

ANNUAL MEETING OF THE INTERNATIONAL SCIENTIFIC COMMITTEE ON HISTORIC CITIES, TOWNS AND VILLAGES
(CIVVIH) – ICOMOS

3RD CONFERENCE OF THE SUB-COMMITTEE FOR CENTRAL AND EASTERN EUROPE

Climate Change and Natural Disasters Proposed Mitigation Measures

By Eleni Maistrou

STRATEGIES FOR ENHANCING HISTORIC CITIES' RESILIENCE TO DISASTERS

SEPTEMBER 10-15, 2025
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The LIFE-IP AdaptIn-GR project "Strengthening the implementation of climate change adaptation policy in Greece"

The presentation will refer to examples of impacts of climate change and other natural disasters, which have been recorded in Greece, on the tangible and intangible cultural heritage of historic towns and villages, as well as on their immediate environment.

The studies were carried out as part of the LIFE-IP AdaptIn-GR project "**Strengthening the implementation of climate change adaptation policy in Greece**," and the HELLENIC SOCIETY for the Environment and Culture has prepared an analysis and assessment of the impacts of climate change in five cases representative of the country's cultural heritage:



FLOODING IN CORFU

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The LIFE-IP AdaptIn-GR project "Strengthening the implementation of climate change adaptation policy in Greece,"

Ancient Messene,

The island of Delos,

The Byzantine Church of Porta Panagia,

The Old Town of Corfu,

The Zagorohoria villages.



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THE CASE OF THE OLD TOWN OF CORFU

The Old Town of Corfu, a UNESCO World Heritage Site is vulnerable to the impacts of climate change due to its location.

- Increasingly hot and dry days,
- Heavy rainfall,
- Marine water turbines, and
- Sea level rise

combined with unplanned urban development and infrastructure challenges create risks of fire and flooding. At the same time, these phenomena worsen the condition of monuments and historic buildings



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THE CASE OF THE OLD TOWN OF CORFU

Strong winds, combined with the above-ground power networks pose a fire risk.

Heavy rainfall combined with inadequate infrastructure, causes flooding in certain parts of the city. And it does not contribute to the replenishment of water reservoirs.

The projected rise in sea level over the next 100 years indicates a higher flood risk for coastal areas.

Drought, humidity, and abrupt temperature changes intensify the deterioration of the materials of the monuments and historic buildings.

The increase in hot and dry days leads to higher demand for air conditioning, and thus greater electricity needs.



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THE CASE OF THE OLD TOWN OF CORFU

Tourism overdevelopment and the functions that support it exceed the city's carrying capacity in terms of natural resources and infrastructure. This results in water shortages, strains on electricity supply, and traffic congestion during the tourist season.

Socio-economic factors such as the excessive growth of restaurants, the occupation of public spaces with tables, chairs, and merchandise, the large number of visitors in the summer months, combined with high building density and narrow or winding streets, make evacuation of residents and visitors difficult or even impossible, and also hinder the access of emergency services in case of emergency



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THE CASE OF THE OLD TOWN OF CORFU

The proposals formulated for mitigating the impacts of climate phenomena and for adapting the city to the effects of climate change are:

- Development of a data Observatory
 - Preparation of a fire prevention plan
 - Flood control studies and works, and improvement of building roof drainage systems.
 - Continuous maintenance of buildings, using appropriate materials.
 - Underground installation of electricity and telecommunication networks
 - Preparation of rescue and evacuation plans
 - Integration of climate change adaptation and mitigation measures into the City Management Plan.
 - Drafting of a Presidential Decree with permitted land uses and allowed occupation of public space
 - Formulation of a comprehensive visitor management plan based on the city's carrying capacity.
 - Training seminars on risk prevention, as well as educational programs
 - Training property owners and engineers in conservation and restoration techniques using appropriate materials
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THE CASE OF THE RURAL TRADITIONAL SETTLEMENTS OF ZAGORI

These are rural residential complexes of great architectural interest. They are developed on the slopes of mountain ranges at altitudes ranging from 650 to 1,320 meters, and since they are built with local materials, they blend harmoniously with the highly valuable natural landscape.

Three traditional settlements of Zagori (**Tsepelovo, Papigo, Dilofo**) were studied on a pilot basis. Their study highlighted the vulnerability of their natural and cultural environment, as well as the problems found in their socio-economic characteristics.



SEPTEMBER 10-15, 2025

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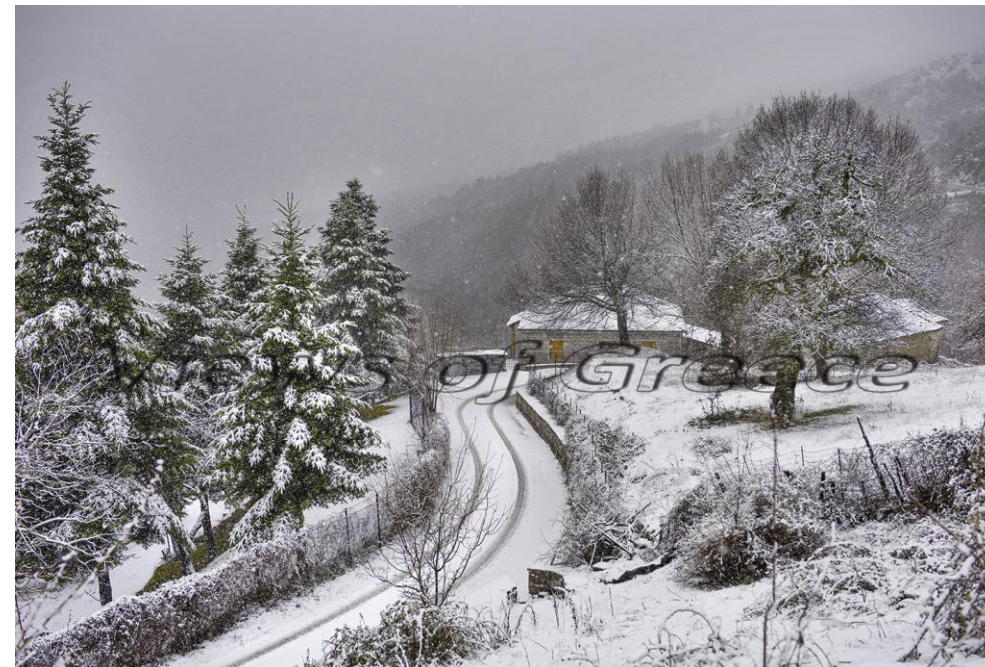
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THE CASE OF THE RURAL TRADITIONAL SETTLEMENTS OF ZAGORI

Depending on their location, the settlements are more or less vulnerable to:

- **Precipitation** throughout the year, with particularly intense phenomena from October to March.
- **Low winter temperatures** and high temperature fluctuations during the summer months.
- Very high levels of **humidity** throughout the year, except in the summer months.
- **Snowfall** during winter, autumn, and even spring, with very large snow accumulations in winter.



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THE CASE OF TSEPELOVO, PAPIGO, DILOFO

Their study highlighted the vulnerability of their natural and cultural environment, as well as the problems found in their socio-economic characteristics.

- **The intensity and frequency of rainfall**, create risk of subsidence, disintegration, landslides, and destruction of the historic building heritage.
- **The risk of flooding phenomena** increases due to the destruction of traditional stone-paved paths which were wisely constructed to absorb rainwater
- **Drought, humidity, and sudden temperature fluctuations** worsen the pathology of the building materials of historic structures



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THE CASE OF TSEPELOVO, PAPIGO, DILOFO

Their study highlighted the vulnerability of their natural and cultural environment, as well as the problems found in their socio-economic characteristics.

- **Intensive weather events**, combined with difficulties in the road network in some cases, make residents' access to critical infrastructure and services difficult.
- **Climatic conditions** affect the productivity of the primary sector.
- **Climate change phenomena** threaten local vegetation and biodiversity, which have immediate impacts on the landscape and its ecological continuity



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THE CASE OF TSEPELOVO, PAPIGO, DILOFO

The proposals developed to mitigate the impacts of climatic phenomena and adapt the settlements to the effects of climate change are:

- Proper maintenance of buildings using appropriate materials.
- Studies and technical works for slope stabilization along local streams and landslides.
- Support of primary production,
- Inclusion of climate change adaptation and impact mitigation measures in local urban planning schemes.
- Training seminars on risk prevention for staff of relevant agencies and services, and educational programs to inform the local community about the impacts of climate change and mitigation actions.



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THE CASE OF TSEPELOVO, PAPIGO, DILOFO

The proposals developed to mitigate the impacts of climatic phenomena and adapt the settlements to the effects of climate change are:

- Development of a Data Observatory
- Implementation of a fire prevention measures for settlements and the surrounding forests
- Flood control studies and works
- Improvement and supplementation of electrical and mechanical infrastructure.
- Road network improvements. .



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SOME GENERAL CONCLUSIONS

The preservation of traditional techniques in buildings and public spaces and the right technological infrastructure reduce the impact of climate change on the built and natural environment.

Continuous monitoring of phenomena, appropriate spatial planning at all levels, effective policy, public awareness and engagement, and specific management plans for historic areas, archaeological sites, and monuments are fundamental components for enhancing their resilience and ability to face the evolving climatic conditions and the associated risks.

Appropriate spatial planning, effective policy, public awareness and engagement, and specific management plans are fundamental components for enhancing the resilience and ability of historic cities and settlements to face the evolving climatic conditions and the associated risks.

The involvement of civil society and cooperation between local, national, and international organizations are key pillars of a holistic approach to adapting historic cities and settlements to the new realities brought about by climate change.

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Climate Change and Natural Disasters

Proposed Mitigation Measures

CONTRIBUTORS TO THE LIFE PROGRAM FROM ELLET

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