PARTNER CASE STUDY:

Italy's Vesuvius National Park increases wildfire prevention and management capabilities with weather network

Protecting and preserving the cradle of volcanology

OVERVIEW

Mount Vesuvius in the Campania region of Italy is one of the world's most well-known and studied volcanoes. Its eruption in 79 AD covered nearby towns like Pompei and Herculaneum in ash, creating a tragic snapshot of Roman life in the early first century. Since the late 1700s, the area has been under near-continuous study to improve cultural and scientific understanding of what happened there. Now, the area around Mt. Vesuvius is under threat from a different kind of incendiary force: wildfires. As part of the Italian Parks for Climate program, researchers and professional experts from the Inter-University Research Center for Prediction and Prevention of Major Hazards (C.U.G.RI.) are mapping Vesuvius National Park to create a wildfire risk profile that will inform land management and conservation of this UNESCO World Heritage site.

Overcoming operational challenges

Vesuvius National Park covers a large geographic area with a variety of microclimates and soil types. To create an accurate wildfire risk profile and develop a long-term response strategy, C.U.G.RI. researchers needed to understand specific conditions in those microregions better. The team required a solution that would:

1. CREATE A LOCAL WEATHER MONITORING NETWORK

The solution needed to create a hyperlocal profile of weather conditions and fire risk across more than 135 square kilometers.

2. MONITOR THE SOIL AS WELL AS AMBIENT CONDITIONS

The solution needed to measure temperature, humidity, wind, rainfall, solar radiation, and soil temperature/moisture.

3. PROVIDE INTELLIGENCE BEFORE, DURING, AND AFTER WILDFIRES

The solution needed to provide researchers with data throughout the entire wildfire event cycle to best inform land management.

Salvarani
INNOVATION IS OUR NATURE

MEET SALVARANI S.R.L.

Pier Giorgio and Italo Salvarani founded SALVARANI S.r.l. in Poviglio, Emilia-Romagna in 1983. Building on the region's notoriety for agricultural machinery and Pier Giorgio's background in the world of farm sprayer technology, the Salvaranis grew the company into one of Italy's dynamic technology leaders. In 1992, SALVARANI S.r.l. became a Davis Instruments partner. Since then, they've been at the forefront of bringing high-quality and extendable weather and agricultural monitoring technology to Italy.

> "The territory of the Vesuvius National Park is rich in natural resources, the historical 'cradle' of volcanology, breath-taking landscapes, age-old cultivations, and traditions that make the Vesuvius area one of the most fascinating and most visited places in the world... Our goal is to prevent and reduce the wildfire risk and consequent hydro-geological risks (soil erosion, shallow landslides, and hyper-concentrated flows).
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> **— Domenico Guida & Antonia Longobardi**
> Researchers, C.U.G.RI. (Inter-University Research Center for Prediction and Prevention of Major Hazards), University of Salerno

Solution: On-site weather & soil monitoring powered by Davis Instruments

C.U.G.RI. and Vesuvius National Park partnered with SALVARANI S.r.l. to obtain the monitoring and data transmission hardware they needed to carry out a mapping study that would create a wildfire risk profile for various microregions within the park. Italian researchers call the solution "The Terra Module Monitoring Network." It includes:

VANTAGE PRO2 WEATHER STATIONS

The Vantage Pro2 provided researchers with both the accuracy they needed to carry out their study and a price point that made a five-station network achievable.

SOIL TEMPERATURE AND MOISTURE SENSORS

Working with SALVARANI, researchers were able to achieve their weather and soil monitoring goals working with a single vendor.

ENVIROMONITOR GATEWAY & NODES FOR TRANSMISSION

The EnviroMonitor Gateway allowed researchers to analyze both historic and real-time sensor data without traveling to the field.

Wildfire resiliency in action at Vesuvius

As we speak, C.U.G.RI. researchers are using data from the Terra Module Monitoring Network to better understand hyperlocal fire risk in the area surrounding Mt. Vesuvius. This effort will result in better overall weather, climate, flood, and wildfire resilience for Vesuvius National Park and the Campania region as a whole. By serving as great stewards of the site of one of history's great calamities, the C.U.G.RI. team is going far to prevent the next disaster in the area.

WHY WORK WITH AN AEM PARTNER?

SALVARANI S.r.l., who served as C.U.G.RI. and Vesuvius National Park's enablement team throughout this project, is just one member of a vast network of international partners and resellers that support the AEM family of brands across the world. AEM brands and our partners empower communities to survive – and even thrive – in the face of today's escalating environmental risks.

If you're wondering what sets AEM, our family of brands, and our partner network apart from the rest of the crowd, it all comes down to three things:

1. PERSONALIZED WEATHER MONITORING SOLUTIONS

AEM, our family of brands, and our international partner/reseller network are all proud to believe in customer-centric solutions that are scaled to your needs.

2. WORLD-CLASS HARDWARE & CUTTING-EDGE SOFTWARE

The AEM family of brands has the ideal station, sensor, data logger, or interpretative software platform for any use case, application, deployment, or budget.

3. LOCAL SUPPORT & EXPERTISE ACROSS THE GLOBE

We don't try to support the whole world from a U.S. office; instead, we maintain a truly global network of configuration, enablement, and support experts.

> We are extremely satisfied and excited to have collaborated on this important project. Davis Instruments products are the perfect solution for this type of application, due to their reliability.
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> **— Simone Monica**
> Weather Division Sales Manager, Salvarani S.r.l.