in resilience**
 New initiatives of shared value between the State, industry and civil society
- 4** **An inspiration model for new public institutes and alike**
 Replicate Itrend's model in different realms of public interest at the national and international level
- 5** **Sophistication of the collaborative resilience network**
 Increased depth in the interaction levels with the stakeholders of the STKI network



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