SILVANUS

VOL 01

SILVANUS Newsletter



SILVANUS - European Green Deal Project for Wildfire Management and Climate Change

SILVANUS is a Horizon 2020 Green Deal project, named after the Roman deity of woods and uncultivated lands, whose main objective is to create a **climate resilient forest management platform** to prevent and combat forest fire. The project consortium includes a wide range of environmental, technical and social science experts from eighteen countries, spanning over four continents, who will support regional and national authorities responsible for wildfire management in their respective countries.

SILVANUS experts will help authorities to efficiently monitor forest resources, to evaluate biodiversity, to generate more accurate fire risk indicators, and promote safety regulations among the local population affected by wildfire through awareness campaigns.

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Mission

The project mission is to provide a platform that will create a synergy between technological development, a thorough analysis of environmental effects, and a review of human factors that are crucial factors in wildfire management.

The bottom line is to adopt a synergistic alliance between:

Objectives and Methodology

The objective is to implement and validate the SILVANUS sustainable forest management platform and methodologies for monitoring and protecting natural resources in the fight against extreme wildfire through the integration of a big-data processing framework capable of analyzing various data sources such as climate models and weather data, earth observation sources, fire ignition models, and continuous interpretation of multi-spectral video streams. Weather data analytics using satellite sources will serve as a basis for on-site device integration, while calculation of fuel available and weather data will be utilized to model fire behavior. SILVANUS will also introduce sensor technologies that use inventive wireless communication infrastructure through the coordination of aerial vehicles and ground robots for coordinating first responders.

Phases of Platform Implementation

Phase A

Prevention and Preparedness

Phase B

Detection and Response

Phase C

Restoration and Adaptation

The interdisciplinary and holistic approach will help to address challenges and improve solutions – from a logistical, technological, and educational perspective – in three specifically defined phases. SILVANUS will validate the innovation and applicability of its platform through implementation of 12 pilots in 11 European Union and international countries (Australia, Brazil, Indonesia), featuring a wide scale of case studies, such as sites sensitive to wildfire that are close to electricity and water supply infrastructure, sites with potential explosion risks in an industrial area, and sites with use of ground robots.

Locations of Pilots

Australia - Queensland Centre for Advanced Technologies

Brazil - Pantanal Region

Croatia - Centre for Training of Intervention Services Šapjane

Czechia - Moravian-Silesian Beskydy Mountains

France - La Jonchère St Maurice

Indonesia - Central Kalimantan Province

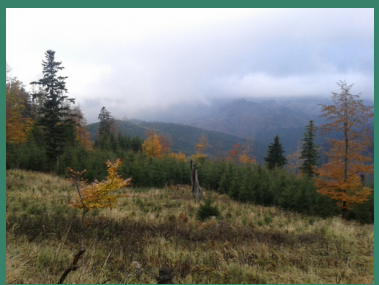
Greece - Euboea Island

Italy - Gargano National Park, Apulia Region

Italy - Natural Park of Tepilora, Sardinia

Portugal - Cova da Beira

Romania - Rodna Mountains National Park



Slovakia - Podpoľanie Region

SILVANUS has identified 18 different stakeholder target groups.
The focus in this newsletter is on the following three stakeholders:

First Responders

SILVANUS recognises the contribution of firefighters, medical response teams, police authorities, local residents, volunteers, civil protection organisations, public administration officials, and stakeholders at the frontline against wildfire.

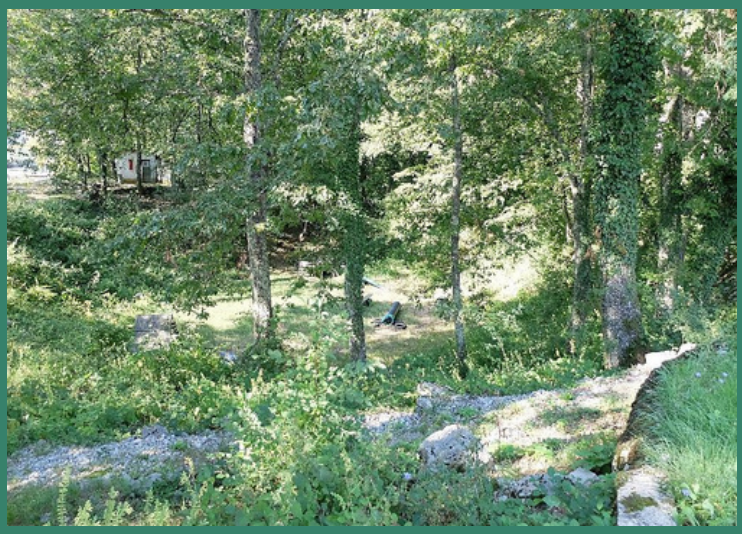
A first responder will have access to SILVANUS platform that will provide technological solutions in early detection through use of in-situ devices, climate and weather data sources, high-end analytics along with the use of drones and ground robots. This will help first responder groups to assess the wildfire situation before any prevention operation commences. The SILVANUS platform will deliver both centralised command centre and front end mobile command centre for continuously monitoring the spread and behaviour of fire. In selected sites, the project will also monitor the health condition of the first responders to develop a deployment strategy.

Firefighting Organisations

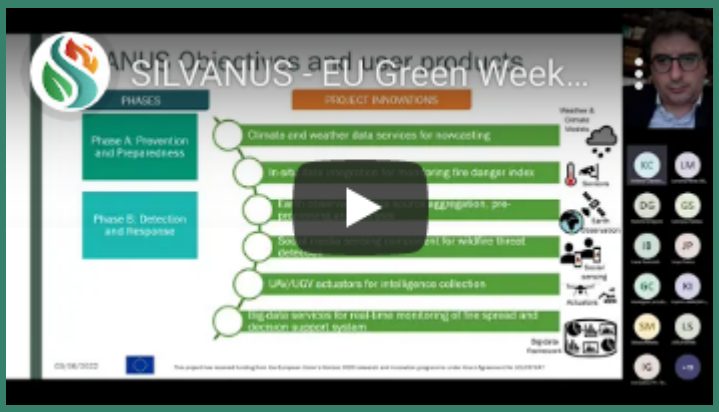
SILVANUS platform will assist firefighting associations to predict, prevent, and suppress wildfire through a technologically innovative system that uses unmanned aerial vehicles and ground robots to establish the natural conditions on sites sensitive to wildfire. Natural causes of wildfire will be more effectively monitored, while human-induced disasters will be more easily prevented and suppressed.

Forest Land Owners

Through the use of technology resources such as unmanned aerial vehicles and ground robots, the SILVANUS platform will show the forest and land owners the potential scenarios on how and when the detected wildfire can reach their properties. The probability of indirect damages to their property caused by wildfire (proliferation of ash and smoke, damage to water or energy supply, business interruption, etc.) will be assessed.



SILVANUS EU Green Week Webinar on Technological Platform for Wildfire Management



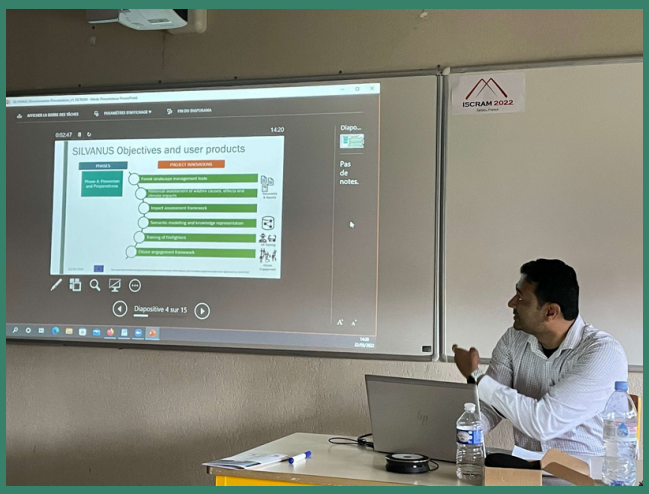
SILVANUS opened its YouTube channel with the recording of the 2-hour webinar, which took place on June 3, 2022, organised as an EU Green Week partner event.
The webinar focused on introducing SILVANUS with a clear determination of the project objectives, followed by three demonstrations of versatile pilots in Italy, Portugal, and Indonesia. The pilots in diverse geographical regions are focused on various distinct phases of protection against wildfire (prevention and preparedness, detection and response, restoration and adaptation), and manifold infrastructural challenges, such as the impact of extreme wildfire on electricity and water supply.

Watch here: www.youtube.com/watch?v=MX90AupQrKM

Overview of Dissemination Events

SILVANUS had the honour of participating at diverse conferences and events where the project was introduced to a wide array of stakeholders. These include:

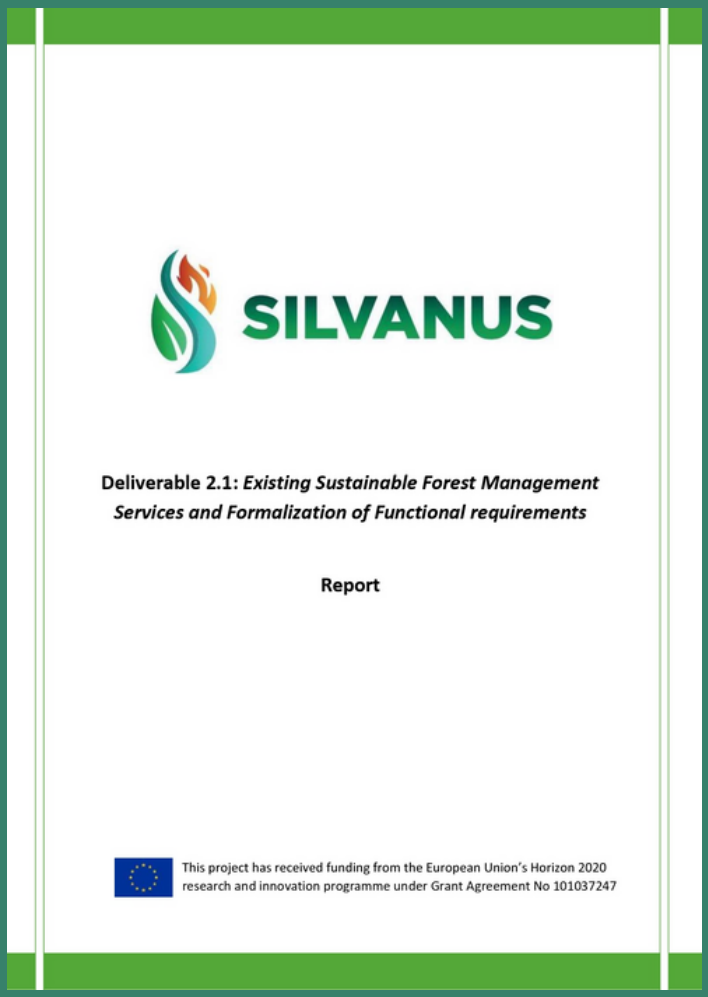
- the participation of VTG (Venaka Treleaf) at the FireLinks event in Arnhem, the Netherlands, participated by leading experts representing the fire fighters, academics, researchers, and industrial members on May 11-12
- presentation by VTG at the 19th International Conference on Information Systems for Crisis Response and Management conference (ISCRAM) in Tarbes, France, on May 22
- a presentation made by PUI (International Emergency Firefighters) at the Aerial Firefighting Conference in Nîmes, France on May 31
- a poster presentation by TUZVO (Technical University Zvolen) at the IUFRO (International Union of Forest Research Organizations) risk analysis conference

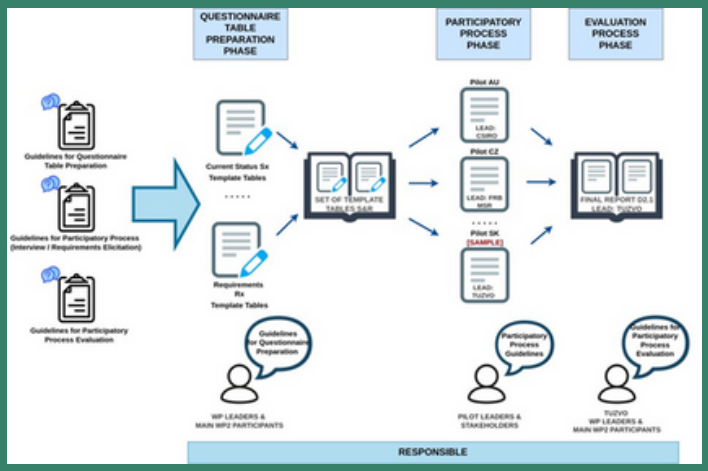


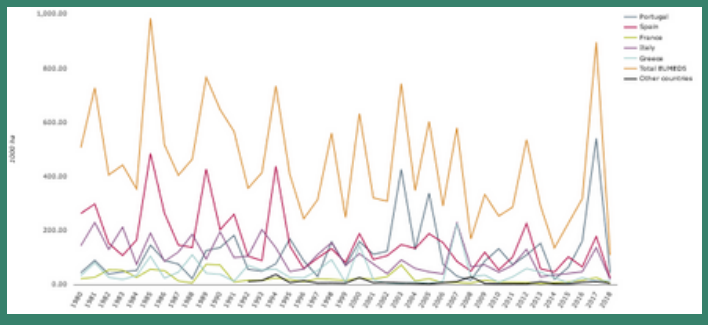
Report on Existing Forest Management Services

SILVANUS has successfully concluded the first iteration of stakeholder consultations by establishing a systematic participatory approach. The key outcomes collected and aggregated from the external stakeholders have been formalised as SILVANUS platform requirements and are currently under consideration for the design of the platform architecture. The key insight derived from the stakeholder consultation process was a detailed description of the operational scenarios and a summary of existing sustainable forest management services as undertaken by the leaders of SILVANUS pilot demonstrations. Following a detailed analysis of the operational scenarios provided by the stakeholders, a mapping of key technology components to be integrated within the pilot studies across multiple pilot demonstrations have been identified.

One of the key challenges, which has been addressed during the participatory approach was to establish a common terminology among the interdisciplinary SILVANUS consortium. To this end, a common approach and understanding among the SILVANUS partners regarding the data, services, and technology available in the project consortium have been documented in the report, which will be continually updated to suit the demands and needs of the project requirement. This common framework developed through the participatory approach has enabled discussion among several stakeholders including pilot owners, civil authorities, fire fighters, researchers, industrial members, and SME representatives. Such a large-scale mobilisation of resources and stakeholder discussion is considered crucial for the success of the project implementation.







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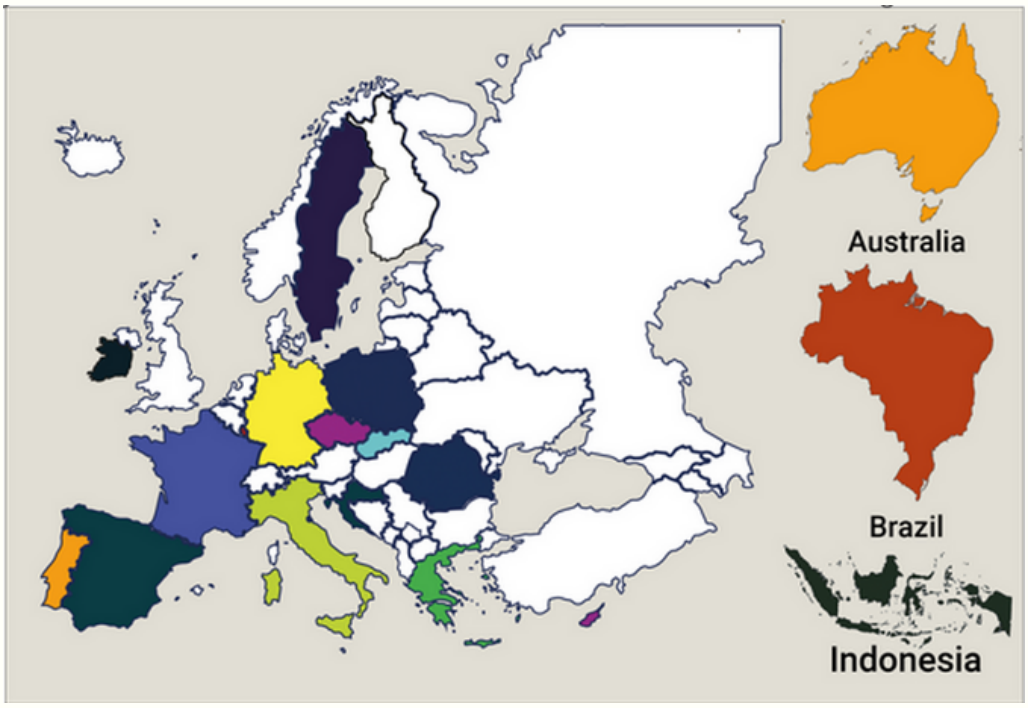

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