Interreg Co-funded by the European Union

Alpine Space

X-RISK-CC

PROJECT NEWSLETTER

NO 2 I JANUARY 2024

Photo credit: Mitja Legat

In a world grappling with unpredictable climate patterns, the X-RISK-CC project, in partnership with ten allies across the Alpine Space, is charting the course for risk managers and policymakers. Together, we're tackling the intricate challenges brought about by extreme weather events in our changing climate.

X-RISK-CC WHAT'S GOING ON?

Our journey kicked off with a deep dive into the realm of extreme weather. Harnessing data from our pilot areas, we embarked on a comprehensive assessment of the likelihood of meteorological extremes. This included analyzing the significant Vaia storm in Trentino South Tyrol. Simultaneously, we scrutinized historical and current trends in climate drivers impacting the region, with a particular focus on intense precipitation in the Gorenjska Region. We expanded these assessments across the entire Alpine Space, leveraging innovative downscaling methods to enhance the precision of climate projections and better equip us for preparedness and planning.

Understanding Risks and Impacts

In Work Package 2, our focus shifted to the collection of vital data concerning hazards, vulnerability, and exposure in our pilot areas. This forms the cornerstone of our efforts to assess risks associated with extreme events. Our approach combines quantitative tools, such as a modular scheme for assessing compound and cascading hazards, with qualitative methods that delve into sequential impact chains. To extend the reach of our impact analysis across the Alpine Space, we've introduced a data-driven scheme. This innovative approach assists in modeling and predicting impact probabilities linked to weather conditions, climate drivers, and other environmental factors.

Rapid Risk Management and Collaboration

Within Work Package 3, we've successfully developed a rapid risk management appraisal approach. This method will guide upcoming workshops in each pilot area, where local experts and decision-makers will assess the strengths and limitations of risk practices during targeted extreme events. Our recent partner meeting in Munich further cemented the crucial link between the scientific analyses in Work Packages 1 and 2 and the practical needs outlined in Work Package 3. Together, we've laid the groundwork for the risk assessment manual and pilot action plans.




Highlights

from the pilot areas

PARTNERS' UPDATES

LESSONS LEARNED FROM FLASH FLOODS FROM AUGUST 2023

Between August 3rd and 6th, Slovenia experienced heavy rainfall with storms, strong downpours, and showers. Widespread and destructive floods, including in our pilot area – the basins of both Sora rivers, where Poljanska Sora and Sora overflowed. Numerous roads, water supply, and electrical installations were damaged. Several buildings were flooded or damaged, and a significant number of landslides were triggered.

In October 2023, we conducted interviews with municipal Civil Protection commanders, providing valuable insights into various aspects of managing this year's August floods. Commanders shared their experiences and challenges faced during the floods. The findings from these interviews were an excellent basis for a workshop conducted in November. Meeting of Various Stakeholders on Better Collaboration and Risk Management in Floods and Landslides In November, the Development Agency Sora, together with the Environmental Agency of the Republic of Slovenia in Škofja Loka, organized a meeting on better collaboration and risk management in floods and landslides. The event brought together key representatives from local and state organizations, including municipal Civil Protection commanders, the Fire Brigade Command, and representatives from the municipalities of Škofja Loka, Železniki, Gorenja vas – Poljane, Žiri, the Directorate of the Republic of Slovenia for Water, the Agricultural Institute of Slovenia (OE Kranj), the Forest Service of Slovenia (OE Kranj), and the Fishing Society Škofja Loka. During the workshop, participants shared experiences with managing the August floods and landslides. Challenges identified included ensuring financial resources for watercourse management, inter-sectoral collaboration at a higher level, informing professional services, and the public, etc. More about the event can be found here.

ASSESSING AND IMPROVING RISK MANAGEMENT IN THE PILOT AREAS OF SOUTH TYROL (ITALY)

From October to December, workshops were held in all pilot areas of the project, in which local stakeholders and experts in the field of risk management in connection with extreme weather events participated.

There are two pilot areas of the X-RISK-CC project in the province of Bolzano. The first workshop for the "VAIA" pilot area took place on 24 October 2023 at the Latemar Forestry School, while the workshop for the "Wipptal/ Pfersch" pilot area was held on 10 November 2023 in the community hall in Gossensaß.

The workshops provided a platform where representatives from various sectors, including municipal representatives, public authorities, civil protection organisations, etc., came together to jointly analyse risk management in connection with the respective events. Based on the findings, the next step will be to develop tailored actions for the pilot areas to help improve risk management. This step will also be carried out in collaboration with the various stakeholders and experts in the pilot areas.

ASSESSING THE PROGRESS OF THE VAIA EMERGENCY MANAGEMENT IN THE PROVINCE OF TRENTO

On October 24, 2023, the PAT team participated as observers in the first South Tyrolean stakeholder engagement workshop organized by the partners of the Bolzano Civil Protection Agency in Nova Levante. This helped the PAT team in the preparation of the first participatory workshop dedicated to the Vaia storm pilot area in Trentino (i.e., the Fiemme and Fassa valleys), held on December 14 in Predazzo at the Alpine School of the Guardia di Finanza. During the half-day event, the 33 participants analyzed the strengths and weaknesses of Vaia emergency management retrospectively with respect to its different phases, from pre-event prevention and preparedness to post-event response and recovery, following the steps provided by the Rapid Risk Management Appraisal methodology. The objective was to create the knowledge base necessary to identify in a shared way improved strategies for the management of similar events in the future, thanks to the enhancement of the experience gained during the Vaia emergency and the collaboration of those who have been directly involved during these years, such as the relevant provincial structures, the municipalities of the pilot area, the fire brigades, forestry operators and other stakeholders.

NEWS FROM STUBAITAL PILOT AREA (AUSTRIA)

In the Stubaital pilot area three workshops were held at the end of the year. The first one took place in Mieders on 29.11, the second one was held in Neustift im Stubaital on 5.12 and the third one was carried out on 13.12. in Fulpmes. During the workshops the extreme weather events having taken place in Stubaital in july 2022 were recapped and in collaboration with the present participants of the workshops (municipal representatives, public authorities, civil protection organizations etc.) the course of events and the alert chain were analyzed and discussed. Since the workshops, the found results are continued to be processed and will be compared to the other pilot regions. In a next step tailored actions and guidelines to adapt risk management in the pilot area to the changing conditions will be defined in collaboration with the project partners and the pilot stakeholders. At the moment organization fort these upcoming workshops is in ist initial stage.




Highlights

from the pilot areas

EXPLORING THE MANAGEMENT OF ELEONOR STORM

In the last 6 months, many activites were achieved on the French side of X-RISK-CC. AURA-EE conducted some interview with local and regional authorities to have a glimpse of what was the Eleanor storm “from the inside” and how did they managed to tackle this event. In general, organisations seemed to have managed this event. Nonetheless, due to the combination of several events, human and financial resources were stressed. Nonetheless, a risk management planning is missing in local authorities, and due to the combination of severals events, human and financial resources were stressed. Though, after this extreme storm, some new mechanisms have been implemented such as on-call schedule. One lesson-learned is that land use planning is a key point to avoid casualties, by taking into account natural risk. The definition of this lesson learned can be found into the TAGIRN (Alpine Territories on Integrated Natural-Risk Management) consortium.

Led by Pôle Alpin des Risques Naturels (PARN), our technical partner, TAGIRN have been invited on the end of June to participate in the Technical Days of STEPRIM and TAGIRN on which a presentation of X-RISK-CC was given by Benjamin Einhorn, director of PARN. This was also the occasion to present digital decision-making tools for crisis management.

AURA-EE also participated in a world coffee event organized in Grenoble as part of the H2020 project ESM 2025. This forward-looking project aims to develop cutting-edge adaptation and mitigation models for the Earth system. Our partners engaged in discussions on enhancing climate risk assessment and response, quickly adressing how X-RISK-CC is tackling this critical issue.

As a reminder of how climate change can impact our infrastructures, Auvergne-Rhône-Alpes have known a 700m3 rockfall at the end of August, because of the combination of a heatwave and a mass precipitation on a highway and a road joining France to Italy (via Modane) that force government to shut down the road as well as the railway between Saint Jean de Maurienne and Modane.

DEVELOPMENT OF AN APPROACH FOR PREDICTING FUTURE ALPINE NATURAL HAZARDS AND RISKS

The pilot region of Garmisch-Partenkirchen is exposed to numerous alpine hazards such as rockfalls, landslides, floods, debris flows, hyper-concentrated flows, and flash floods. Recurring extreme precipitation events have triggered several significant natural hazard events in the past decades. There is a clear connection between dangerous hydrological natural hazards and intense summer rainfall, making the region particularly vulnerable to changing rainfall intensities in a changing climate. The Technical University of Munich is working on a conceptual approach for the quantitative assessment of meteorological trigger conditions and torrential processes of past events. This aims to estimate future probabilities of critical precipitation events, changing frequencies and magnitudes of torrential processes, and the resulting risks. The Chair of Landslide Research systematically collects quantitative information on 14 torrential events from the last 30 years in the study area and links them to their meteorological trigger conditions. In addition to analyzing the meteorological triggers and magnitudes of past events, the project partners of X-Risk-CC will (1) estimate future changes in the probability of critical precipitation events (reaching/exceeding past triggering thresholds) under different emission scenarios, and (2) anticipate future changes in the frequency and extent of potentially hazardous torrential processes. The Engineering Risk Analysis Group conducts a quantitative assessment of risk for the town of Garmisch-Partenkirchen and the touristically used Partnach Gorge. The plan is to evaluate the change in risk due to future changes in the frequency and intensity of heavy rainfall events and compare the results with other factors influencing future risk in the region.

FOLLOW US WEBSITE www.alpine-space.eu/project/x-risk-cc/ LINKEDIN

LEAD PARTNER

PROJECT PARTNERS