Public communication of science with territorial relevance: Challenges and learnings from an experience of climate change adaptation.

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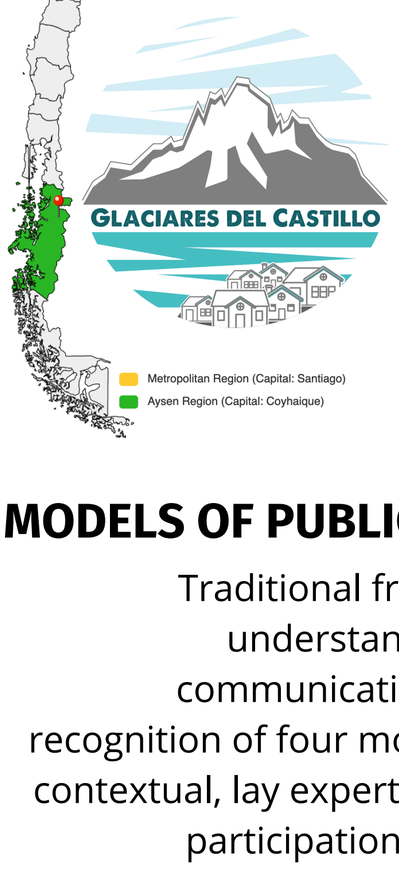
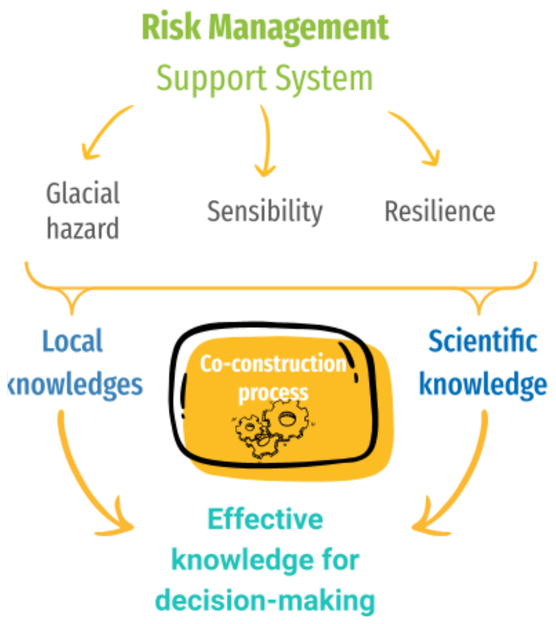
THE EXPERIENCE: 'GLACIARES DEL CASTILLO' PROJECT

Implemented between 2020 and 2023 in Villa Cerro Castillo, Aysen Region, Chile, this pilot project was undertaken by an interdisciplinary team with a strong emphasis on transdisciplinary approaches[1]. Its primary objective was to test a risk management support system grounded in co-constructed indicators, with the subsequent goal of transferring the model to public institutions engaged in disaster risk reduction (at national and local scale).



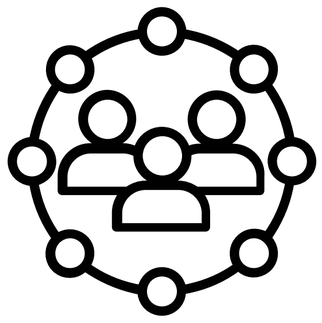
To achieve this, we established a 'Local Reference Group' (LRG) that played a pivotal role in co-constructing the system, comprising 17 local organizations. The primary objective of this group was to encourage participation, as well as validating and monitoring indicators while shaping community preparedness and response to climate-related hazards such as GLOFs. This was followed by the formulation of strategies for their effective use and sustainability in time.

The co-construction approach was crucial in developing the indicators and paved the way for alternative collaboration strategies that allowed us to strengthen territorial resilience.



MODELS OF PUBLIC COMMUNICATION OF SCIENCE?

Traditional frameworks for understanding scientific communication rely on the recognition of four models[2] : deficit, contextual, lay expertise and public participation. Through our experience, we have observed how these models are not mutually exclusive; instead, they overlap and become entangled in complex ways.



At times, community agents demanded knowledged they considered to be lacking in, while in other moments agents expected to be treated as lay experts or to participate in more broad terms. In the LRG, these kinds of shifts in expectations were not exceptional, but the norm.

CHALLENGES AND LEARNINGS

'Why am I here?'

- **Changing the 'deficit model'?** not only present among scientists but also within the community, where at times certain members overly relied on scientific authority: *"you tell me, you are the one supposed to know*" Overcoming this mindset is a complex task.

'How long will this take?'

- **Sustaining involvement over time.** Maintaining community engagement over an extended period is challenging. It requires ongoing effort to keep people interested and committed.

From community to *communities*

- **Community is not homogeneous.** During the co-construction process we had to identify the different local logics of public communication, which was not a planned. activity. A multi-channel communication strategy was developed to reach different audiences and communities. This included participation in the local radio, group chats, and other social networks. Also the realization of two "open exhibitions" in the house of the Community. This shift allowed us to also contribute with other unexpected benefits.
- **Timely and transparent communication of our decision-making processes,** as they changed by incorporating local knowledges. Transparency highlighted how individuals were indeed crucial and important part of the process, strengthening their commitment and engagement.
- **Showcasing synergic objectives:** Employing strategies to highlight shared objectives among various organizations and the project is crucial. This helps clarify the importance of co-construction and fosters collaboration.
- **Increasing territorial relevance:** with local knowledges' inputs, the project's actions had a much better reception in the wider community, such as the installation of the glacial evironment monitoring station and the conformation of the local vulnerability monitoring system. It takes time, specific competences and planification.
- **Diversifying communication strategies:** we reached different communities within the territory. This was useful as it allowed us:
  - To provide information about the project and its activities
  - To promote local environmental education on specific impacts of climate change in the territory, such as water scarcity and drinkable water system issues, risk perception, local memories about past disasters, among others.
  - To foster resilience through improving reflexivity and social learning.

FINAL REFLECTIONS

An **explicit dialogue** is needed between the frameworks used in the understanding of public communication of science and the frameworks used for understanding transdisciplinarity. In this dialogue, **territorial and cultural particularities of communicative structures at the local level must be foregrounded**, especially when applied to the design of interdisciplinary and transdisciplinay research/intervention projects for climate adaptation. **Communication is key** in both conceptualizations of transdisciplinarity: as an effort to integrate scientific disciplines and construct shared languages, and as an effort to cross over the boundaries of science, integrating other forms of knowledges.

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