

Advanced Fire Analysis Network



Project summary, outcomes and way forward November 2023

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AFAN partners





Wildfires **Fire ecology** **Crisis management**



TRAINING AND OPERATIONS

Promote training and exchange programs
We deploy assistance during forest fire
events



KNOWLEDGE AND APPLIED SCIENCE

Foster knowledge and experience transfer
among academy and first responders



RESILIENCE LANDSCAPES AND SOCIETIES

Support forest management activities for
resilient and safer landscapes. Develop risk
awareness activities

- European's Union Civil Protection Mechanism – Network partnerships call for projects
- AFAN (Jan 2021 - Jun 2022): empowering the European Fire Analysts networks and facilitating knowledge-sharing

Consortium

Coordination,
network expander



Practitioners - Fire
& Rescue Services



Gwasanaeth Tân ac Achub
De Cymru
South Wales
Fire and Rescue Service

Fire management
training centres

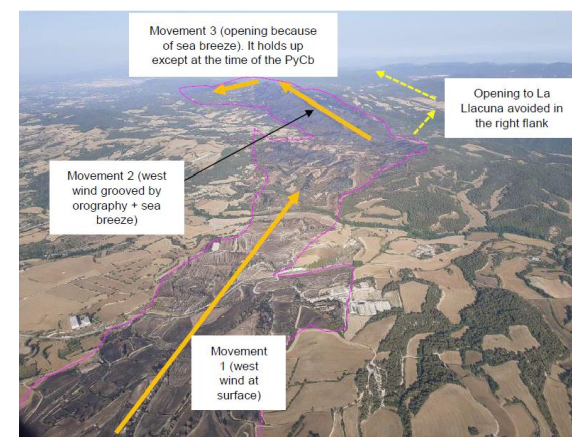
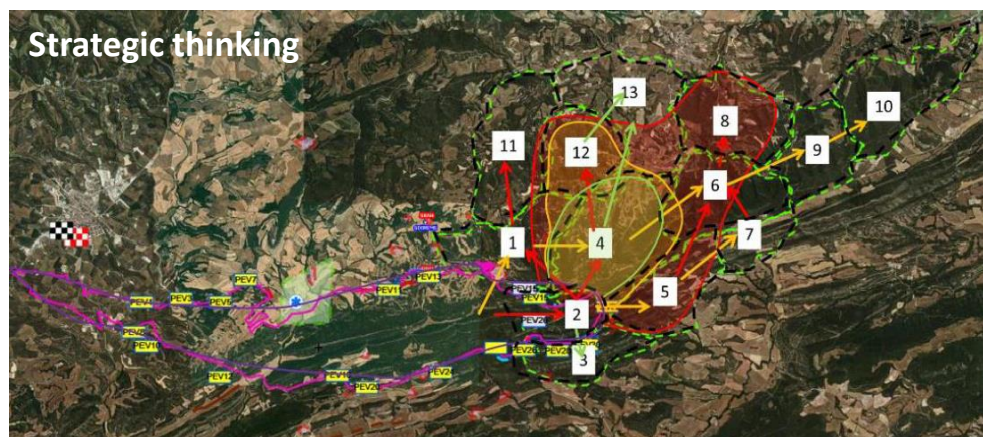


AFAN answers network needs



What is fire analysis?

- **Provide certainty** in decision-making by isolating the sources of uncertainty
- Analyse **possible scenarios** of resolution and the **cost of opportunities**
- Select the **final strategic outcome** using a common good approach and including ecology and future landscape resilience in decision making



Source: SCQ wildfire report - CFRS, 2021

Wildfire network

Formalise a European network
dedicated to share knowledge on
wildfire, particular focus on fire
analysis (or assessment) used by
emergency managers

Scale up existing local, regional and
national knowledge and capacities

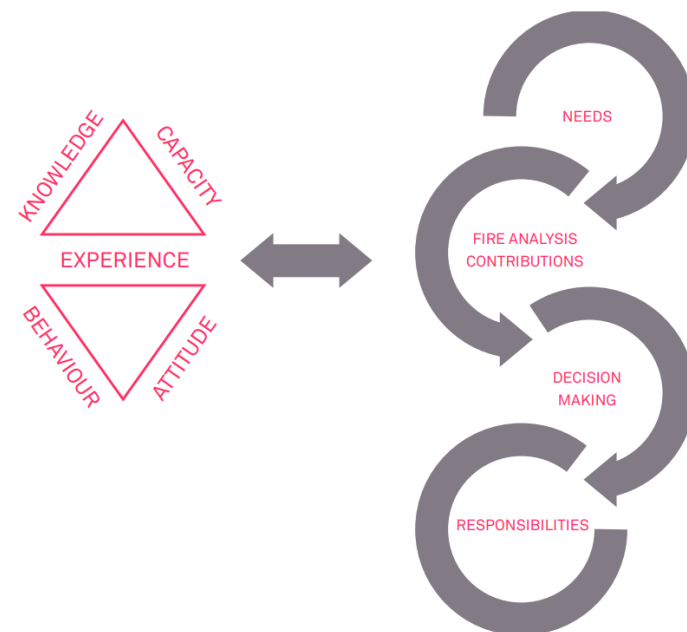
Strengthens and empowers networks
by learning together and harmonising
methodologies



Key outcomes (1/4)

• Guidelines of fire analyst competencies and skills

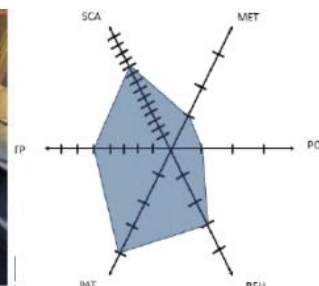
- Starting point on organizing and classifying the existing fire analysis knowledge
- Includes knowledge from different agencies across Europe
- Agency's needs -> fire analysis contribution -> impact on decision making
- Classification of tasks to be conducted by fire analysts
- Targeted at an audience already initiated in the analysis of forest fires



Key outcomes (1/4)

- **Guidelines of fire analyst competencies and skills**
- Thematic areas of knowledge
 - Impact of meteorology on fire behaviour (MET)
 - Fire position (POS)
 - Fire behaviour (BEH)
 - Fire spread patterns (PET)
 - Tactical planning (TP)
 - Strategy and scenario awareness (SCA)

Source: Castellnou et al., 2021



Key outcomes (1/4)

- **Guidelines of fire analyst competences**
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FLAME & RUNS:

1. To assess the vegetation fuel quantity and availability to predict the expected fire behaviour of the day. E.g. images from on-field crews, classification of fuels according to the time needed to start burning, Rothermel fuel models (1973), etc.
2. To describe current fire behaviour (rate of spread, spotting, flame length and heat (KW·m). E.g. using information, videos, from on-field crews.
3. To establish similarities between the actual fire behaviour and the expected ones in different areas inside the potential impact. (Campbell Prediction System, RAF...). E.g. maps.

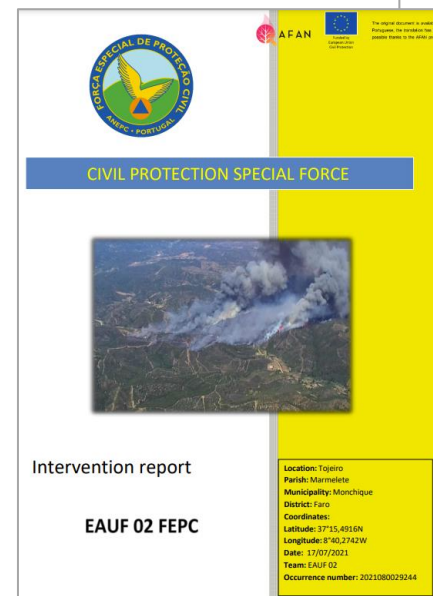
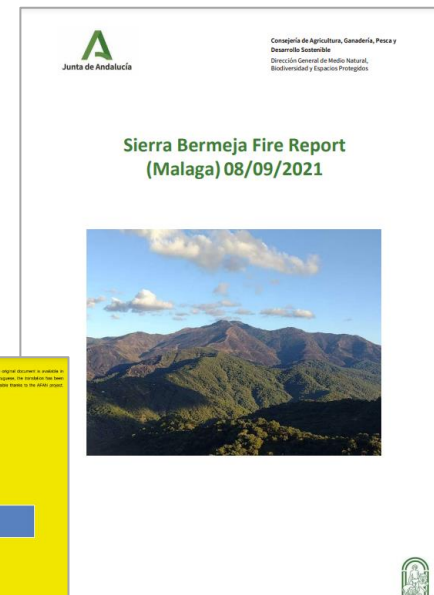
PLUME & ATMOSPHERE:

4. To anticipate fire behaviour due to the smoke plume interaction with the atmosphere. This is to anticipate integrating vertical column analysis to anticipate critical situations to add the vertical component of the atmosphere to the analysis.
5. To anticipate complex behaviour in which different fires are interacting: dominance, suction, etc.

Key outcomes (2/4)

- **Relevant fire analysis resources translated to English**

- Make regional knowledge accessible to a wider audience
- Capitalize on lessons learned
- Wildfire reports
- Methodologies used for fire analysis



Key outcomes (3/4)

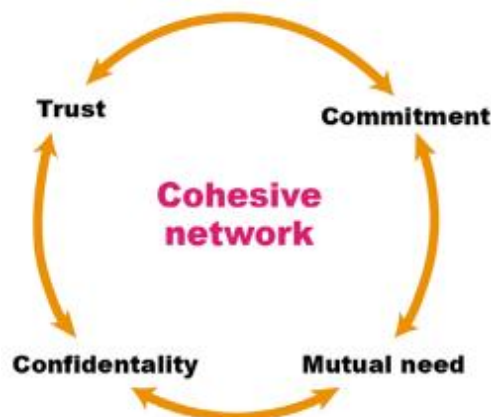
- **Guidelines for remote assessment units**

- Description of common remote assessment practices in recent international wildfires
- Different capacities and approaches used
- Common framework (decision-making needs, communication flow, information needed, products, tools used)
- Good practices and lessons learned



Key outcomes (4/4)

- **AFAN principles for a sustainable network structure**
 - Similar needs and common goals
 - Effective practitioner-knowledge sharing occurs during exchanges **on the ground**
 - Online platforms for information exchange
 - Formal vs. informal networks



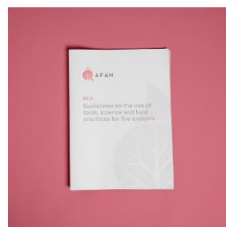
AFAN Toolkit

Guidelines



Guidelines of fire analyst
competencies and skills

Read now



Guidelines on the use of tools,
science and best practices for
fire analysis

Read more



Guidelines for remote
assessment units

Read now

Reports



AFAN principles for a
sustainable network structure

Read now



AFAN network demonstration
and wayforward

Read now

Fire Analysis Resources



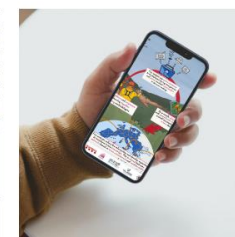
Relevant fire analysis
resources

Read now



AFAN Webinars

Watch now



Infographic of the AFAN
Project

More information

For more information:
<https://fireanalysisnetwork.eu/>

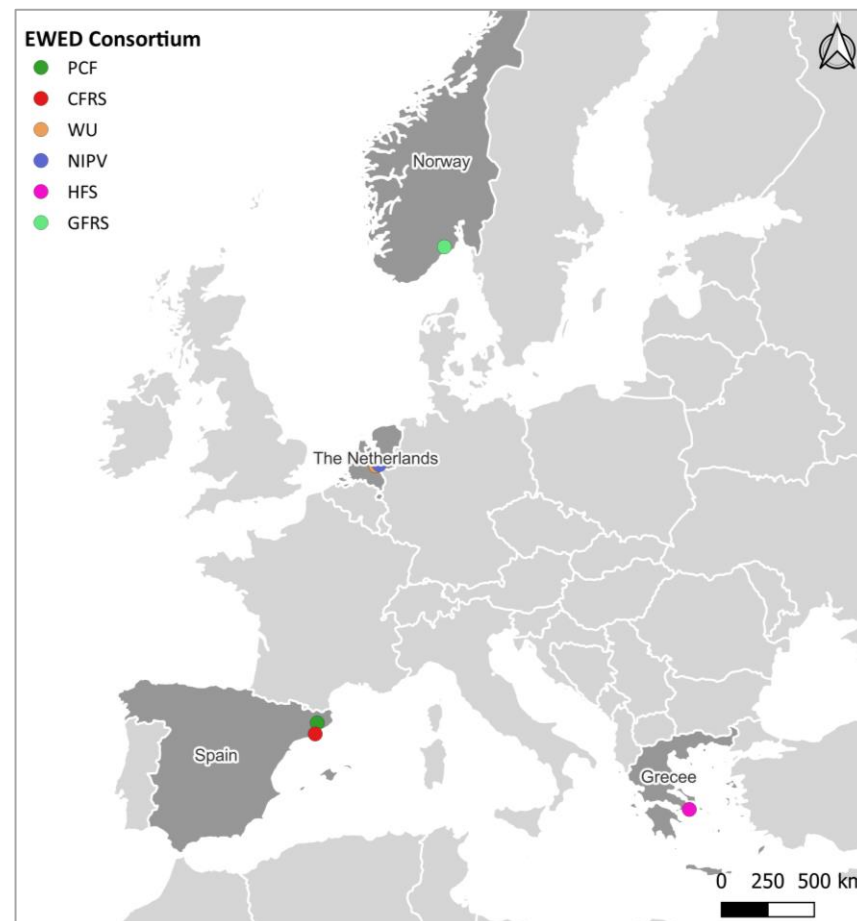
Beyond AFAN

- AFAN → basis for an operational network for fire analysts and advisers
- Overarching goal → enhances response capacities to improve management of certain and uncertain wildfire scenarios
- **Ongoing priorities**
 - Networking and exchanges between first responders → **interoperability** between organizations and countries
 - **Harmonized frameworks** on fire analysis → implementation at organizational, national and EU levels (competency-based training programs...)
 - Gaps of knowledge → deep understanding of **extreme fire behaviour**

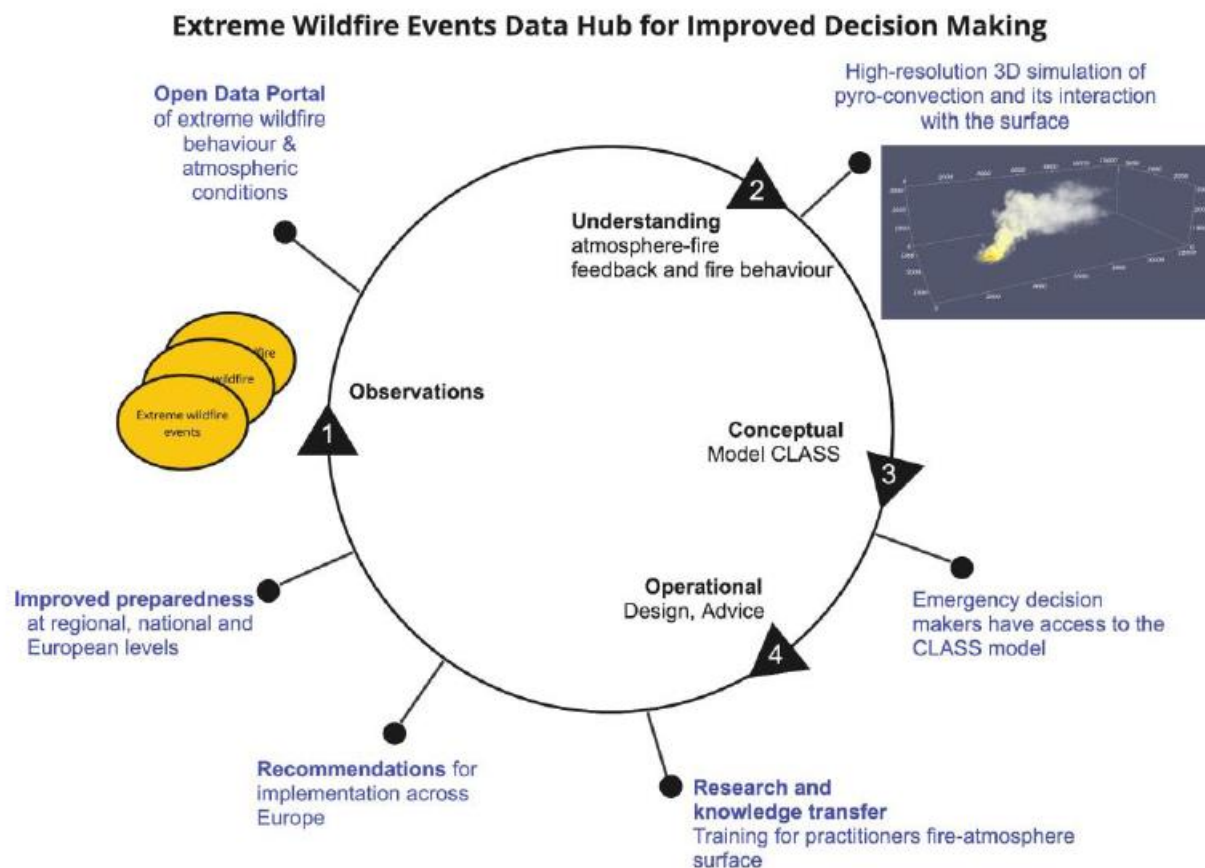


Way forward

- **EWED:** Extreme Wildfire Events Data Hub for Improved Decision Making
- **Call:** UCPM-2023-KAPP-PREP (Jan 2024 – Dec 2025)
- **Objectives**
 - Develop the first-ever Knowledge Hub on Extreme Wildfire Events
 - Expanding Europe's capacity to address new emerging disaster risk
 - Strengthening the capabilities of the European wildfire network



Way forward





Edgar Nebot, Laia Estivill, Marta Miralles, Marc Castellnou (**Catalan Fire and Rescue Service, SP**)

Giacomo Sbaragli, Luca Tonarelli, Simone Scopetani (**D.R.E.Am. ITALIA, IT**)

Ronan de Saint Germain (**VALABRE, FR**)

Raphael Supplisson, Wilfried Stefic, Paul Gilli (**ENSOSP, FR**)

Craig Hope, Chris Evans (**South Wales Fire and Rescue Service, UK**)

Juan Caamaño, Mariona Borràs, Anna Fabrega, Jordi Vendrell, Celia Conde, Jonathan Troncho, Núria Prat-Guitart (**Pau Costa Foundation, SP**)

<https://fireanalysisnetwork.eu/>
Stay tuned! Twitter account: @AfanUcpm

AFAN partners

