Protecting Wildfire Responders in the Mediterranean

Integrating technology, operational knowledge and occupational safety and health through the SIMMER approach

Klelia Vasiliou[1], Cleo Varianou-Mikellidou[1], Georgios Boustras[1], Pierantonios Papazoglou[1], Manolis Plionis[2], Athina Dimou[2], Paraskevi Oikonomou[2], Joseph Bechara[3], Nour Al-Junidie[4], Tariq Abu Taleb[5], Shereen Dabbas[5], Adam Jirsa[6]*

[1] Centre of Excellence in Risk and Decision Science (CERIDES), European University Cyprus, Cyprus
[2] National Observatory of Athens, Greece
[3] Lebanon Reforestation Initiative, Lebanon
[4] Palestine Polytechnic University, Palestine
[5] WADI for Sustainable Ecosystems Development, Jordan
[6] Association Internationale des Forêts Méditerranéennes (AIFM), France

*Presenting author: Klelia Vasiliou · k.vasiliou@research.euc.ac.cy

PREVENTION | KNOWLEDGE | PEOPLE | TECHNOLOGY | TRAINING | JUDGEMENT | SAFE ACTION

SIMMER · Strategic Integration of Operational and Legal Frameworks for Enhanced Resilience and Management of Mediterranean Wildfires

Interreg Co-funded by the European Union
NEXT MED
SIMMER

European University Cyprus | CERIDES Excellence in Innovation and Technology

Wildfires are changing. Are we ready?

01 Climate change and prolonged drought

02 Land abandonment and fuel accumulation

03 Expanding wildland-urban interface

04 Increasing complexity of wildfire events

05 More demanding conditions for responders

Changing fire conditions also mean changing conditions of work.

The safety question is not only how we respond, but how well our systems anticipate a more complex fire environment.

Different systems. Recurring safety challenges.

Emerging themes across SIMMER user-needs work in the six partner countries.

WHAT THE CONSORTIUM IS HEARING

Strong expertise and knowledge already exist.

The challenge is connecting knowledge, people and operational action.

RECURRING NEEDS

01 Clearer roles and stronger inter-agency coordination

02 Prevention and preparedness that reduce responder exposure

03 Shared, trusted and timely information for operational decisions

04 Training and protocols that turn knowledge and tools into operational capability

Different national realities point to the same principle: responder safety depends on the system around the responder.

Safety starts before ignition

Wildfire safety begins long before a responder enters the fireground.

PREVENTION → PREPAREDNESS → RESPONSE

PREVENTION INFLUENCES

Fuel conditions	Fire behaviour	Access	Exposure	Intervention windows	Decision time

Safe response is prepared before response.

Knowing the risk is a safety tool

Know the landscape. Know the fuels. Anticipate the fire.

KNOW

Landscape · Fuels · Vulnerability

OBSERVE

Weather · Fuel condition · Changing conditions

ANTICIPATE

Fire behaviour · Exposure · Intervention limits

KNOW THE GROUND

Fuel maps

OBSERVE THE DAY

Fire Weather Index

ANTICIPATE THE EVENT

Satellite detection

ALSO MAPPED IN THE SIMMER INVENTORY Weather stations, GIS, remote sensing, drone mapping and decision-support systems.

Information reduces uncertainty. It still needs to become operational judgement.

Behind the technology, people still decide

TECHNOLOGY CAN

Detect · Map · Monitor
Forecast · Inform · Support

PEOPLE MUST

Understand · Interpret
Communicate · Decide · Act

> **Technology provides information.**
> **People turn information into action.**

The challenge is not simply having more technology. **It is making knowledge and tools operationally usable.**

The right tool is not enough

TOOL + TRAINING + ROLE + PROTOCOL + PRACTICE = CAPABILITY

Is the tool understood?	Is the responder trained to use it?
Is its information trusted?	Does it fit the operational protocol?
Is responsibility clear?	Has it been tested under realistic conditions?

AND WHEN THE PLAN NO LONGER HOLDS

Can it be used safely when conditions no longer match the expected scenario?

> **Technology becomes a safety asset only when it becomes operational capability.**

Knowing your role is also a safety tool

Five questions every responder should be able to answer before deployment.

What is my task?

What am I trained to do?

What tools can I use?

Who do I report to?

Where does my responsibility stop?

FINDING **Structured recruitment, screening, certification, continuous training, operational coordination, defined roles and limits.**

Unclear roles create operational uncertainty. This is especially important where volunteers and multiple operational actors work together.

When conditions change, clear roles provide the boundaries within which safe adaptation can occur.

The real gap is often between systems

SCIENCE

Data
Models
Forecasts
Tools

THE JOIN

OPERATIONS

Experience
Command
Decisions
Action

THE JOIN

GOVERNANCE

Roles
Protocols
Coordination
Accountability

Safety depends on the connections between them.

Not **“no knowledge”**. Not **“no tools”**. Often: weak integration, weak interoperability, unclear translation into operational practice.

THE SIMMER LOGIC

Connecting what we know with what people need — and turning both into safer practice

LISTEN	MAP	IDENTIFY THE GAP	INTEGRATE	TEST	TRAIN	APPLY

O3.1	Listen to operational needs
O3.2	Map existing knowledge & tools
O3.3 / O3.4	Identify gaps and feasible integration
WP4 to WP6	Integrate · Test · Train · Apply

Training is where technology meets people

Training and field exercises allow us to test:

Can responders access the right information?	Can they interpret it under pressure?
Is it communicated across agencies?	Are roles and decision points understood?
Does technology support the operation, or complicate it?	What happens when conditions exceed expected capability?

We do not only need to test whether the technology works.

> **We need to test whether the system works with people inside it.**

Competence creates confidence, not overconfidence

THE PROGRESSION

KNOWLEDGE

COMPETENCE

CONFIDENCE

JUDGEMENT

SAFE ACTION

Confidence is not “I can handle this.”

Confidence is knowing when to act, and when conditions exceed your role, training or capability.

Adaptability does not mean taking greater risks.

It means recognising change without losing the safety frame. **Good judgement includes knowing when not to act.**

Why the project makes sense



SIMMER does not begin by inventing another tool. It begins with what people need, maps what already exists, identifies what is missing or disconnected, and then integrates, tests and trains until knowledge becomes usable capability.

PREVENTION → KNOWLEDGE → PEOPLE → TECHNOLOGY → TRAINING → JUDGEMENT → SAFE ACTION

From project design to safer action: the two chains are the same logic seen from two sides.

From presentation to discussion, governance and stakeholder practice

TODAY · 17 SEPTEMBER

16:00–17:00

SIMMER Workshop at WOS 2026

Take the logic into the room: operational needs, responder safety, technology, roles, training and judgement.

TOMORROW · 18 SEPTEMBER

09:00–10:00

SIMMER General Assembly

Turn the discussion into project decisions and governance.

TOMORROW · 18 SEPTEMBER

10:30–13:30 · 14:30–17:00

SIMMER Info Day · 7th Stakeholder Workshop

Bring authorities, operational actors, communities and partners together — first to share, then to listen and work through needs.

One sequence: present → discuss → decide → engage → refine.

These two days are part of the process through which the SIMMER logic is tested against people, governance and practice.

Safety is a chain.

PREVENTION reduces exposure.	**KNOWLEDGE** reduces uncertainty.	**TECHNOLOGY** supports awareness.	**TRAINING** builds competence.
CLEAR ROLES support coordination.	**SOUND JUDGEMENT** enables safer action.	**PREPAREDNESS** enables safe adaptation.	

Protecting the responder protects the operational chain.

SIMMER, connecting knowledge, technology, people and practice for safer wildfire management in the Mediterranean.

SIMMER

Cyprus · Greece · Lebanon · Jordan · France · Palestine

Interreg Co-funded by the European Union
NEXT MED
SIMMER

European University Cyprus | CERIDES Excellence in Innovation and Technology | HR Excellence in Research