PERTEVMUN'26

WMO
Study Guide

Agenda Item:
Addressing Extreme Fire Weather Conditions And Wildfire Risks In The Mediterranean Region

Under Secretary General:
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1. Letter from the Secretary General

ESTEEMED DELEGATES AND DISTINGUISHED GUESTS,

ON BEHALF OF THE WHOLE PERTEVMUN FAMILY, AS THE SECRETARY GENERAL, IT IS MY GREAT HONOR AND PLEASURE TO WELCOME YOU TO THE THIRD ANNUAL SESSION OF PERTEVMUN.

I WOULD LIKE TO EXPRESS MY APPRECIATION TO OUR AMAZING ORGANIZATION TEAM AND ASTONISHING ACADEMIC TEAM FOR THEIR HARD WORK AND GREAT EFFORT. THANKS TO EVERYONE'S DETERMINATION AND COMMITMENT, WE PREPARED YOU 12 COMMITTEES FOR YOU, WHICH INCLUDE TWO GENERAL ASSEMBLY COMMITTEES, SEVEN SPECIAL COMMITTEES, AND THREE CRISIS COMMITTEES. THE COMMON GROUND OF ALL OF THESE COMMITTEES IS TO ENCOURAGE YOU TO DEBATE OR ACT UPON EITHER HISTORICAL, CURRENT, OR FUTURISTIC ISSUES AND GLOBAL TOPICS TO BROADEN YOUR PERSPECTIVES.

I HOPE FOR THE DURATION OF PERTEVMUN'26, ALL THE PARTICIPANTS HAVE ONE OF THE MOST SPECTACULAR EXPERIENCES OF THEIR LIVES FILLED WITH TEAMWORK, NEW FRIENDSHIPS AND UNFORGETTABLE MEMORIES.

#LIVEFORTHEAPPLAUSE

SINCERELY,

ELA KARABATI
SECRETARY-GENERAL OF PERTEVMUN'26

2. Letter from the Under Secretary General

Most esteemed delegates,

As the Under Secretary General, I would like to welcome you all to PertevMUN'26 and the WMO committee. I am more than excited to serve you in this regard. My name is Asya Ateş, and I am currently in my sophomore year at Kağıthane Anatolian High School.

This conference therefore has a very special place in my heart, being one of the best parts of my MUN journey and the first conference I've attended. Having this opportunity alongside one of my closest friends, who is also your dear academic assistant (ELALOOO!!!!!!!!), makes it all the more special. I am more than willing to make this a memorable experience for us all.

In this committee, we will explore a topic that many of us are familiar with: the fireweather i the Mediterranean region . I have a feeling that most of you already have ideas about it, and I hope this helps you in your debates, directives and in finding solutions within the committee. Please read the study guide, even if only briefly, and focus on finding global solutions to the 'Questions to be Answered' section. Trust me, it will help you more than anything; let it be your guide through your solutions.

Lastly, please do not hesitate to contact me with any questions you may have via email or phone. I wish you the best of luck with your debates (also directives😝😝) and hope you are as enthusiastic about the committee as I am.

atezasya@gmail.com - +905522578570

Asya ATEŞ - Under Secretary General

3. Letter from the Academic Assistant

Dear delegates,

As the Academic Asisstant of this committee,I welcome you all to PertevMun'26 (best of bests) and to this amazing committee,World Meteorological Organization. My name is Ela Eraslan and I'm a 10th grader in Kağıthane Anatolian High School .I'm so glad to serve you this study guide,it has always been my dream to be here.

As I said before,this conference has a very special place in my heart since 2024 and it's a pleasure for me to be here.Experiencing this brilliant conference with my homegirl (ASYAA) makes it even more special for me.

We had so much fun while preparing your study guide,I hope it's understandable as possible.We highly encourage you to focus on solutions and to be confident. If you have any questions you can contact me. I wish you the best and I hope your PertevMun experience will go in the best way possible

4. Key Terms and Definitons

Extreme Fire Weather Conditions : A combination of atmospheric factors, such as high temperatures, low relative humidity, strong winds and prolonged drought, that significantly increases the likelihood of wildfires being ignited, spreading rapidly and burning intensely.

Wildfire Risk: The likelihood and potential impact of wildfires in a given area are determined by the interaction of meteorological conditions, vegetation (fuel) and human activity.

Fire Weather Index (FWI): A widely used meteorological tool which integrates temperature, wind speed, humidity and rainfall data in order to predict potential fire behaviour and intensity, as well as estimating fire danger levels.

Meteorological Monitoring Systems: Networks of weather stations, sensors and observational tools collect real-time atmospheric data to support the analysis of fire weather conditions and forecasting.

Early Warning Systems (EWS): Integrated systems that combine monitoring, forecasting and communication mechanisms in order to provide timely alerts about extreme fire weather and wildfire risks. This allows preventive and emergency action to be taken.

Remote Sensing: The use of satellite and aerial technologies to observe environmental conditions and detect active fires, as well as to analyse the health of vegetation, the dryness of fuels, and the temperature of the land surface.

Fuel Load: The amount of flammable vegetation in an area, including dry grass, shrubs and trees. This directly affects the intensity and spread of a fire.

Fuel Moisture: The amount of water contained within vegetation that determines how easily it can ignite and sustain a fire in conditions of extreme weather.

Wildland–Urban Interface (WUI): Areas where human settlements are located in or near landscapes at risk of wildfires, which increases the risk of damage and complicates response and rescue efforts.

Prescribed burning (controlled burning): A preventive land management practice in which fires are deliberately set under controlled conditions to reduce fuel levels and lower the risk of uncontrolled wildfires.

Capacity building: Efforts to strengthen the national and regional ability to manage wildfire risks through training, infrastructure development, technological access and institutional support.

Climate adaptation: Long-term strategies and policies aimed at reducing vulnerability to climate-driven hazards, including an increase in the frequency and intensity of wildfires.

5. Introduction to the Committee

The World Meteorological Organization (WMO) is the authoritative voice of the United Nations system on the state and behaviour of the Earth's atmosphere, its interaction with the land and oceans, the resulting weather and climate, and the distribution of water resources.

Since weather, climate and the water cycle do not recognise national boundaries, international cooperation on a global scale is essential for developing meteorology and operational hydrology, and for reaping the benefits of their application. The WMO provides a framework for this kind of international cooperation for its 193 member states and territories.

The WMO's area of focus includes meteorology (weather and climate), operational hydrology, and related geophysical sciences. The organisation plays a pivotal role in promoting the safety and welfare of humanity by fostering collaboration between its members' National Meteorological and Hydrological Services (NMHSs) and by advancing the application of meteorology and hydrology in various areas of society and the economy.

The WMO regulates and facilitates the independent and unrestricted exchange of data, information, products, and services in real or near real-time. This is critical for applications relating to the safety and security of society, social and economic welfare, and environmental protection. WMO standards and policies also contribute to the formulation of policies in these areas at national and regional levels.

The organisation plays a leading role in international efforts to monitor and protect the climate and the environment. In collaboration with other UN agencies and NMHSs, the WMO supports the implementation of the UNFCCC and several environmental conventions, providing governments with advice and assessments on related matters. These activities help to ensure the sustainable development and well-being of nations.

6. Introduction to the Agenda Item

The Mediterranean region is increasingly recognized as a global hotspot for extreme fire weather conditions and escalating wildfire risk due to the convergence of its climatic characteristics and the accelerating impacts of climate change. Defined by prolonged hot and dry summers, limited seasonal precipitation, and frequent strong winds, the Mediterranean climate creates an environment in which vegetation rapidly loses moisture and becomes highly susceptible to ignition. In recent decades, rising average temperatures and more

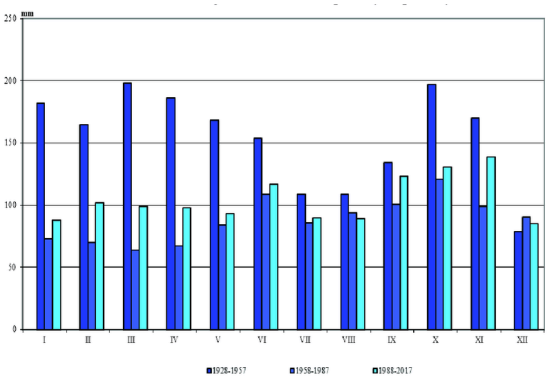
frequent heatwaves have intensified evapotranspiration rates, reduced soil and vegetation moisture, and extended periods of drought, thereby increasing the availability of dry, combustible fuels across the landscape. These climatic changes have also lengthened the wildfire season beyond its historical limits, allowing fires to occur earlier in spring and persist later into autumn. Furthermore, strong regional wind systems, such as the Etesian winds in the Eastern Mediterranean, can accelerate fire spread and hinder suppression efforts, particularly when combined with extreme heat and dry conditions. As a result, wildfires in the Mediterranean region have become more frequent, larger in scale, and more severe in intensity, posing growing threats to human settlements, critical infrastructure, biodiversity, and ecosystem stability across southern Europe, North Africa, and the Eastern Mediterranean. Understanding the relationship between extreme fire weather conditions and wildfire behavior is therefore essential for assessing future risks and developing effective prevention, adaptation, and land-management strategies in the region.The Mediterranean region (including southern Europe, North Africa, and the Levant) has a climate characterized by:

- Hot and dry summers
- Mild, wetter winters
- Strong seasonal winds (like Meltemi winds)

Extreme fire weather conditions cause climate change and these two conditions trigger each other. Climate change(driven by rising greenhouse gas emissions)is making extreme fire weather both more common and more severe. Summers are getting longer ,hotter and drier, which increases the fire danger. WWA shows winter rainfall in parts of the eastern Mediterranean has decreased by about 14%, leaving landscapes drier before summer even begins.

7. Scientific and Climatic Background

Mediterranean Climate Characteristics

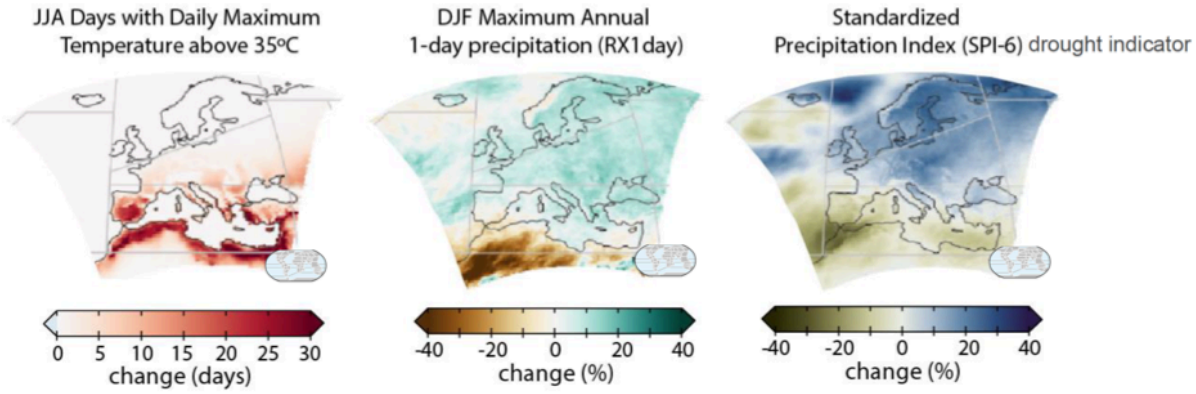


The Mediterranean climate is characterized by hot, dry summers and mild, rainy winters, making it one of the most distinctive climate types in the world. During summer, temperatures often rise above 25–30°C, and rainfall is extremely limited because subtropical high-pressure systems dominate the region, leading to long periods of drought. In contrast, winters are influenced by mid-latitude cyclones, bringing moderate to heavy rainfall while temperatures generally remain between 8–15°C, rarely dropping below freezing. This seasonal rainfall pattern strongly affects natural vegetation, which mainly consists of maquis and garigue, made up of evergreen, drought-resistant shrubs with small, hard leaves that reduce water loss. The climate is also highly favorable for agriculture; crops such as olives, grapes, citrus fruits, figs, and wheat thrive in these conditions, although irrigation is often necessary during the dry summer months. The Mediterranean climate is typically found on the western sides of continents between 30° and 45° latitude, including countries like Turkey, Italy, Greece, and Spain, as well as regions such as California, central Chile, Cape Town, and southwestern Australia, where similar temperature and rainfall patterns are observed.

Climate Change and Raising Fire Risk

On 11 August 2021, the World Meteorological Organization (WMO) reported a temperature of 48.8 °C in Sicily, Italy. The observation was made by a weather station administered by a regional agro-meteorological network rather than Italy's national meteorological service. It occurred during an intense heatwave in Italy, Spain and parts of North Africa. According to the WMO Weather and Climate Extremes Archive, the current verified record of the highest maximum temperature for continental Europe is 48.0°C (118.4°F) and was set in Athens on 10 July 1977. Climate change raises wildfire risk by creating hotter, drier, and more unstable environmental conditions that make fires easier to ignite and much harder to control. Rising global temperatures increase the frequency and intensity of heatwaves, which dry out vegetation such as grasses, shrubs, and forests, turning them into highly flammable fuel. At the same time, climate change alters precipitation patterns, leading to longer droughts and reduced soil moisture, as seen in regions like the Mediterranean Basin, California, and Australia. These dry conditions are often combined with stronger and more erratic winds, which help fires spread rapidly over large areas once ignition occurs. In addition, warmer winters reduce snowpack and cause earlier snowmelt, extending the fire season by weeks or even months; for example, in western North America, wildfires now start earlier in spring and last well into autumn. Climate change can also increase the frequency of dry thunderstorms, which produce lightning without significant rainfall, a major natural ignition source for wildfires. Together, these factors create an environment where even small ignition sources—such as a spark from power lines or human

activity—can escalate into large, destructive wildfires with severe ecological, economic, and human impacts.



The newly released Sixth Assessment Report of the IPCC states that with climate change, we are have been observing more frequent and severe high temperature events, and this will continue to do in the future.A regional IPCC fact sheet for Europe states that "The frequency and intensity of hot extremes, including marine heatwaves, have increased in recent decades and are projected to keep increasing regardless of the greenhouse gas emissions scenario. Critical thresholds relevant for ecosystems and humans are projected to be exceeded for global warming of 2°C and higher (high confidence)." The temperature in the Mediterranean area – both in Europe and North Africa – has increased by more than the global average.

The IPCC stated that, for the European Mediterranean, there will be a "Projected combination of climatic impact-driver changes (warming, temperature extremes, increase in droughts and aridity, precipitation decrease, increase in fire weather, mean and extreme sea levels, snow cover decrease, and wind speed decrease) by mid-century and at global warming of at least 2°C and above (high confidence). For the North African Mediterranean, the IPCC projects decreases in mean precipitation, increases in fire weather conditions and decreases in mean wind speed, as well as observed and projected increases in aridity, meteorological, hydrological and agricultural and ecological droughts. Experts cannot say exactly when these records will be broken but Europe will need to prepare for the eventuality of further records being broken with temperatures above 50C being possible in Europe in future.

Seasonal and Atmospheric Drivers of Wildfires

Seasonal and atmospheric drivers have a huge role in the formation and spread of wildfires. Seasonally,especially in dry and hot summers and long periods of time without any rain,soil reduces it's moisture and the water content in vegetation which makes forests extremely susceptible to fire.
At the end of spring and the beginning of summer, the vegetation grows rapidly and dries in the summer increases the amount of flammable substances. In addition, in some regions, little

snowfall in winter and early snow melts leave a drier environment in the summer months and cause the fire season to be prolonged. In terms of atmospheric factors, high air temperature, low relative humidity and strong winds are the most critical factors. While low humidity causes easy ignition of plants, the wind both allows the fire to spread quickly and moves the sparks and embers forward, creating new fire foci. In addition, the drought seen with hot and dry air masses weakens forest ecosystems in the long run. In some cases, rainless lightning storms (dry storms) can also start forest fires as a natural source of ignition. When all these seasonal and atmospheric conditions come together, the likelihood and destructiveness of forest fires increases significantly.The World Meteorological Organization (WMO) claimed that there is strengthened evidence that climate change increases the frequency and severity of fire weather around the world in 2020. Land management alone cannot explain recent increases in wildfires, according to an update from internationally acclaimed scientists.

Looking at the general situation, the summer of 2025 was spent with hundreds of forest fires in most of the Mediterranean countries with the effect of extremely hot weather, drought and wind. These fires also posed increased risks in other Mediterranean countries such as Spain, Italy and Bosnia.It was claimed that summer 2025 was one of the hottest summers ever.With the several wildfires that had happened in

- Cyprus-Limassol wildfire
- Türkiye-Aydın,İzmir,Antalya,etc. wildfire
- Greece-Kefalonia wildfire
- France-Corbières Massif wildfire

We can say that the more climate change the more fire case.

8. Historical Background and Case Studies

Wildfires have long been a common occurrence in the Mediterranean region, primarily due to the region's hot, dry summers and mild, wet winters. For a long time, wildfires have mostly followed the same seasonal patterns and have been a part of how nature and people use the land. Vegetation in the Mediterranean has adapted to living with fire, and traditional farming methods – such as grazing, small-scale farming, and controlled burning – have helped keep the amount of fuel building up in the area low. Although there were wildfires, they were generally contained and rarely escalated into major humanitarian or economic disasters.

But in the last few decades, the way wildfires have been affecting the Mediterranean has changed a lot. Rising temperatures, prolonged droughts, and increasingly frequent heatwaves have changed how fires behave in the region, with extreme fire weather conditions being a big factor. All of these changes have been made even worse by changes in the climate, people moving into the area, and the growth of cities in places where fires are common. This has turned wildfires from something that only happens at certain times of the year into really big disasters. It's really important to understand this historical evolution if we're going to assess current wildfire risks and develop effective, science-based responses within the mandate of the World Meteorological Organization.

● *Timeline of Important Events*

The Escalation of Wildfire Risk in the Mediterranean Region

● *Pre-Industrial Period (Before the 20th Century)*

Before the large-scale industrialisation of Mediterranean societies, wildfire activity was closely linked to natural climatic cycles and to local land management practices. Fires are known to occur with a certain frequency during the summer months in dry climates, but are frequently limited in scale due to the topography of the landscape, the ongoing use of the land for agricultural and other purposes, and the lower continuity of fuel for burning. Rural communities have historically adapted to the risk of fire through the adoption of agricultural practices, grazing patterns, and manual fuel management techniques. These strategies have contributed to reducing the likelihood of extreme fire behaviour in these areas. During this period, fire was regarded as a natural ecological process rather than a widespread disaster risk.

● *Mid-20th Century (1950's-1980's)*

Following World War II, rapid urbanisation and economic transformation reshaped the landscapes of the Mediterranean region. Rural depopulation and the abandonment of agriculture led to unmanaged vegetation spreading across large areas, increasing fuel loads and continuity. At the same time, urban expansion brought residential development closer to forested and shrubland areas, significantly increasing exposure to wildfire hazards. While meteorological conditions had not yet reached today's extremes, these structural changes created new vulnerabilities, paving the way for more severe wildfire impacts under poor weather conditions.

● *Late 20th Century (1990's)*

During the 1990s, Mediterranean countries began to experience noticeable changes in the climate, including rising average temperatures, reduced rainfall in some regions and more frequent droughts. Fire seasons gradually lengthened, extending beyond the traditional summer period. Increased vegetation dryness made landscapes more vulnerable to ignition

and fire spread. Although wildfire management remained primarily focused on suppression, this decade saw the first clear indication that climate unpredictability and extreme weather events were becoming increasingly influential in shaping wildfire risk.

- ***Early 21st Century (2000's)***

The early 2000s marked a significant turning point in the Mediterranean wildfire regime. Severe droughts combined with prolonged heatwaves created conditions ideal for large, fast spreading fires. Events such as the 2007 wildfires in southern Europe showed how a combination of high temperatures, low relative humidity and strong winds could quickly overwhelm firefighting capabilities. These disasters revealed the flaws in reactive, suppression-focused strategies, emphasising the increasing importance of fire weather forecasting and early warning systems.

- ***2010's (2010-2019)***

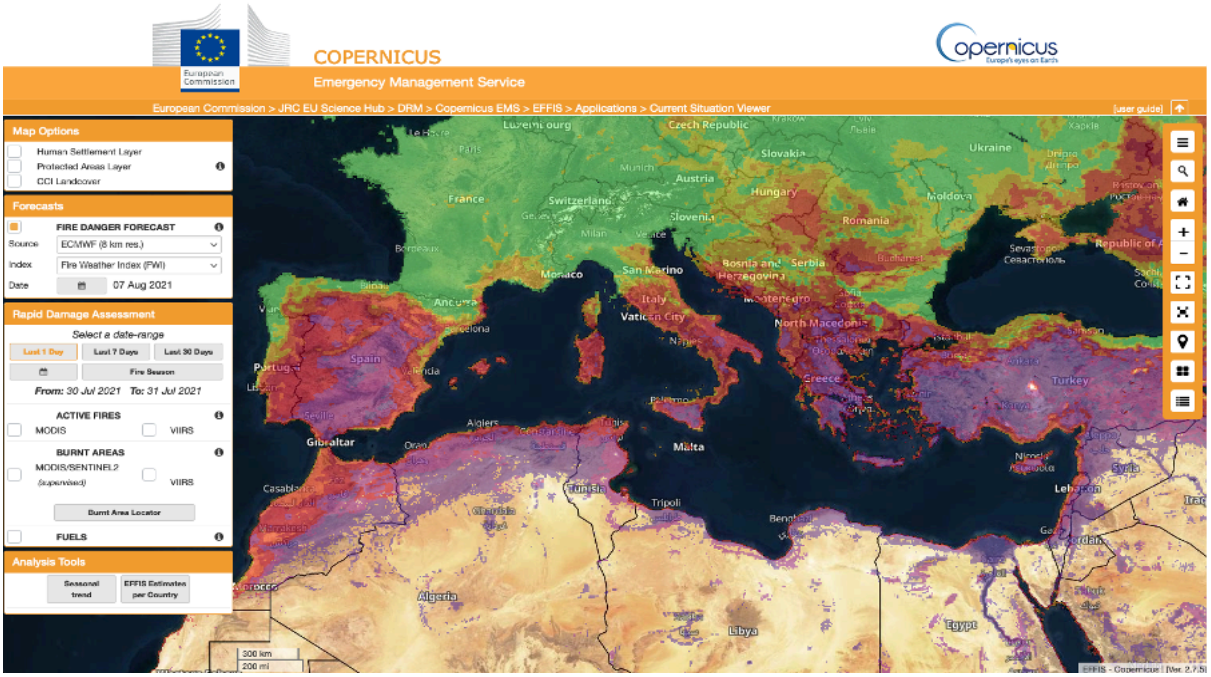
Throughout the 2010s, extreme fire-weather events became more frequent and intense across the Mediterranean Basin. Heatwaves lasted longer and occurred more frequently, while repeated droughts reduced fuel moisture levels to critically low levels. Wildfires began to behave extremely, with characteristics including rapid spread, high intensity and resistance to suppression efforts. This decade saw a shift from isolated catastrophic events to recurrent seasonal fire crises, putting sustained pressure on emergency response systems and public resources.

- ***Early 2020's (2020 - Present)***

The early 2020s have seen unusual levels of wildfire activity across the Mediterranean region. Record-breaking temperatures, prolonged droughts and synchronised heatwaves have resulted in large fires occurring in multiple locations across several countries, often all at once. These conditions have exposed weaknesses in firefighting capacity, coordination and preparedness, emphasising the need for forecast-based decision-making, regional cooperation and integrated risk management approaches. The increasing scale and frequency of wildfires highlight the urgent need to address this risk as a regional and climate-driven challenge.

● *Major Mediterranean Wildfires*

In recent decades, wildfire events across the Mediterranean basin have revealed the increasingly important role of extreme weather conditions in determining the behaviour, scale and impact of fires. While the sources of ignition are often human-related, whether accidental or deliberate, the severity, speed and destructiveness of recent fires are closely linked to meteorological extremes, including prolonged heatwaves, critically low relative humidity, drought and strong regional winds. These conditions increase the probability of ignition and significantly influence fire intensity, rate of spread and resistance to suppression efforts.



GEFF fire danger forecasts initialized on 31 July 2021, showing 'very extreme' (purple shading) around the Mediterranean valid for 7 August. Credit: EFFIS

In Greece, for example, the 2007 wildfires in the Peloponnese were one of the earliest modern examples of a climatic disaster involving wildfires in the Mediterranean. Prolonged drought had already reduced fuel moisture levels before a period of extreme heat and strong winds caused the fires to spread rapidly. The fires resulted in major environmental damage, loss of life and long term economic losses. Further fire seasons, particularly in 2018 and 2021, showed how high temperatures combined with dry fuels and wind-driven behaviour could rapidly overwhelm local response mechanisms. In several cases, fires transitioned into fast-moving, high-intensity events that left affected populations with minimal time to leave the area. These disasters emphasised the importance of integrating fire weather forecasting into civil protection planning and highlighted the consequences of delayed risk communication.

Like many other countries, Turkey has experienced increasingly severe wildfire seasons, particularly along its Mediterranean and Aegean coastlines where tourism infrastructure and expanding urban settlements share space with forested landscapes. The wildfire outbreak of 2021 was one of the most extensive fire crises in the country's recent history. Multiple fires ignited and spread simultaneously under record breaking temperatures and during a period of intense drought. The combination of extreme heat, low humidity and localised wind systems made suppression efforts significantly more difficult and put a huge burden on national firefighting resources. The scale of the crisis showed how extreme fire weather can lead to a series of challenges, such as putting pressure on emergency services, disrupting transportation and energy systems, and causing long-term ecological damage.

Spain has also experienced repeated large scale wildfires, particularly during long summer heatwaves. Inland regions experience intense heat extremes and dry continental

winds, which contribute to the rapid spread of fires across vast areas. During several recent fire seasons, Spain has witnessed fires behaving erratically and extremely, including rapid directional shifts driven by wind changes. These events revealed the interaction between meteorological instability and the effect of decades of land use change on fuel loads. Similarly, Italy has experienced severe wildfire seasons, particularly in the south of the country, where drought and high temperatures increase the flammability of the landscape. In both countries, wildfires have increasingly threatened areas on the edge of cities, highlighting the growing vulnerability of communities located within the wildland urban area.

Collectively, these case studies reveal a common pattern: although local conditions differ, extreme fire weather is a unifying factor in Mediterranean wildfire disasters. High impact fire seasons are increasingly associated with multiple meteorological extremes rather than individual heatwaves. This regional pattern highlights the need for coordinated preparedness measures, improved seasonal forecasting and harmonised fire danger monitoring systems across national borders.

- ***Lessons Learned from Past Disasters***

The historical wildfire disasters examined above teach us several critical lessons that are relevant to the agenda of addressing extreme fire weather conditions and wildfire risks in the Mediterranean region. One of the most consistent findings is the importance of early warning systems and forecast-based preparedness. In many catastrophic fire events, meteorological indicators such as extreme temperature anomalies, prolonged drought, low relative humidity and forecasted strong winds were detectable before ignition and escalation. However, these meteorological signals were often not translated into actionable risk communication and preventive measures. This highlights the need for stronger integration between national meteorological and hydrological services and civil protection authorities.

Another lesson is about the growing importance of extreme weather happening at the same time in different places. Recent wildfire crises have frequently been accompanied by heatwaves, water shortages and strain on energy systems, creating multidimensional emergencies. When multiple fires ignite simultaneously under extreme fire weather conditions, the capacity to suppress them becomes limited and prioritisation decisions become more complex. This pattern shows that regional cooperation mechanisms, resource-sharing agreements and response systems that can manage multiple cross-border crises are necessary.

Another key finding is that strategies focused only on fire suppression are insufficient in the context of escalating fire weather extremes. While a rapid response is still necessary, reducing long-term risk requires preventive measures such as improved land management, strategies to reduce fuel loads, and urban planning policies that minimise exposure in high-risk areas. Historical events repeatedly demonstrate that areas with high population levels located within dry, fire-prone landscapes face greater impacts during extreme seasons.

Furthermore, past disasters emphasise the need for standardised fire danger rating systems and consistent data collection methods across the Mediterranean region. Differences in risk classification systems, monitoring capacities and forecasting tools can make it difficult to coordinate regional responses. International cooperation, particularly in the areas of meteorological data sharing, climate modelling and early warning frameworks, has therefore become central to the effective governance of wildfire risk.

Finally, historical wildfire crises show that climate change is not an abstract concept, but an active force that is reshaping the Mediterranean fire regime. Rising temperatures, increasing drought frequency and longer fire seasons suggest that extreme fire weather conditions may become more frequent in the coming decades. This situation underlines the importance of integrating climate adaptation strategies into wildfire risk management. For delegates, these lessons highlight that improving emergency responses is not enough; systemic, science-based, regionally coordinated solutions are also required, in line with the mandate of the World Meteorological Organization.

9. Current Challenges in the Region

The Mediterranean region is currently facing an escalating series of weather-related challenges that highlight it's status as one of the world's most vulnerable climate change hotspots. Rising temperatures have intensified and prolonged heatwaves, while decreasing precipitation and higher evaporation rates are worsening drought and water scarcity, particularly in Southern Europe, North Africa and parts of the Eastern Mediterranean. At the same time, extreme weather events(including destructive wildfires, sudden flash floods, and powerful storms)are becoming more frequent and severe. The warming of the Mediterranean Sea further amplifies these risks by contributing to marine heatwaves, biodiversity loss and stronger coastal flooding. Together, these interconnected phenomena are not only reshaping the region's climate patterns but also threatening public health, food security, ecosystems and economic stability across Mediterranean societies.

- ***Early Warning and Forecasting Gaps***

Despite increasing climate risks, significant gaps remain in early warning and forecasting systems across the Mediterranean region. Many countries, particularly in North Africa and parts of the Eastern Mediterranean, face limitations in meteorological infrastructure, data sharing, and technological capacity, which reduce the accuracy and timeliness of forecasts for extreme events such as heatwaves, floods, droughts, and wildfires. Inconsistent monitoring networks, outdated equipment, and insufficient satellite and radar coverage further hinder real-time risk assessment. In addition, weak coordination between national and regional agencies slows information exchange and emergency response, while socioeconomic inequalities affect public access to warnings and preparedness measures. These challenges are especially critical because extreme weather events in the Mediterranean often develop rapidly and cross national borders, making regional cooperation and integrated forecasting systems essential. Strengthening early warning mechanisms, investing in climate

technology, and improving communication between governments and communities are therefore crucial for reducing vulnerability and enhancing resilience in the region.

- ***Cross border fire management issues***

Wildfires in the Mediterranean frequently spread across national boundaries or occur in border regions, creating serious cross-border management challenges. The combination of extreme heat, drought, strong winds (such as the Mistral in southern France or Etesian winds in Greece), and continuous forest ecosystems means that fires do not respect political borders. However, emergency response systems, legal frameworks, and firefighting capacities differ significantly between countries, leading to coordination gaps.

One major issue is inconsistent preparedness levels. While countries like France, Italy, and Spain have relatively advanced aerial firefighting fleets and monitoring systems, other Mediterranean countries may lack sufficient aircraft, funding, or early detection technologies. When a fire spreads from one country into another, differences in response speed and equipment can worsen the situation.

Another challenge is limited real-time data sharing. Weather forecasts, satellite imagery, and fire-risk maps are not always shared quickly or efficiently across borders. Although mechanisms exist within the European Union through the Civil Protection Mechanism, coordination between EU and non-EU Mediterranean countries can be slower or politically complicated.

Legal and administrative barriers also create obstacles.Each country has different:

- Airspace regulations for firefighting aircraft
- Emergency command structures
- Environmental policies

These differences can delay cross-border deployment of resources. For example, sending aircraft from one country to assist another may require formal diplomatic approval, which takes time during rapidly spreading fires.Additionally, political tensions in parts of the Eastern Mediterranean and North Africa may limit cooperation, even when environmental risks are shared. Climate change is increasing the frequency and intensity of fires, making these coordination gaps more dangerous each year.Finally, there is the issue of unequal funding and capacity building. Wealthier countries can invest in prevention strategies such as controlled burns, forest management, and early warning systems, while others focus mainly on emergency response. This imbalance creates regional vulnerability because Mediterranean ecosystems are interconnected.

- ***Urban Expansion into Fire-prone Areas***

Urban expansion into fire-prone areas has become a major environmental and disaster-risk challenge across the Mediterranean. Rapid population growth, tourism

development, and rising demand for coastal and suburban housing have pushed cities outward into forests, shrublands, and dry landscapes that are naturally adapted to periodic wildfires. This process has created extensive wildland–urban interfaces (WUI)—zones where human settlements and flammable vegetation overlap—making both people and ecosystems more vulnerable to fire.One key issue is the spread of low-density housing and holiday homes in countries such as Spain, Greece, Italy, and Türkiye. Coastal regions and scenic rural landscapes attract tourism and real estate investment, leading to construction in high-risk zones. These settlements often lack proper fire-resistant building materials, evacuation routes, or buffer zones, which increases the likelihood of casualties and property loss during wildfire events.Another major challenge is that expanding urban areas increase ignition sources. Human activities—such as power lines, vehicles, agricultural burning, and negligence—are responsible for the majority of wildfires in the Mediterranean. As populations move closer to forests, the number of potential fire triggers rises significantly. In addition, fragmented land ownership and urban sprawl make it difficult to implement effective vegetation management and fuel reduction strategies.

Urban expansion also complicates firefighting efforts. Dense housing in narrow, forested terrain limits access for emergency vehicles and aerial firefighting. In many Mediterranean towns, especially in mountainous or coastal regions, road networks were not designed for rapid evacuation or large-scale fire response. This increases both response time and disaster severity.Socioeconomic and governance factors further contribute to the problem. Weak land-use planning, informal settlements, and insufficient enforcement of environmental regulations allow construction in high-risk areas. Climate change intensifies this risk by creating hotter, drier conditions that make previously safe zones more fire-prone.

10. Existing International and Regional Frameworks

The Mediterranean region relies on a combination of global climate agreements, disaster-risk reduction frameworks and regional cooperation mechanisms to address rising climate and wildfire risks. However, while these frameworks provide coordination platforms and financial mechanisms, implementation and enforcement remain uneven across countries.

- UNFCCC(United Nations Framework Convention on Climate Change)
- Paris Agreement
- Union for the Mediterranean (UfM)
- European Union Civil Protection Mechanism
- Sendai Framework for Disaster Risk Reduction
- Barcelona Convention

WMO Fire Weather Activites

World Meteorological Organization (WMO) is a specialized agency of the United Nations responsible for international cooperation in meteorology, climatology, hydrology, and

related environmental sciences. It coordinates global weather data exchange and supports early warning systems for extreme events, including wildfires.Some of the activities are:

- Fire Weather Forecasting and Early Warning Systems
- Data Sharing and Global Monitoring
- Climate Research and Fire Risk Projections
- Capacity Building and Training

In summary,WMO's fire weather activities focus on forecasting, data sharing, climate research, early warning systems, and capacity building. In the Mediterranean(where heatwaves, drought, and urban expansion are increasing wildfire risk)WMO's role is critical for improving preparedness and strengthening cross-border cooperation.

Sendai Framework for Disaster Risk Reduction

The Sendai Framework for Disaster Risk Reduction is a global agreement adopted in 2015 in Sendai, Japan, under the United Nations. It aims to reduce disaster risks and losses in lives, livelihoods, and infrastructure by shifting the focus from responding to disasters toward preventing and managing risks before disasters occur. It replaced the previous Hyogo Framework and reflects the growing importance of climate change, urbanization, and environmental degradation in increasing disaster vulnerability.

The main goal is to strengthen resilience and reduce the impacts of natural and human-made hazards, including floods, earthquakes, droughts, heatwaves, and wildfires. It recognizes that disasters are not only natural events but also the result of weak governance, poor planning, and socioeconomic inequalities.

There are four key priorities:

- Understanding disaster risk
- Strengthening disaster risk governance
- Investing in risk reduction and resilience
- Enhancing preparedness and "Build Back Better"

In summary,the Sendai Framework represents a global shift from reacting to disasters to preventing and managing risks, focusing on resilience, governance, investment, and preparedness. It plays a key role in guiding national and regional disaster strategies, particularly in climate-vulnerable regions like the Mediterranean.

Regional Cooperation Mechanisms in the Mediterranean

The Mediterranean region faces shared environmental challenges such as wildfires,droughts,extreme heat and water scarcity.Since these risks often cross national borders,countries decided to rely on regional cooperation mechanisms to coordinate policies,share resources and strengthen disaster preparedness.There are several international organizations and agreements which facilitate collaboration among Mediterranean states such as:

- Barcelona Convention
- Union for Mediterranean
- European Union Civil Protection Mechanism
- Mediterranean Action Plan (MAP)
- Food and Agriculture Organization (FAO)

Despite these mechanisms,cooperation can still be limited by; political tensions between some Mediterranean states,unequal economic resources,limited funding for joint climate initiatives.

11. Tools and Technologies

Effective wildfire risk management requires a range of connected scientific, technological and operational tools. These systems transform raw weather observations into actionable information for decision makers, fire managers, civil protection authorities and bodies responsible for international coordination. They support the entire disaster risk management process, from prevention and preparedness to response, recovery and long term adaptation.

In the Mediterranean region, where the interaction of complex topography, strong seasonal winds, prolonged drought and expanding urban/wildland interfaces is particularly challenging, wildfire management tools must operate at multiple geographic and temporal scales. Local weather variability, cross border smoke transport and shared ecosystems necessitate coordinated monitoring systems and shared data platforms. Rapid advances in remote sensing, artificial intelligence, high resolution modelling and cloud computing are transforming how wildfire risk is predicted and managed, enabling more accurate detection and improved strategic planning.

However, technology alone is insufficient. The effectiveness of these tools depends on institutional capacity, funding, training, regional cooperation and integration into emergency decision making structures. The following subsections outline the major technological developments that support modern wildfire management.

Meteorological Monitoring Systems

Meteorological monitoring systems are crucial for understanding wildfire risk because atmospheric conditions directly affect the probability of ignition, how quickly a fire spreads, the intensity of the flames, and how difficult it is to suppress the fire. Even slight variations in factors such as wind direction, humidity, and temperature can dramatically change the behaviour of fires, particularly in mountainous Mediterranean terrain.

- ***Surface Weather Stations and Mesonets***

National meteorological services operate networks of surface stations that automatically measure temperature, relative humidity, wind speed and direction, atmospheric

pressure and rainfall. These observations are essential for calculating fire danger levels and for weather prediction models.

Mesoscale networks, or mesonets, provide much more detailed coverage than traditional national networks. They capture localised microclimates, such as valley wind systems, coastal sea breezes, and Föhn-type downslope winds, which can significantly impact fire behaviour. In regions where wildfires are common, mesonets allow the relevant authorities to identify extreme localised fire weather conditions that might not appear on broader meteorological maps.

However, maintaining such detailed networks is expensive. Stations require calibration, maintenance, protection against vandalism, and regular data validation. In remote or mountainous regions, coverage gaps still exist.

- ***Fire Weather Indices and Danger Rating Systems***

Meteorological data is often made into operational tools using Fire Weather Indices (FWIs) and national danger rating systems. These indices combine factors such as temperature, humidity, wind and rainfall in order to predict fuel moisture levels and potential fire intensity.

The FWI system is widely used across Europe and the Mediterranean and produces categories such as low, moderate, high, very high and extreme danger. These classifications are used to inform operational decisions, including:

- restricting forest access
- pre-positioning firefighting resources
- issuing public warnings
- suspending agricultural burning.

While standardised systems improve cross-border coordination, regional adjustments are still necessary. Mediterranean vegetation types (e.g. maquis shrubland and pine forests) respond differently to drought stress than boreal forests do, so fuel models must reflect local ecological realities.

- ***Fuel Moisture and Environmental Sensors***

In addition to traditional weather parameters, modern wildfire monitoring increasingly uses fuel moisture sensors that are placed directly in vegetation or soil. These sensors measure the dryness of plant material, which is one of the strongest predictors of ignition potential.

Emerging Internet of Things (IoT)-based sensor networks can send microclimate data in real time to centralised platforms. This is particularly valuable in wildland-urban zones, where the risk of ignition is highest.

Advantages:

- Real-time, operationally actionable data
- High temporal resolution
- Direct link to fire behaviour modelling.

Disadvantages:

- Infrastructure costs and maintenance burdens.
- Limited coverage in remote areas
- Potential data gaps during extreme events.

Satellite and Remote Sensing

Satellite and remote sensing technologies provide consistent, large scale monitoring that goes beyond national borders. In a region such as the Mediterranean, where fires frequently affect multiple countries and smoke crosses borders, satellite systems are essential.

- ***Active Fire Detection and Thermal Anomalies***

Satellite instruments detect active fires using thermal sensors that identify heat signatures significantly above background temperatures. Near-real-time hotspot detection helps the authorities identify emerging fires within a matter of minutes or hours, even in remote or inaccessible areas.

These systems are particularly valuable during periods of extreme fire weather when multiple ignitions may occur simultaneously due to lightning or human activity. Rapid detection allows for faster response and control, which is crucial in preventing small fires from escalating into catastrophic events.

However, small fires under the canopy or those hidden by heavy cloud cover may go undetected. Limitations in space resolution can also make early detection difficult in areas with heavy vegetation.

- ***Vegetation Health and Pre-Fire Risk Mapping***

Remote sensing also supports long-term fire risk analysis by measuring factors such as vegetation health, fuel accumulation and drought stress. Indices such as the Normalised Difference Vegetation Index (NDVI) and soil moisture anomalies help to identify areas experiencing extreme dryness, often weeks before fires ignite.

This information can be used to inform seasonal predictions and strategic planning. For instance, if satellite data reveal extreme drought stress in southern Spain or Greece, civil protection agencies can increase preparedness levels before the peak fire season.

- ***Smoke Plume Tracking and Air Quality Monitoring***

Satellites play a crucial role in tracking the spread of smoke and its impact on the atmosphere. Smoke from wildfires in the Mediterranean can travel hundreds or even thousands of kilometres, affecting air quality in neighbouring countries.

When combined with atmospheric transport models, satellite observations enable forecasters to predict smoke movements and issue health warnings. This is particularly important for vulnerable groups, such as the elderly and people with breathing difficulties.

- ***Drones and High-Resolution Remote Sensing***

Unmanned aerial systems (UAS), or drones, are now being used more and more for:

- real time fire perimeter mapping
- post fire damage assessment
- monitoring hotspots after containment.

Although drones provide greater geographical detail than satellites, they are limited by flight time, weather conditions and legal restrictions.

Advantages:

- Large geographical coverage
- Cross-border visibility
- Early detection in remote terrain
- Critical for smoke and air quality forecasting

Disadvantages:

- Cloud/smoke interference.
- Resolution limits for small fires
- High data processing requirements.
- Legal restrictions for drones

Data Sharing and Forecast Models

Although monitoring systems generate large amounts of data, their effectiveness depends on their integration into forecasting models and coordinated information-sharing platforms. In the Mediterranean region, where wildfire risk is always present, these systems must be capable of operating together if they are meant to be effective.

- ***Early Warning Systems and Impact Based Forecasting***

Modern wildfire early warning systems try to predict where a wildfire will go, not just where it might happen. Instead of just predicting high fire weather conditions, these systems

estimate the potential consequences of a fire, such as how many people will be affected, the risk to infrastructure, and whether people will need to be evacuated.

Local projects are working together to create systems that provide the same early warnings about dangerous weather. These systems use information from weather forecasts, satellite data and assessments of how likely it is that certain areas will be affected. These platforms help people who work in weather, fire and civil protection to understand what is going on better.

But to achieve this, there are some requirements such as: information being the same everywhere, the foundation of legal agreements, and political cooperation.

- ***Numerical Weather Prediction and Fire Spread Models***

High resolution numerical weather prediction (NWP) models provide short-term forecasts of critical factors for predicting fire behaviour, such as wind shifts, temperature extremes and humidity changes.

Fire spread models integrate:

- weather forecasts
- topography
- vegetation type
- fuel moisture

These models simulate potential fire growth scenarios to support disaster planning and resource deployment. Despite being increasingly advanced, fire models still face difficulties due to quickly changing conditions and unpredictable human factors.

- ***Data Portals and Compatibility***

National and regional wildfire information is brought together on accessible, centralised platforms via standardised data portals, making it available to policymakers and responders. Standardised data formats allow for cross border comparisons of fire danger levels and resource deployment strategies.

However, challenges include cybersecurity, concerns about data sovereignty, unequal technical capacity among countries, and funding sustainability.

Advantages:

- Improved regional coordination
- Improved strategic planning
- Better resource management
- Transparent information exchange

Disadvantages:

- Requires advanced technology
- Dependence on political cooperation
- Risk of data becoming disorganised without standards

Innovative & Emerging Technologies

Emerging technologies are transforming the way we manage wildfires.

- *Artificial Intelligence and Deep Learning:* AI models can analyse satellite imagery to detect smoke plumes more quickly than traditional techniques. Machine learning can also be used to improve predictions of how fires will spread by learning from historical datasets.
- *Big data and cloud platforms:* Cloud-based processing allows for the quick analysis of large satellite datasets, reducing response times.
- *Autonomous Detection Towers:* AI-enabled optical cameras mounted on towers can automatically detect smoke columns and alert the relevant authorities.
- *Predictive seasonal outlook systems:* Coupling climate projections with vegetation stress data enables long-term planning in the context of climate change scenarios.

However, while these technologies are promising, concerns have been raised about cost, technological inequality between states, algorithm transparency, and overreliance on automated systems without human verification.

12. Organizations and Coordinating Bodies

National Meteorological and Hydrological Services(NMHS)

National Meteorological and Hydrological Services are government agencies responsible for monitoring weather, climate, and water systems within a country. Their main role is to collect meteorological data, produce weather forecasts, and issue early warnings for extreme events such as heatwaves, storms, floods, droughts, and wildfire risk. These services operate observation networks including weather stations, satellites, and radar systems to track atmospheric conditions.NMHS also provide fire weather forecasts, which help authorities predict when environmental conditions(such as high temperatures, low humidity and strong winds)may increase wildfire risk. In addition, they share data with international systems coordinated by the World Meteorological Organization(WMO) to improve global forecasting and climate monitoring.

Civil Protection Agencies

Civil protection agencies are national or regional institutions responsible for disaster preparedness, emergency response and recovery operations. Their primary function is to protect civilians and infrastructure during emergencies such as wildfires, floods, earthquakes

or storms.These agencies coordinate evacuation plans, firefighting operations, search-and-rescue teams and humanitarian assistance. They also work closely with meteorological services to translate weather forecasts into practical emergency actions, such as issuing evacuation alerts or deploying firefighting units. In many Mediterranean countries, civil protection agencies also conduct public awareness campaigns and disaster preparedness training to strengthen community resilience.

International and Regional Organizations

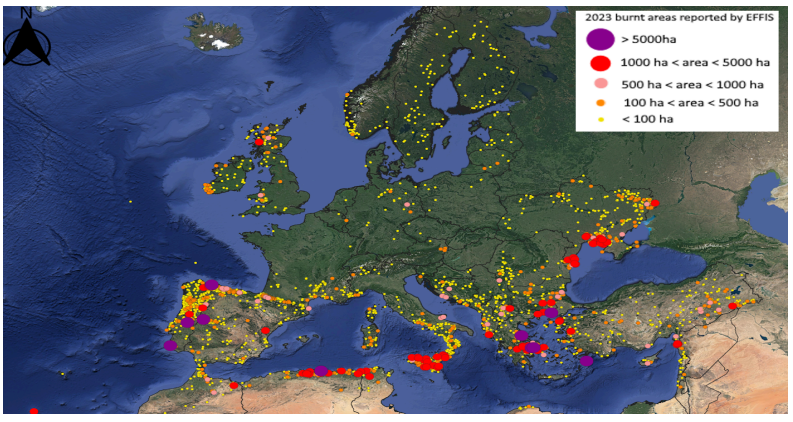
International and regional organizations support countries by providing coordination, funding, scientific research and technical assistance. They help strengthen early warning systems, improve cross-border cooperation and facilitate the sharing of data and resources during disasters.For example, the World Meteorological Organization(WMO) coordinates global meteorological cooperation and supports fire weather forecasting systems. The European Union Civil Protection Mechanism enables European countries to share emergency response resources such as firefighting aircraft and rescue teams during large-scale disasters. Additionally, the Union for the Mediterranean promotes regional collaboration on environmental protection, climate adaptation and sustainable development.

13. Strategic Priorities for International Cooperation

Multiple countries are getting more affected by extreme fire-weather conditions and large-scale wildfires, especially in the Mediterranean Basin, where climate systems, vegetation patterns, and seasonal drought cycles are highly connected. Addressing these risks requires coordinated international action that integrates meteorological science, disaster risk reduction strategies, and cross-border resource management.

The World Meteorological Organization (WMO), alongside the United Nations system and regional institutions, emphasises that wildfire risk management must evolve from reactive fighting to a proactive framework based on prevention, early warning systems, scientific collaboration and capacity development. International collaboration must be strengthened because the atmospheric drivers of wildfire risk, such as heatwaves, droughts and strong winds, often extend across national boundaries and influence multiple countries simultaneously.

Through global initiatives, including early warning systems for multiple hazards and international fire management partnerships, international organisations aim to improve preparedness, ensure fair access to forecasting technologies and promote the sharing of scientific knowledge and operational resources.



Wildfires until the end of August. Source: EFFIS
European Union, 2023

- ***Prevention and Risk Reduction***

In regions increasingly affected by extreme fire weather conditions, prevention and risk reduction represent the most effective long term strategies for taking care of wildfire threats. Modern wildfire governance is not just about stopping fires after they have started. It is also about reducing vulnerability before a fire even starts.

In the Mediterranean region, for example, wildfire risk is strongly influenced by climatic conditions such as prolonged drought, high temperatures and dry winds. These conditions increase the flammability of vegetation and create environments in which fires can spread rapidly. The World Meteorological Organization states that climate change is making these conditions worse, which means there are more fires and more of them are extreme. This means that wildfire prevention strategies must increasingly include climate monitoring and seasonal forecasting in national risk management plans.

Such strategies typically include improved land-use planning, fuel management programmes and the restoration of fire resilient ecosystems. Many Mediterranean countries implement controlled or planned burning to reduce the amount of easily combustible vegetation that builds up, while others use machinery to clear vegetation in high risk areas. Moreover, there has been an increasing use of firebreak systems, landscape management, and urban wildland buffer zones to help limit the spread of fires near populated areas.

Reducing risk also means making better systems for rating the danger of fires based on the climate. Tools such as the Fire Weather Index (FWI) combine meteorological factors such as temperature, wind speed, humidity and rainfall to predict potential fire intensity and the likelihood of its spread. These allow the relevant authorities to identify periods of heightened danger and implement temporary restrictions on activities such as agricultural burning or outdoor fires.

International cooperation can greatly improve prevention strategies by supporting shared research into the interactions between climate and fire, exchanging the best practices for landscape management and coordinating regional wildfire risk assessments.

- ***Early Warning and Communication Systems***

Early warning systems are among the most effective tools for lowering the human and economic impact of wildfires. According to the World Meteorological Organization, countries with well developed systems experience significantly lower disaster-related death rates, which shows how important it is to have information quickly when preparing for disasters.

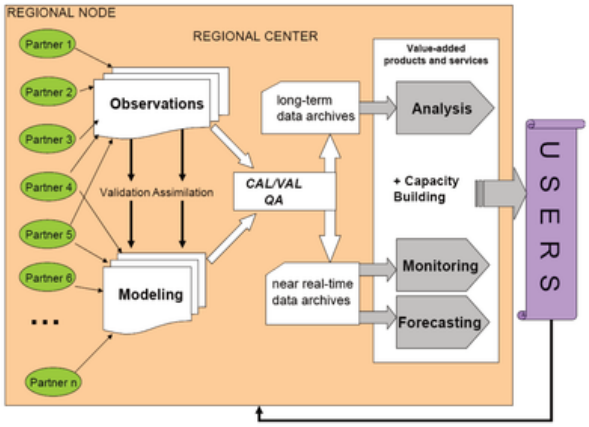
Early warning systems for wildfire risk rely on the integration of meteorological monitoring, satellite observation and predictive modelling. National Meteorological and Hydrological Services continue to monitor atmospheric factors such as temperature, humidity, wind patterns and precipitation, all of which influence the dryness of vegetation and the behaviour of fires. These observations are combined with seasonal climate forecasts to identify periods of potential fire risk.

The United Nations and WMO are working together to support the global "Early Warnings for All" (ew4all) initiative, which aims to ensure that every person on Earth is protected by effective early warning systems for hazardous weather and climate events by 2027. The initiative promotes the development of end-to-end warning systems that bring together risk monitoring, forecasting, communication strategies and emergency response coordination.

An important part of good warning systems is that everyone uses the same words to talk about danger. The WMO promotes the use of the Common Alerting Protocol (CAP), a global standard that enables emergency warnings to be published on multiple communication channels at the same time, including broadcast media, digital platforms, and mobile networks. This ensures that warnings reach communities quickly and effectively, regardless of region or language.

In terms of wildfire risk management, early warnings may include fire danger forecasts, heatwave advisories, smoke alerts and air quality warnings, as well as recommendations for how to respond to emergencies. In the Mediterranean region, where atmospheric conditions that drive extreme fire weather frequently affect several countries at once, strengthening cross-border coordination of warning systems is particularly important.

- ***International Data and Resource Sharing***



The thing is, wildfire disasters often happen in huge areas, so it's really important that countries work together to share information. To provide a complete picture of changing wildfire risks, meteorological data, satellite imagery, fire danger ratings and climate forecasts must be exchanged across national borders.

Global cooperation is promoted by the World Meteorological Organization through networks that connect national meteorological agencies and research institutions. These networks support both the sharing of real-time observations and forecasting data and operational decision-making and long-term scientific research. The Regional Climate Centres established by the WMO play an important

role in coordinating climate monitoring and issuing warnings about extreme weather patterns that could increase the risk of wildfires.

Another example of international cooperation is the Vegetation Fire and Smoke Pollution Warning, Advisory and Assessment System (VFSP-WAS), a global initiative designed to improve wildfire smoke and atmospheric pollution forecasting resulting from vegetation fires. The system provides countries with scientific tools and shared datasets to support fire management decisions, public health advisories and emergency response planning.

Beyond sharing meteorological information, international cooperation also involves the sharing of operational resources during major wildfire emergencies. This may include the coordinated deployment of firefighting aircraft, specialised equipment, technical experts and emergency response teams through regional civil protection mechanisms.

Strengthening international data-sharing frameworks can significantly improve situational awareness during large wildfire events, ensuring that governments have access to the scientific information they need to make decisions on time.

- ***Capacity Building and Training***

Capacity building is a key part of managing the risk of wildfires internationally, particularly as climate change is increasing the frequency and intensity of extreme weather events that lead to fires. Different levels of technical resources, forecasting capabilities and institutional capacity can lead to significant inequalities in preparedness and response capabilities between countries.

Capabilities of National Meteorological and Hydrological Services are strengthened through training programs, technical assistance, and the development of standardised forecasting techniques. These initiatives aim to improve national capacity in areas such as fire weather forecasting, climate risk analysis and the implementation of early warning systems.

International initiatives also focus on enhancing the operational capacity of emergency management agencies and wildfire response personnel. Training programmes often include specialised instruction in predicting fire behaviour, interpreting remote sensing data, and integrating meteorological forecasts into firefighting strategies.

Alongside technical training, capacity-building efforts emphasise the importance of collaboration between meteorological services, environmental agencies, civil protection authorities and local communities. Effective wildfire risk management requires coordination between scientific institutions that produce forecasts and the operational agencies responsible for emergency response.

By working together on projects, sharing knowledge, and creating international training networks, we aim to help all countries, regardless of their economic or technological limitations, access the tools and knowledge needed to manage wildfires effectively.

14. Country Stances

Greece

Greece has experienced multiple wildfire disasters over the past two decades, which are often caused by extreme summer heatwaves and strong winds. The 2018 Attica wildfire, one of the deadliest in Europe in recent history, exposed serious weaknesses in emergency coordination, evacuation planning and land use regulation. While Greece has since invested in early warning systems and expanded its firefighting capabilities, structural challenges remain, including the lack of a unified approach to forest management and increasing development in areas prone to wildfires. Greece generally supports stronger European and regional cooperation in wildfire forecasting, climate monitoring and cross-border emergency responses.

Türkiye

Türkiye regularly experiences large wildfire emergencies along its Mediterranean and Aegean coastlines, where dry vegetation and intense summer heat create highly flammable conditions. The 2021 wildfire season highlighted the gravity of the situation, with hundreds of fires breaking out simultaneously across several regions. Although the government has expanded its aerial firefighting fleet and invested in monitoring technologies, the country's wildfire response capabilities remain uneven, particularly in remote or mountainous regions. Although Türkiye emphasises the importance of improving early detection systems and strengthening regional cooperation in meteorological data sharing, domestic debates regarding forest governance and disaster preparedness continue.

Spain

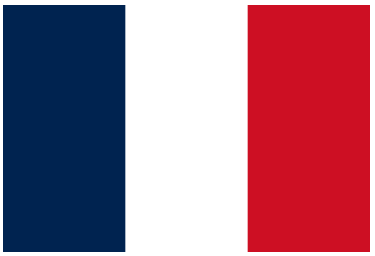
Spain faces significant challenges in dealing with wildfires due to a combination of extreme climate conditions and major changes in land use. Over recent decades, large areas of rural Spain have been abandoned, allowing forests and shrublands to expand unchecked and reducing the effectiveness of traditional agricultural management practices that once mitigated wildfire risk. As a result, Spain now experiences some of Europe's largest wildfires. Despite the development of advanced fire monitoring systems and integrated wildfire management strategies by Spanish authorities, preventing megafires remains an ongoing challenge. Spain strongly

supports international climate cooperation and improved early warning systems to address the growing risks posed by fire weather.

Italy

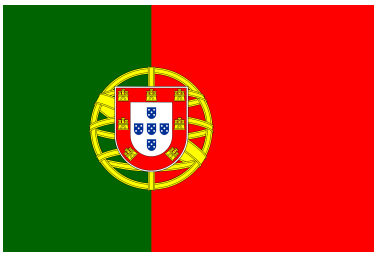
Italy experiences regular wildfires during the summer, particularly in the south of the country and on the Mediterranean islands. However, the country has struggled with inconsistent forest management policies and limited preventive measures. In some cases, wildfires are intentionally set to resolve disagreements over land use. Although Italy has significant firefighting resources and participates actively in European disaster response mechanisms, structural issues such as fragmented regional governance and a lack of long-term landscape management continue to complicate efforts to prevent wildfires. Italy generally calls for stronger scientific cooperation on climate impacts and improved forecasting of extreme fire weather conditions.

France



France has a high risk of wildfires, particularly in its Mediterranean territories and southern regions, where drought conditions and strong winds increase the danger of fires. Compared to several neighbouring countries, France has relatively well-developed wildfire prevention and response systems in place, including strict land use regulations and extensive aerial firefighting capabilities. However, rising temperatures and increasingly severe drought conditions are expanding the risk of wildfires into areas that have historically experienced fewer fires. France frequently calls for stronger European cooperation in wildfire monitoring and supports increased investment in climate observation technologies.

Portugal



Portugal has experienced some of the most serious wildfire incidents in Europe, with fires causing significant loss of life and widespread environmental damage. These disasters have been tied to extreme weather conditions, large monoculture plantations of highly flammable eucalyptus trees and poor forest management policies. Although the country has implemented major reforms since the late 2010s, such as strengthening prevention strategies and improving emergency coordination, it continues to struggle with rural depopulation and landscape management challenges that increase the risk of wildfires.

15. Questions to be Answered

1. What steps can Mediterranean countries take to effectively address the increasing frequency and intensity of extreme fire weather conditions caused by climate change?

2. Which structural weaknesses -such as inappropriate land management, rural abandonment and high levels of fuel build-up, continue to increase the risk of wildfires- and how can these risks be realistically reduced?

3. In what ways can early warning systems be improved to ensure that information about wildfire risks is communicated in a timely, accurate and accessible manner, particularly in vulnerable and high-risk regions?

4. What are the main limitations of the current systems used for meteorological monitoring and wildfire detection, and how can these gaps be addressed at national and regional levels?

5. In order to ensure effective data sharing, coordinated response mechanisms and resource allocation during large-scale or cross-border wildfire events, how can international cooperation be strengthened?

6. How can the differences in technological capacity and disaster preparedness between countries be reduced through capacity building, funding and knowledge transfer?

7. What strategies can be employed to reduce the risk of wildfires in the long term, while balancing environmental sustainability, economic interests and the growing pressures of climate change in the Mediterranean region?