AIMS
NEWSLETTER

AIMS

Development and testing of a shared, AI-based predictive model for a coordinated use of big data and for a joint Monitoring System of landslides risk in the Adriatic-Ionian region

Project overall objective

The proposal aims to produce and disseminate a tailored methodology for territorial planners and policy makers to address the early forecasting and risk management of critical landslides in the ADRION region. For this purpose, AIMS targets the interconnections between different landslide manifestations and climate change-derived meteorological events to build predictive models based on AI and big data analysis able to reduce the macro-region's vulnerability to climate change.

Specific Objective

Enhancing resilience to climate change, natural and man-made disasters in the Adriatic - Ionian region

✓ **Lead partner:**
Università Politecnica delle Marche, Ancona, Italia

✓ **Eight Project Partners**
(IT, SI, AL, BA, HR, EL, RS)

✓ **Project budget in EUR:**
986.735,00

✓ **Project Duration:**
33 months

INTRODUCTION
LEAD PARTNER

A word by the Lead Partner

Role and Vision

The climate evolution of this decade is exposing all our communities to ever-increasing environmental risks with dramatic examples of the effects on the territory, with serious loss of life and widespread destruction of infrastructures and social activities. The Mediterranean area is particularly influenced by climate change, due to the increase in the temperature of the seas that affect the physical state of the atmosphere, creating the conditions for the occurrence of meteorological events of great intensity and high destructive power.

The AIMS project aims to bring together the experiences of the countries bordering the Ionian and Adriatic seas to give a common response to the safety needs of communities in relation to landslide risk. The original idea of the project stems from the need to provide new solutions to the multiple challenges posed by the high hydro-geological vulnerability of the Adriatic-Ionian areas, with the aim of developing and implementing practical tools that are easy to use for the management and mitigation of landslide risk by public authorities and administrators.

Prof. Giuseppe Scarpelli

In this respect, Artificial Intelligence tools may give new opportunities to correctly interpret and represent the relationship between the updated climatic factors and the distribution of landslide phenomena in the territories addressed by AIMS.

The management of territories susceptible to landslides is a complex task for administrations that must plan works on the territory both to mitigate landslide risk and to make territories resilient through the redundancy of communication systems and services and avoid the isolation of entire communities in the case of a destructive event of a destructive event. The real need for resilience of the territories has emerged dramatically during the recent flooding events such as those of Romagna in Italy and in other Ionian-Adriatic areas where many villages have found themselves totally isolated by a landslide that has destroyed even a short stretch of the only connection between the town to urbanizations and strictly necessary services. The strengths of the project are the variety of the geographical context of reference and the multidisciplinary composition of the participants with skills in climatology, geology in all its specializations and geotechnical engineering.

Considering the Adriatic-Ionian region in the whole, AIMS is a unique opportunity for contributing countries to capitalise over the very different experiences available on the subject, by sharing a common methodology for classifying, monitoring, analysing landslide phenomena, to evaluate associated risks at the appropriate scale, to select end implement solutions for mitigation.

AIMS aims at introducing a modern approach in the management of landslide risk devising an artificial intelligence tool for helping administration in forecasting landslide phenomena and selecting solutions for monitoring, mitigation, and ensure the safety of the population.

MEET
OUR PARTNERS

✓ **Università Politecnica delle Marche**,
Ancona, Italia

UNIVERSITÀ
POLITECNICA
DELLE MARCHE

✓ **Geological Survey of Slovenia**
Ljubljana, Slovenia

GeoZS
Geološki zavod
Slovenije

✓ **Albanian Geological Survey**
Tirane, Albania

✓ **Resource Environmental Centre**
Sarajevo, Bosnia and Herzegovina

REC
BOSNIA AND
HERZEGOVINA

✓ **Croatian Geological Survey**
Zagreb, Croatia

HGI 1909
HRVATSKI GEOLOŠKI INSTITUT
CROATIAN GEOLOGICAL SURVEY

✓ **University of Patras**
Patras, Elláda

ΠΑΝΕΠΙΣΤΗΜΙΟ
ΠΑΤΡΩΝ
UNIVERSITY OF PATRAS

✓ **Romagna Tech**
Forlì, Italia

romagnatech
INNOVATION VALUE

✓ **Regional Development Agency of Eastern Serbia**
Zaječar, Serbia

R·A·R·I·S
Regionalna agencija za razvoj istočne Srbije
Regional Development Agency Eastern Serbia

PROJECT
PARTNERS

Università Politecnica delle Marche, Ancona, Italia

Thematic competences

The Department of Science and Engineering of Matter, the Environment and Urban Planning (SIMAU) is a multidisciplinary research organisation of UNIVPM comprising collaborative divisions aimed at providing solutions for the complex challenges faced by modern society. From its inception, SIMAU has incorporated geological and geotechnical divisions to effectively tackle the issue of landslide risk assessment and mitigation.

Role in the project

UNIVPM, as the project's Lead Partner, will manage overall project implementation, coordinate partners, and handle reporting. Key responsibilities include hosting the kick-off meeting, developing project management tools, and overseeing daily operations and midterm reviews. UNIVPM will produce essential deliverables like the Project Management Manual, Risk Management Plan, and Midterm Review Template. In Work Package 2 - Testing of the Landslides Monitoring & Early Prediction System for the ADRION region, UNIVPM will oversee pilot testing activities, including selecting sites and formalizing testing plans, and will lead the pilot action. Additionally, it will organize a Transnational Forum for validation of solutions and manage macro-regional clustering activities, culminating in a report on joint activities. For the Transnational High-Level Conference in Belgrade, UNIVPM will provide key templates for formal commitments.

Project experience

UNIVPM has an extensive expertise in the management and implementation of EU and international projects. Currently, there are 26 research projects that involve SIMAU-UNIVPM either through partnership or coordination, with funding partially or entirely provided by the EU.

🌐 **UNIVPM.IT**

Geological Survey of Slovenia, Ljubljana , Slovenia

Thematic competences

The Geological Survey of Slovenia (GeoZS) is a multidisciplinary public research institute focused on geosciences, combining fundamental research, applied projects and public services supporting policy and decision makers in Slovenia and the EU. Its main mission is to improve the knowledge of Slovenia's geological structure in order to address national challenges in the areas of environmental and health protection, drinking water supply, natural disasters protection, land management, exploration and evaluation of reserves and sustainable management of mineral resources, energy supply and energy efficiency. GeoZS acquires, manages, stores and interprets geological data and makes it publicly accessible.

Role in the project

GeoZS will actively participate in all phases of the project implementation and coordinate the establishment of a comprehensive framework for addressing challenges in landslide monitoring and early prediction in the Adriatic-Ionian region. This includes collecting and analysing data from EU projects and Slovenian sources, hosting a Transnational knowledge hub in Ljubljana, and contributing to the AIMS joint strategy. GeoZS will participate in Transnational round tables, support the development of pilot test plans and test solutions on the landslides in the catchment of the Koroška Bela. They will share data on the AIMS platform and participate in events in Athens, Ancona and Belgrade for solution validation and knowledge dissemination.
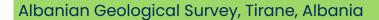
Project experience

Over the course of more than 20 years, GeoZS has actively participated in numerous EU-funded research projects, gaining extensive experience and knowledge, and forming strong expert networks and partnerships that remain active today. The institute possesses competent project teams and experts proficient in EU-funded project coordination, planning, implementation, and scientific and technological expertise.

🌐 **GEO-ZS.SI**

PROJECT
PARTNERS

Albanian Geological Survey, Tirane, Albania

Thematic competences

The expertise of the Albanian Geological Survey (AGS) lies in the field of geology and geotechnical engineering, specifically related to landslide identification, documentation and management. The organisation has developed competencies and experiences in assessing and addressing landslide hazards in Albania. The AGS has undertaken a national project aimed at identifying and recording landslides throughout the country.

Role in the project

AGS will support the lead partner in all tasks related to project management, ensuring compliance with technical and financial obligations. This includes provision of necessary documentation, periodic reports, and active cooperation with partners through virtual and in-person meetings; collection and analysis of relevant data from the national database; testing of the Landslides Monitoring & Early Prediction System for the ADRION region by organizing the transnational roundtables in Tirana; attending the Transnational Forum in Ancona and contribution to communication activities following the guidance provided by RARIS.

Project experience

Over the years, the AGS has actively participated in various projects funded by the European Union, showcasing their expertise and valuable contribution to significant geological and environmental initiatives. In 2021, as part of EuroGeoSurvey, the AGS played a role in the RASTOOL project, which aimed to provide the Civil Protection Authorities with user-friendly tools for streamlining the data from the European Ground Motion Service (EGMS).

🌐 **GSA.GOV.AL**

Resource Environmental Centre, Sarajevo, Bosnia and Herzegovina

Thematic competences

The Resource Environmental Center (REC) from Bosnia and Herzegovina plays a significant role in this project by leveraging its expertise and capabilities. REC functions as a non-governmental and non-profit organisation with a primary objective of supporting environmental protection in BiH. The mission of REC is twofold: to enhance the capacities, transparency, and sustainability of environmental NGOs in BiH, and to contribute to the EU integration process of BiH through project implementation that builds resilience to climate change, advocates for clean energy solutions, promotes nature conservation and sustainable mobility, fosters cooperation and networking, and strengthens environmental governance within BiH.

Role in the project

REC will actively participate in all project activities, collaborating closely with the lead partner, partners, and relevant governmental agencies. They will provide timely environmental data and reports for the pilot site, working with the Ministry of Environment of Bosnian-Podrinje Canton and the City of Goražde (Bosnian associated partner). Expertise and capabilities will facilitate the transfer of knowledge from theoretical to operational levels.
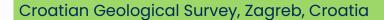
Project experience

REC has extensive experience and has been involved in various national, international and EU-funded projects, both as a leader and a partner. Some of the projects in which REC has participated are: LOCCAR; TRANSFER; NEST; ELAN; THEMIS; LEDS GP...

🌐 **REC.ORG.BA**

PROJECT
PARTNERS

Croatian Geological Survey, Zagreb, Croatia

Thematic competences

The Croatian Geological Survey (HGI) is a leading public research institute in Croatia specialising in geoscience and geological engineering. With a dedicated team of 116 professionals, including 48 PhD holders, HGI possesses extensive expertise in various areas. This includes hydrogeological and engineering geological investigations, resource identification and protection, geological mapping, addressing environmental issues such as landslides, erosion, flooding, and soil contamination, as well as mineral resource exploration.

Role in the project

HGI will play a crucial role in the project's success by supporting the lead partner in project management and ensuring compliance with technical and financial obligations. It will lead the transnational assessment of landslide types and risks in the Adriatic-Ionian region, providing partners with assessment guidelines and creating a comprehensive report. HGI will also engage in defining requirements for the Landslide Monitoring and Early Prediction System, participate in validation forums, organize capacity-building activities, and contribute to communication efforts, including producing informative materials and videos.

Project experience

Over the past decade, HGI has gained substantial knowledge and organisational expertise through its active involvement in a wide array of EU co-financed projects. During this period, the institute has assumed diverse partnership roles, contributing to its extensive understanding of project implementation and collaboration.

🌐 **HGI-CGS.HR**

University of Patras, Patras, Elláda

Thematic competences

The University of Patras (UPAT) contributes with expertise in landslides through its laboratories. The Laboratory of Atmospheric Physics (LAPUP) specialises in atmospheric sciences, meteorology, and climatology. LAPUP work focuses on atmospheric forecasts, complex systems dynamics, management of extreme weather events and early warning systems. LAPUP utilises physically-based models, ground-based and satellite measurements, and artificial intelligence methods to study atmospheric and environmental parameters.

Role in the project

UPAT and its laboratories' specific and strong expertise on climate change, weather and meteorological events, represent the key element and added value to the project. Being landslides phenomena caused by a combination of geological conditions and climate-related elements, UPAT operates in a research field which is totally complementary to the one covered by the Lead partner, essential for a comprehensive approach to the landslides issues tackled by the project.

Project experience

UPAT's experience in EU projects further strengthens its ability to contribute to the successful implementation of the proposed project. Important projects include AETHER, which encompasses collaborative planning, protocol management, and networking with Information and Communication Technology (ICT), featuring initiatives like the establishment of a Civil Protection Operational Base equipped with unmanned aerial vehicles.

🌐 **UPATRAS.GR**

PROJECT
PARTNERS

Romagna Tech, Forli, Italia

Thematic competences

Romagna Tech (RT) is a not profit joint-stock consortium company accredited as an industrial research laboratory and innovation centre. It operates as a research and technology transfer organisation, aiming to promote and generate technological innovation processes. Its mission includes working with knowledge centres, promoting the culture of innovation, supporting companies in developing technological solutions, and assisting startups in their growth. The shareholders of Romagna Tech consist of public and financial institutions, trade associations and services, and companies from various sectors.

Role in the project

Romagna Tech (RT) plays a significant role in the project in 2 key areas: joint transnational investigation on existing predictive models and landslides monitoring and early prediction systems based on AI applications, and the design and development of a data management platform and interoperable data collection infrastructures for the Landslides Monitoring and Early Prediction System in the Adriatic-Ionian region.

Project experience

Romagna Tech has been actively involved in numerous projects and initiatives in various sectors. Romagna Tech has participated in several European projects under the Erasmus+ Programme, Interreg ADRION Programme, IPA Adriatic Cross-border Cooperation Programme, Interreg Central Europe Programme, Intelligent Energy Europe Programme and national project under the Por Fesr 2014-2020 and PR FESR 2021-2027 Programmes.

🌐 **ROMAGNATECH.EU**

Regional Development Agency of Eastern Serbia RARIS, Zajecar, Serbia

Thematic competences

RARIS (Regional Development Agency of Eastern Serbia) is an Serbian-based organisation specialised in regional development, fostering collaboration and innovation in various fields. Founded in 2007, it became the first accredited regional development agency in Serbia under the Law on Regional Development in 2011, serving the Eastern Serbia region and operating as an institutional area-based partnership. Its founders include 8 municipalities, a company, a faculty, a civil society organisation, and a Chamber of Commerce.

Role in the project

RARIS, as the lead partner for communication and dissemination, plays a crucial role in promoting and disseminating project activities and results, as well as in the transfer activities.

Project experience

RARIS has extensive experience in project implementation and securing various types of funding, both at the international and national levels. Over the past 17 years, RARIS has successfully implemented more than 60 projects. Among these projects, RARIS has executed over 30 initiatives with international, EU, or bilateral funding, collaborating with organisations such as GIZ, USAID, SDC, CIDA, OSCE, UNDP, and CEI.

🌐 **RARIS.ORG**

ABOUT
PROGRAMME

Interreg IPA Adrion 2021-2027

Interreg

Co-funded by
the European Union

IPA ADRION

IPA ADRION includes ten countries both from EU and non-EU area and it provides financial support to public authorities (local, regional and national bodies), research institutions, NGOs, and private companies which are willing to pull together in transnational partnerships. The Programme launches Calls for Proposals which cover a wide range of topics according to its Thematic priorities. The Calls are expected to support transnational projects aiming to find joint solutions to common challenges through the development of digital tools, strategies, action plans and pilot tests.

Winning projects are co-financed to up to 85% via the Interreg Funds. National contributions from its ten Partner States will allow for 100% coverage of the project.

For the programming period 2021-2027, IPA Adrion has a total budget of 160,810 million euros, in which Interreg funds amounts to about 136,700 million euros.

The programme is marked by a strong sustasinable approach, where green policy plays a major role with dedicated resources for future funded projects up to 54% of the total allocated resources.

The Programme builds on the lessons learnt of the previous ADRION Programme (2014-2020) and the strong heritage collected by its 87 funded projects and 11 Thematic Clusters set up in the frame of its capitalisation strategy. IPA ADRION continues to support the implementation of the macro-regional strategy EUSAIR, especially through the embedding of EUSAIR flagships and specific strategic projects.

This project is supported by the Interreg IPA ADRION programme under the Interreg Funds (European Regional Development FUND and IPA III)

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