



ENHANCING RED CROSS RED CRESCENT PREPAREDNESS FOR EXTREME RAIN EVENTS SCOPING STUDY

27 June 2025

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THE FUNDAMENTAL PRINCIPLES OF THE INTERNATIONAL RED CROSS AND RED CRESCENT MOVEMENT

Humanity

The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavours, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health and to ensure respect for the human being. It promotes mutual understanding, friendship, cooperation and lasting peace amongst all peoples.

Impartiality

It makes no discrimination as to nationality, race, religious beliefs, class or political opinions. It endeavours to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.

Neutrality

In order to enjoy the confidence of all, the Movement may not take sides in hostilities or engage at any time in controversies of a political, racial, religious or ideological nature.

Independence

The Movement is independent. The National Societies, while auxiliaries in the humanitarian services of their governments and subject to the laws of their respective countries, must always maintain their autonomy so that they may be able at all times to act in accordance with the principles of the Movement.

Voluntary service

It is a voluntary relief movement not prompted in any manner by desire for gain.

Unity

There can be only one Red Cross or Red Crescent Society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.

Universality

The International Red Cross and Red Crescent Movement, in which all societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.



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Executive Summary

Introduction to the Scoping Study

This scoping study aims to inform disaster preparedness and adaptation for extreme rainfall events in Europe and Central Asia, drawing on experiences from 2021-2024. It reviews scientific literature and operational reports to understand changing risks, to map policy and operational trends and identify gaps. The study makes recommendations for improved preparedness and response capacities, seeking to provide a foundation for further discussions and validations by the IFRC Regional Office for Europe and National Red Cross Red Crescent Societies (National Societies).

The Risk Environment in Europe and Central Asia with focus on Extreme Rainfall

Historical data indicates a greater number of floods are caused by extreme rainfall events in the 2021 to 2024 period compared to prior periods in Europe and Central Asia. These events have caused significant human and economic impacts, with notable examples such as the 2021 floods caused by Storm Bernd and the 2024 floods in eastern Spain. Anthropogenic climate change (referenced as climate change throughout the document) is identified as a key factor intensifying these events, with projections indicating more frequent and severe rainfall leading to pluvial and riverine floods. While the precise impacts remain uncertain due to various influencing factors, changes in the risk environment call for enhanced preparedness, resilience, and adaptation strategies to mitigate the adverse effects of future extreme rainfall.

Preparedness and Response Trends in Europe and Central Asia

In response to the evolving risk environment, various trends have emerged in the preparedness and response strategies for extreme rain events in Europe and Central Asia, as pursued by different stakeholders, including the IFRC Regional Office for Europe (ROE) and National Societies. These trends should be aligned with an increased policy emphasis on supporting preparedness, resilience, and adaptation, particularly by the European Commission. The particular importance of anticipatory action and effective early warning systems need to be highlighted, especially in the light of the gaps in current practices. The fact that the largest and most impactful extreme rain events were predicted, indicate the urgent need to further invest in early warning early action. Past events have highlighted a gap in community risk awareness and perception, where despite early warning, populations have either not taken the risk seriously enough to result in early action, or populations were not properly prepared or aware of how to undertake early action. A shift to evidence-based risk management requires an ability and willingness to integrate lessons learned leading to the revision of scenarios and contextualised response planning.

Evolution of Operations from Red Cross Red Crescent Operations in response to Extreme Rainfall

A comparison of Red Cross Red Crescent Operations in Europe and Central Asia from 2021 to 2024, and more specifically an analysis of IFRC Disaster Response Emergency Funding (DREF)-operations in response to extreme rain events, revealed more concrete lessons to inform future response actions from National Societies and IFRC. National Societies are not consistently collaborating with their Hydrometeorological (HydroMet) offices to maximise the dissemination of existing warnings, nor are they substantially engaging in the development or promotion of early action activities within communities. First response activities tend to be more traditional in nature, involving needs assessments and distribution of relief items, with occasional assistance with water pumping and house cleaning. DREF allocations for floods are primarily used for WASH, Shelter, Health, and Livelihoods, with both food and non-food item distribution and increased cash-based assistance. Operations have highlighted the need for psychological support and the importance of Community Engagement and Accountability. There are common challenges in strengthening disaster management capacities and spreading knowledge among volunteers and staff. In addition, the importance of logistical preparedness and pre-positioning of stocks is evident. Despite ad-hoc evidence, previous DREF operations indicate learning and improvement through these experiences. An overview of operations responding to extreme rainfall events underscores the significance of local capacity-building and community engagement. This aligns with the localized impact of heavy rain and the rapid onset of floods, particularly in mountainous regions, suggesting that National Societies at the branch level have opportunities to increase their participation in addressing extreme rain events.

Recommendations

Experience has shown that extreme rainfall leads to rapidly developing, localized, and unpredictable flooding events. This necessitates a specific approach to preparedness and response, contextualized within a strong general preparedness framework. The following strategic recommendations have been identified for how National Societies can continue to improve their preparedness and response capacities to extreme rain events:

The first set of recommendations focus on ensuring that **timely and relevant information** reaches the affected populations and the concerned responders. It recommends that National Societies strengthen community readiness by developing and disseminating accessible preparedness messages and checklists for individuals and households, improving information-sharing with HydroMet services, redistributing early warning messages with clear action-oriented guidance, and leveraging existing services to ensure inclusive outreach that motivates timely protective action.

The second set of recommendations around **enhanced risk awareness** aims to create an environment where timely early warning information prompts communities to act immediately and take responsibility. This is needed for locally led action to become the

default. For National Societies, this involves increasing understanding of community risk perception, raising public and volunteer awareness of early warning seriousness, advocating for regular local response plan exercises, and promoting the activation of existing response mechanisms to build experience among all stakeholders. For IFRC, it includes leading post-disaster lessons learnt workshops, supporting robust response actions and anticipatory measures for extreme rain events, and promoting the use of Enhanced Vulnerability and Capacity Assessment to support communities in assessing risks and co-creating early warning and preparedness messages through their preferred communication channels. The actions support the strengthening of regional disaster preparedness and readiness.

The third set of recommendations aims to **enhance internal capacities** of National Societies, particularly at the branch level, to integrate disaster risk management and the use of climate forecasts and projections into their activities and capabilities and to invest in strengthened local capacities ahead of disasters. National Societies should also liaise with relevant public authorities to ensure they fulfil their responsibilities for an adequate response, while ensuring that the added value of National Societies' community-based response capacities is recognized. This includes reviewing procurement systems and capacities to ensure readiness, enhancing staff knowledge of standard international tools, strengthening climate risk knowledge, exploring nature-based solutions, increasing staff and volunteers' knowledge on emergency procedures and preparedness, including for cash-based assistance systems, and reviewing the flood resilience of local buildings to ensure business continuity during disasters.

Policy Recommendations and Humanitarian Diplomacy Messages

The analysis of extreme rainfall events from 2021 to 2024 and the corresponding preparedness and response activities underscores the critical need for increased attention and investment in disaster risk management for extreme rainfall events and related fluvial and pluvial floods.

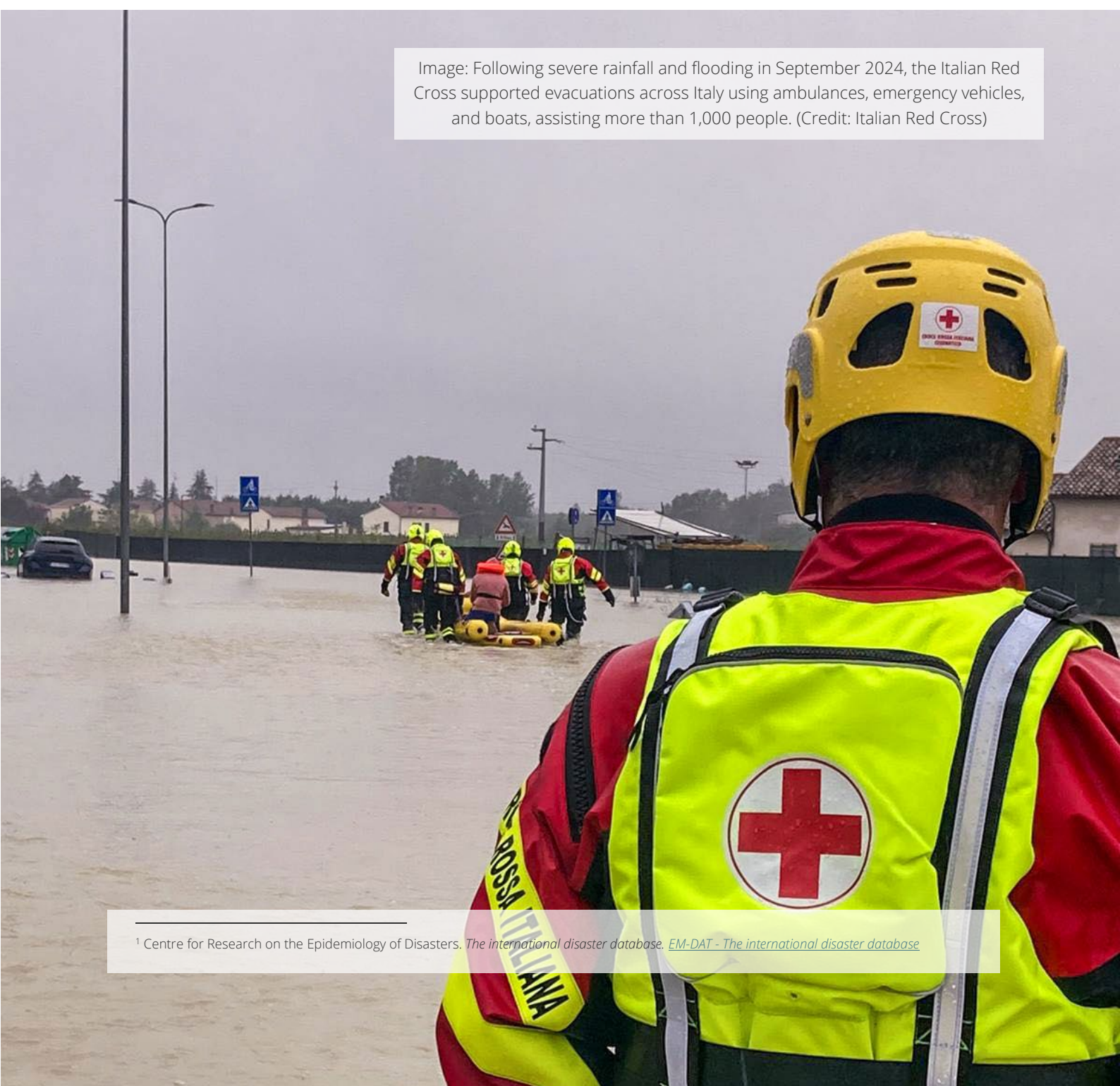
A proactive approach is essential not only to bolster National Society preparedness, particularly at the local level, but also to position National Societies as key preparedness and response actors vis-à-vis governments and local communities they serve. This includes advocating for greater integration of National Societies into local and national preparedness frameworks and response mechanisms. It must also incorporate awareness raising among communities and other key stakeholders about the urgency and potential impact of extreme rainfall events in Europe and Central Asia, including recognition of the vulnerabilities prevalent in regions that have not previously experienced disasters.

Because communities and local authorities often rely on subjective experiences rather than past data, evidence-based advocacy is essential to ensure disaster risk management decisions are grounded in objective information, helping strengthen preparedness, response, and locally led resilience efforts.

Introduction

There has been an increased frequency and growing impact of extreme rain events in Europe and Central Asia¹, with a greater number of floods caused by extreme rainfall events in the 2021 to 2024 period compared to prior periods, leading to numerous river and flash floods across various countries. These developments place pressure on the economy as well as the population and illustrate changing climate conditions. Recent events in Spain, Austria, Belgium, Germany, Switzerland and Croatia, to name but a few, represent how populations in several European countries are becoming increasingly vulnerable to natural hazards, and the most vulnerable groups in society are disproportionately affected.

Image: Following severe rainfall and flooding in September 2024, the Italian Red Cross supported evacuations across Italy using ambulances, emergency vehicles, and boats, assisting more than 1,000 people. (Credit: Italian Red Cross)



¹ Centre for Research on the Epidemiology of Disasters. *The international disaster database*. [EM-DAT - The international disaster database](#)

Preparedness is essential, along with longer-term adaptation and resilience measures, early and strategic investments in infrastructure, strategic urban planning and land use, early warning systems and communication, collaboration and coordination. The existing capacities across Europe and Central Asia need to be strengthened to effectively respond to more extreme weather events in the future, and to assist communities in addressing these events.

The rapidly changing risk landscape, with increasing risks and vulnerabilities, requires all preparedness and response actors, including the International Red Cross Red Crescent Movement, to make strategic choices in their adaptation, preparedness and response capacities and resources. However, the degree of preparedness varies across different countries due to differing levels of capacities, knowledge, resources and direct experience with extreme rainfall. These differences are observed among National Societies, governmental stakeholders, and civil society, necessitating preparatory research to foster a common understanding of the issue and contribute to a joint and consolidated approach.

Therefore, the International Federation of Red Cross and Red Crescent Societies (IFRC) Regional Office for Europe has commissioned this scoping study on extreme rain events in the region, with a focus on the time period 2021 to 2024. The purpose is to identify ways to maximize the impact of future Red Cross Red Crescent programming and operations in response to extreme rain and related flood events. The target audience of the scoping study includes the IFRC and National Societies in Europe and Central Asia, serving as a foundation for further discussions on enhancing flood risk reduction, adaptation, and preparedness at both national and international levels.

Background

Disaster preparedness, including anticipatory action, resilience, adaptation and disaster risk reduction, are clear objectives of the IFRC as demonstrated through various recent policies and strategies. The [‘IFRC Strategy 2030. Platform for Change. Global Reach, local action’](#) sets out as its first goal: *“People to anticipate, respond to and quickly recover from crisis.”* Reducing disaster impacts requires an understanding of the changing nature of hazards, vulnerability and exposure, and an enhancement of local and national response, preparedness and disaster risk reduction capacities. The first global challenge identified in the IFRC Strategy 2030 are climate and environmental crises and the Strategy states that *“changes to our climate and environment are already contributing to an increase in the frequency, intensity and unpredictability of severe weather events.”* Furthermore, more common and more costly - and deadly - disasters are expected to affect the coping ability of populations. The IFRC Strategy 2030 suggests several transformations to deal with these changes in the risk environment, including the support and development of National Societies as strong and effective local actors. In support of institutional preparedness, the National Society Preparedness for Effective Response (PER) approach outlines related guiding principles, including to incorporate system-wide perspectives to understand the complexity and

interconnectedness of adaptation, preparedness, anticipation, response and recovery actions; to build on evidence and objectivity to measure, analyse and track progress; and to nurture a culture of learning and excellence for improved humanitarian assistance.

The objectives of the IFRC Strategy 2030 reflect the purpose of the [Climate and Environment Charter for Humanitarian Organizations](#) to increase our response to the growing humanitarian needs and to work together to adapt to, and reduce the impacts of the climate and environmental crises. Through the Charter humanitarian organizations commit themselves to reducing risks and vulnerability across preparedness, response and recovery phases, embracing leadership of local actors and communities, and increase capacity to understand risks to develop evidence-based solutions. The Charter is guided by the latest scientific evidence and objectives of the 2015 Paris Agreement, Sendai Framework and Sustainable Development Goals (SDGs). The IFRC signed the Charter in 2021 and has identified specific targets aligned with the commitment to support National Societies in their climate change adaptation and disaster risk reduction activities, and to reach vulnerable people with activities addressing a broad range of climate risks.

A clear demonstration of this commitment by the IFRC Movement is the establishment of the [Red Cross Red Crescent Climate Centre](#) in 2002, which has a mission is to support the Movement and its partners to “*reduce the impacts of climate change and extreme-weather events on vulnerable people.*” The [Strategy of the Climate Centre](#) outlines three pathways to change: 1) harness scientific knowledge and influence research agendas, 2) inform policy, and 3) advance practical solutions to better manage rising risks.

Scoping study methodology

This scoping study builds on the commitments made by the IFRC to strengthen disaster preparedness and climate adaptation efforts across Europe and Central Asia. The focus of the study is on extreme rainfall events during 2021 to 2024, when several major episodes of heavy precipitation led to severe flooding across the region. The objective of this study is to enhance understanding of intense rainfall driven flood risks through historical climate and impact data analysis, as well as to draw lessons learned and identify gaps and recommendations that can lead to improved understanding, capacities and more effective preparedness and response for extreme rainfall events.

The research methodology follows a structured approach, beginning with a desktop analysis of the evolving risk landscape through a review of existing scientific and academic literature. This is complemented by mapping of policy and operational trends related to response to extreme rainfall events in Europe and Central Asia during 2021 to 2024, examining both broader developments and those specific to the IFRC Movement. Despite limitations, the exploration of risks and operational trends leads to the identification of a range of opportunities and recommendations for improved response preparedness and

effectiveness, and to the identification of narratives and evidence to be used in humanitarian diplomacy and advocacy at regional or country levels.

The methodology of the study relied mainly on the review of existing documentation, studies, operational reports, and lessons learned documents. A snowball sampling approach was applied to identify relevant documentation from key stakeholders from IFRC and National Societies.

To supplement the scoping study, a validation workshop was held online in October 2025, bringing together National Societies and IFRC representatives. The workshop aimed to validate the initial findings of the Study, unpack and contextualise key findings and recommendations, provide an opportunity for National Societies to reflect on the relevance of the findings and share practical insights from recent operations. A detailed workshop report can be found in Annex 1.

The study is expected to provide the groundwork for further discussions and validations of the conclusions and recommendations, as organized by the IFRC Regional Office for Europe.

Limitations of the study

This scoping study primarily builds on the desk review of existing reports and literature but did not include key informant interviews to gather additional details and perspectives from key stakeholders, which can be considered a limitation. However, given the objective of the scoping study and the short timeframe (February-March 2025), a literature review was considered an appropriate methodology to provide a solid foundation to support further discussions and analysis.

A key limitation related to the literature, particularly the English academic scientific literature, is that the predominant geographical focus is on Europe. The academic literature in other languages, including those relevant for Central Asian contexts was not reviewed for this study. As a result, there is an imbalance in the sources consulted, where the main operational reports are from [DREF operations](#) in Central Asia, Balkans and Caucasus, while the academic evidence base on climate change impacts and trends primarily relates to Europe, complemented by analyses of policy developments within the European Union. This reduces the comparative depth of region-specific scientific evidence for areas outside of Europe. Nevertheless, the scoping study deliberately targets the full geographic scope of the IFRC Regional Office, and it was therefore decided to maintain a focus on all regions even though some sections refer more to events and developments in one part of the region only.

Finally, it is difficult to strictly differentiate between lessons learned from National Society operations specifically and overall findings from disaster response in general, including from other response actors, as these sets of findings influence each other. The recommendations focus on areas and activities under the control of the National Societies and the IFRC in light of the broader operational response environment.

Chapter 1 – The Risk Environment in Europe and Central Asia

The objective of this chapter is to enhance understanding of changing weather patterns, flood risks, and their drivers in Europe and Central Asia. The chapter aims to address several questions: What trends can be observed, and what has changed in recent years— such as demographic shifts, urbanization, or other factors? Additionally, the chapter examines how climate change has influenced the magnitude, frequency, duration, timing and other factors of extreme rainfall events, and what is projected for the future in relation to pluvial and riverine flood risks, based on a summary of scientific literature.

Data

Historical data indicates a rise in heavy rainfall contributing to floods in Europe and Central Asia. According to EM-DAT, out of the 2308 recorded disasters, there were 755 flood events in Europe and Central Asia between 1900 and 2024, representing 33% of the total.² The majority of these flood events have occurred since 2000. Of the 755 flood events since 1900, there is an increase in the proportion of flood-related disasters attributed to heavy rainfall - from 53% over the entire period (1900-2024) to 64% in the last twenty-five years, and 82% in the past four years.

Since 2000, the human impact of this type of disaster is considerable, with almost 6.75 million people affected by flood events caused by heavy rains, and according to EM-DAT, there have been 1,876 casualties. In the focus period for this scoping study, namely 2021 to 2024, 49 heavy rain events in Europe and Central Asia have caused 384 deaths and affected 656,547 people.³

Key extreme rain disaster events in the period 2021-2024

From 2021 to 2024, Europe and Central Asia experienced several significant flood events due to extreme rainfall. Major disasters resulted in new records during this period. As a general trend in Europe, pluvial floods caused the majority of casualties, whereas fluvial floods were responsible for most of the economic damage.⁴ These large events included:

- On July 13-14 2021, over 200mm of rain fell in several western European countries including Germany, Belgium, and the Netherlands, caused by Storm Bernd resulting in

² A limitation of this data comparison is that disaster data from the 20th century is less comprehensive and precise compared to data collected after 2000.

³³ Centre for Research on the Epidemiology of Disasters. *The international disaster database*. [EM-DAT - The international disaster database](#)

⁴ European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

increased river discharge⁵ and floods leading to at least 212 fatalities⁶ and EUR 46 billion in damages⁷. Precipitation levels in certain regions of Belgium and Germany were the highest recorded since 1950⁸. Consequently, water levels in the Meuse and Rhine rivers reached the highest measurements recorded by the European Flood Awareness System since 1991. Storm Bernd then led to intense rainfall in the German alpine regions causing flash floods, debris flows and landslides.⁹ Similar events occurring in a specific area within the broader Western European region are estimated to happen approximately once every 400 years.¹⁰

- In 2023, at least twelve countries in Europe experienced major flood events, as well as more localized floods and flash floods.¹¹ In May 2023, record rains in Emilia-Romagna, Italy, led to floods causing 15 deaths and affecting 46,000 people.¹² Later in 2023, heavy rainfall in Slovenia affected 90% of the country, resulting in six deaths and impacting around 1.5 million people.¹³ Storm “Daniel” was responsible for torrential rains that caused pluvial and fluvial floods, resulting in casualties in Bulgaria, Spain, Türkiye and Greece.



Image: The Slovenian Red Cross and IFRC continue assisting flood-affected communities ten days after severe flooding caused by torrential rain in Slovenia (Credit: Slovenian Red Cross, August 2023).

⁵ Copernicus (2021). European State of the Climate. Flooding in Europe. <https://climate.copernicus.eu/esotc/2021/flooding-july>

⁶ European Centre for Disease Prevention and Control (2021). *Extreme rainfall and catastrophic floods in western Europe*. <https://www.ecdc.europa.eu/sites/default/files/documents/RRA-20210720-1799.pdf>

⁷ Finanz Nachrichten (Jan, 2022). *ROUNDUP: Munich Re: Naturkatastrophen richten 280 Milliarden Dollar Schaden an*

⁸ Copernicus (2021). European State of the Climate. Flooding in Europe. <https://climate.copernicus.eu/esotc/2021/flooding-july>

⁹ Poschlod, B. (2022). *Attributing heavy rainfall event in Berchtesgadener Land to recent climate change – Further rainfall intensification projected for the future*. Weather and Climate Extremes (38). <https://doi.org/10.1016/j.wace.2022.100492>

¹⁰ Tradowsky, J.S., Philip, S.Y., Kreienkamp, F. *et al.* Attribution of the heavy rainfall events leading to severe flooding in Western Europe during July 2021. *Climatic Change* 176, 90 (2023).

¹¹ European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

¹² EM-DAT Data

¹³ Ibid.

- In 2024, two consecutive rain events caused large-scale floods in Central and Southern Europe. From 12 to 15 September, a Vb depression¹⁴ called Boris resulted in exceptional rainfall over a large area across Poland, Czechia, Austria, Hungary, Germany and Slovakia resulting in a least 24 deaths. Although the frequency of such events has not necessarily changed, the occurrence of a Vb depression of this magnitude in the affected region was estimated to happen every 100 to 300 years¹⁵. Nevertheless, this event was said to be the heaviest ever recorded¹⁶, causing the worst flooding in the region since 2002.¹⁷
- At the end of October 2024, an upper-tropospheric cut-off low¹⁸ (also called Depresión Aislada en Niveles Altos (DANA) or cold drop) caused extreme precipitation in eastern Spain, resulting in 224 casualties - the deadliest flood event in Europe since 1967.¹⁹ Even when cut-off lows are a frequent reason of floods in the region, the event included a record amount of rainfall with some municipalities registering over 770 litres per square meters in 24 hours, which is nearly the typical annual rainfall.²⁰

During this four-year period, 2022 was an exception as annual precipitation in Europe fell below the average (-4% to -10% compared to averages for the 1991-2020 reference period²¹) marking it as one of the driest years on record. From May to August, Europe experienced a drought (with anomalies in May ranging from -21% to -28%)²², particularly in France, Italy, Switzerland, northern Germany, and southern Sweden, as well as countries west of the Black Sea. The Crete floods in October 2022 contrasted with the drier than average conditions. Despite regional variations, the 2022 drought may have contributed to effects observed in subsequent years.²³

Central Asia also experienced notable rainfall events during the period 2021-2024, with heavy rainfall in this area often results in mudflows and landslides. Several Central Asian countries were affected by significant rainfall during this period leading to a variety of hydro-meteorological extremes driven single and compound event disasters, including:

- In May 2021, heavy rainfall in Tajikistan caused severe flooding, landslides, and mudflows, leading to significant displacement and damage to homes and infrastructure. The

¹⁴ A Vb depression is a rare pressure system that can bring heavy rainfall when cold polar air flows from the north over the Alps meet very warm air from Southern Europe. This type of cyclone develops over the western Mediterranean and moves north-eastward.

¹⁵ World Weather Attribution (Sept. 25, 2024). *Climate change and high exposure increased costs and disruption to lives and livelihoods from flooding associated with exceptionally heavy rainfall in Central Europe*. <https://www.worldweatherattribution.org/climate-change-and-high-exposure-increased-costs-and-disruption-to-lives-and-livelihoods-from-flooding-associated-with-exceptionally-heavy-rainfall-in-central-europe/>

¹⁶ Ibid.

¹⁷ Climate Centre (Sept. 2024). Central Europe floods may be the worst since 2002. <https://www.climatecentre.org/14490/central-europe-floods-may-be-the-worst-since-2002/>

¹⁸ "A cut-off low, also known as a cold drop or upper-level low, is a high-altitude pocket of colder air and localised lower pressure. These systems are generally invisible on surface weather maps (pressure charts) but nevertheless influence the weather and can also lead to uncertainty in weather forecasts. Because it's no longer steered by the jet stream, a cut-off low can linger over one region for days, often bringing persistent rain, thunderstorms, and even flooding. These systems are especially tricky for meteorologists because they move unpredictably and can intensify local weather conditions. (Cut-off low - MeteoSwiss)"

¹⁹ World Weather Attribution (Nov 4, 2024). *Extreme downpours increasing in southeastern Spain as fossil fuel emissions heat the climate*. <https://www.worldweatherattribution.org/extreme-downpours-increasing-in-southern-spain-as-fossil-fuel-emissions-heat-the-climate/>

²⁰ Galvez-Hernandez, P., Dai, Y. & Muntaner, C. The DANA disaster: unraveling the political and economic determinants for Valencia's floods devastation. *Int J Equity Health* 24, 64 (2025). <https://doi.org/10.1186/s12939-025-02435-0>

²¹ Copernicus. Precipitation. European State of the Climate 2022. <https://climate.copernicus.eu/esotc/2022/precipitation>

²² Ibid.

²³ Ibid.

incident affected over 18,000 individuals and resulted in seven casualties. Approximately 250 households, particularly in the Khatlon province, experienced substantial damage.²⁴

- In August 2023, increased precipitation in the mountainous regions in Kyrgyzstan caused high volumes of water to flow down towards villages, resulting in mudflows and river spillovers affecting Ken-Suu, Bayzak, Taldy-Suu, Korumdu, and Koochu in the Tup district of the Issyk-Kul region. Approximately 13,000 people were affected. Similar events occurred in April and June 2024, impacting around 145,000 individuals in different regions. In April 2024, between 35% and 77% of the average monthly rainfall fell within hours in Osh, Jalal-Abad, Talas, Naryn, and Razakov city, causing mudslides that destroyed roads and damaged buildings and critical infrastructure. In June 2024, Osh, Jalal-Abad, Batken, and Talas received more rain in eight days than during an entire month.²⁵
- In April 2024 in Kazakhstan, extreme rainfall combined with rapid snowmelt due to a significant rise in temperatures, caused floods and affected 120,000 individuals. The event affected a large part of the country, and a state of emergency was declared in thirty locations across ten regions, with over 118,000 people evacuated, 12,000 residential buildings and 7,000 summer houses flooded.²⁶



Image: Floods and deadly mudslides caused by heavy rainfall damaged homes, farmland, and infrastructure in parts of Kyrgyzstan. The Kyrgyzstan Red Crescent swiftly mobilised to assist those affected (July 2024).

²⁴ DREF Final report, [Tajikistan Floods 2021](#).

²⁵ Respective DREF Final reports, [Kyrgyzstan floods 2023](#) and [2024](#).

²⁶ DREF Final report, [Kazakhstan floods 2024](#).

Climate change influence

The flood events resulting from extreme rainfall in 2021-2024 in Europe and Central Asia should be considered within the broader context of climate change. Clear connections have been identified between climate change and heavy precipitation for several disasters in Europe and Central Asia in the past five years. For example, the autumn and winter storm rainfall in the UK and Ireland in 2023-2024 were said to have been 20% heavier compared to pre-industrial levels due to climate change – specifically linked to the position and strength of the jet stream (North Atlantic Oscillation).²⁷ In November 2023, several countries around the Black Sea were affected by Storm Bettina which brought unusually heavy precipitation and high wind speeds, even though this type of storms occurs regularly in the region. The rainfall intensity was attributed to human-induced climate warming, but not the wind speeds.²⁸ Also the extreme rainfall in October 2023 in Cork, Ireland was attributed to global warming,²⁹ and the intense rainfall causing the 2023 floods and mudflows in Kyrgyzstan, as mentioned earlier, were equally linked to climate change and deviated significantly from normal precipitation levels.³⁰

Other flood events in this period can be assumed to be influenced by climate change, despite the absence of direct causal linkages, relying on uncertain estimates and theoretical assumptions, such as the rains caused by low-pressure system “Daniel” in Greece and Bulgaria in September 2023.³¹

However, not all events can be fully attributed to climate change, highlighting the need for nuanced approach to explain developments. For example, the role of climate change in the 2023 Emilia-Romagna floods could not be confirmed and there is no detectable increase in heavy rainfall in the region in the spring, however the IPCC projected changes for 2041-2060 in maximum precipitation for the December-January-February season indicates a slight increase. This relates to the observation that climate change actually decreases the number of low-pressure systems and heavy rainfall in Mediterranean,³² as will be further explained in the next paragraph.

²⁷ World Weather Attribution (May 22, 2024). *Autumn and winter storm rainfall in the UK and Ireland was made about 20% heavier by human-caused climate change.* <https://www.worldweatherattribution.org/autumn-and-winter-storms-over-uk-and-ireland-are-becoming-wetter-due-to-climate-change/>

²⁸ World Weather Attribution (Jan 30, 2024). *Climate change increased heavy precipitation associated with impactful Storm Bettina over Black Sea.* <https://www.worldweatherattribution.org/climate-change-increased-heavy-precipitation-associated-with-impactful-storm-bettina-over-black-sea/>

²⁹ World Weather Attribution (Feb 29, 2024). *Climate change made the extreme rainfall associated with flooding in Midleton, Ireland more likely and more intense.* <https://www.worldweatherattribution.org/climate-change-made-the-extreme-rainfall-associated-with-flooding-in-midleton-ireland-more-likely-and-more-intense/>

³⁰ Respective DREF Final reports, *Kyrgyzstan floods 2023* and *2024*.

³¹ World Weather Attribution (Sept 19, 2023). *Interplay of climate change-exacerbated rainfall, exposure and vulnerability led to widespread impacts in the Mediterranean region.* <https://www.worldweatherattribution.org/interplay-of-climate-change-exacerbated-rainfall-exposure-and-vulnerability-led-to-widespread-impacts-in-the-mediterranean-region/>

³² World Weather Attribution (May 21, 2023). *Limited net role for climate change in heavy spring rainfall in Emilia-Romagna.* <https://www.worldweatherattribution.org/limited-net-role-for-climate-change-in-heavy-spring-rainfall-in-emilia-romagna/>

Observed changes in precipitation

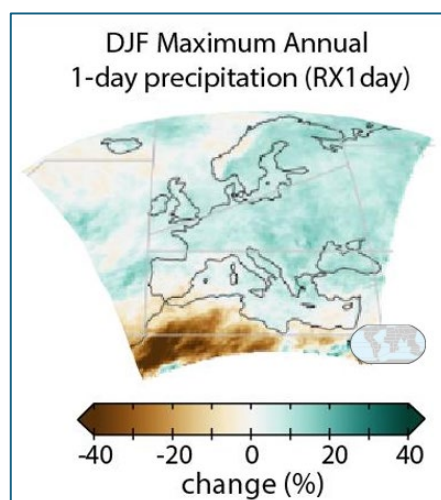


Figure 11: Projected Changes for 2041-2060 relative to 1995-2014 (DJF = Dec to February). Source: IPCC 6th Assessment Report, Fact Sheet Europe

In Europe, changes in temperatures can be observed leading to an increase in days and nights with significantly above average temperatures, surpassing global average temperature changes, along with anticipated alterations in precipitation patterns.³³ An increase in rainfall, for example over the December – February period, is projected and in some cases has been observed in Europe, partly due the higher water-holding capacity of a warmer atmosphere and changes in atmospheric circulation patterns. However, the intensity and frequency of rainfall depend on the region and season. Summers are notably becoming drier due to enhanced evaporation and higher-than-average temperatures, particularly in southern and central-eastern Europe³⁴. The example of the extreme rains in Valencia in 2024 indicates that cold drop systems might be more stationary and that the warmer temperatures of the Mediterranean may increase their intensity. Conversely, the majority of Europe, including northern and eastern Europe is experiencing wetter winters, and is projected to see increasingly wetter winters in the future (Fig. 1). Mountainous areas are especially at risk for extreme precipitation events.³⁵ The at-times contrasting effects of climate change were particularly visible in 2024, with extremely dry and often record-warm weather in the east, but warm and wet conditions in the west.³⁶ More relevant to the topic of this study, extreme precipitation and pluvial flooding are forecasted to escalate in all regions except the Mediterranean.³⁷ The intensity of the maximum amount of rain for one day in the summer

³³ IPCC. Sixth Assessment Report: Working Group 1 – The Physical Science Basis. Regional fact sheet – Europe. https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Europe.pdf

³⁴ Ibid.

³⁵ European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

³⁶ Copernicus (Apr 15, 2025). European State of the Climate: Striking east-west contrast and widespread flooding in Europe's warmest year. <https://climate.copernicus.eu/european-state-climate-striking-east-west-contrast-and-widespread-flooding-europes-warmest-year>

³⁷ IPCC. Sixth Assessment Report: Working Group 1 – The Physical Science Basis. Regional fact sheet – Europe. https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Europe.pdf

increased by 3 to 19% in Western Europe during 2021, as demonstrated in Figure 3.³⁸ In Austria for example, there has been an 8% increase in daily and a 15% increase in hourly heavy rainfall in the last four decades based on data from 1900 to 2023.³⁹ IPCC indicates that glacier, snow and permafrost decline has altered the frequency, magnitude and location of most related natural hazards (high confidence).

The link between increased precipitation and frequency of river flooding in Europe is not fully clear, as some studies indicate.⁴⁰ The Intergovernmental Panel on Climate Change (IPCC) states that *“there is not always a one-to-one correspondence between an extreme precipitation event and a flood event, or between changes in extreme precipitation and changes in floods, because floods are affected by many factors in addition to heavy precipitation. Changes in extreme precipitation may be used as a proxy to infer changes in some types of flash floods that are more directly related to extreme precipitation.”*⁴¹ For instance, analysis of the most extensive river flow database reveals an increase in flood frequency in north-western Europe from 1960 to 2010. Conversely, there has been a decrease in flood occurrences in medium and large catchments in southern Europe, as well as a decline in eastern Europe.⁴² Other studies though identify clear linkages between increased daily heavy rainfall changes and observed flood increases, especially in small catchments.⁴³

In Central Asia, climate change is expected to affect the semi-arid and arid regions, especially due to changes in extreme precipitation events.⁴⁴ Temperatures are anticipated to rise, with an increase in heat extremes and a reduction in cold extremes. It is reasonably certain that average and heavy precipitation will increase across Asia at large, as illustrated in Figure 2, while the melting of glaciers and permafrost will contribute to river levels and instability of mountain slopes, making them more vulnerable to landslides following extreme rainfall. Especially in elevated areas, such as Central Asia, an increase in extreme precipitation can be observed with seasonal variations: less precipitation in summer and more in winter.⁴⁵ Projections estimate a 50% rise in average annual precipitation in Central Asia, alongside

³⁸ Tradowsky, J.S., Philip, S.Y., Kreienkamp, F. *et al.* Attribution of the heavy rainfall events leading to severe flooding in Western Europe during July 2021. *Climatic Change* 176, 90 (2023).

³⁹ Haslinger, K., Breinl, K., Pavlin, L. *et al.* Increasing hourly heavy rainfall in Austria reflected in flood changes. *Nature* 639, 667–672 (2025).

⁴⁰ Blöschl, G., *et al.*, 2019, 'Changing climate both increases and decreases European river floods', *Nature* 573(7772), pp. 108–111 (DOI: 10.1038/s41586-019-1495-6).

⁴¹ Seneviratne, S.I., X. Zhang, M. Adnan, W. Badi, C. Dereczynski, A. Di Luca, S. Ghosh, I. Iskandar, J. Kossin, S. Lewis, F. Otto, I. Pinto, M. Satoh, S.M. Vicente-Serrano, M. Wehner, and B. Zhou, 2021: Weather and Climate Extreme Events in a Changing Climate. In *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1513–1766

⁴² European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

⁴³ Haslinger, K., Breinl, K., Pavlin, L. *et al.* Increasing hourly heavy rainfall in Austria reflected in flood changes. *Nature* 639, 667–672 (2025).

⁴⁴ Gummedi, S., Samineni, S. & Lopez-Lavalle, L.A.B. Assessing high-resolution precipitation extremes in Central Asia: evaluation and future projections. *Climatic Change* 178, 29 (2025). <https://doi.org/10.1007/s10584-025-03872-0>

⁴⁵ IPCC. Sixth Assessment Report: Working Group 1 – The Physical Science Basis. Regional fact sheet – Asia. https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Asia.pdf

increases in maximum one-day rainfall and the number of days with over 10 mm of rain, due to rising temperatures, and fewer dry days in parts of the region.⁴⁶

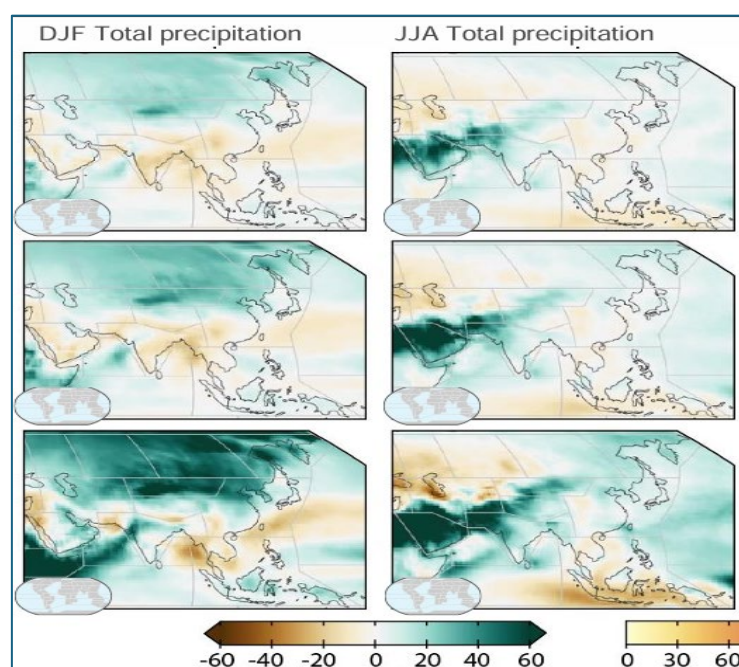


Figure 2: Projections at 1.5°C, 2°C and 4°C global warming for precipitation in (Central) Asia . DJF = Dec-Feb. JJA = June-August). Source: IPCC 6th Assessment report. Regional Fact Sheet Asia.

Expectations for the future

The effects of extreme rainfall are influenced by the rising occurrence of droughts and **heatwaves**. Intense heat is associated with extreme rainfall in two ways: 1) extreme heat may increase the likelihood of extreme rainfall, and 2) heat and drought can cause dry and compact soils, reducing water infiltration and exacerbating the impact of extreme precipitation. This was also evident in the September 2024 floods in Central Europe, where dry soils amplified the impact of the rain. A combination of both extremes is predicted to become more frequent, especially in Europe.

Projections for the current decade and immediate future (2021-2040) indicate an increase in heavy to extreme precipitation in the broad Europe and Central Asian region, independent of warming trends, likely leading to more extreme flooding. Research indicates that most of Europe, excluding southern regions, may experience significant rises in both extreme precipitation and average precipitation under all future scenarios. Short-duration extreme precipitation is particularly expected to increase.⁴⁷ Extreme peak-flow with a return period of 100 years is expected to increase in all Europe. For the period 2041-2060, this trend is expected to continue, especially in northern and western Europe, resulting in increased risk

⁴⁶ Gummadi, S., Samineni, S. & Lopez-Lavalle, L.A.B. Assessing high-resolution precipitation extremes in Central Asia: evaluation and future projections. *Climatic Change* 178, 29 (2025). <https://doi.org/10.1007/s10584-025-03872-0>

⁴⁷ Huo et al. *Extreme Precipitation Changes in Europe from the Last Millennium to the End of the Twenty-First Century*, January 2021.

of pluvial floods. Heavy precipitation has been identified by the IPCC AR6 as a key climate risk for Europe and Central Asia, as demonstrated in Figure 5.⁴⁸

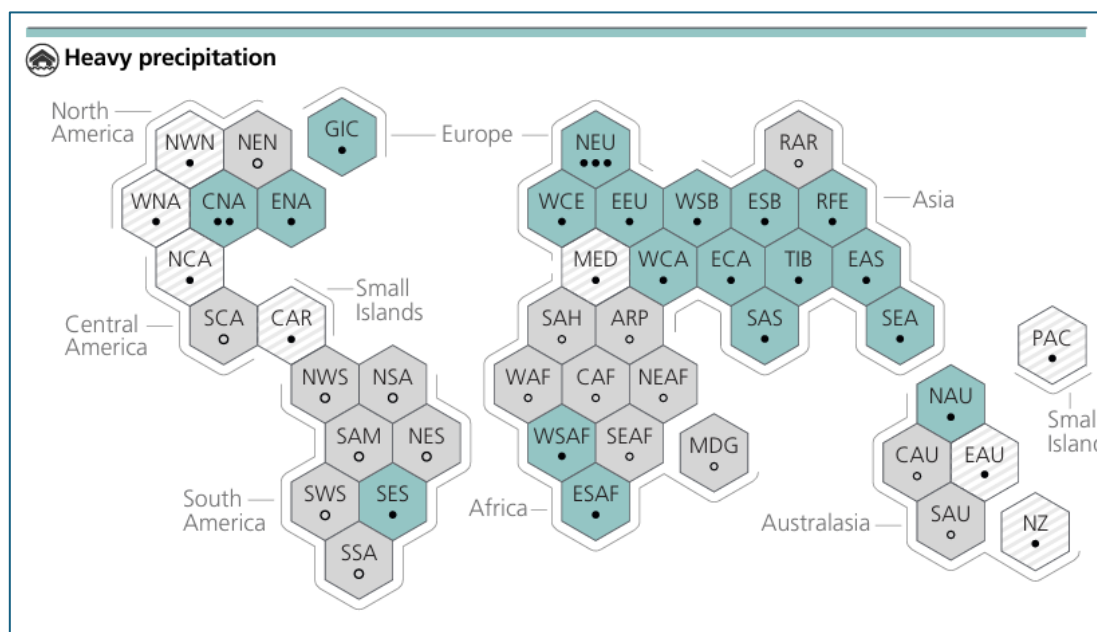


Figure 3: Global projections for changes in heavy precipitation events. Blue colour indicates increase, grey colour indicates limited data/literature, hatching means low agreement in the type of change. Source: IPCC_AR6_SYR_LongerReport.pdf

However, simulations of extreme flows using regional hydrological models remain challenging. In addition to uncertainties regarding the magnitude and locations of future floods, predicting their duration and geographic extent, as well as expected impact remains a challenge. The economic impact of the floods will depend on the prosperity of the region, while fatalities are likely to be higher in areas with high socio-economic vulnerability and aging populations.⁴⁹ In case of the high emissions climate scenario, the Joint Research Centre estimates that 484,000 people in Europe will be exposed to river flooding each year, and up to 2.2 million to coastal flooding, potentially leading to up to 340 deaths per year.⁵⁰

As factors driving exposure and vulnerability evolve over time, existence and changes in non-climatic contributing factors increasingly must be considered. For example, the rise in number of households and infrastructure exposed to river floods, resulting in increased economic damage, increasingly leads to new and expanding 'hot spots' of risk⁵¹. Also urbanization, soil degradation, poor (drainage) infrastructure and prevention infrastructure influence the likelihood of extreme rain turning into flood events. Between 2011 and 2021, the population living in potential riverine flood-prone areas in Europe increased by over 935,000 people. This results in approximately 12% of the European population residing in

⁴⁸ IPCC, 2023: Sections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115, [doi: 10.59327/IPCC/AR6-9789291691647](https://doi.org/10.59327/IPCC/AR6-9789291691647)

⁴⁹ European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

⁵⁰ European Environment Agency. *Responding to climate change impacts on human health in Europe: focus on floods, droughts and water quality*. EEA Report 3/2024.

⁵¹ European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

areas susceptible to river flooding, especially in Central and Central-Eastern Europe⁵² Exposure to flooding continues to increase with the disruption of floodplains used for urban development and economic activities, including such development which leads to some extent of social benefit such as healthcare and educational facilities.⁵³ While the connection between impact, hazard, vulnerability and exposure is clear, more research is needed on the attribution of changes in the probability or magnitude of flood events to human influence, due to limited number of studies and large modelling uncertainties.⁵⁴

Land regions	Northern Europe			Western Europe			Central-Eastern Europe			Southern Europe			European regional seas		
	Past	Future		Past	Future		Past	Future		Past	Future			Past	Future
		Low	High		Low	High		Low	High		Low	High			
Mean temperature	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	Sea surface temperature	↗	↗
Heat wave days	□(*)	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			
Total precipitation	↗	↗	↗	↗	/	↘	↗	↗	/	↘	↘	↘	Sea level	↗	↗
Heavy precipitation	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			
Drought	↗	↘	↘	↗	/	↗	↗	/	↗	↗	↗	↗			

Figure 4: Observed and projected trends in key climate-related hazards in different European regions (Source: EUCRA)

In conclusion, changes in terms of extreme rainfall in Europe and Central Asia are evident. This is visible based on historical data on events, including their frequency and impact. Some regions experience recurring disasters and can be considered more vulnerable to the effects of extreme rain events. This is also observable in analyses of climate change influence and predictions for the future, based on various climate change models. It is apparent that in the future, more extreme rain events will occur. However, the extent to which these extreme rain events will cause large-scale floods and have economic and human impacts should be assessed. Other factors need to be considered when anticipating future extreme rain events and predicting their impact, including the vulnerability of regions, exposure, and combination with other types of disasters. The latter offers a window of opportunity to learn how to better deal with such events. Extreme weather does not have to become a disaster.

⁵² European Environment Agency. *Responding to climate change impacts on human health in Europe: focus on floods, droughts and water quality*. EEA Report 3/2024.

⁵³ European Environment Agency, Floods, <https://discomap.eea.europa.eu/climatechange/?page=Floods&views=Who-and-what-is-at-risk%3F-->

⁵⁴ Seneviratne, S.I., X. Zhang, M. Adnan, W. Badi, C. Derczynski, A. Di Luca, S. Ghosh, I. Iskandar, J. Kossin, S. Lewis, F. Otto, I. Pinto, M. Satoh, S.M. Vicente-Serrano, M. Wehner, and B. Zhou, 2021: Weather and Climate Extreme Events in a Changing Climate. In *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1513–1766

Chapter 2 - Operational Response in Europe and Central Asia

This chapter examines changes in preparedness and response activities due to recent extreme rain events. It begins with an overview of general operational trends for both IFRC Movement Partners and other stakeholders. The identification of trends occurred based on general literature and responses from various National Societies and, reports from various operations in Europe and Central Asia, funded by IFRC-DREF) or not. As the policy framework set by the European Union is more pronounced for Europe, there is an unavoidable emphasis on this region. To provide practical lessons learned and good practices encountered by National Societies, a comparative analysis of DREF operations to extreme rainfall events from 2021-2024 was conducted. This aimed to identify operational trends and gaps that can inform strategic recommendations for future improvements. Several of these elements are also relevant for other response operations, even when not part of the DREF mechanism.

Identification of overall preparedness and response trends

Increased focus on preparedness, resilience and adaptation

Recognizing the challenges posed by climate-related events and particularly by climate-related extremes on the health and livelihoods of the population, there is growing focus on preparedness, resilience and adaptation, even though gaps remain.

Some National Societies have already engaged in disseminating messages to the population on risks they face and how to prepare for various types of disasters and crises. Examples include British⁵⁵ and Austrian⁵⁶ Red Cross which prepared checklists for basic items needed in households, and the latter also established an app to inform people with additional knowledge and practical guidance. The German Red Cross outlines the impacts of climate change on its website and warns about the risks associated with flooding.⁵⁷ The Red Cross of Montenegro supported flood-prone communities in the Skadar Lake basin in strengthening their resilience and to make risk-informed decision⁵⁸. In general, recurring extreme weather events contribute to a conducive environment for preparedness work and present an opportunity to further reinforce effort on resilience and adaptation. For example, after the [2022 Bulgaria floods](#), post-distribution monitoring revealed that affected people

⁵⁵ British Red Cross. *Floods in the UK: advice on staying safe and protecting your home*. <https://www.redcross.org.uk/get-help/prepare-for-emergencies/how-to-prepare-for-floods-and-flooding>

⁵⁶ Austrian Red Cross. *Katastrophenvorsorge*. <https://www.rotekreuz.at/katastrophenvorsorge>

⁵⁷ German Red Cross. *Katastrophen Überschwemmungen*. <https://www.drk.de/hilfe-weltweit/wann-wir-helfen/katastrophe/ueberschwemmungen/>

⁵⁸ Red Cross EU Office, 2020. *Red Alert. National Red Cross Societies managing disaster risks in Europe*. <https://redcross.eu/uploads/files/Latest%20News/Red%20Alert/Red%20Alert.pdf>

had increased knowledge on how to react to crises and how to recognize early warning signals.

Particularly in Europe, disaster preparedness and adaptation activities need to be situated within the larger policy context. Considering growing climate risks, the European Union (EU) Preparedness Union Strategy was launched in March 2025 with the aim *“to support Member States and enhance Europe's capability to prevent and respond to emerging threats”*. It adopts an all-hazards perspective and advocates for a comprehensive all of society and all of government approach. This framework holds particular relevance for National Societies as some of its core components align to the established ambitions of the Red Cross Red Crescent Movement, including foresight and anticipation, resilience, population preparedness, anticipatory action, response coordination and civil-military cooperation.⁵⁹ The Strategy complements broader EU policy frameworks, including the EU's Adaptation Strategy to Climate Change calling for the development of adaptation strategies at national, regional and local level⁶⁰, the Green Deal and the mandate of the EU Civil Protection Mechanism (UCPM). Given the rise in UCPM activations for floods in Europe (six activations in both 2023 and 2024, including responses in France, Czech Republic, Poland, Armenia, Bosnia and Herzegovina, and Spain⁶¹) there is significant potential to strengthen collaboration between NSs and UCPM on flood risk preparedness, anticipatory action and response in Europe and its neighbouring States, including Central Asia, the Caucasus and the Balkans where UCPM assistance can also be requested.

The European Commission also promotes improved disaster risk management through various policies, directives and tools in which the activities of the European National Societies can be framed. The principal legislation governing flood management in the EU is known as the Floods Directive, which is founded on the principle of solidarity, and mandates EU Member States to create river basin management plans to mitigate the impacts of floods. It also calls for cooperation in civil protection assistance interventions from Member States during major flood emergencies under the UCPM.⁶² The Water Framework Directive is also important for disaster risk management, whereby the Commission is currently developing a European Water Resilience Strategy to *“make Europe water-resilient, ensuring that water sources are properly managed and scarcity is addressed.”*⁶³ In February 2023, a set of Disaster Resilience Goals were adopted under the UCPM to strengthen disaster prevention and risk management and to call for improved prevention measures⁶⁴. Furthermore, the EU supports

⁵⁹ European Commission (Mar 26, 2025). *EU Preparedness Union Strategy to prevent and react to emerging threats and crises*. https://ec.europa.eu/commission/presscorner/detail/en/ip_25_856

⁶⁰ European Commission (Feb 24, 2021). *Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0082>

⁶¹ European Commission (Jan 9, 2025). *EU Civil Protection Mechanism activations in 2024*. Union Civil Protection Knowledge Network. <https://civil-protection-knowledge-network.europa.eu/news/eu-civil-protection-mechanism-activations-2024>

⁶² [Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks](#).

⁶³ European Commission. *Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Water Resilience Strategy*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52025DC0280>

⁶⁴ European Union (2021). *European disaster resilience goals*. https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/european-disaster-risk-management/european-disaster-resilience-goals_en

initiatives aimed at heavy rain risk reduction, such as RAINMAN, which offers a toolbox for integrated environmental management by regional and local administrations.⁶⁵

Even though floods became a primary concern for many countries in 2020⁶⁶, some gaps remained in the national preparedness systems of European states. A 2024 report on the progress of Article 6 of the UCPM Decision⁶⁷ indicates that most Member States and Participating States have disaster risk management frameworks in place, supported by various coordination mechanisms. The report highlights the need to strengthen risk awareness raising and early warning systems. In particular, flood risks associated with smaller river catchments have historically received limited attention, despite their growing significance, while the magnitude and frequency of past extreme flood events are often underestimated in the design of flood protection infrastructure⁶⁸. For instance, in Germany's Ahr catchment, flood estimates relied on gauge records beginning in 1946, but historical events like those in 1804 and 1910, which were comparable to the July 2021 flood, were overlooked⁶⁹.

With the support of the European Commission, adjustments to response needs are ongoing. This requires response organizations to understand the context of the changing climate. For example, an analysis of 'Displacement and migration in a changing climate'⁷⁰ highlights the need to enhance anticipatory actions to strengthen preparedness. There are some examples from National Societies on how they increased their preparedness. In Kyrgyzstan, the reoccurring rain events in 2024 re-emphasized the need for the [Kyrgyzstan Red Crescent Society](#) to better support communities before, during and after disasters. With funding from ECHO Programmatic Partnership Project (PPP), local disaster management committees have been established, local residents have been trained in disaster risk reduction, community risk maps have been developed and small-scale mitigation projects have been launched. This highlights the importance of combining a better understanding of risks with updated scenarios and response planning to ensure that lessons learned are incorporated, and response actions are contextualized. National Societies, along with other civil society organisations, can support inclusive local adaptation planning processes and ensure that vulnerable groups and areas are included in the planning and implementation of adaptation solutions. The Europe Mission on Adaptation funds initiatives to assist local authorities in the EU and neighbouring regions in their efforts to strengthen adaptation and resilience to the climate crisis, aiming to support at least 150 European regions and communities towards climate resilience by 2030.

⁶⁵ Interreg Central Europe. Rainman. <https://programme2014-20.interreg-central.eu/Content.Node/RAINMAN.html>

⁶⁶ European Commission. *Report from the Commission to the European Parliament and the Council on Progress on implementation of article 6 of the Union Civil Protection Mechanism (Decision No 1313/2013/EU). Preventing and managing disaster risk in Europe.* COM (2024, 12.3.2024).

⁶⁷ Article 6 of the UCPM Decision calls for an effective disaster risk management framework, especially for disaster prevention to enhance protection and resilience

⁶⁸ European Environment Agencies. *European Climate Risk Assessment.* EEA Report 1/2024.

⁶⁹ Galvez-Hernandez, P., Dai, Y. & Muntaner, C. The DANA disaster: unraveling the political and economic determinants for Valencia's floods devastation. *Int J Equity Health* 24, 64 (2025). <https://doi.org/10.1186/s12939-025-02435-0>

⁷⁰ IFRC. *Displacement and Migration in a Changing Climate. The Role of National Societies in Europe.* DRAFT.

The need to enhance anticipatory action

IFRC plans and strategies are clear about their ambitions to strengthen anticipatory action. [Resolution 5 of the 34th International Conference of the Red Cross and Red Crescent](#), adopted in October 2024, calls on States to support each other and the Movement components to work on anticipatory action⁷¹. The [Climate and Environment Charter for Humanitarian Organizations](#) states that “we will reduce risks and vulnerability to shocks, stresses and longer-term changes through an increased focus on climate change adaptation, disaster risk reduction and anticipatory action.” IFRC’s Strategy 2030 aims to enable people not only to respond but also to anticipate crises. This ambition has been translated in several guidance documents, such as the 2021-2025 Operational Framework for Anticipatory Action.⁷² The Framework, which supports the Council of Delegates’ resolution on *Strengthening Anticipatory Action: Our Way Forward*, sets clear targets by 2025, including that 80 National Societies are engaged in anticipatory action and 25% of DREF is allocated to anticipatory action.⁷³ While DREF is only one mechanism, it is considered important to increase pre-arranged disaster funds to enable faster, earlier responses that protect communities, address diverse needs, and expand people’s choices and agency. Other instruments include replenishment guarantees for countries and entities for disaster risk financing instruments to support anticipatory action such as contingency funds, crisis modifiers, pooled funds for preparedness and climate-smart initiatives at local level.

Acknowledging that anticipatory action depends on timely early warning, a review of recent extreme rain event response operations in Europe indicates substantial room for improvement to undertake anticipatory actions. In 2022, anticipatory action was used in nearly forty countries globally, yet little evidence exists for its use in the European context for extreme rain events. An exception is the German Red Cross, which took first steps towards anticipatory action as of 2023 and prepared a pilot project at branch level to address cold and heat waves and floods.⁷⁴ After the 2023 flood event in [Georgia](#), the Austrian Red Cross supported the Georgian Red Cross Society with a Feasibility Study into the development of a trigger mechanism to enhance its anticipatory action capacity for future floods. Since 2019, the Red Crescent Society of Tajikistan has been implementing early action protocols for cold waves and heatwaves.⁷⁵ Several National Societies in the region have an interest in developing flood EAPs.

A concrete opportunity to integrate more anticipatory action and readiness into preparedness efforts is the expanded use of the IFRC-DREF Anticipatory Pillar, which provides reliable and predictable financing for National Societies to implement anticipatory

⁷¹ IFRC (Oct, 2024). *Protecting people from the humanitarian impacts of extreme climate and weather events: Working together to strengthen anticipatory action* [Resolution 34IC/24/R5]. https://rcrcconference.org/app/uploads/2024/11/34IC_R5-Anticipatory-Action-EN-1.pdf

⁷² Anticipatory Action is defined in this framework as “a set of actions taken to prevent or mitigate potential disaster impacts before a shock or before acute impacts are felt.”

⁷³ IFRC. *IFRC Operational Framework for Anticipatory Action 2021-2025*. [IFRC Operational Framework for Anticipatory Action 2021-2025 final 0.pdf](#)

⁷⁴ Red Cross EU Office (Feb 25, 2021). *Anticipation Hub: striving to make anticipatory humanitarian action the new norm*. <https://redcross.eu/latest-news/anticipation-hub-striving-to-make-anticipatory-humanitarian-action-the-new-norm>

⁷⁵ IFRC. *Displacement and Migration in a Changing Climate. The Role of National Societies in Europe*. DRAFT.

action. This financing mechanism should be coordinated with broader risk reduction and anticipatory action measures and be aligned with national strategies, as well as local and national coordination mechanisms. Between 2009 and 2024, sixteen imminent DREF operations were launched in the Europe region. None of these were related to floods or extreme rain events even though some of these flood events were forecast and took place in countries with a history of large-scale floods. To address this gap, the IFRC has been disseminating information to National Societies in Europe and Central Asia about the possibility of using the DREF's Anticipatory Pillar for forecast-based action (FbA) for low-frequency events⁷⁶, as it has been done for other hazards including heatwave and cold wave. This process has highlighted the need to strengthen National Society staff knowledge about existing international tools, to be applied domestically, and the importance of developing anticipatory action plans based on pre-defined and pre-agreed triggers. A relevant initiative in this context is the multi-stakeholder Risk Informed Early Action Partnership (REAP), which aims to enhance early action efforts and improve capacity to act on risks identified.

The potential of effective early warning

The deadliest and most expensive disasters in the past two decades were predicted⁷⁷, emphasizing the significance of early warning systems. The [IFRC Global Climate Resilience Platform](#) advocates for people-centred early warning systems, and highlights the strong potential of early warning and early action to save lives and livelihoods, offering cost-efficiency and a higher return on investment compared to post-facto response. Enhancing the efficacy of early warning mechanisms is a fundamental goal of disaster risk management within the IFRC.

While the concept of early warning early action is broadly accepted in the Movement and amongst emergency responders at large, a review of past events indicates the overall challenges associated with early warning for extreme rain events in Europe and Central Asia. This observation relates to early warning at all levels, including national early warning, early warning within National Societies to expedite response and dissemination of early warnings of Meteorological Services to networks and communities to activate early actions. The examples identified, illustrate the critical gaps and offer a compelling case for improvements in early warning practices to safeguard communities and mitigate disaster impacts.

For instance, the 2021 floods in Germany, Belgium and the Netherlands, considered one of the costliest disasters in Europe in the last fifty years, were preceded by meteorological and hydrological forecasts that identified a high likelihood of extreme rainfall and significant flood risk several days in advance. However, the unprecedented severity and local impacts of the event were not fully anticipated, highlighting the challenges of translating forecasts into timely preparedness and response actions. The event revealed inadequacies within the early warning systems. In the German Ahr valley, where 134 people died, a systemic failure of early

⁷⁶ There is a minimum 5-year return period for EAPs (less for sEAPs).

⁷⁷ Coughlan de Perez E., et al., 2022. Learning from the past in moving to the future: Invest in communication and response to weather early warnings to reduce death and damage. *Climate Risk Management* (38). <https://doi.org/10.1016/j.crm.2022.100461>

warning and emergency management systems was observed⁷⁸. Studies conclude that forecasts identified a high likelihood of exceptionally heavy rainfall and the potential for severe flooding in the affected region up to two days in advance. The key communication, interpretation and translation of forecast information into preparedness actions⁷⁹. In Germany, hydrological forecasts anticipated higher streamflow and water levels at gauges. However, they did not accurately predict the physical characteristics of the flooding or its potential societal impacts, resulting in insufficient impact-based forecasting. Another key lesson from the 2021 rain event was the need for better distribution of early warning messages⁸⁰, along with clearer information on expected impacts to effectively inform households in flood-prone areas. The complexity of communicating risk increases as areas previously not at risk (or at low risk) to floods, are facing rising risk levels now and in the future. This means certain communities in areas that may have been at relatively low risk or near zero risk may require a different approach to communication of risk and warning messages.

Another example of a costly extreme rain event with a missed opportunity for effective early warning was the October 2024 floods in Valencia. There has been criticism that the severity of the flash floods associated extreme precipitation events driven by the presence of an upper-tropospheric cut-off low⁸¹ (known in Spanish as DANA) was unnecessarily worsened by political and economic factors, including unregulated urbanisation in flood-prone areas. A researcher from the University in Valencia noted that *“The intensity of the DANA does not align with the severity of the tragedy.”* One contributing factor was the inadequacy of early warning systems, even though the Spanish National Meteorology Agency issued a red weather alert at least eight hours in advance. The governmental agency responsible for managing water resources also issued real-time alerts regarding rising water levels and emergency scenarios. However, some public communications may not have accurately conveyed the level of risk⁸². Reports suggest that flood maps did not provide sufficient coverage for this event, as some streets experienced flooding that was not accounted for in the 500-year return period risk maps. This meant that preparedness for these specific zones was limited, influencing the distribution of early warning messages and affecting actions. A mass emergency cell phone alert was eventually issued by the Valencian government, but it was too late for many residents to act, nor did it reach all affected residents. The population was not properly informed to take precautions and avoid risky behaviours during emergencies. Timely alerts

⁷⁸ European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

<https://www.eea.europa.eu/en/analysis/publications/european-climate-risk-assessment>

⁷⁹ MOHR Susanna et al. *A multi-disciplinary analysis of the exceptional flood event of July 2021 in central Europe – Part 1: Event description and analysis*. *NHESS - A multi-disciplinary analysis of the exceptional flood event of July 2021 in central Europe – Part 1: Event description and analysis*

⁸⁰ UNU-EHS, UNU-CRIS, UNU-MERIT (2023). Building climate resilience: Lessons

from the 2021 floods in Western Europe. Bonn, Germany; Brugge, Belgium;

Maastricht, Netherlands. collections.unu.edu/eserv/UNU:9123/UNU-EHS_CRI_230518pdf.pdf

⁸¹ World Weather Attribution (Nov 4, 2024). Extreme downpours increasing in southeastern Spain as fossil fuel emissions heat the climate.

<https://www.worldweatherattribution.org/extreme-downpours-increasing-in-southern-spain-as-fossil-fuel-emissions-heat-the-climate/>

⁸² At the time of the red weather alert, the President of the Valencian Government, Carlos Mazón, held a press conference stating that *“the storm is moving toward the Serranía de Cuenca, so its intensity is expected to decrease across the rest of the Valencian Community around 6:00 pm”*.

could have prevented loss of life and increased awareness among residents to seek safer places⁸³ and support different behaviour during these unprecedented events.

The importance of direct collaboration and information exchange between National Societies and National Meteorological and Hydrological Services is increasingly recognized. Although public early warning was delayed in the examples provided, information from the National Meteorology Agency (State Meteorological Agency (Agencia Estatal de Meteorología), universally known as AEMET) enabled the Spanish Red Cross to initiate actions and carry out evacuations a day before the event. The Red Cross Red Crescent Climate Centre has published an updated [guide to help National Societies improve their collaboration with Meteorological and Hydrological Services](#).⁸⁴ The guide notes that this cooperation needs to be based on shared, formalized mandates and participation in disaster management working groups, and highlights the potential for early warning through timely access to weather and climate information. For example, National Societies are encouraged to “*help ensure that the communication of forecasts is simplified, context-specific and delivered in the right language at the right time*” and to assist in raising public awareness of weather forecasts, alerts and early warning systems, bridging national and community-level efforts.⁸⁵

Further progress is needed to fully implement the IFRC institutional priority of *early warning early action*. For example, analysis of the DREF reports for extreme rain events from 2021-2024 indicates that early warning and awareness raising activities, which should be part of the initial actions ahead of an impending event, are not consistently highlighted in the operations. National Societies can play an important role in tailoring community early warning systems (CEWS) to the needs of European populations within their legal mandates, involving communities in the design of these systems, bridging national and community early warning systems, and ensuring official weather alerts are translated into understandable and actionable messages that reach the population, with particular attention to vulnerable groups. These efforts would align with the guiding principles of CEWS, particularly principle M1 which emphasizes that communities must be actively engaged in understanding, interpreting and acting on information, and guiding principle R1 that we need to respond to warnings, not to disasters.⁸⁶ Actions to enhance early warning align with international initiatives like Early Warning for All (EW4All), with the Action Plan 2023-2027 calling for investments of US\$ 3.1 billion “*to strengthen disaster risk knowledge and management, observation and forecasting, dissemination and communication of warnings, and preparedness and response capabilities*.”⁸⁷ Promising examples exist; for example the Red Crescent Society

⁸³ Galvez-Hernandez, P., Dai, Y. & Muntaner, C. The DANA disaster: unraveling the political and economic determinants for Valencia's floods devastation. *Int J Equity Health* 24, 64 (2025). <https://doi.org/10.1186/s12939-025-02435-0>

⁸⁴ IFRC, Finnish Red Cross and Climate Centre (Dec, 2024). *Collaborating with National Meteorological and Hydrological Services. A National Society guide to getting started*. <https://www.climatecentre.org/wp-content/uploads/Climate-Centre-NMHS-Guide.pdf>

⁸⁵ IFRC. *Collaborating with National Meteorological and Hydrological Services A National Society guide to getting started*. December 2024.

⁸⁶ IFRC. *Community early warning systems: guiding principles*. 2012

⁸⁷ [Early Warnings for All | United Nations](#)

of Tajikistan which collaborates with government partners to strengthen multi-hazard early warning systems through EW4All.⁸⁸

Community risk awareness trends

The European Climate Risk Assessment mentions that the lack of risk awareness and preparedness among the general public is a hindering factor of disaster response in Europe.⁸⁹ Early warning alone is insufficient. It requires an enabling environment in which the population can understand the message and take it seriously. For example, in the 2021 Germany floods, not only were their shortcomings in the distribution of early warning messages, but communities were also insufficiently aware of the risks posed by the extreme rainfall. The assumption that weather alerts would trigger community preparedness proved to be incorrect. An online survey in flood-affected areas of Germany found that over 29% of respondents received no warning, but more importantly, of those warned, 85% did not anticipate severe flooding and 46% were unsure of what actions to take⁹⁰. This resulted in the population remaining largely passive, waiting for guidance from risk governance actors. The predominantly top-down system left citizens dependent on the functioning of the risk and emergency system.⁹¹ Surveys in the Netherlands equally indicated that populations are insufficiently prepared for floods, despite the country's vulnerability and history of sea flooding.⁹²

It is recommended to deliver *“unambiguous messages, describing the expected event clearly including the impact, using plain language to reach all members of the potentially affected population, illustrating the warnings using maps and easily understandable charts, increasing the understanding of the population's own role within the warning chain and adding additional warning channels like employers as multipliers, social media, or phone chains.”*⁹³ The warning must also be accompanied by clear messages on what action to take in order to trigger awareness and corresponding action. In Spain in 2024 for example, people were surprised by the scale of the event, and they were not aware that this could pose a risk to their lives. These examples demonstrate that to ensure populations take early warning messages seriously, they need to be aware of the actual risk and know how to respond⁹⁴. In the EU there is an increasing emphasis on encouraging households to prepare for emergencies by maintaining survival kits to last first 72 hours of an emergency. This initiative provides

⁸⁸ IFRC. Displacement and Migration in a Changing Climate. The Role of National Societies in Europe. DRAFT.

⁸⁹ European Environment Agencies. *European Climate Risk Assessment*. EEA Report 1/2024.

⁹⁰ Thieken, A.H., and others (2022). Performance of the flood warning system in Germany in July 2021 – insights from affected residents. EGU sphere.

⁹¹ Joy Ommer, Sophie Blackburn, Milan Kalas, Jess Neumann, Hannah L. Cloke, Risk social contracts: Exploring responsibilities through the lens of citizens affected by flooding in Germany in 2021, *Progress in Disaster Science*, Volume 21, 2024, 100315, ISSN 2590-0617, <https://doi.org/10.1016/j.pdisas.2024.100315>.

⁹² Dutch News. (Oct 17, 2028). *The Dutch are not prepared for flooding says the Red Cross*. <https://www.dutchnews.nl/2018/10/the-dutch-is-not-prepared-for-flooding-says-the-red-cross/>

⁹³ European Union (Jul 19, 2024). German Committee for Disaster Risk Reduction. *Report on 2021 floods*. Union Civil Protection Knowledge Network. <https://civil-protection-knowledge-network.europa.eu/stories/german-committee-disaster-risk-reduction-report-2021-floods>

⁹⁴ Chavda, S. (Dec 2, 2024). *The 2024 Spain floods: Failures in early warning, action, coordination, and localisation*. Global Network of Civil Society Organisations for Disaster Reduction. <https://www.gndr.org/2024-spain-floods-early-warning-action-coordination-and-localisation/>

National Societies with an opportunity to play a significant role in distributing and supplying emergency packages to households and individuals.

Limited experience with extreme rain events by individuals, communities and municipalities reduces risk perception. In fact, risk management is argued to be subjective, based on risk experiences, organizational memory and access to a collective industry body of risk knowledge.⁹⁵ This affects decision-making since communities and municipalities often lack sufficient knowledge and experience of past disasters to fully understand the risks posed by extreme rain events and the potential resulting floods. This finding contrasts with the crucial role of local actors in responding to extreme rain events, which can be very localized. The lack of recent experiences results in insufficient awareness of the existence of response plans and insufficient training on executing the plans. Disaster preparedness is not institutionalized and structured but depends on the know-how and experiences of individuals, often resulting in an ad-hoc approach. Although using a subjective approach to disaster risk management doesn't always lead to bad decisions, it shows why organizations need to advocate for objective, evidence-based methods that rely on historical data. Additionally, it is beneficial to encourage locally led adaptation efforts to enhance community resilience. This approach also underscores the need for effective community engagement strategies, informed by a thorough understanding of communities' risk perceptions, allowing National Societies to tailor messages appropriately to those communities.

A shift to evidence-based risk management

Several National Societies (for example Armenia, Bosnia and Herzegovina, Kyrgyzstan, Netherlands, Serbia, Sweden, Tajikistan and the UK) have been undertaking National Climate Risk Assessments and screening of their programmes and operations in an effort to understand the impact of changing climate risks across sectors, geographies, vulnerable groups and their own operations and to work towards becoming climate-smart.⁹⁶ For example, the National Climate Risk Assessment for Armenia, drafted in February 2025, serves as *"a foundational resource for shaping the Armenia Red Cross Society (ARCS) future policies, incorporating climate considerations into ARCS sectors of work, and embedding climate policies into key working documents, strategies, and standard operating procedures (SOPs) of the National Society."* The assessment is expected to contribute to enhanced institutional and community resilience in the face of climate change and disaster risks. The IFRC and Red Cross Red Crescent Climate Centre support National Societies to enhance preparedness, climate adaptation, and anticipatory action, and also seek to improve knowledge and understanding of how to work with climate information across timescales, and how to integrate climate considerations in strategies, programmes or operations.

⁹⁵ Peter Ashwin. The Influence of Risk Perception on Event Risk Management and Decision Making. In Encyclopedia of Security and Emergency Management (pp.1-8), June 2020.

⁹⁶IFRC. *Climate-smart disaster risk reduction*. <https://www.ifrc.org/our-work/disasters-climate-and-crises/climate-smart-disaster-risk-reduction>

The effectiveness of these analytical efforts will depend on the degree of alignment and coordination between national, regional and local capacity-building. The final report of the Flood Resilience Program in Montenegro, highlights the importance of strengthening flood resilience at the local level through interventions with individuals, families, local leaders and communities. The three fundamental pillars of change of this programme were to 1) integrate flood resilience awareness and actions into the daily lives of individuals and families, 2) encourage communities and local authorities to prioritise environmental management and flood protection insurance and 3) ensure national policy to prioritise community needs, priorities and capacities.⁹⁷

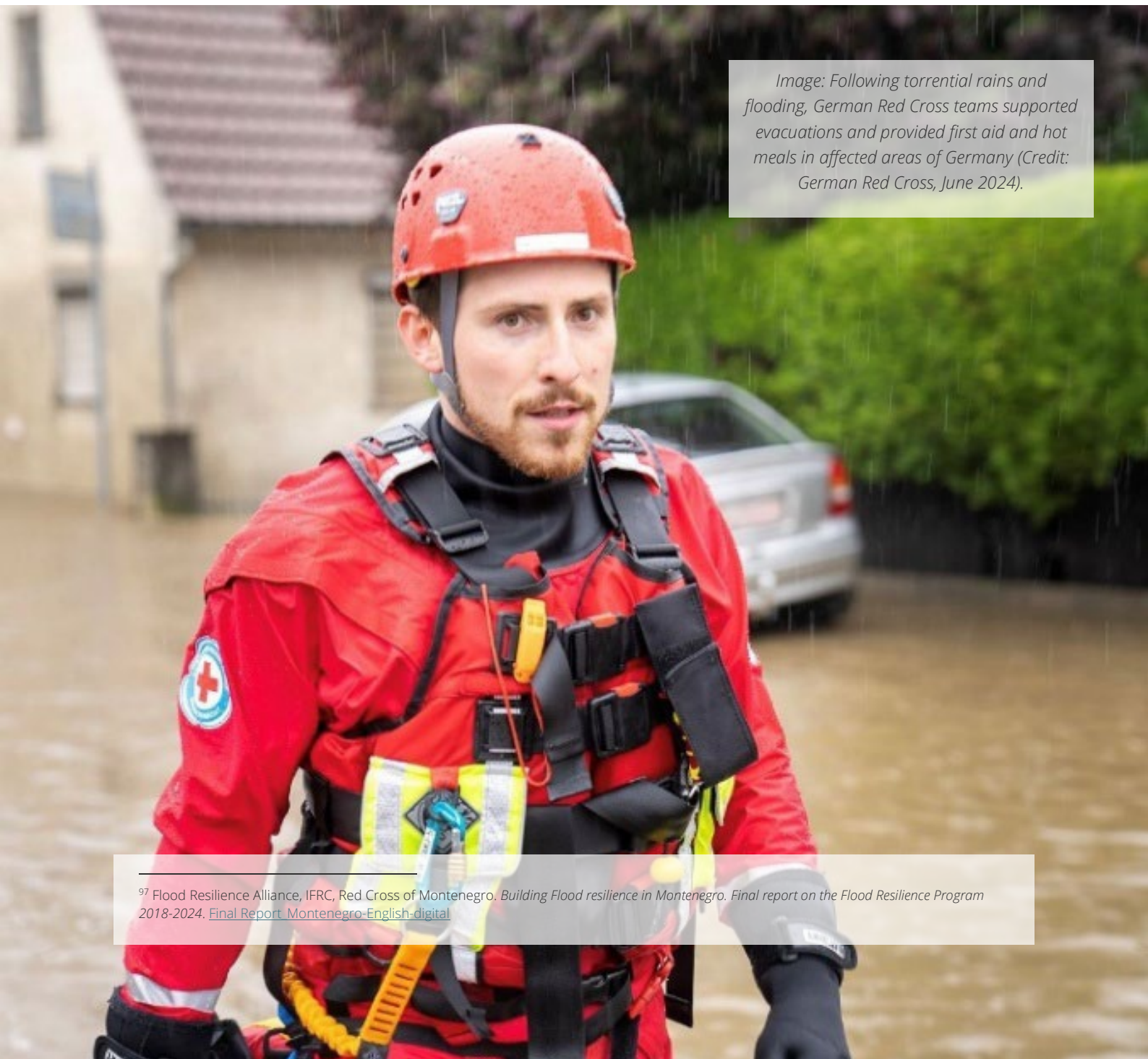
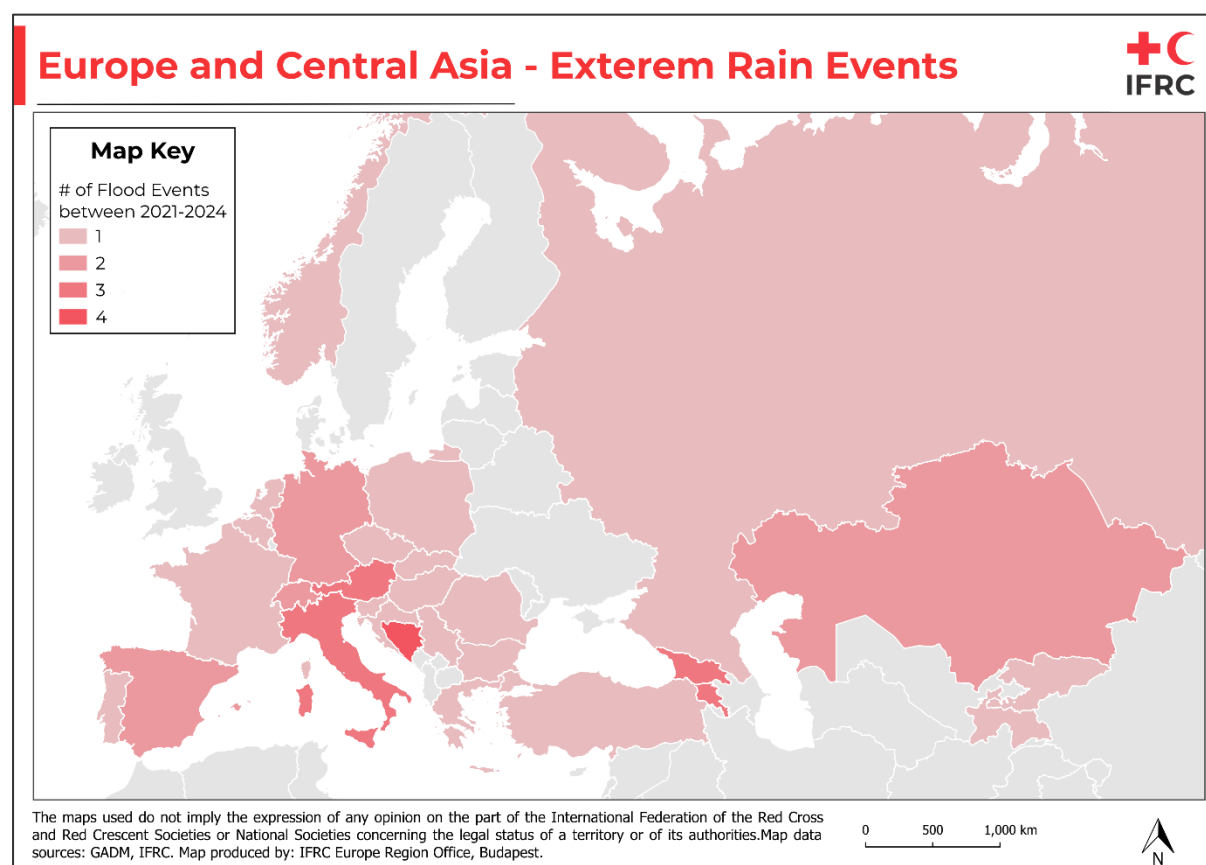


Image: Following torrential rains and flooding, German Red Cross teams supported evacuations and provided first aid and hot meals in affected areas of Germany (Credit: German Red Cross, June 2024).

⁹⁷ Flood Resilience Alliance, IFRC, Red Cross of Montenegro. *Building Flood resilience in Montenegro. Final report on the Flood Resilience Program 2018-2024.* [Final Report Montenegro-English-digital](#)

Identification of operational lessons learned and good practices

In addition to the overall trends related to the preparedness and response to extreme rain events in Europe and Central Asia, a comparative analysis of the DREF operations between 2021 and 2024 allows for even more concrete lessons learned and identification of good practices.



Map 1: A selection of 44 extreme rain events in 2021-2024 across Europe and Central Asia that required Red Cross Red Crescent response. (These events are not a comprehensive list of the flood events that occurred in the region during the period) (Source: Various IFRC Documentation)

Between 2021 and 2024, no fewer than 44 extreme rain events⁹⁸ in Europe and Central Asia triggered domestic or international Red Cross Red Crescent operations, causing more than EUR 162 billion in economic damage, affecting three million people and resulting in nearly 800 fatalities. Map 1 plots the location of these events. Out of these 44 extreme rain events where Red Cross Red Crescent DREF operations were activated, 20 (45% out of the total) were due to extreme rain events and resulting floods. Operational budgets ranged from CHF 99,459 for the [Kyrgyzstan floods](#) in August 2023, up to CHF 999,726 for the [Slovenia floods](#) in August 2023. All floods were categorized as ‘yellow’ crisis, except for one event in Slovenia

⁹⁸ An overview of reviewed rain events, and where applicable DREF operations, can be found in Annex 2.

in August 2023 which had an ‘orange’ risk category⁹⁹. Bosnia and Herzegovina stands out as having received four DREF operations linked to extreme rainfall in the last four years. Three DREF operations were launched in Georgia and two were launched in both Kyrgyzstan and Armenia. Figure 7 provides an overview of the affected population per country and Figure 8 shows the number of people assisted in the various DREF operations. This graph also highlights the scale of the Slovenia floods compared to the other operations.

Although not all extreme rain events require activation of a DREF operation, a comparative analysis of the DREF final reports highlights a number of relevant lessons learned and operational trends to promote further reflection. A better understanding of the reasons for National Societies to initiate a DREF application should be better researched, yet this review indicates an unprecedented scale of many of these events negatively influence the coping capacity of the National Societies to respond, calling on the need to access DREF. For example, the [2023 floods in Georgia](#) differed from typical seasonal disasters due to their expanded magnitude and severity, affecting more regions and people. The [2023 floods in Slovenia](#) are considered the largest ever in the country’s history, with around two-thirds of the country affected and 82% of its municipalities impacted. The amount of precipitation causing the [May 2023](#) and [June 2024](#) floods in Kyrgyzstan was also unprecedented. The [2024 flooding in Romania](#) was incomparable in scale to earlier events, including the 2013 flooding in Galati. Some of these countries, including Armenia and Bosnia and Herzegovina are regarded as high-risk zones, such as. Nonetheless, the 2024 flooding in Bosnia and Herzegovina was more extensive due to the occurrence of flash floods and large-scale landslides. Conversely, the 2024 floods in Poland were stated to be comparable with similarly devastating floods in 1997 and 2010.

Image: Malaga faced torrential rains recently that forced more than 4,000 people to evacuate. The dedicated Spanish Red Cross teams continue to provide essential services to support communities by providing shelters, beds, blankets and hygiene kits in the affected area. (Credit: Spanish Red Cross, November 2024)



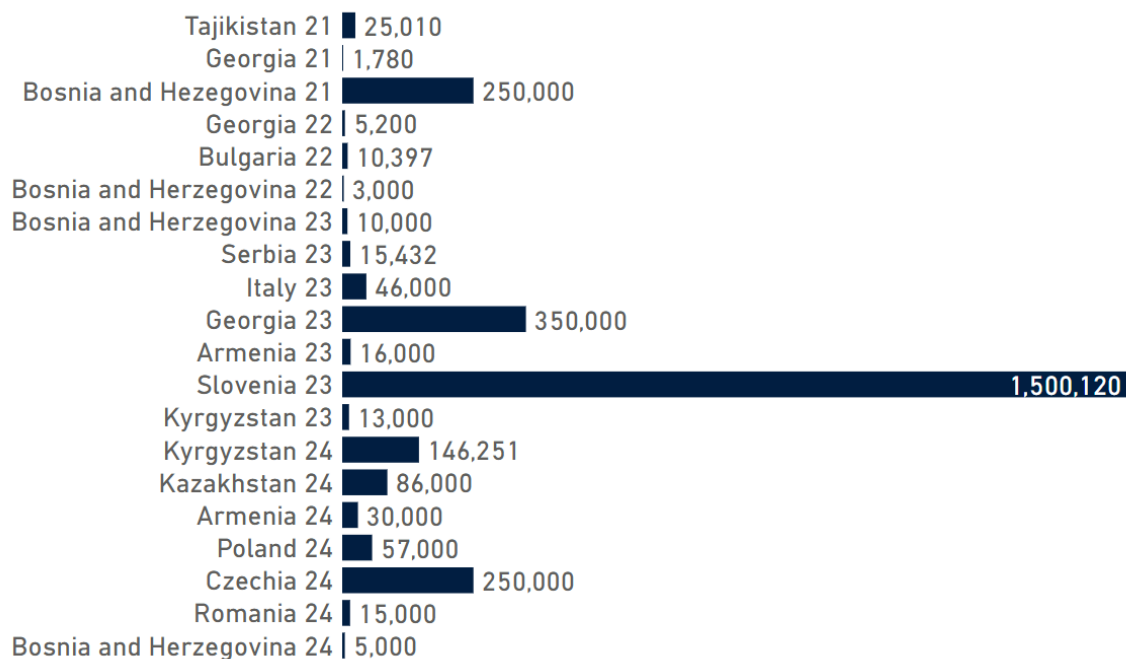


Figure 5: Affected populations of DREF Operations Related to Extreme Rain Events in Europe and Central Asia (2021-2024) (Source: DREF final reports)

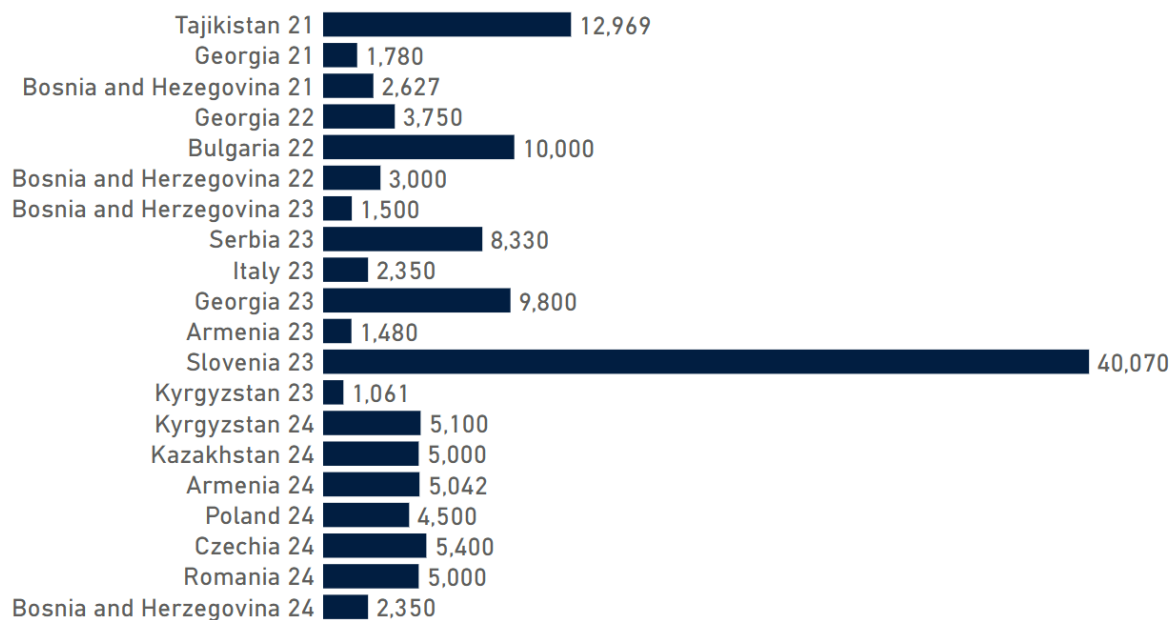


Figure 6: Assisted populations of DREF Operations Related to Extreme Rain Events in Europe and Central Asia (2021-2024) (Source: DREF final reports)

Emerging operational trends from operations¹⁰⁰

A review of the DREF reports allows for the following observations in terms of operational activities, challenges and lessons learned, which are largely similar to the lessons learned from domestic response operations, for which no DREF operation was launched¹⁰¹. Therefore, these trends, even when not comprehensive, can be considered as relevant for the Movement at large.

National Societies are not always collaborating with their National Hydrometeorological agencies on co-production of accessible, understandable and actionable warnings, to enhance decision-making on early actions that can be taken across sectors to reduce the impacts of extreme events. Reports of National Society involvement in early warning activities were found in only two DREF operations. For example, in the [2021 Georgia floods](#), branch volunteers were deployed to inform and prepare the most vulnerable households in advance of the event. In the [2024 floods in the Czech Republic](#), the National Society activated its crisis response structures. In other events, such as the [2024 Poland](#), [2024 Kazakhstan](#) and [2023 Slovenia](#), early warning from authorities existed but did not lead to awareness-raising activities by the National Society. Existing room for improvement was confirmed in a recent analysis, which found that although 81% of National Societies effectively coordinate with authorities to anticipate major hazards, only 25%¹⁰² have fully integrated early warning systems as part of a comprehensive national strategy¹⁰³. Another reason is that early warning is not necessarily within the mandate of National Societies. This results in hesitancy, or even the impossibility, to work on early warning-related activities.

National Societies in the Europe region are not often undertaking early action activities nor promoting early action in communities¹⁰⁴. The main activity undertaken by National Societies before a disaster strikes is coordination with authorities, such as in [2021 Georgia floods](#). In [2021 Bosnia and Herzegovina](#), Kobo forms were activated early so that local branches could send timely information on needs and available resources. The term “early action” is also used in reports to describe immediate activities after the event, including providing first aid and assessing needs, which creates confusion. Recent analysis confirms these observations, since less than half of National Societies decide on early action activities based on vulnerability, exposure, and triggers. Another related challenge is that early action protocols based on clear thresholds have only been developed for some hazards in selected countries¹⁰⁵, aligning with the trend described above.

¹⁰⁰ The following section is not exhaustive since it is based on the final reports of DREF operations mainly. This overview is meant to trigger discussion and reflection.

¹⁰¹ The field reports of non-DREF National Society Response are available on the Go Platform. However, there are less suitable for comparative analysis, since the contents lack consistency and details. Nevertheless, no contradictions were found between DREF and non-DREF response operations.

¹⁰² It needs to be acknowledged that not all National Societies have a mandate for early warning per their auxiliary role.

¹⁰³ IFRC. *National Society Preparedness and Response Capacity Trends Analysis for Europe Region*: DRAFT Version March 2025.

¹⁰⁴ According to IFRC, *early warning and early action, also known as anticipatory action or forecast-based action, means taking steps to protect people before a disaster strikes based on early warning or forecasts. To be effective, it must involve meaningful engagement with at-risk communities.* [Early warning, early action | IFRC](#)

¹⁰⁵ IFRC. *National society Preparedness and Response Capacity Trends Analysis for Europe Region*: DRAFT Version March 2025.

First response activities consist mainly of conducting needs assessments, distributions of relief items and occasionally assistance in pumping and cleaning. For example, the [Bulgarian Red Cross](#) responded within hours after the onset of the disaster in September 2022. Branches and volunteers of the [Armenian Red Cross Society](#) conducted an initial assessment, based on a structured and tailored questionnaire through the Kobo tool. Indeed, assessment is the primary activity for National Societies at this stage in line with criteria for DREF allocation, and their capacity for emergency needs assessment is confirmed in the recent National Society preparedness analysis with relatively high rates due to standardized templates for data collection, trained teams, and development of emergency plans based on assessment results¹⁰⁶. There are frequent distributions of relief items across sectors from available stocks or additional procurement with DREF funds, as is further referred to below in the text. In addition, there are examples where National Societies are involved in removal of debris and cleaning of houses, such as in flood operations in 2023 in [Italy](#) and the [Kyrgyzstan](#) floods.

National Societies actively coordinate with authorities for Red Cross Red Crescent operations, respecting their auxiliary role and legal obligations. National Societies play important roles but respect the lead responsibility of designated entities in the country and their own mandate within the broader structure. In Bosnia and Herzegovina, the Red Cross is the primary organization for coordinating humanitarian aid. In other countries, like [Romania](#), National Societies operate in a secondary, supportive capacity. Coordination is strongest at the central level, but local coordination examples include the [Polish Red Cross](#) participating in emergency committees at national and local levels in September. In [Italy in 2023](#), the need for close collaboration with municipalities was considered a fundamental role to streamline coordination and optimize assistance. The recent National Society Preparedness and Response Capacity Analysis for Europe highlights strong coordination capacities, particularly with authorities, though regional and local disparities exist.¹⁰⁷ Yet, challenges remain, like in the case of the [2023 Italy flood](#) operation, where it was noted that patience and coordination with state institutions were required to guarantee targeted assistance.

The main sectors for which DREF-funds are used in extreme rain events are WASH (85%), Shelter (70%), Health (65%) and Livelihoods and basic need (60%), both in terms of distribution of items and cash and voucher-based assistance, as illustrated in Figure 9. A frequent first support was the provision of food and water in addition to essential household items (including blankets, boots, and raincoats) and hygiene items. In selected situations, dehumidifiers were also distributed, in line with maximum thresholds of DREF operations for assets. In [Kyrgyzstan in 2024](#), additional WASH needs were identified during the response and the distributions were accompanied by awareness raising sessions on WASH. Indeed, WASH activities were deemed to require prioritization in flood responses, since logistical challenges and procurement delayed distribution of essential hygiene supplies, and the flood

¹⁰⁶ IFRC. *National society Preparedness and Response Capacity Trends Analysis for Europe Region*: DRAFT Version March 2025.

¹⁰⁷ Ibid.

waters often contaminate potable water systems. Even when WASH activities were at times included in cash-based assistance, dedicated focus continued to be needed.

In almost all DREF operations except two ([Italy 2023](#) and [Kyrgyzstan 2023](#)), activities related to National Society Strengthening were included. Shelter and evacuation support were also often implemented, such as in the [Italy floods 2023](#) or the [Czech floods in 2024](#) where Red Cross teams were active in evacuation centres. However, in [Poland](#), it was noted that people mainly stayed in temporary shelters or hotels, reducing the need for folding beds and eliminating the need for mattresses, but increasing the demand for blankets, since they were also used as covers and to improve room temperature. The sectors least involved in DREF operations related to extreme rain events included Education (reported only once in [Italy, 2023](#)), Migration and Displacement (reported once in [Slovenia, 2023](#)), International Disaster Response, and Coordination and Partnerships. This limited representation may be explained by the likelihood that such activities were captured in other reports and programmes or integrated within broader sectoral responses.

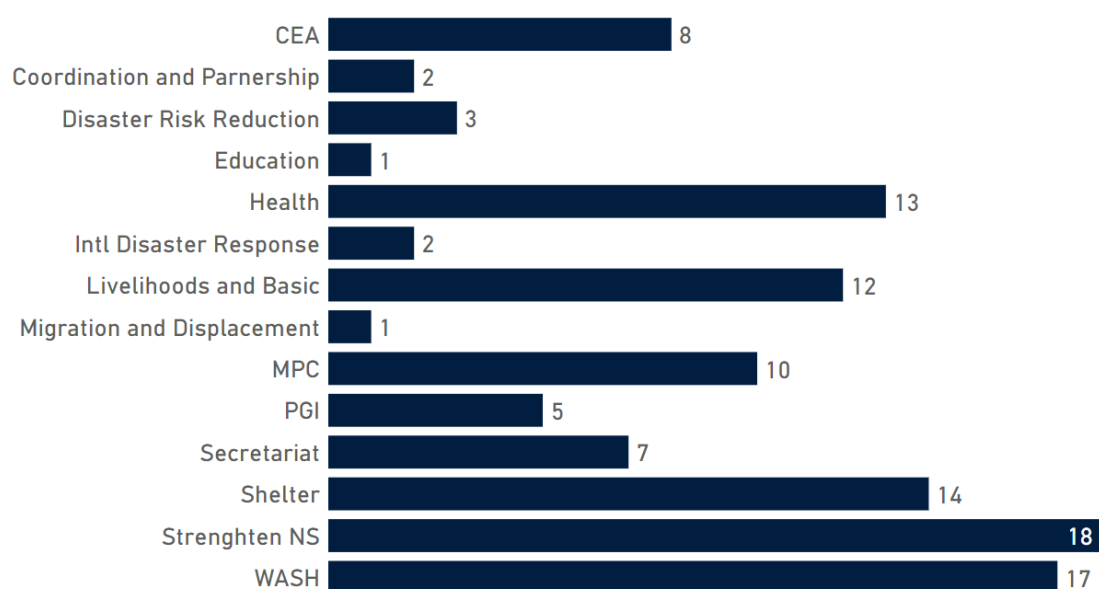


Figure 7: Number of times sectors were implemented as part of DREF Operations related to Extreme Rain Events in Europe and Central Asia (2021-2024) (Source: DREF final reports)

Flexibility is essential in response operations. The needs of the population evolve during responses, as noted by the [Polish Red Cross in September 2024](#), which required adjustments to the response strategy, timeframe, and budget. With the absence of electricity and water, the demand for food supplies increased, necessitating a stronger focus on this activity. In [Slovenia](#) and [Italy](#) in 2023, organizational flexibility and resilience were equally required. In these cases, the needs of the affected population remained constant, but since other stakeholders also distributed relief items, the planned approach had to be adjusted to ensure complementarity with other in-kind donations. In [Bosnia and Herzegovina in 2022](#), the intended DREF planning had to be significantly reduced to avoid overlap with the

response activities of other humanitarian actors, highlighting the need for coordination and information exchange among emergency responders.

Capacities to include cash-based interventions in emergency operations could be further increased. Cash-based interventions as part of DREF operations are increasing, as noted in the final DREF reports. However National Societies need more knowledge and institutional readiness to implement cash-based activities. Out of the 20 relevant DREF operations reviewed for this study, 50% included multi-purpose cash assistance. However, the 2024 national society trend analysis shows that only 12% of National Societies globally have high operational capacity for cash-based interventions. This is due to few National Societies having developed frameworks, trained staff databases, clear guidelines, and mapping of cash delivery methods¹⁰⁸.

These challenges were visible in the DREF operational reports. For example, the [Armenian Red Cross](#) experienced challenges in implementing cash transfers due to a pending governments' approval of the decree, which was granted only two months after the event. Another challenge was the slow collection of bank details by the ministry to issue the payments. Finally, the communities had little trust in the cash programme. In [Kyrgyzstan in 2024](#), the need to conduct accompanying information sessions on basic safety protocols for managing money for recipients was identified, even though no safety incidents were reported. In [Bulgaria in 2022](#), a challenge was to identify a financial service provider for cash transfer with no charges for money transfer and to coordinate the cash transfer to properties with several owners. In other operations, challenges were noted in terms of financial transparency, respect for privacy of the assisted populations, and effective delivery of the assistance. In general, National Societies realized the need to enhance their knowledge of cash and voucher assistance and to increase their CVA preparedness, and to establish specific contingency plans, pre-identify resources and prepare awareness materials in advance.

However, cash-based assistance was not the most appropriate form of assistance in all operations. In at least one event, cash-based assistance was not perceived as the best approach by the affected population, and they preferred in-kind assistance, catered to their specific needs. Some other reasons that cash-based assistance might not be the most appropriate activity includes deep-rooted cultural inclinations, reduced feasibility of this type of assistance due to disrupted markets or imposed restrictions by authorities.

A lesson learned from DREF operations was the enhanced need for psychological aid. Throughout the various operations, the timely delivery of psychological first aid and psychosocial support was deemed crucial for addressing the mental well-being of affected populations post-disaster. There are some exceptions where mental health and psychosocial support (MHPSS) interventions were not prioritized within the operation due to the urgency to distribute assistance like in the [2024 Armenia floods](#). Yet overall, psychosocial support was

¹⁰⁸ IFRC. *National society Preparedness and Response Capacity Trends Analysis for Europe Region*: DRAFT Version March 2025.

much appreciated by the affected population, staff and volunteers, for example in [Bulgaria in 2022](#). In 2023 in [Slovenia](#) or [Kyrgyzstan](#), psychological first aid was considered essential especially in the first phase of the crisis with the need for complementary assistance being available, or referred to, beyond this initial support. In [Armenia](#), it was recommended that psychological training be provided regularly to volunteers and staff to be ready for rapid deployment, also outside disaster periods. The recent analysis underscores this observation and especially the need for more psychological support for staff and volunteers was emphasized¹⁰⁹. The [MHPSS Hub](#) in Denmark can serve as a resource to address this need¹¹⁰.

A growing trend is the need for Community Engagement and Accountability (CEA), as demonstrated by the [Bulgaria floods of 2022](#). The challenges included high expectations from the affected population towards the National Society. This required staff and volunteers to clarify the role and status of the Red Cross, and its relationship with public authorities. It was necessary to explain the independence and voluntary nature of the National Society's work. Similarly, in [Georgia in 2022](#), the community experienced frustration due to insufficient support, as their needs exceeded the capacity of available funding. A lesson learned was the importance of regular awareness-raising activities to facilitate rapid response at the community level. Response activities in [Bulgaria in 2022](#) were enhanced by the establishment of community councils to improve publicity and visibility of the initiatives. In [Italy in 2023](#), CEA was crucial in understanding that cash-based assistance was not well accepted by communities. In [Armenia](#), CEA was essential to ensure a participatory approach.

Another ongoing challenge was the need for capacity-strengthening for volunteers and staff in terms of disaster management and response. The [Czech](#) and [Romanian](#) Red Cross noted the necessity to increase the number of staff and volunteers in the affected branches in 2024. In [Slovenia in 2023](#), volunteer engagement in operations decreased after one month, posing a risk of overloading staff and volunteers. In [Bulgaria in 2022](#), staff and volunteers were already fatigued from the response to the Ukraine crisis. In [Bosnia and Herzegovina in 2023](#), there was an issue with insufficient training and preparedness of volunteers for hazards and safety measures. These findings correspond with the recent analysis of National Societies' preparedness and response capacities, highlighting the need for capacity strengthening of volunteers and staff, including disaster management training and specialized topics such as CEA, CVA, and PSS¹¹¹. Indeed, there was also the need for staff to increase awareness and knowledge of international tools, such as the DREF. The lessons learned workshop for the [Armenia floods](#) indicated that due to the deployment of staff, there was insufficient capacity to draft the DREF application at headquarters. This resulted in limited ownership of the plan, missed indicators, and incorrect calculation selections. Refresher training on DREF and online applications is considered essential.

¹⁰⁹ IFRC. *National society Preparedness and Response Capacity Trends Analysis for Europe Region*: DRAFT Version March 2025.

¹¹⁰ MHPSS International Movement Hub - <https://mhpsshub.org/>

¹¹¹ IFRC. *National society Preparedness and Response Capacity Trends Analysis for Europe Region*: DRAFT Version March 2025.

An overview of relevant DREF operations underscores the importance of logistical preparedness and pre-disaster positioning of stockpiles. For example, in [Bosnia and Herzegovina in 2022](#), the procurement process faced significant challenges, including the absence of a dedicated procurement officer. The floods in the subsequent year highlighted the necessity of maintaining sufficient emergency stock, particularly hygiene kits and emergency supplies, to ensure timely and efficient aid distribution. Common issues included delays in procurement, which hindered delivery timelines, and discrepancies between projected and actual procurement costs, raising concerns about quality and sustainability. Market fluctuations also affected response efforts, as seen in [Serbia](#) and [Bosnia and Herzegovina](#) in 2023. Accurate cost predictions proved difficult amidst economic instability, necessitating flexible procurement strategies and proactive monitoring of market trends to mitigate potential resource shortages. One lesson learned from the [2023 Slovenia floods](#) was the critical nature of procurement and transportation duration for material aid. Time constraints challenged the obtaining of documentation and evidence for the suitability of purchasing food packages. In [Romania in 2024](#), additional warehousing capacity and increased logistical staff were engaged to implement the DREF operational plan.

National Societies involved in previous DREF operations indicate learning, even though the evidence is anecdotal and ad hoc and there is no systematic overview available on how National Societies integrate lessons learned. In general, insights from past DREF operations in previous disaster situations proved valuable and were used in the following DREF operation, notably in Bosnia and Herzegovina and Georgia; two countries with recurring extreme rain events. Lessons from other DREF operations, such as [Bosnia's 2022 Emergency Appeal Population Movement](#), were also deemed useful to plan the next operation. Lessons learnt workshops as part of the DREF are deemed a useful tool and seen as beneficial for reviewing DREF procedures. For example, in [Slovenia](#), workshops at both headquarters and local levels were appreciated. Another improvement resulting from the Lessons Learned workshop was noted in [Armenia](#), in the form of better cash and voucher assistance.

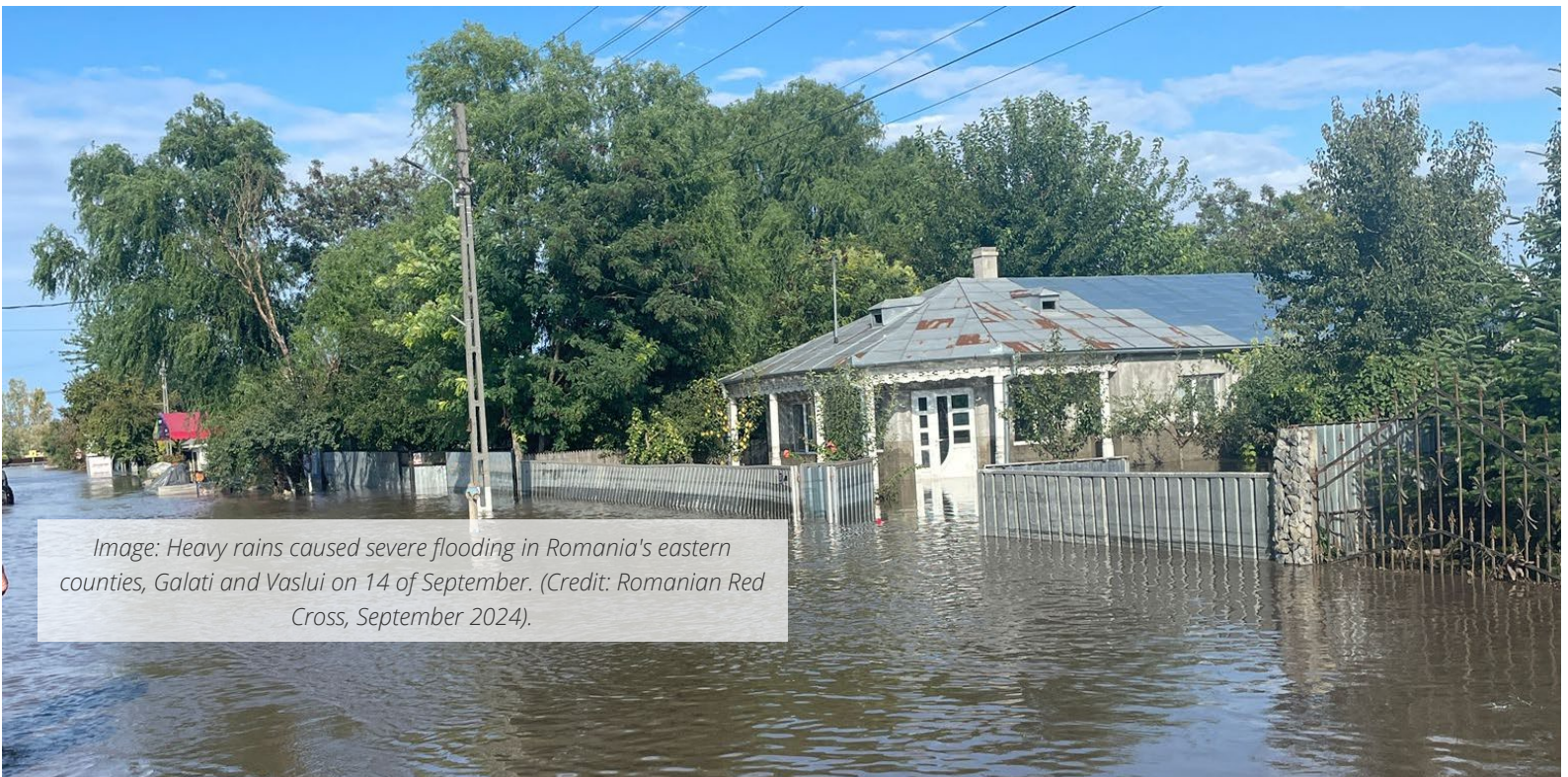


Image: Heavy rains caused severe flooding in Romania's eastern counties, Galati and Vaslui on 14 of September. (Credit: Romanian Red Cross, September 2024).

In conclusion, the preparedness and response environment is already evolving in line with the changing risk environment and projections related to extreme rainfall. This shift is reflected in broader EU policies and legal frameworks aimed at addressing increased climate risks, as well as in the ambitions and plans of the Red Cross and Red Crescent network, such as in the [Regional Climate Action Roadmap](#) and in various domestic and international operations across the Movement.

Even when many countries in Europe and Central Asia are not yet adequately prepared for extreme rain events, several operational trends can be identified, including an increase in anticipatory action, climate adaptation initiatives, community engagement and accountability, mental health and psychosocial support, and cash-based assistance alongside traditional forms of assistance, and the importance of logistics preparedness and stock readiness.

However, there are also clear challenges, such as the need to strengthen collaborations with climate service providers and other stakeholders to optimize early warning early action, increase the capacities and knowledge of volunteers and staff, and the ability to invest in local adaptation plans together with local authorities.

National Societies are part of broader efforts to enhance overall preparedness, with the need to build on local risk perceptions. They are well positioned to increase efforts together with governments and other stakeholders for better preparedness and response. There are ample examples in the region that show effective practices of National Societies contributing to improved awareness and disaster risk management. Many approaches, tools and learnings exist, but these need to be more widely embraced and more consistently applied by all National Societies in the region in alignment with international commitments for anticipatory action, community-based early warning and proactive risk management based on evidence.



Image: Kazakhstan faced massive floods in spring 2024. Hundreds of thousands of people have been evacuated and may not be able to return home for a while. Since the first day, the Kazakhstan Red Crescent with support from the IFRC and its local partners has been assisting thousands of people affected. (Credit: Red Crescent of Kazakhstan, July 2024).

Conclusions

Experience has shown that extreme rainfall leads to **rapidly developing, localized, and unpredictable** flooding events. This necessitates a specific approach to preparedness and response, contextualized within a strong general preparedness framework.

First, extreme rainfall is characterized by the rapid development of the disaster. Yet, most extreme rainfall events are predicted, offering a brief window for preparation. It's vital to avoid wasting time convincing people to take the event seriously. Pre-disaster awareness is essential for prompt action. The massive amount of rain falling within a short period often remains surprising, and this trend is expected to increase due to climate change.

Second, the unpredictability of extreme rainfall events makes them a relevant hazard for large parts of the population in Europe and Central Asia. Risk assessments, scenario mapping, and contingency planning need to be updated, as not only populations close to large rivers are vulnerable, but also communities living near small rivers, which may result in flash floods, and even those in plains due to groundwater rise. Consequently, National Societies must adopt a functional approach to ensure readiness in all locations.

Third, recent events have indicated static weather patterns resulting in very localized incidents, where well-prepared emergency responders at the national level, as well as operators of flood management systems for large rivers, have reduced abilities to respond effectively. Therefore, risk management and preparedness must be redefined so that local emergency responders, communities and local civil society themselves play a crucial role. Moreover, the large amount of rain in a short period results in communities being cut off and facing access challenges, further calling for a bottom-up approach and pre-established partnerships, coordination mechanisms and communication channels at the municipal level.

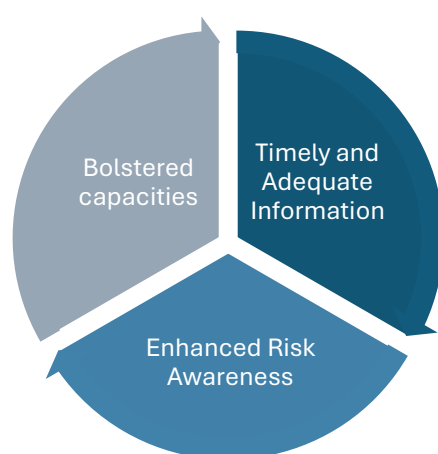


Image: Heavy rains and flash floods in northern Armenia (Lori and Tavush regions) in spring 2024 affected thousands of people, their houses, farmlands, livestock and regions' infrastructure. (Credit: Artur Hovhannesian / Armenian Red Cross, June 2024).

Strategic Recommendations

A clear overview of the risks, challenges, and good practices helps shape strategic recommendations so National Societies, with IFRC support, can keep improving their preparedness and response to extreme rain and flooding.

While states have the primary responsibility to respond to the needs of the population, National Societies, with support from the IFRC, often complement - and sometimes substitute - the state in assuming those responsibilities. The following recommendations are of particular importance for extreme rain events, but do not exclude other types of disasters. They can be summarized as follows:



A first set of recommendations deals with ensuring that timely and relevant information reaches the affected populations, and the concerned responders. This includes, amongst others:

For National Societies:

- Prepare simple preparedness messages ([public awareness and public education = PAPE](#)) and basic checklists for individuals and households, detailing practical do's and don'ts in accessible formats, distributed before and during disasters and contextualized together with national and local authorities, and communities.
- Enhance information-sharing between National Societies, including branch level, with the country's meteorological and hydrological services and partners to enable early action through pre-established communication channels in line with national and regional existing practices and legal frameworks.
- Redistribute early warning messages of meteorological services and authorities to populations to amplify their effectiveness and reach. Complement these messages with unambiguous action-focused guidance on what the population should or should not do.
- Use National Societies' existing activities, like medical assistance, to inform and motivate vulnerable populations about early warnings and encourage prompt action and ensure

that early warning messages are inclusive and accessible for persons with disabilities, low literacy, or non-majority languages.

A second set of recommendations seeks to foster an environment where timely early warning information prompts communities to act immediately and take responsibility, rather than remaining passive.

For National Societies:

- Increase understanding among National Societies, staff and volunteers of community risk perception, possibly by using Knowledge, Attitude, and Practices (KAP) assessments.
- Raise awareness among the population, including staff and volunteers, to take early warning messages and weather alerts seriously, emphasizing personal risk and impact on homes and assets.
- Support local communities by engaging in evacuations and shelter assistance with the aim of providing concrete assistance and to lead by example to demonstrate the seriousness of these alerts.
- Advocate for regular exercises of response plans at local/community levels with relevant stakeholders.
- Promote activation of existing response mechanisms at national and local levels, addressing the lack of experience of other stakeholders in disaster response.

For IFRC:

- Lead post-disaster workshops to identify lessons learned and enhance risk perception following recent events.
- Organize robust response actions and increase anticipatory measures for extreme rain events in Europe and Central Asia, in line with international commitments and the [CEWS](#) guiding principle to strive to organize robust, no-regrets response actions with the community
- Promote the use of Enhanced Vulnerability and Capacity Assessment ([EVCA](#)) as a participatory process for communities to increase their resilience through assessment and analysis of relevant risks and identification of actions to reduce these risks, and to co-create and co-produce early warning and preparedness messages based on preferred communication channels.

A third set of recommendations focuses on enhancing the internal capacities of the National Societies, particularly at the local/branch level, to integrate disaster risk management into the activities and capabilities of each branch.

For National Societies with guidance and support from IFRC:

- Enhance staff knowledge of standard international tools, such as DREF, use available opportunities, and adapt these where needed for domestic use. Facilitate exchange between international and domestic departments.

- Strengthen climate risk knowledge and [climate-smart programmes and operations](#) through the implementation of the climate action journey towards locally led adaptation.
- Foster partnerships with other stakeholders, including authorities, civil society, and emergency responders, based on an understanding of mandate, capacities, and limitations to optimize the collaboration, coordination, and communication before, during, and after disasters.
- Increase knowledge of and prepare for cash-based assistance systems according to the requirements and legal obligations of a country, including data protection and privacy, identification of appropriate modality, use of PGI tools, and cooperation with social assistance of the country.
- Increase knowledge of MHPSS for staff and volunteers, including by integrating PGI into preparedness training and how to support trauma and violence. Ensure PSS services are available for staff and volunteers during and after disaster response.
- Review existing procurement systems and capacities to ensure readiness for disasters, while also increasing stock of food, household items, and flood-specific non-food items, such as dehumidifiers.

For National Societies:

- Increase volunteers' knowledge on emergency procedures and how they can assist in response operations, especially in terms of CEA and PSS, taking into account needs of specific vulnerable groups, and how to switch from normal operations to disaster management. Strengthen volunteer management before, during and after disasters and facilitate exchange on lessons learned between branches.
- Review flood resilience of local buildings and offices of the National Society to ensure business continuity during disasters.
- Promote household and individual preparedness through preparedness emergency packages to cope with the first 72 hours after floods.

Ideas for Further Research

- Systematically gather lessons learned and best practices from all relevant response operations, including non-DREF activities, and further analyze National Societies' regular response patterns to extreme rain events and flooding beyond DREF operations, and how lessons learned from DREF can be applied to these regular responses and other contexts.
- Analyze the motivations and triggers for National Societies to initiate a DREF operation for extreme rain events to better understand when DREF operations add value and what the challenges are for National Societies to respond to this type of disasters.
- Undertake research to increase understanding of early actions taken by National Societies to complement the findings extracted from the DREF reports used in this study.
- Examine how to adapt international tools to the socio-economic context of Europe and Central Asia.

- Further explore the differentiated impacts of floods on at-risk groups such as women, children, older people, persons with disabilities, and LGBTQIA+ individuals in order to strengthen inclusive early warning and safeguarding mechanisms.
- Investigate the implementation of CEWS in Europe and define the concept of 'community' in this context.
- Identify, in advance of extreme rain events, effective cooperation and experience exchange methods between international and domestic departments of National Societies which are most effective during disasters.
- Explore how National Societies can maintain their auxiliary role while encouraging proactive behaviour and a no-regret approach among other stakeholders.
- Conduct research on the correlation between extreme rain events, climate change, and evolving vulnerabilities such as population growth and aging demographics.
- Evaluate the contribution of implemented DREF operations to preparedness and organizational learning and assess the replicability of best practices, also across regions in Europe and Central Asia.
- Develop a regional investment case for flood preparedness and anticipatory action.

Humanitarian Diplomacy Messages

National Societies, and their Red Cross Red Crescent Movement partners are encouraged to advocate for the following actions:

Narratives vis-à-vis Governments:

- Fully integrate National Societies into local and national preparedness frameworks and emergency response mechanisms. This includes:
 - Formal inclusion of National Societies in national and subnational disaster risk management plans, ensuring they have a clearly defined role in preparedness, early warning, and response.
 - Strengthening operational coordination with HydroMet authorities, enabling timely access to hazard forecasts, risk information, and early warning systems.
 - Supporting National Societies with the resources, data, and operational space needed to effectively carry out their auxiliary role and reach the most at-risk communities.
- Invest in climate change mitigation and adaptation based on heavy rain projections in Europe and Central Asia..
- Review and update Disaster Risk Management (DRM) laws, policies, and plans in advance of extreme rain events, particularly in vulnerable areas. Ensure they incorporate forecast-based actions and financing, and enhance anticipatory action.
- Ensure major infrastructure is designed and, where possible, retrofitted to withstand pluvial and fluvial floods, flash floods, and extreme precipitation occurring within a short timeframe, using environmental impact assessments.

- Invest in and design integrated, people-centred early warning and early action systems for extreme rain events. Using multiple means, channels, and stakeholder networks, this will ensure timely delivery of actionable warnings at the community level.,.
- Complement central response systems with strong local level approaches to effectively manage the rapid onset of extreme rain events.

Narratives vis-à-vis Local Authorities:

- Clarify roles and responsibilities for responding to extreme rain events in close cooperation with relevant civil society organizations and communities, including through regular exercises.
- Decentralize access to funding for adaptation and DRM activities, particularly at the municipal level, to complement coordination mechanisms at national and regional levels.
- Support and empower local civil society and community leadership in preparedness and response for extreme rain events, including through regular updates to response plans.
- Promote a no-regret approach that emphasizes the importance of proactive action before disasters strike to minimize impacts and save lives.

Narratives vis-à-vis Academic Institutions and Experts:

- Promote the increased risk of heavy rainfall caused by climate change as a critical goal of climate action in Europe and Central Asia and as a matter requiring urgent attention.
- Harness scientific knowledge and influence research agendas to generate actionable insights on rain-induced floods, exposure, and vulnerability of people and their livelihoods.
- Advocate for policies informed by scientific analysis that address the anticipated impacts of climate change and increasing extreme rain events, including considerations for urbanization and planning.



As heavy rains have caused flooding in many cities in Northern Italy, the Italian Red Cross volunteers have mobilized to support their communities with evacuations, water pumping and putting sandbag barriers, delivering supplies to those stuck at their homes, and caring for evacuees at reception centres. (Credit: Italian Red Cross, November 2023)

Annex 1: Workshop Report-Enhancing RCRC Preparedness for Extreme Rain Events

Summary of discussions, findings, and recommendations from the validation workshop (22 October 2025)

The *Enhancing Red Cross Red Crescent Preparedness for Extreme Rain Events* scoping study represents the first step in a broader learning exercise aimed at strengthening preparedness within the RCRC network in Europe and Central Asia. Building on the findings of the study, a participatory validation workshop was organized to engage National Societies in reviewing, contextualizing and enriching its conclusions and recommendations.

This report summarizes the outcomes of the validation workshop and captures key reflections, operational insights, and recommendations contributed by participants to further inform and strengthen the scoping study.

Workshop Overview

The validation workshop was held online on 22 October 2025 (09:00–12:00 CET) and brought together 28 participants from National Societies and IFRC Country and Cluster offices from Europe and Central Asia. Participants represented a range of technical and operational expertise, including disaster management, preparedness, and climate adaptation. The workshop was jointly facilitated by colleagues from the IFRC Regional Office HDCC team and the Red Cross Red Crescent Climate Centre.

The specific objectives of the workshop were to:

- Validate the initial findings of the Scoping Study;
- Unpack and contextualize key findings and recommendations in relation to National Society contexts;
- Complement the study with operational experiences, good practices, and lessons learned;
- Identify priorities and potential next steps for strengthening preparedness for extreme rainfall events.

As a validation exercise, the workshop provided an opportunity for participants to reflect on the relevance of the study findings, share practical insights from recent operations, and contribute to shaping actionable recommendations. The discussions captured in this report form part of the evidence base to support the recommendations of the Scoping Study and inform potential follow-up actions.

Methodology

The validation workshop was designed as a participatory and interactive exercise to gather feedback on the findings and recommendations of the Scoping Study. The Study and a summary of its key findings were shared with participants in advance of the workshop to

support informed discussion and reflection. The workshop combined plenary presentations, interactive validation tools, and facilitated group discussions to ensure the depth of input.

The workshop agenda was structured into three main sessions:

Session 1: Presentation and validation of findings

The workshop opened with a presentation of the Scoping Study, including key findings related to risk trends, preparedness capacities, and response practices. This was followed by a validation exercise, where participants were invited to assess the extent to which selected findings resonated with their National Society's experience.

Session 2: Thematic group discussions

Participants were divided into breakout groups to discuss and further unpack selected thematic areas identified in the scoping study. Discussions focused on experiences and good practices; gaps and challenges; and reflections on the applicability of findings across local contexts. Inputs were captured through a shared virtual whiteboard (Canva) for real-time documentation and clustering of ideas. Each group reported back in plenary to support cross-group reflection and validation of emerging themes.

Session 3: Discussion of recommendations and next steps

In a final set of breakout discussions, participants explored selected recommendations from the scoping study. The discussions focused on alignment with National Society priorities and capacities, as well as opportunities for collaboration within the Movement. This session also aimed to identify potential areas for follow-up action and peer-to-peer support.

Findings

Session 1: Validation Exercise Results

As part of the first session, participants were asked to assess the extent to which key statements from the Scoping Study resonated with their National Society's experience, using a Likert scale (0 representing "Not aligned at all" and 5 representing "Fully aligned"). The results provide an initial indication of areas of strong alignment, as well as topics where perceptions were more mixed, in five thematic areas.

Public Awareness and Education – Community Engagement

Participants showed overall agreement with the statements related to community engagement and public awareness, with scores ranging from moderate to strong alignment. The highest level of agreement was observed for the statement that limited experience leads to low-risk perception and highlights the need for locally led evidence-based planning (3.6). Similarly, participants agreed that community-level preparedness is not sufficiently institutionalized, leading to passive and top-down responses (3.4). Slightly lower agreement was recorded regarding the effectiveness of early warning uptake, with respondents

indicating that even when warnings are received, communities may not anticipate impacts or know how to respond (2.9).

Institutional Preparedness and Capacity Strengthening

This thematic area showed the strongest overall alignment across all topics. Participants fully agreed that strengthening branch capacities, pre-disaster stockpiling, procurement systems, infrastructure, and volunteer management is critical (5.0). There was also strong agreement that volunteer engagement is difficult to sustain during prolonged emergencies and that training gaps persist across key areas such as disaster management, PSS, CEA, and CVA (4.3). In contrast, significantly lower alignment was observed regarding the statement that learning and institutional memory are not always systematized which limits the ability to institutionalize improvements and build long-term resilience (2.7).

Early Warning, Early Action, and Coordination

Participants expressed moderate to strong agreement in this thematic area. The strongest alignment was found for the need for supporting the development of anticipatory action plans, training staff, and integrating early action into preparedness strategies (3.8). There was also agreement that coordination with authorities is generally effective at central levels but presents challenges at local level (3.4). Lower agreement was recorded for the statement that early warnings often fail to trigger timely action due to poor communication, lack of coordination, or limited public trust (2.8).

Response Effectiveness and Operational Learning

Participants demonstrated strong agreement on issues related to operational capacity and learning. The highest alignment was observed for the statement that logistical preparedness and flexibility are essential, and that gaps in procurement, stockpiling, and warehousing can hinder timely response (4.1). There was also strong agreement that components such as PFA, CEA, and CVA are increasingly recognized as critical to effective response but require increased integration into operations (3.8). Additionally, participants agreed that while lessons learned workshops are valued, there is no consistent mechanism to capture, share, and apply insights across operations (3.9).

Climate-smart Planning, Adaptation and Resilience Building

Participants showed consistently strong alignment for all statements in this thematic area, with all scores above 3.0. The highest agreement was for the statement that consideration of climate and environmental risks is foundational for strengthening resilience of National Society programmes and operations (3.7). Participants also agreed on the need for increased training of staff and volunteers on climate-smart programming, nature-based solutions, and integration of climate risks into disaster planning (3.4), as well as the relevance of existing European Union strategies and initiatives in providing frameworks and funding support for climate resilience (3.3).

Cross-cutting observations

Overall, the findings confirm alignment with the key messages of the Scoping Study and underscore their relevance for diverse National Society contexts. The results also highlight recurring themes, including:

- The need to strengthen community-level preparedness and risk awareness;
- Challenges in sustaining volunteer engagement and capacities over time;
- Gaps in systematizing and applying operational learning;
- The importance of integrating climate considerations and anticipatory approaches into preparedness and response.

These findings provided a foundation for deeper discussion in subsequent sessions, where participants further unpacked these themes and identified practical challenges and recommendations.

Session 2: Summary of thematic discussions

Institutional Preparedness and Capacity Strengthening (Group A)

The Scoping Study highlights that institutional preparedness and capacity strengthening are critical pillars for effective response to extreme rainfall events in Europe and Central Asia. While many National Societies have made progress, significant gaps remain in readiness, coordination, and the ability to scale up response rapidly and effectively.

Discussions confirmed that this area remains a central priority for National Societies, while also highlighting ongoing challenges related to coordination, scalability, and sustaining capacity. Participants shared a range of ongoing efforts and good practices aimed at strengthening institutional preparedness. These include risk prevention education, the promotion of a culture of early awareness, implementation of lessons learned exercise supported by external consultants, and the strengthening of volunteer training, including in areas such as disaster preparedness and psychosocial support. Key priorities identified include improving coordination between branches and headquarters, alongside investments in the digitalization of emergency response tools, the development of standard operating procedures (SOPs), and branch-level training to enable local units to effectively manage small- and medium-scale emergencies. The importance of centralized mapping of available resources was also highlighted to support preparedness and response planning.

Concrete examples illustrate how these efforts are being operationalized. The Spanish Red Cross described its preparedness capacity-strengthening strategy developed at national level, which brings together lessons learned from both domestic and international operations over an extended period. The strategy is designed to be implemented across different territorial contexts, considering varying starting points and capacities, and includes training for both volunteers and technical staff as part of a broader programme approach.

Similarly, experiences from the German Red Cross highlighted how lessons learned from the 2021 floods have informed ongoing improvements in preparedness. This includes investments in training and materials, as well as strengthened coordination among multiple response actors. Practical adjustments have been made to logistical preparedness, including improving the capacity to provide portable water, clothing, and food at scale, based on gaps identified during past responses.

Participants also referred to efforts related to adaptation, including mitigation measures, and the mobilization of resources to strengthen specific capacities. A specific example highlighted was fundraising to support the development of the Stepanavan Branch of the Armenian Red Cross Society (ARCS), which operates a well-established Forecast and Response Center with a dedicated volunteer base.

In terms of gaps and challenges, discussions focused on the management of volunteer engagement during prolonged or large-scale emergencies. Participants noted the importance of maintaining updated volunteer databases to enable rapid mobilization and tracking of availability. They also emphasized the need for regular briefings, safety measures, and recognition mechanisms to ensure that volunteers remain informed, supported, and motivated over time.

Response Effectiveness and Operational Learning (Group B)

The Scoping Study reveals that while Red Cross Red Crescent National Societies have responded to numerous extreme rain events across Europe and Central Asia, the effectiveness of response operations and the systematic integration of operational learning remain areas for improvement.

In terms of experiences and good practices, participants highlighted that response models are increasingly being adapted based on recent experiences and lessons learned. There is a growing trend to integrate climate change adaptation measures into both response models and “business as usual” activities, with the aim of anticipating risks and reducing the need for future response or minimizing impacts. Reflection on lessons learned is typically carried out through management or team meetings and internal discussions, with insights often feeding into the revision of training programmes for volunteers.

A concrete example from the Armenian Red Cross Society (ARCS) illustrates how learning is applied in practice. In this case, the response mechanism for the 2024 floods was designed based on lessons learned from previous operations including the Population Movement operation and the DREF Hailstorm, particularly regarding the Cash and Voucher Assistance (CVA) component. Similarly, approaches to volunteer management were informed by a previous DREF response to an explosion. Overall, most National Societies have made adaptations to their response models in line with their capacities and anticipated future scenarios.

Participants identified several constraints affecting both response effectiveness and learning processes. A key challenge relates to limited funding opportunities for National Society

development, including strengthening response mechanisms and capacities. It was also noted that there is no systematic measurement of how learning is transferred between operations, particularly between successive DREF operations. While lessons learned workshops are conducted, their outcomes rarely translate into organized management responses, limiting their impact on institutional learning. Another major challenge identified is the difficulty of maintaining capacities at scale over time. This requires significant and continuous investment in training and capacity development, often following a “no-regret” approach. However, participants noted that despite these investments, capacity gains are not always sustained, as trained volunteers may no longer be available for future responses.

This was further discussed in plenary while exploring how learning can be strengthened across the region. It was highlighted that a key challenge relates to the volunteer-based nature of response systems, where much of the operational learning is generated by volunteers who may not be involved in future responses due to high turnover and varying levels of engagement. As a result, valuable experience and knowledge may not be retained within the organization. To address this, one approach used is to integrate lessons learned into training materials, so that new volunteers can benefit from previous experience. While this may not fully replace direct experience, it was noted as one of the more sustainable ways to retain and transfer knowledge.

Early Warning, Early Action and Coordination (Group C)

The Scoping Study identifies early warning and early action (EWEA) as essential yet underutilized components of disaster preparedness for extreme rainfall events in Europe and Central Asia. Despite the predictability of many recent disasters, gaps in coordination, communication, and institutional readiness have limited the effectiveness of early action.

Discussions on experiences highlighted that in many European contexts, governments have primary ownership of early warning systems, while the role of National Societies is focused on community engagement, supporting how communities interpret warnings, and ensuring the inclusion of vulnerable groups. Examples shared included the use of government-led SMS early warning systems, which are widely accessible and function effectively in disseminating alerts. At the same time, Luxemburg Red Cross is working to develop internal tools and processes to communicate early action guidance to staff and volunteers, with some initiatives currently under development. Spanish Red Cross also highlighted efforts to integrate public awareness components into existing activities (e.g., in conservation activities), although it was noted that such campaigns are not always focused on what actions people should take in response to warnings.

Additional examples include the Luxemburg Red Cross developing an information platform (crisis website) to provide guidance, as well as the Spanish Red Cross (SRC) integrating volunteers into the full project cycle, strengthening engagement and continuity.

Key gaps and challenges identified include issues related to how early warning information is understood and acted upon. It was noted that people may assume early warning messages

are not relevant to them, and that messages often focus on forecasts rather than clearly communicating what actions should be taken. This is supported by findings from the British Red Cross, which indicate that early warning systems may not reach or resonate with vulnerable populations, highlighting the need for more localized and tailored communication approaches. Participants (Netherlands RC) also reported that in some contexts, early warning systems are not actively used at community level by National Societies but remain primarily internal tools. Challenges were identified in relation to coordination with government authorities, including difficulties in being recognized as a relevant actor and being included in early stages of response planning and discussions.

Further gaps included the lack of community-level preparedness activities, limited targeting of public awareness initiatives to specific risk groups, and the absence of risk-informed approaches based on local vulnerabilities. Participants also noted that messages issued by authorities often focus on forecasts rather than actionable guidance, contributing to uncertainty about how to respond.

Operational challenges were also highlighted, including cases where National Societies themselves were impacted by disasters, affecting their ability to respond, as well as the loss of local branch infrastructure, which plays a critical role in response capacity. In one case, several local branches of the Spanish Red Cross were damaged, significantly affecting operational presence at community level, as branches play a key role in disaster response. In some contexts, early warning systems are still under development at branch level, with National Societies working to establish strategies to strengthen these capacities.

Additional reflections were shared during plenary discussions, further enriching this thematic area. First, the discussion highlighted the potential role of National Societies in bridging gaps between authorities and communities, particularly in relation to inclusive early warning dissemination. While governments retain responsibility for issuing warnings, questions remain on how to effectively reach vulnerable groups such as persons with disabilities and older people, and how to complement official systems with community engagement approaches. It was noted that local authorities often lack specific capacities in community engagement and accountability, pointing to a potential added value for National Societies in supporting more inclusive and people-centred communication.

Second, insights from recent British Red Cross policy research on flooding in socio-economically vulnerable areas reinforced earlier findings. The research showed that early warning messages often do not resonate with the most at-risk populations. In several cases, community members were either unaware of warnings or assumed that they were not relevant to them, reflecting a common perception that generic national warnings apply to others rather than to their own situation. The discussion also highlighted the need to strengthen community engagement and risk awareness, so that people better understand their exposure to risk and how to respond to warnings. It also emphasized the importance of complementing early warning systems with more localized and tailored communication, to ensure that warnings are meaningful and actionable.

Climate-smart Planning, Adaptation and Resilience Building (Group D)

The Scoping Study emphasizes that climate-smart planning and resilience building are essential for long-term preparedness and risk reduction in the face of increasingly frequent and severe extreme rainfall events. National Societies across Europe and Central Asia are beginning to integrate climate considerations into their operations, but efforts remain uneven and often under-resourced.

In terms of experiences and good practices, discussions highlighted several approaches to integrating climate-smart principles into preparedness and response. Luxemburg Red Cross shared the example of using flood risk maps provided by government authorities to anticipate risks and inform preparedness activities, particularly in high-risk areas such as river basins. Based on this information, efforts are made to train and sensitize communities on flood risks. Participants also emphasized the importance of having prior knowledge of climate and weather elements to support contingency planning. In some contexts, particularly in countries such as the Netherlands and Switzerland, extensive climate information is available that can provide a strong basis for planning.

Additional best practices include the use of scenario-based planning, with some National Societies conducting periodic exercises to prepare for extreme weather events, as well as regular weather monitoring (e.g. twice weekly) to support preparedness and operational readiness. Climate information is increasingly being incorporated into planning processes. Participants also noted efforts to prepare the public through scenario-based approaches, including extreme weather and heat, with similar approaches beginning to be developed for extreme rainfall. However, it was highlighted that while information is available, it is not always clear how to use it or how to adapt it for different groups, especially those that are harder to reach.

Key gaps and challenges identified difficulties in communicating climate-related messages to communities and ensuring their active involvement. The Swiss Red Cross noted that climate adaptation is still a relatively new area, with National Societies facing challenges in positioning themselves within national adaptation frameworks (NAPs) and identifying a clear role. A common challenge, particularly in countries with well-developed crisis management systems such as the Netherlands and Switzerland, is defining the role of National Societies in relation to government-led frameworks and ensuring complementarity rather than duplication. Challenges were also highlighted in translating climate information into operational planning and volunteer training, including uncertainty around roles and responsibilities within National Societies. Finally, experiences from the Luxembourg Red Cross during the 2021 flood response highlighted challenges related to volunteer management, particularly in coordinating large numbers of spontaneous volunteers during the emergency operation.

Public Awareness and Community Engagement (Group E)

The Scoping Study reveals that while early warning systems for extreme rain events in Europe and Central Asia have improved, their effectiveness is often undermined by insufficient public risk

awareness and limited community engagement. The study underscores that early warning alone is not enough—it must be accompanied by clear, actionable coordination, use of the information communication and a receptive, informed public.

In discussing experiences and good practices, a range of National Society community-based preparedness and awareness activities were highlighted. These include the use of existing public awareness and preparedness materials (e.g., PAPE), adapted and localized to specific contexts, as well as targeted training initiatives. Examples include training sessions for adults in academic settings, school-based preparedness programmes for children such as *Red Cross My Pillow Suitcase Curriculum*, and the “*Learn, Practice, Share*” approach which integrates personal safety, awareness of local hazards, and basic coping skills. Participants also noted the importance of risk-informed and targeted approaches, including the mapping of vulnerable groups and urban climate mapping, that support more effective planning and resource allocation in high-risk areas. Additional measures include the distribution of emergency preparedness kits to enhance household-level readiness. Ideas were also raised regarding the capture and dissemination of operational learning, including the development of context-specific approaches and the potential use of digital tools—such as applications, artificial intelligence, and chat-boxes—to improve access to and use of lessons learned.

Session 3: Recommendations and way forward

Building on the validation exercise and thematic discussions, participants reflected on the key recommendations emerging from the Scoping Study and identified potential actions for implementation. Discussions explored the relevance and feasibility of these recommendations considering National Society priorities, capacities, and operational contexts, as well as opportunities for collaboration across the Movement, including peer-to-peer support and knowledge sharing.

Additional recommendations

Participants also identified several additional recommendations for strengthening preparedness for extreme rainfall events. These included:

- Strengthening community awareness and risk perception, including improving messaging and communication approaches to better inform communities about risks and appropriate actions.
- Increasing the use of existing National Society activities to inform and motivate vulnerable populations about early warnings and preparedness actions.
- Leveraging existing services and local partnerships to better reach vulnerable groups, including adapting services (e.g. first aid) to emerging risks such as heatwaves and extreme weather. While emergency services are often in place, the most vulnerable populations are not always effectively reached.
- Promoting information sharing among National Societies, including the use of existing research and key findings to support adaptation efforts and avoid duplication.

- Expanding community education on climate change, targeting different age groups from children to older populations.
- Strengthening engagement with professional networks, positioning National Societies as contributing partners and enhancing preparedness within these networks.
- Enhancing staff and volunteer knowledge and capacities as a cross-cutting priority.

Opportunities for Movement Collaboration

A range of opportunities for collaboration within the Movement were identified to support the implementation of these recommendations:

- Sharing best practices and research, such as studies produced by National Societies (e.g. the [British Red Cross research on flood preparedness](#)), recognizing that activities and contexts differ significantly across countries.
- Strengthening the role of the IFRC in facilitating information flow, including directing relevant information to appropriate counterparts within National Societies, supporting those with limited capacity, and advocating with senior management where needed. Reinforcing links with IFRC Country and Cluster Offices was also highlighted.
- Increasing knowledge sharing on specific thematic areas, including interest from the British Red Cross in tools and approaches related to resilient buildings.
- Promoting data-driven approaches, particularly in relation to risk perception, and addressing the need to better adapt existing tools (e.g. urban resilience assessment tools) to urban European contexts, where current tools may not be fully applicable.
- Encouraging the use of shared platforms to exchange experiences, including expanding the Community of Practice to enable more in-depth technical discussions.
- Exploring opportunities for joint trainings, greater use of social media for outreach, and improved dissemination of good practices.
- Sharing practical examples of collaboration with local authorities and statutory bodies, particularly in relation to evacuation planning and ensuring that systems are trusted and understood by communities.

Alignment with National Society Priorities and Capacities

Participants also reflected on how the recommendations align with their National Society priorities and capacities. Examples included:

- The Spanish Red Cross highlighted its Urban Resilience Programme, including training on early warning systems and collaboration with civil protection authorities.
- The British Red Cross emphasized its role in public education, noting that beyond awareness of early warning messages, there is a need to strengthen understanding of what preparedness actions should be taken, including for specific groups such as renters.
- The British Red Cross also highlighted that people may not act due to a lack of understanding of evacuation plans, which are often not clearly communicated to communities. This was linked to a broader sense of uncertainty, and interest was

expressed in exploring how civil society organizations can work more effectively with local authorities in this area.

Additional reflections in plenary emphasized the importance of strengthening engagement at local level, particularly between National Society branches and local authorities. While strategic discussions on climate risks and adaptation are often well developed at headquarters level, challenges remain in translating these into action at branch level, where there is often high staff and volunteer turnover. As a potential way forward, it was suggested to organize joint trainings or workshops at local level, bringing together branch representatives and their counterparts from civil protection and other relevant stakeholders. Such initiatives could support deeper exchange, help identify common challenges across contexts, and strengthen practical collaboration. The discussion also pointed to opportunities to better connect with broader initiatives on transformational adaptation planning at city and regional levels, where local authorities are increasingly engaged. In this context, National Societies were seen as having a distinct humanitarian role and added value, with potential to act as connectors between communities and institutional actors.

Conclusion

The validation workshop confirmed the overall relevance of the Scoping Study findings across diverse National Society contexts in Europe and Central Asia, while also providing important operational insights that further enrich and contextualize these findings. Discussions highlighted that many of the identified challenges, particularly related to community engagement, early warning effectiveness, institutional learning, and volunteer management, are widely experienced across the network. At the same time, the workshop underscored the added value of peer exchange and collective reflection that enables National Societies to share practical experiences, identify common challenges, and explore context-specific approaches. The findings demonstrate that while significant progress has been made in strengthening preparedness, there remains a need to translate existing knowledge, systems, and tools into actionable, locally relevant practices, particularly at community and branch level. The workshop also contributed to refining and expanding the recommendations of the Scoping Study, highlighting priorities such as strengthening risk communication and community engagement, enhancing operational learning systems, and reinforcing collaboration with local authorities and partners. The importance of network-level collaboration, including knowledge sharing, joint learning, and peer support, emerged as a key enabler for advancing these efforts. Participant feedback further reinforced these conclusions. A rapid feedback exercise captured key takeaways from the session, including collaboration, experience exchange, local collaborations, alongside a recognition that National Societies are “in the same boat” when facing increasingly complex climate-related risks. These reflections underline both the collective nature of the challenges and the value of continued exchange within the Movement.

Annex 2: Overview of Reviewed Flood Events

Flood Events in Europe and Central Asia 2021-2024 with Red Cross Red Crescent Operations			
Country (44 events)	Year	DREF (# 20)	DREF Number
Tajikistan	May 2021	X	MDRTJ030
Germany	July 2021		
Belgium	July 2021		
Netherlands	July 2021		
Switzerland	July 2021		
Georgia	October 2021	X	MDRGE015
Bosnia and Herzegovina	November 2021	X	MDRBA013
Spain	May 2022		
Georgia	July 2022	X	MDRGE016
Italy	September 2022		
Bulgaria	September 2022	X	MDRBG003
Portugal	December 2022		
Bosnia and Herzegovina	December 2022	X	MDRBA014
Türkiye	March 2023		
Croatia	May 2023		
Bosnia and Herzegovina	May 2023	X	MDRBA015
Serbia	June 2023	X	MDRRS014
Italy	May 2023	X	MDRIT004
Georgia	June 2023	X	MDRGE017
Armenia	June 2023	X	MDRAM012
Slovenia	August 2023	X	MDRSI011
Austria	August 2023		
Norway	August 2023		
Kyrgyzstan	August 2023	X	MDRKG017
Greece	September 2023		
Kazakhstan	April 2024		
Russia	April 2024		
Kyrgyzstan	May 2024 (and June)	X	MDRKG019
Kazakhstan	April 2024	X	MDRKZ013
Armenia	May 2024		
Germany	June 2024		
Armenia	June 2024	X	MDRAM013
Switzerland	June 2024		
Austria	June 2024		
Poland	September 2024	X	MDRPL014
Austria	September 2024		
Czechia	September 2024	X	MDREC005
Romania	September 2024	X	MDRRO006
Italy	September 2024		
Slovakia	September 2024		
Hungary	September 2024		
Bosnia and Herzegovina	October 2024	X	MDRBA014
France	October 2024		
Spain	October 2024		