

# HYDROMETEOROLOGICAL HAZARDS – RISK AND MITIGATION



## PARTNERSHIP

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# COVALEX TALKS

## 1 Introduction

This document provides an overview of the available **webinar recordings and other video presentations/talks** that were given during the [COVALEX](#) (Community of Valued Experts in Hydrometeorological and Technological Multi-hazards) project duration in 2023 and 2024. The videos are available on the [COVALEX YouTube channel](#).

## 2 Available Videos

### 2.1 Impact Based Forecasting in Humanitarian Operations

**Video type:** COVALEX webinar

**Language:** English

**Date of recording:** November 23rd, 2023

**Place:** online

**Speakers:**

- Davide Miozzo, Project Manager / EWS expert, CIMA Research Foundation
- Jean Baptiste Bove, PhD student, CIMA Research Foundation/Italian Red Cross
- Chiara Gorni, Emergency Planning and Preparedness Officer, Italian Red Cross

**Description:**

The webinar consisted of three parts. In the first part, Davide Miozzo shows the work he has been doing in the field of weather prediction using artificial intelligence (AI) for CRI and relies on close examples such as the war in Ukraine. Davide explains that during the war the tool developed by CIMA was used to carry out weather planning in Ukraine where there were problems with the internet, and for planning to provide humanitarian aid for the population and vulnerable groups. The AI-based alert system predicts needs (e.g., during floods or polar temperatures) to ensure aid and necessary equipment reach the population while taking into account the tool designer's perspective.

**Link:** <https://www.youtube.com/watch?v=72lPy9aRDkc&list=PLCgHg6Cjp7HRwB-QPsjoX6FveHfjQ-x4B&index=5>

## 2.2 Traffic Over Our Heads: Enabling (Multiple) UAV Flights During Complex Crisis Operations

**Video type:** COVALEX webinar

**Language:** English

**Date of recording:** December 14, 2023

**Place:** online

**Speakers:**

- Jakub Ryzenko – Head of Crisis Information Centre (CIK, part of the Space Research Centre of the Polish Academy of Sciences), specialist in space policy, international cooperation in space activities, the use of satellite techniques in the area of security and systems engineering
- Emil Wrzosek – Crisis management specialist at Crisis Information Centre (CIK, part of the Space Research Centre of the Polish Academy of Sciences), expert on planning and conducting simulation games, exercises and trainings

**Description:**

This webinar was held in collaboration with the COLLARIS project and covered 6 main points. In the first part, the systemic gap, its scope, initial formulation and identification of stakeholders was set out for the audience. To better illustrate the challenge, the speakers focused on a case study and explained the Biebrza 2020 forest fire. Due to safety regulations, the full potential of the use of UAVs could not be adopted and UAVs were only allowed to fly during dusk and dawn, hence approximately 30 minutes per day because of manned aircrafts being deployed during the forest fire event as well. This was seen as ineffective and inefficient and therefore, the gap in the potential simultaneous deployment of manned and unmanned aircrafts was detected.

In the second part of the webinar, the role of the “innovation vendor” was discussed, to briefly describe how to bring innovations into organizations that do not have adequate structures to find and adopt them by themselves. The crux of the webinar was the problem definition, hence: the situation in which the deficiency manifests itself and describing the system itself and its shareholders. Subsequently, the theme of the webinar focused on explaining the development of the solution and its implementation progress.

**Link:** <https://www.youtube.com/watch?v=B91NNuY4U-s&list=PLCgHg6Cjp7HRwB-QPsjoX6FveHfjQ-x4B>

## 2.3 A Look at Future Civil Protection and Emergencies

**Video type:** presentation

**Language:** Spanish

**Date of recording:** April 10, 2024

**Place:** Ferrol, Spain

**Speaker:** Marcos Araujo Pereira, Manager of the Galician Agency of Emergencies

**Description:**

The presentation was part of an in-person COVALEX networking event and was divided into the following sections:

1. Introduction: This section establishes the general theme of the presentation, introducing climate change as a global phenomenon and highlighting its impact on risk management.
2. Impact on Extreme Weather Events: This section describes how climate change has increased both the frequency and intensity of extreme weather events such as hurricanes, floods, droughts and heat waves, affecting various areas of human and socio-economic life.
3. Climate Variability and Natural Hazards: This section explores how climate variability exacerbated by climate change increases the incidence of phenomena such as droughts, forest fires and desertification, endangering food security and public health.
4. Sea Level Rise and Coastal Management Challenges: Specific challenges faced by coastal communities due to sea level rise, such as flooding, erosion and saline intrusion, are discussed and adaptation measures to address these risks are suggested.
5. Indirect Impacts on Health and Social Welfare: This section focuses on the secondary impacts of climate change, such as increased risk of heat-related diseases and food insecurity, which undermine health and social welfare.
6. Response and Adaptation: The importance of adopting an integrated and multidisciplinary approach to address the challenges of climate change, including collaboration among different stakeholders and the implementation of adaptation measures, is highlighted.
7. Investment in Research and Training: Emphasizes the need to invest in research, development and training to build adaptive capacity and resilience to climate change, as well as to raise awareness of associated risks and opportunities.
8. Challenges and Opportunities: The presentation concludes by highlighting the challenges and opportunities presented by climate change, as well as the importance of ambitious policies and strategies backed by political commitment and active citizen participation.

**Link:** <https://www.youtube.com/watch?v=TmcusBhpaRA>

## 2.4 Flood Emergency Operations – Lessons Learned

**Video type:** presentation

**Language:** Spanish/English

**Date of recording:** April 10, 2024

**Place:** Ferrol, Spain

**Speaker:** Marce-li Rosaleny i Romero, Member of the Disaster Damage Assessment and Recovery Unit Valencia

**Description:** The lecture focuses on lessons learned from experiences in emergency operations, particularly focused on floods in the Mediterranean Basin. Frequent flooding, caused by "cold drops", is highlighted and the lack of preparedness in urban areas to evacuate large amounts of water is pointed out. Historical flooding in cities such as Valencia is mentioned and warns about the increasing frequency of these events.

**Flood Effects and Forecasting:** The devastating effects of floods are described, highlighting the destruction of basic services and the need for foresight. Historical cases of floods in Valencia and Bilbao are mentioned, as well as the importance of forecasting and the development of emergency plans.

**Operationalisation in Emergencies:** A Japanese intervention method for decision-making in emergencies, which includes a strategic and tactical part, is explained. The importance of real-time information and communication is emphasised, as well as the adaptability of the action plan according to the situation.

**Analysis of Risks and Available Resources:** The need for a detailed risk analysis, including meteorological and historical flood data, is emphasised. The importance of adequate resources and operational capacities to deal with emergencies is highlighted.

**Conclusions:** Floods are inevitable and foresight, preparedness and adaptability in emergency response are crucial. The webinar highlights the improvement in operability and the importance of real-time information in decision making.

**Link:** <https://www.youtube.com/watch?v=cKPzz-DHPKg>



## 2.5 Methodologies and Tools for Establishing an Early Warning System for Forest Fires

**Video type:** COVALEX webinar

**Language:** English

**Date of recording:** November 8th, 2024

**Place:** online

**Speakers:**

- Andrea Trucchia – CIMA Research Foundation - Facilitator
- Fabio Violante – CIMA Research Foundation – Facilitator

**Description:** The webinar was dedicated to share CIMA's experience with an early warning system for forest fires through the presentation of models and tools that CIMA uses to support the national, regional and local authorities for forecast, monitoring and evaluating the impact of forest fires. During the webinar, the facilitators talked about the "Risiko" model and "Propagator" tools for forecast, monitoring and evaluating the impact of a forest fire, as well as forest fire hazards and susceptibility maps for the Forest Fires Danger Bulletin.

During the webinar, the speakers mainly dealt with the implementation of early warning systems for forest fires, with a focus on risk models, propagation tools and advanced technologies for monitoring and prevention. Various aspects of emergency management were discussed, including the importance of training, effective communication and the use of digital platforms for information sharing. Finally, an integrated tool for emergency management and civil protection was presented, with the aim of improving disaster response and promoting international cooperation in this area.

**Link:** <https://www.youtube.com/watch?v=kxC3KTDJA6Y&list=PLCgHg6Cjp7HRwB-QPsjoX6FveHfjQ-x4B&index=4>



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