Interreg CENTRAL EUROPE

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MISSION CE CLIMATE

RISK AND VULNERABILITY ASSESSMENT (RVA)

Understanding climate risks is essential for building resilient communities.

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CONTENT

1 WHAT IS RISK AND VULNERABILITY ASSESSMENT (RVA)?

This Risk and Vulnerability Assessment (RVA) identifies local hazards, vulnerabilities, and strengths to guide adaptation strategies and strengthen climate resilience.

It is a systematic process used to understand how climate change can impact a specific area — a city, region, or community.

It evaluates the **climate hazards** a place is exposed to (such as floods, heatwaves, droughts, wildfires), how **vulnerable** its people, ecosystems, infrastructure, and economies are to these hazards, and what **adaptive capacities** already exist.

RVA is based on four key dimensions:

- **Hazards** – the potential threats from climate change.
- **Exposure** – who and what could be affected.
- **Vulnerability** – how sensitive and unprepared the exposed systems are.
- **Adaptive Responses** – how well communities can cope, adjust, and strengthen resilience.

By understanding these aspects, RVA helps prioritize actions to protect people, livelihoods, and critical systems in the face of climate risks.

2 IMPORTANT STEPS ON HOW TO SET IT UP

The RVA process includes **five key steps**:

Step 1: *Analyzing Past and Present Climate Impacts*
- Collect data on past extreme weather events (e.g. floods, heatwaves, storms) and understand current vulnerabilities.
- Identify long-term trends to see how risks are already evolving.

Step 2: *Analyzing Climate Projections and Future Impacts*
- Study climate forecasts and scenarios to understand future risks.
- Look at how hazards might increase in frequency or severity and anticipate new emerging threats.

Step 3: *Conducting an Indicator-Based RVA*
- Use a structured set of indicators covering hazards, exposure, vulnerability, and adaptive capacities.
- This usually involves cooperation with local stakeholders (e.g., municipalities, civil protection agencies) to gather data and jointly assess the situation.

Step 4: *Understanding the Role of Surrounding Areas*
- Recognize interdependencies with nearby regions (e.g., water supply, agriculture, transport).
- Strengthen collaboration across city boundaries to ensure adaptation strategies are effective beyond the city itself.

Step 5: *Identifying Main Adaptation Concerns and Defining Objectives*
- Based on the collected data, define which risks are most urgent and set clear adaptation priorities.
- This step lays the foundation for developing detailed climate resilience strategies and action plans.

3 WHY IS RVA RELEVANT?

Provides a comprehensive risk overview: RVA gives a full picture of where the community is most at risk and where it is already resilient.

Supports strategic adaptation planning: It helps local authorities and stakeholders make informed decisions and prioritize actions.

Strengthens cross-sectoral cooperation: By involving different actors early in the process, RVA builds a shared understanding and commitment to climate resilience.

Reduces future losses: Early identification of vulnerabilities allows for timely investments and actions that prevent costly damage later.

Builds long-term resilience: A successful RVA is a starting point for creating stronger, safer, and more sustainable communities prepared for the challenges of a changing climate.

4 VORARLBERG EXAMPLE

1. Heat:

- **Sunshine Hours:** 1680 hours in 2022, low hazard level, trend increasing.
- **Summer Days (≥25°C):** 65 days in 2022, high hazard level, increasing trend.
- **Hot Days (≥30°C):** 25 days in 2022, high hazard level, increasing trend.
- **Tropical Nights (≥20°C):** 5 nights in 2022, high hazard level, increasing trend.
- **Heatwaves:** 21 heatwave days in 2022, high hazard level, increasing trend.
- **Cooling Degree Days:** 354 in 2022, high hazard level, increasing trend.
- **Vegetation Period (≥5°C):** 264 days in 2022, low hazard level, increasing trend.

2. Cold Days:

- **Frost Days (≤0°C):** 55 days in 2022, decreasing trend.
- **Heating Degree Days:** 2444 in 2022, decreasing trend.
- **Standard Outdoor Temperature:** 8.4°C in 2022, medium-low hazard, trend increasing.

3. Snow/Rain:

- **Precipitation Days (≥1 mm):** 142 days in 2022, decreasing trend.
- **Heavy Precipitation Days (≥20 mm):** 42 days in 2022, stable trend.
- **Precipitation Intensity:** stable compared to the reference period.
- **Maximum 5-day Precipitation:** stable.

4. Dryness:

- **Longest Dry Episode:** 20 days (both in 2022 and reference period), trend stable.

Key Takeaways:

- **Heat risks** are **high and increasing** (more hot days, tropical nights, heatwaves).
- **Cold risks** are **decreasing** (fewer frost and heating degree days).
- **Precipitation** trends are mostly **stable or slightly decreasing**.
- **Dry episodes** are **stable** – no major worsening.
- Overall, **Vorarlberg is becoming warmer**, with **higher heat stress** and **longer vegetation periods**, but **winter cold extremes are declining**.

5 EUROPEAN MAP