

From Climate Data to Regional Action

How ClimEmpower connects evidence, resilience assessment and practical recommendations

ClimEmpower pathway

1	2	3	4	5	6
Regional needs	Climate intelligence	Risk assessment	Resilience assessment	Recommendations	Policy action

Regions already have access to a growing amount of climate information. The challenge is often not simply obtaining more data, but turning available information into knowledge that can support concrete decisions.

ClimEmpower addresses this challenge by connecting several stages that are frequently treated separately: understanding regional needs, accessing climate information, assessing risks, measuring resilience and identifying appropriate adaptation actions.

Step 1 – Start with regional needs

The ClimEmpower approach begins with the regions themselves.

Through regional stakeholder engagement and Communities of Practice, the project identified local concerns, priorities and information needs. This ensured that project tools and recommendations were not developed only from a technical perspective, but also reflected the decisions regional users need to make.

Although regions share climate hazards, their vulnerabilities and priorities are different. Local participation is therefore an essential part of developing meaningful climate services.

Step 2 – Combine different sources of information

No single dataset provides a complete picture of climate risk.

ClimEmpower explored the combination of multiple information sources, including:

- climate and meteorological data
- Earth observation
- vegetation and drought indices
- population and socio-economic information
- infrastructure and land-use data
- historical hazard information
- local and regional information
- social sensing

For example, drought assessment can combine vegetation conditions, meteorological indicators and soil moisture information. Flood and wildfire risk assessment can combine hazard information with data on exposed people, infrastructure, agriculture or other assets.

ClimEmpower also investigated methods for improving the spatial resolution of Earth-observation information and explored social sensing as a complementary source for identifying and understanding climate-related events.

Step 3 – Understand risk

Climate risk is not determined by the hazard alone.

A severe climatic event becomes a major regional risk when important people, assets or systems are exposed and vulnerable. ClimEmpower therefore uses the interaction of hazard, exposure and vulnerability as a basis for understanding climate risk.

Risk maps and asset-specific information can help regions identify where particular hazards may have the greatest consequences and which sectors or communities require attention.

Step 4 – Measure resilience

Understanding risk tells a region what may happen. Resilience indicators provide another perspective: how prepared is the region to cope, adapt and transform?

ClimEmpower reviewed 531 indicators and developed a framework covering health, population, economy, infrastructure, governance and the environment.

The emphasis is on indicators that are measurable, understandable and actionable. Their purpose is not simply to describe regional conditions, but to help identify areas where targeted resilience measures may be required.

Step 5 – Connect indicators with action

A major development in the final ClimEmpower recommendations framework is the direct connection between resilience indicators and recommendations.

The project developed 90 recommendations linked to 36 resilience indicators.

This means that recommendations can respond to a specific identified weakness instead of functioning as a generic catalogue of climate actions. Decision support can become progressively more specific by considering:

the resilience indicator → relevant climate hazard → local context → suitable type of action.

Recommendations are additionally characterised by their field of application, relevant governance level and implementation timeframe.

They also include information on policy roadmaps, environmental, social and economic co-benefits and examples of best practice.

Step 6 – Support policy uptake

Regional stakeholders participated in prioritising the measures considered most relevant to their territories.

Common cross-regional priorities were then developed into 10 Policy Letters, each focused on a selected resilience recommendation. The Policy Letters translate project findings into a format designed for decision-makers and include key policy actions, an implementation roadmap, expected co-benefits, possible funding instruments and supporting evidence.

A digital environment for continued use

The different components come together in the ClimEmpower Toolbox.

The Toolbox provides a modular environment in which regional users can access and explore climate information, risk maps, resilience indicators and recommendations relevant to their region. Its purpose is to help users move from observing a territorial condition to understanding its implications and identifying possible actions.

The ClimEmpower approach therefore creates a continuous pathway:

**Regional needs → Climate intelligence → Risk assessment → Resilience assessment →
Recommendations → Policy action**

Rather than treating climate data as an end result, ClimEmpower uses it as the starting point for better-informed regional decisions.