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D.2.3.1 Climate Change Adaptation Plan and Counter-measures for the UNESCO Site of TROGIR

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Introduction to the project

The CAMPUS project (Climate Adaptation Plans for UNESCO Sites) focuses on the challenges that climate change poses to UNESCO sites in Italy and Croatia, with particular emphasis on the protection of cultural and natural heritage. Rising temperatures, changes in precipitation patterns, flooding, sea-level rise, droughts, and other extreme climate events are increasingly affecting sensitive historical and natural areas, highlighting the need for a more systematic and long-term approach to climate change adaptation.

The aim of the CAMPUS project is to develop a joint, cross-border framework for climate risk assessment, the preparation of adaptation plans, and the definition of measures that contribute to preserving the Outstanding Universal Value of UNESCO sites. The project integrates scientific analyses, spatial tools, and local knowledge, and fosters cooperation between public authorities, expert institutions, and local communities.

Project implementation involves partners from Italy and Croatia. Through joint efforts, methodologies and tools are being developed to enable a comparable approach to assessing the vulnerability, sensitivity, and resilience of UNESCO sites to climate change, while respecting their specific spatial, historical, and governance contexts.

The CAMPUS project is structured around three work packages. The first work package focuses on the analysis of climate scenarios, vulnerabilities, and risks, as well as on the development of a monitoring system tailored to UNESCO sites. The second work package addresses the preparation of climate change adaptation plans, with active involvement of local stakeholders through participatory processes such as Living Labs. The third work package focuses on the development and evaluation of concrete adaptation countermeasures and solutions, with an emphasis on their applicability and transferability.



Introduction to the deliverable

Deliverable D.2.1.2 – Reports on Climate Change Adaptation Plans and Countermeasures Developed through Living Labs represents one of the key outputs of Activity A.2.1 – Activation of Living Labs within the CAMPUS project. The purpose of this deliverable is to document the process, results, and outcomes of the Living Lab activities carried out at selected UNESCO sites, with the aim of developing locally tailored climate change adaptation plans.

The deliverable integrates analytical and participatory components and links the scientific and technical foundations developed within Work Package 1 with concrete adaptation measures shaped through cooperation with local stakeholders. Particular emphasis is placed on the involvement of local authorities, expert institutions, and the community in identifying climate risks.

This document has been prepared for the UNESCO site Historic City of Trogir. It represents a comprehensive report on the implemented Living Lab process and its results, including:

- description of site characteristics and climatic features
- the implementation and outcomes of the participatory process
- climate change adaptation measures
- conclusions and recommendations at the local level

Deliverable D.2.1.2 provides a basis for further planning and monitoring of climate change adaptation measures at the site level.

Activity 2.1

Activity 2.1 is implemented within Work Package 2 – Climate Change Adaptation Plans for UNESCO Sites and focuses on the activation of Living Labs as a participatory mechanism for developing climate change adaptation plans at the local level.

The objective of Activity 2.1 is to involve local stakeholders, competent authorities, and experts in identifying climate risks, assessing spatial vulnerability, and jointly defining adaptation measures that are feasible and tailored to the local context. The Living Lab approach enabled the integration of expert analyses with the local knowledge and experiences of participants.



Using the UNESCO site Historic City of Trogir as a case study, Activity 2.1 was carried out through a Living Lab workshop and survey, supported by GIS analyses and climate data. Particular emphasis was placed on climate risks directly affecting the historic core, such as flooding, sea-level rise, and drought.

The results of this activity form the basis for the development of the Climate Change Adaptation Plan presented in this deliverable.



Site characteristics

Location of the Site

Trogir is distinguished by its location on a small island situated between the mainland and the island of Čiovo. The historic core of Trogir is one of the best-preserved medieval urban ensembles on the eastern Adriatic coast. In 1997, the city was inscribed on the UNESCO World Heritage List due to the exceptionally well-preserved historic core that developed on ancient foundations, as well as the wealth of architectural achievements that testify to the long continuity of Mediterranean life, crafts, and cultural influences.

As early as the Hellenistic period, when the Greek colony of Tragurion was founded, the basic street grid was established. This layout—consisting of a main street and a network of transverse side streets—remained clearly recognizable in later periods, when the city developed first as a Roman municipium and subsequently as an important medieval communal center. Few cities on the Adriatic have retained such a high degree of continuity: almost the entire present-day urban layout is based on earlier layers, while the density of historic buildings and authentic materials makes Trogir a unique example of a city that has grown harmoniously over centuries.

During the period from the 13th to the 15th century, the city experienced significant development and prosperity, marked by the construction of the Cathedral of St. Lawrence, numerous palaces, and the city walls. The most renowned individual monument of Trogir is the Cathedral of St. Lawrence, with the portal by Master Radovan, one of the most important masterpieces of Croatian and European medieval art. In addition, the loggia, the town hall, the Benedictine monastery complex of St. Nicholas, the palaces of noble families, as well as the towers and fortifications, further confirm Trogir's status as a significant coastal stronghold under Venetian rule.

All these buildings preserve a high degree of authenticity, ranging from Romanesque and Gothic to Renaissance and Baroque periods, and together form a unique urban ensemble that UNESCO has recognized as having Outstanding Universal Value.



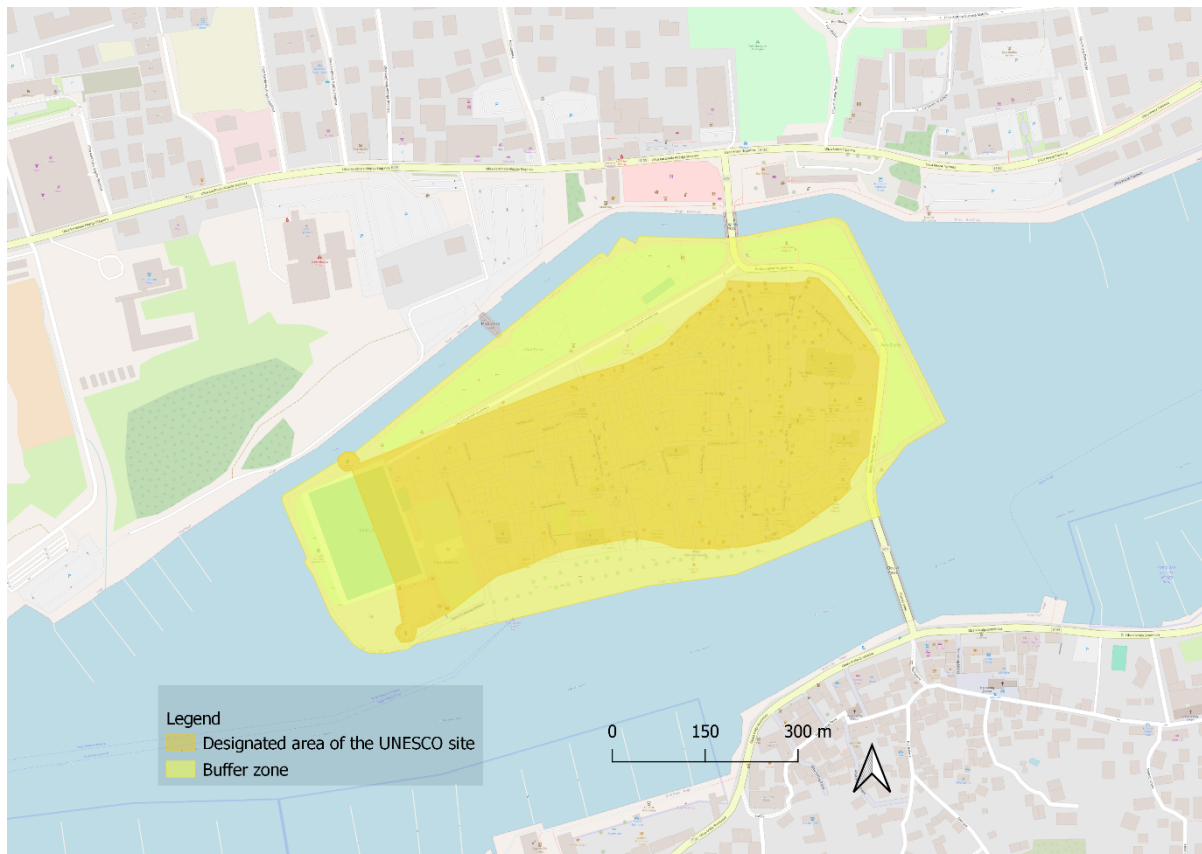


Figure 1. Protected area of the UNESCO site

Climatic Characteristics and Climate Change

Trogir is located within the Mediterranean climate zone, characterised by hot, dry summers and mild, wet winters. The average annual air temperature for the period 1981–2024 is 16.4 °C, while temperatures exceeding 30 °C are regularly recorded in July and August. The average annual precipitation amounts to 975 mm, with the highest rainfall occurring in late autumn and early winter.



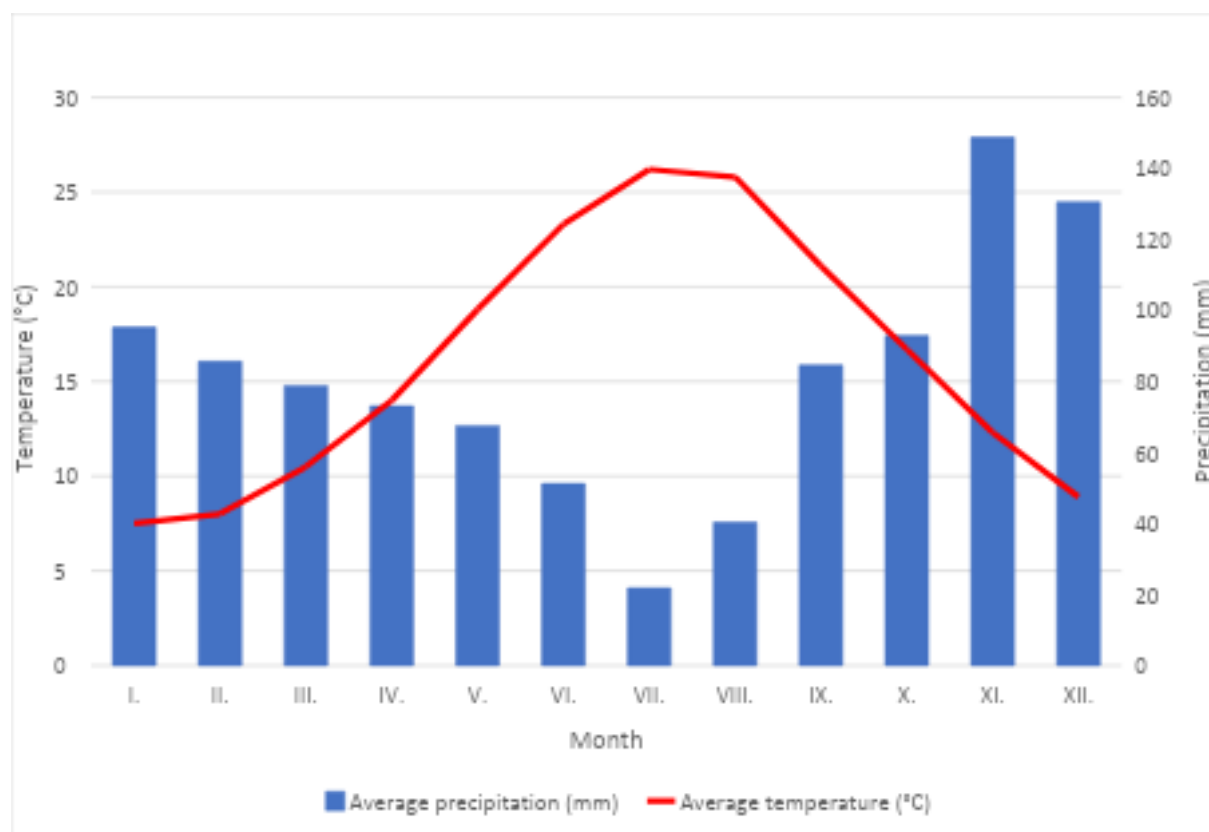


Figure 2. Climate Diagram for the City of Trogir, 1981–2024



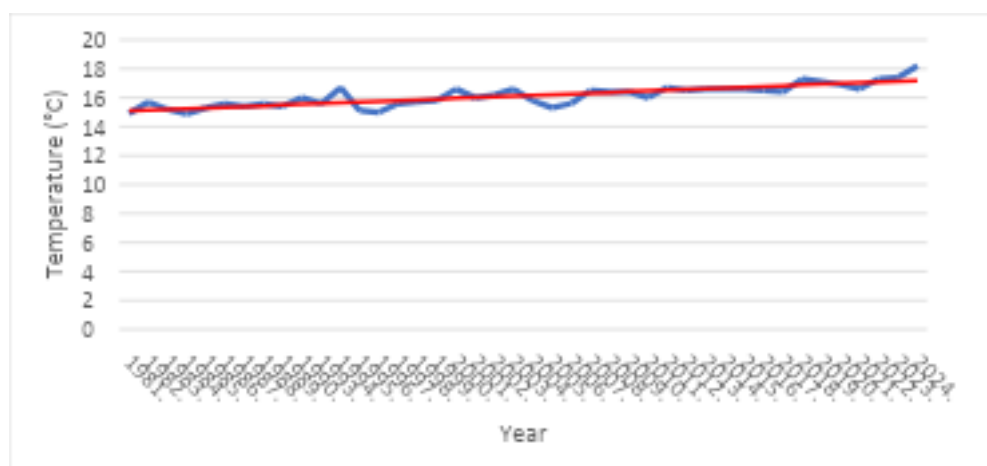


Figure 3. Average Monthly Air Temperature, 1981–2024

Since the early 1980s, a clear increase in the average monthly air temperature has been observed in Trogir. In 1981, the average monthly value was 14.9 °C, while by 2024 it had risen to 18.2 °C. This increase over more than four decades indicates a gradual but persistent warming of the area.

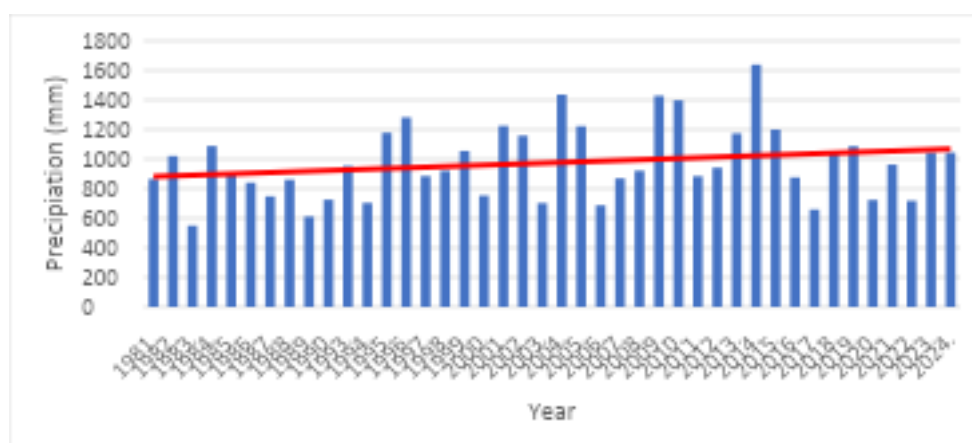


Figure 4. Annual Precipitation, 1981–2024



From 1981 to 2024, a clear increase in total annual precipitation has been recorded in the Trogir area. While 862.5 mm of precipitation was recorded in 1981, as much as 1,043.9 mm was recorded in 2024. This increase is not the result of isolated wet years alone; rather, the data indicate a gradual rise over a longer period, suggesting that the precipitation regime is becoming more intense and more variable than in the past.

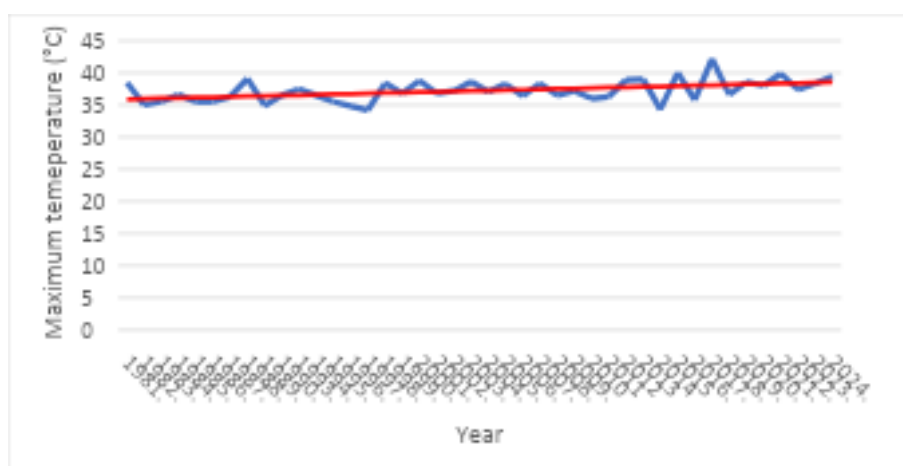


Figure 5. Absolute Maximum Air Temperature, 1981–2024

From 1981 to 2024, an increase in the absolute maximum air temperature is evident in the Trogir area. In 1981, the highest recorded temperature was 38.5 °C, while in 2024 it reached 39.5 °C. Although these are extreme values recorded only during the hottest days, the trend indicates a gradual rise in absolute temperature maxima, confirming the intensification of heat extremes over recent decades.

Other Geographical Characteristics of the Area

Relief and Geological Setting

From a topographical perspective, Trogir is characterized by a combination of low-lying coastal terrain and the hilly slopes of the island of Čiovo. A large portion of the urban and historic fabric lies below 5 metres above sea level, which increases exposure to sea-level rise, tidal events, and coastal flooding. The low elevation of most of the coastal zone, together with the proximity of the sea and the channel, represents a key vulnerability in the context of climate change.



The analysed island, with a total area of 112,436 m², is marked by a very high level of urbanization and the predominance of impermeable surfaces. Based on visual interpretation of satellite imagery, roof-covered areas are estimated to account for approximately 45% of the total island surface (around 50,600 m²), indicating a dense and compact urban structure with very limited open space.

Green areas cover only about 15% of the island (approximately 16,900 m²) and are largely fragmented and located along the periphery, without functional continuity within the historic core. The remaining surface, roughly 40% (around 45,000 m²), consists of other impermeable surfaces such as streets, squares, paved public spaces, and coastal structures.

Table 1. Core Area Surfaces by Type of Ground Cover

Surface	Share of area (%)
Buildings (roof-covered areas)	45
Green areas	15
Other impermeable surfaces (streets, squares, waterfronts)	40

Hydrography

There are no permanent watercourses within the historic core of Trogir; instead, the area is affected exclusively by torrential flows that form during intense rainfall events. These torrents originate in hypsometrically higher areas, from which water is rapidly conveyed toward the lower-lying parts of the area.

The outlets of these torrents are predominantly located along the coastal zone north of the historic core, where the flows discharge directly into the sea. Although there is no direct spatial connection between the torrents and the historic core itself, the intensity and dynamics of torrential runoff can have an indirect impact on the wider urban area, particularly by placing pressure on transport routes and infrastructure access to the core during episodes of extreme rainfall.





Figure 6. Torrential watercourses in the area of the City of Trogir



Methodology

The methodology was based on a combination of analysis of available data, spatial processing within a GIS environment, and the involvement of local stakeholders. In the first step, the existing conditions of the historic core of Trogir were analysed, with a particular focus on observed occurrences and impacts of climate change to date. Based on this analysis, the most likely climate-related risks affecting the historic core were identified, namely flooding, drought, sea-level rise, and coastal erosion.

For the purposes of risk assessment, relevant data were collected and subsequently processed and analysed within a GIS system. Spatial analysis provided insight into the distribution and frequency of individual phenomena—particularly flooding—and enabled the linkage of climate risks to specific areas of the historic core. Based on the results of the analysis, each risk was further interpreted and assessed in terms of its likelihood and potential impact.

The methodology was complemented by a participatory approach. A Living Lab was organised with representatives of the City of Trogir, including the municipal administration, public utility companies, and relevant institutions, with the aim of gathering expert and operational experience. In addition, a survey was conducted among participants in order to capture broader perceptions and experiences related to climate risks. The results obtained were used as an additional validation and refinement of the analytical findings, as well as a basis for further assessment and the planning of adaptation measures.



Results of the participatory process

Living Labs

As part of the “Living Lab” activities in Trogir, a participatory workshop was held with the aim of involving key local stakeholders in discussions on climate risks and adaptation measures. Participants included representatives of the public sector, competent authorities, public utility companies, and other relevant stakeholders involved in the management of space, infrastructure, and cultural heritage. A total of 11 participants took part, ensuring the exchange of diverse perspectives and practical experience related to current challenges and future needs of the City of Trogir in the context of climate change.

Table 2. Analysis of respondents – flooding theme

Topic	
Flooding	
Question	Summary of responses
Have you personally experienced the impacts of flooding in Trogir? If so, which ones?	All respondents answered affirmatively, stating that heavy rainfall leads to flooding in the historic core as well as on coastal roads.
Which locations in the historic core do you consider most at risk?	The historic core, particularly its western part.
How do floods affect heritage assets (city walls, basements, churches, houses)?	Flooding damages the structural stability and material condition of buildings, thereby negatively affecting the quality of life in the area.
Which measures could be most effective (drainage, barriers, nature-based solutions, etc.)?	A new drainage system, barriers, and raising the level of the coastal edge where feasible.



Table 3. Analysis of respondents – tourism and overcrowding theme

Topic	
Tourism and Overcrowding	
Question	Summary of responses
What are the main problems related to tourist overcrowding in Trogir?	Traffic congestion, lack of parking spaces, increased pressure on infrastructure, and large amounts of waste during the summer months.
In what ways do climate change impacts exacerbate these pressures?	Extreme heat increases the use of air conditioning and places additional strain on energy networks, while drought periods lead to higher water consumption.
Which measures could help balance tourism and heritage conservation?	Implementation of the Management Plan, visitor number management, development of routes outside the historic core, and visitor education.

Table 4. Analysis of respondents – priorities and cooperation theme

Topic	
Priorities and Cooperation	
Question	Summary of responses
What are the most important adaptation measures for the next five years?	Coastal elevation and rehabilitation, improvement of drainage systems, and public education.
Who should be responsible for implementing these measures?	The City, conservation authorities, the tourism sector, associations, the local community, and the County.
How can the local community and young people participate?	Through education, awareness-raising activities, and regular maintenance of buildings and infrastructure.



The results of the stakeholder survey indicate that climate change in Trogir is already having tangible impacts on everyday life, the built environment, and cultural heritage. Flooding has emerged as the most pronounced issue, particularly in the western part of the historic core and along coastal roads. Stakeholders clearly recognise that such events affect the structural integrity and long-term preservation of historic buildings, highlighting the need for a more systematic approach to risk management.

At the same time, tourist overcrowding during the summer months places additional pressure on infrastructure, while extreme temperatures and increased climate stress further intensify these pressures, particularly through higher energy and water consumption. As a result, stakeholders emphasise the importance of combining climate adaptation measures with tourism management strategies.

The key priorities identified for the next five years include the improvement of drainage systems, the elevation and rehabilitation of the coastline, and continuous education of the local community. It is also recognised that successful implementation requires cooperation across all levels—from the City and conservation authorities to the tourism sector, associations, the County, and local residents.

Overall, stakeholder responses confirm that Trogir requires an integrated approach to climate change adaptation, one that simultaneously protects heritage, enhances spatial resilience, and improves the quality of life within the historic core.

Stakeholder Survey

In addition to the Living Lab activities, a small-scale survey was conducted among local respondents in the Trogir area with the aim of gathering additional insights into perceptions and experiences related to climate change. A total of 25 respondents participated in the survey, and the questions focused on personal experiences with the impacts of climate events, the frequency of flooding, the effects of climate change on cultural heritage and everyday life, as well as potential solutions and adaptation measures. The responses obtained were used to complement the results of the Living Lab and to inform the formulation of further adaptation measures in Trogir.



Table 5., Overview of Survey Questions and Response Shares

Question	Interpretation of responses
Have flooding events become more frequent at your location compared to the past (a decade ago or earlier)?	76% of respondents believe that flooding has become more frequent over the past decade.
Do you personally, or in relation to your work or other activities, feel the negative impacts of climate change?	76% of respondents report experiencing negative impacts of climate change.
Do you believe that climate change will have a negative impact on tourism?	84% of respondents believe that climate change will have a negative impact on tourism.
Do you believe that climate change will have a negative impact on agriculture?	88% of respondents believe that climate change will have a negative impact on agriculture.

Table 6., Assessment of Climate-Related Risks in Trogir (Respondents)

Flooding	48% of respondents consider the likelihood of flooding to be high.
Drought	36% of respondents consider the likelihood of drought to be high.
Sea-level rise and permanent coastal flooding	32% of respondents consider the likelihood to be high.
Coastal erosion	20% of respondents consider the likelihood of coastal erosion to be high.



The results of the survey conducted among respondents in Trogir indicate a high level of awareness of climate change and its impacts. More than three quarters of respondents believe that flooding has become more frequent compared to a decade or more ago, and the same proportion report already experiencing negative effects of climate change, either in their private or professional lives. Perceptions of future impacts are also pronounced: a large majority of respondents expect climate change to have negative consequences for tourism, while concern regarding agriculture is even more pronounced.

In the assessment of climate risks for the Trogir area, flooding stands out as the most significant threat, with nearly half of respondents considering its likelihood to be high. This is followed by drought and sea-level rise with permanent coastal flooding, while coastal erosion is recognised as a less frequent but still present risk. This perception among respondents confirms that hydrological and coastal risks are among the key challenges for the future development and climate resilience of Trogir.

Table 7., Climate Risk Priorities – Trogir, Based on the Results of the Participatory Process

Priority	Climate risk	Risk level
1	Flooding	High
2	Drought	Medium-high
3	Sea-level rise and permanent coastal flooding	Medium
4	Coastal erosion	Lower



Climate risks and challenges

Within the preparation of this document, the analysis of climate risks focused on those risks that pose the greatest and most direct threat to the historic core of Trogir and its cultural, spatial, and functional values. Particular attention was given to the climate risks of flooding, drought, sea-level rise, and coastal erosion, as key processes that already shape, and will continue to shape in the long term, the level of vulnerability of the area.

Flooding represents the dominant short- and medium-term climate risk for the historic core. Due to its low elevation, coastal location, and dense urban structure, flood events have a pronounced negative impact on ground-floor levels of buildings, foundations, public spaces, and infrastructure systems. The frequency and intensity of these events directly affect the state of preservation of cultural heritage assets and increase the need for remedial interventions.

Sea-level rise constitutes a long-term structural risk that further amplifies the effects of flooding and increases the exposure of the coastal zone of the historic core. This process raises the likelihood of seawater intrusion during high tides and storm conditions and requires timely planning and the phased implementation of adaptation measures.

Drought and rising temperatures are associated with the development of heat stress, reduced thermal comfort, and adverse effects on materials and structural elements of historic buildings. Limited green areas and a high proportion of impermeable surfaces further intensify the urban heat island effect, thereby increasing the vulnerability of the area during the summer months.

Coastal erosion, in combination with wave action and sea-level rise, represents an additional risk to the stability of coastal structures and waterfront public spaces. In the long term, erosion processes may lead to the degradation of coastal infrastructure and the loss of the protective function of the coastal zone.



A common characteristic of the identified climate risks is their spatial overlap with areas of the highest concentration of cultural heritage, which necessitates a selective and prioritised approach to adaptation. Rather than applying generic solutions, interventions are directed towards the most at-risk parts of the historic core, while preserving the historical, ambient, and landscape values of the area.

Flooding

At present, the most pronounced climate-related risk in the Trogir area is flooding, particularly under conditions where heavy precipitation coincides with southerly winds (jugo) and high tides caused by low atmospheric pressure. Under such circumstances, large volumes of stormwater accumulate on streets, especially in the lower-lying and coastal parts of the historic core, which hampers the functioning of the area and increases risks to buildings and infrastructure.

To assess this risk on the basis of actual events, interventions by fire services related to flooding—specifically water pumping operations—were analysed for the period from 2019 to the present. A spatial location was assigned to each recorded intervention, and all data were entered into a GIS system. Based on this dataset, an intervention density analysis was carried out using a heatmap tool, which clearly identified areas of the historic core that are more frequently exposed to flooding.

The results obtained provide an important basis for understanding the spatial distribution of flood risk, for further analysis of the causes of flooding, and for the planning of targeted protection and adaptation measures. In this regard, it is recommended to continue the systematic collection of data on interventions and to regularly update them in the GIS database, in order to enable more accurate trend monitoring and more effective flood risk management in the future.



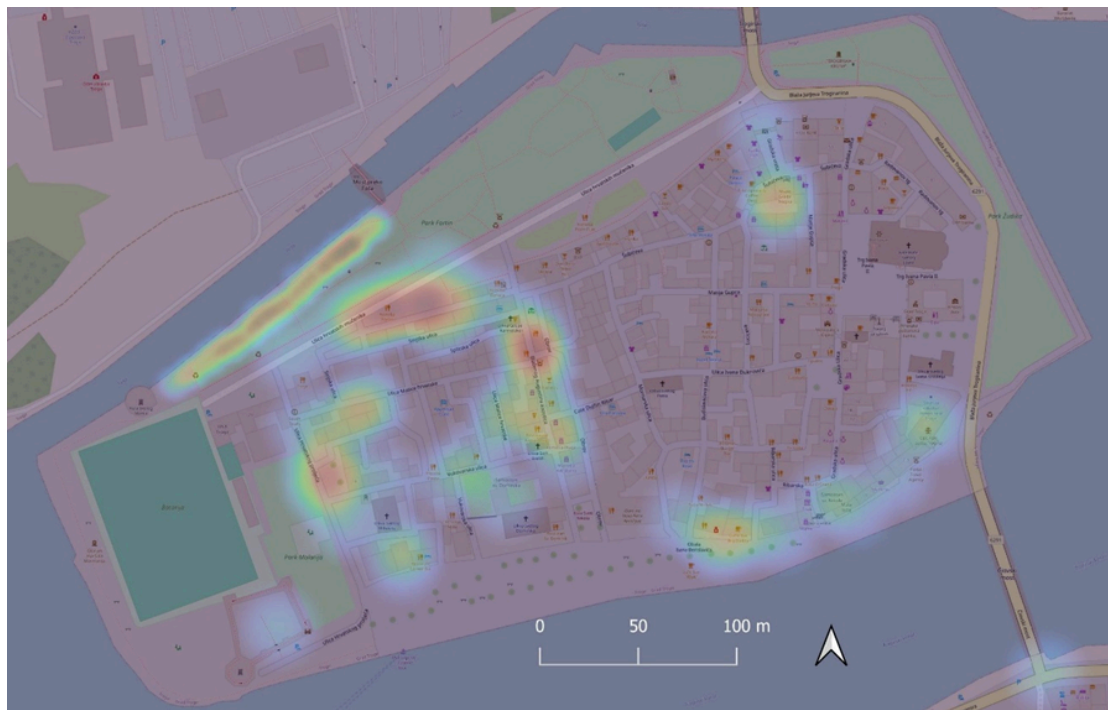


Figure 7. Flooding of the Historic Core of Trogir
Source: Trogir Public Fire Brigade, 2018–2025

The analysis indicates that the western, central, and south-eastern parts of the historic core of the city are particularly exposed to flooding. These areas show the highest frequency of recorded interventions, pointing to increased vulnerability under conditions of heavy precipitation and adverse meteorological events. Flooding occurs most frequently during the autumn period, with 76% of recorded cases occurring in November. This distribution corresponds to the characteristics climatic of the area, as November is the month with the highest average precipitation.

The eastern part of the historic core is located at a higher elevation (approximately 4 m above sea level), while the western part lies at a lower elevation (approximately 1 m), which contributes to differing levels of exposure to flooding.

In addition, certain parts of the island were formed through land reclamation in the past, including during the medieval period in the Pasike area and in the late 19th century in the western part of Batarija and in the area of today's Fortin Park.

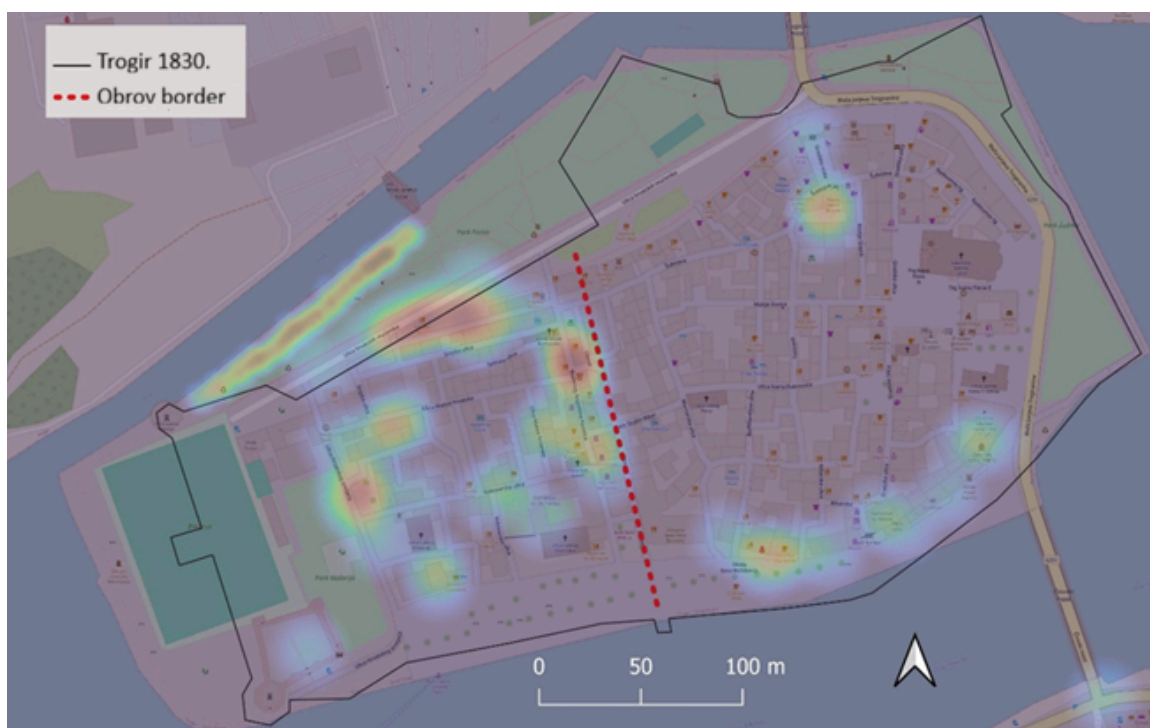


Figure 8. Areas of land reclamation in Trogir during the medieval period (west of "Obrov") and after 1830 (outside the black line).

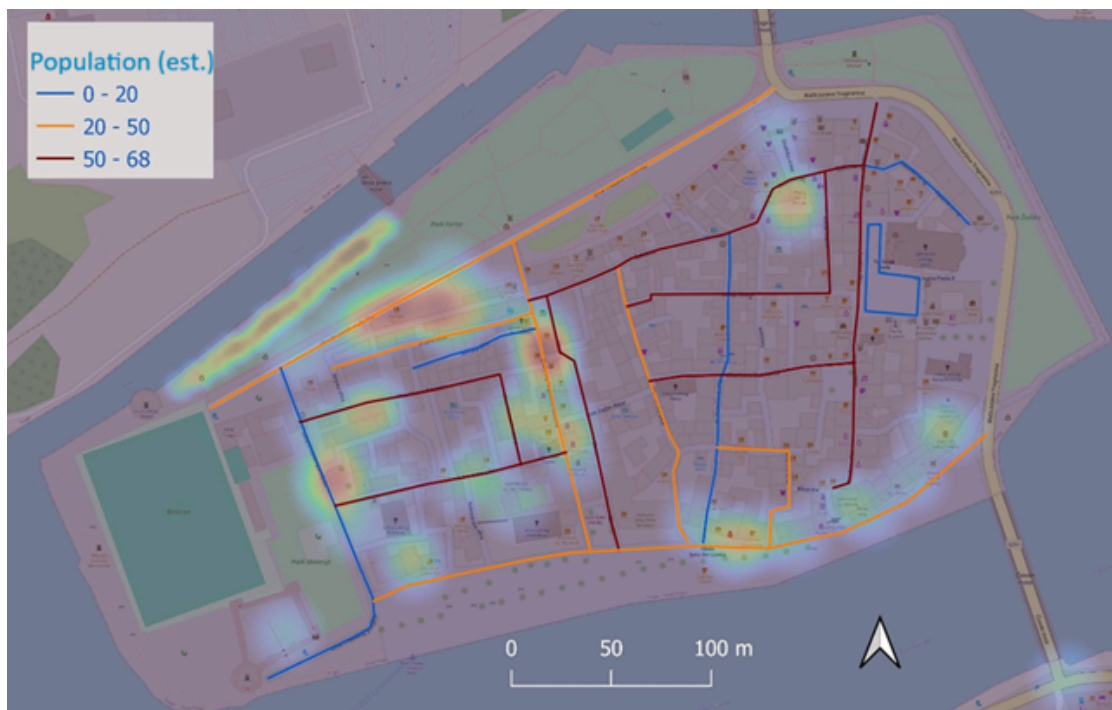


Figure 9. Analysis of Street Flooding with an Estimate of the Number of Affected Residents

Based on estimates of the number of residents per street and the frequency of flooding, approximately 38% of the population of the historic core is exposed to this risk. Such exposure undermines quality of life, causes material damage, and may become one of the stronger drivers of out-migration from the historic core.

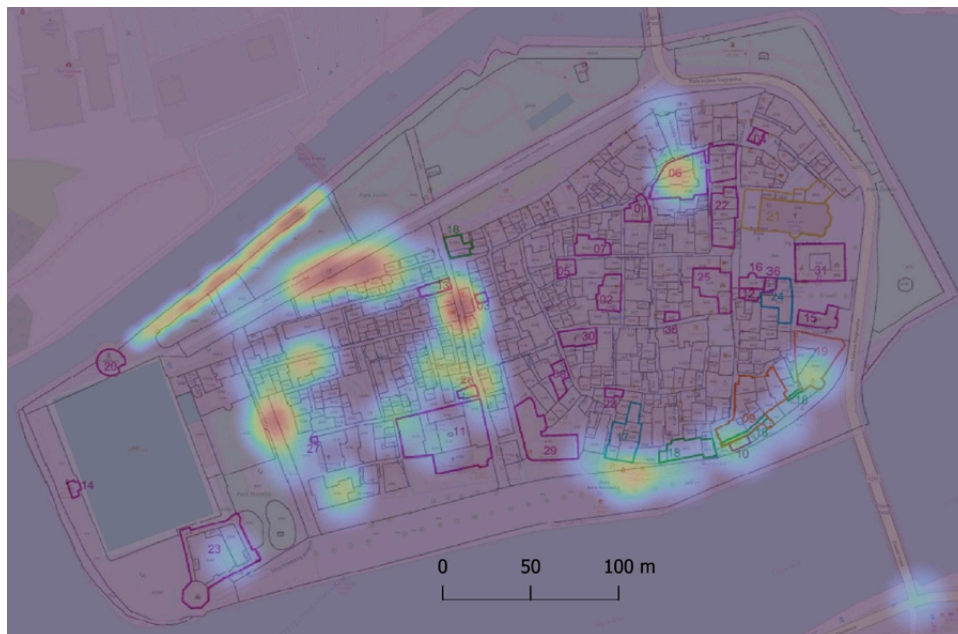


Figure 10. Analysis of Street Flooding with an Assessment of Impacts on Cultural Heritage Assets (designated heritage assets).

Based on the analysis of the spatial distribution of flooding and the location of cultural heritage assets, it is estimated that approximately 39% of the cultural heritage assets within the historic core are exposed to flood risk. This impact is not limited to the structural components of buildings, such as foundations and ground-floor levels, but also affects monuments, exposed elements, artworks, and other valuable contents within protected spaces.



Table 8. List of Cultural Heritage Assets at Risk of Flooding

Cultural heritage asset	Cultural heritage asset
Pučka House	Courthouse Building
Garagnin–Fanfogna Palace	St Mark's Tower
Church and Monastery of St Nicholas	Kamerlengo Fortress
Small Loggia	Church of All Saints
Church and Monastery of St Dominic	Bell Tower of St Michael
Church of Our Lady of Mount Carmel	Petar Berislavić Primary School
House of the historian Ivan Lučić	Church and Monastery of St Dominic
City Walls and Towers	Church of Our Lady of Mount Carmel



Climate risk assessment- flooding

According to the analysis of intervention data processed within the GIS system, as well as the experiences reported by respondents, flooding stands out as one of the more significant risks associated with the impacts of climate change. The analysis indicates that this risk is already manifested through frequent problems in certain parts of the historic core. In light of the recorded increase in precipitation (Table 4), as well as the expected continued sea-level rise and the occurrence of increasingly intense rainfall over shorter time periods, a further increase in both the frequency and intensity of flooding can be expected in the future.

Drought

Drought was identified in the survey as the second most significant climate risk, which is consistent with broader climate trends in the Mediterranean region, where drought is already considered one of the leading long-term risks. Rising air temperatures, combined with increasingly frequent gaps between precipitation periods, place additional pressure on water resources and vulnerable sectors, confirming that drought represents one of the key challenges for the future development of this area.

The increase in average monthly air temperature, as shown in Figure 3, has a direct influence on the occurrence and intensity of droughts. Higher air temperatures increase evaporation from soil and vegetation, meaning that moisture is lost more rapidly even in periods when precipitation levels remain unchanged. In addition, a warmer climate often leads to longer dry intervals between precipitation events. Although total annual precipitation may increase, it increasingly occurs in the form of short-duration, intense rainfall events, which infiltrate the soil less effectively and do not contribute significantly to the replenishment of soil moisture reserves. The result is a higher frequency of droughts, particularly during the warmer part of the year, with negative impacts on agriculture, vegetation, and the availability of water resources.



Impact of drought- related climate risk on tourism

In the context of potentially more frequent and prolonged drought periods, it is necessary to consider the role of tourism and its growing importance for the City of Trogir. Increased tourist pressure places additional strain on overall infrastructure, particularly water supply systems and the energy sector, including electricity generation, thereby further increasing the vulnerability of the area to drought conditions.

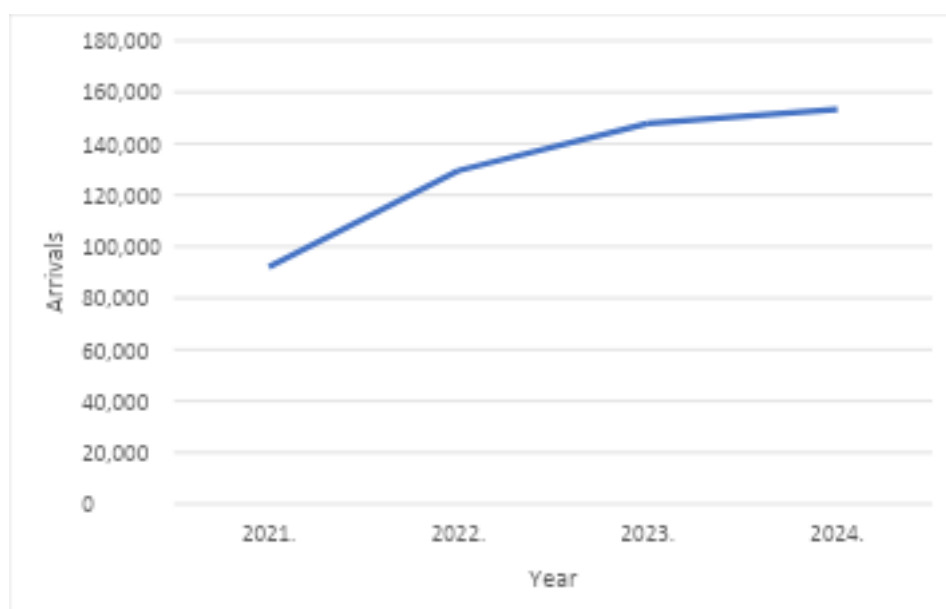


Figure 11. Tourist Arrivals in the City of Trogir (2021–2024)



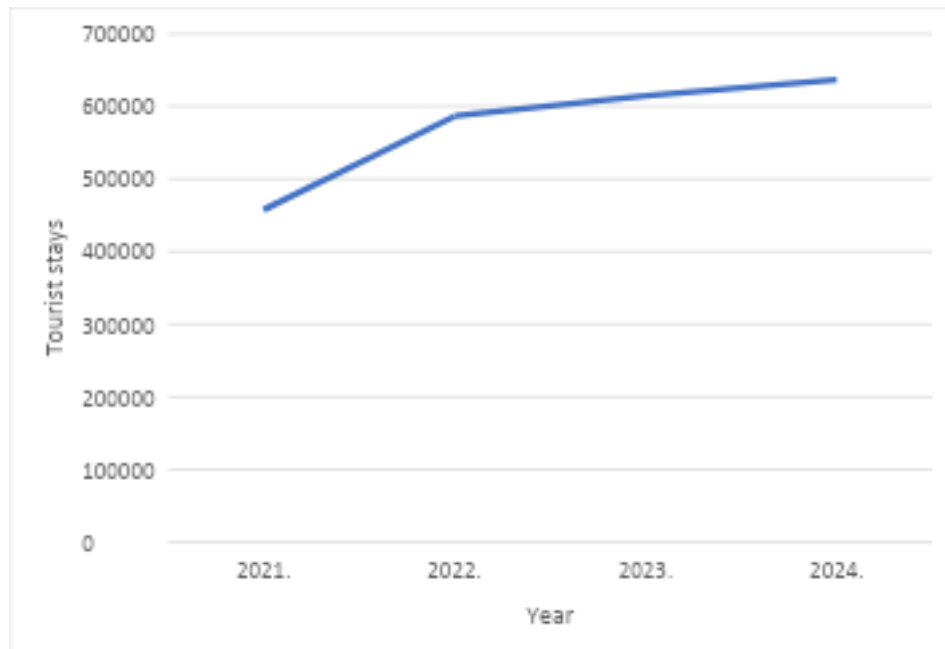


Figure 12. Tourist Overnight Stays in the City of Trogir (2021–2024)

Sea-level rise

Sea-level rise is one of the long-term climate processes affecting the Mediterranean region and is also relevant to the area of Trogir. Scientific assessments (MedECC) indicate a gradual rise in sea level associated with increasing temperatures and changes in the global climate system. Due to its coastal location and the low elevation of certain parts of the historic core, Trogir is particularly sensitive to this risk. Rising sea levels may lead to more frequent flooding and reduced efficiency of drainage systems, especially under adverse weather conditions. According to scientific projections for the Mediterranean region (MedECC), sea levels are expected to continue rising in the coming decades. By the middle of the century, an increase of approximately 10 to 20 centimetres is expected. By the end of the century, the increase may be significantly greater, depending on climate scenarios. Even relatively small increases in sea level can have pronounced impacts on low-lying coastal areas.



Table 9. Estimated Sea-Level Rise Projections

Period	Estimated sea-level rise	Implications for Trogir
by 2040.	approx. 10–20 cm	Occasional flooding of coastal areas and the western part of the historic core.
by 2080.	approx. 30–60 cm	High risk of flooding affecting large parts of the historic core, increased pressure on coastal infrastructure and cultural heritage assets.
by 2100.	approx. 40–80 cm	Permanent exposure of parts of the historic core, requiring the implementation of adaptation and protection measures.



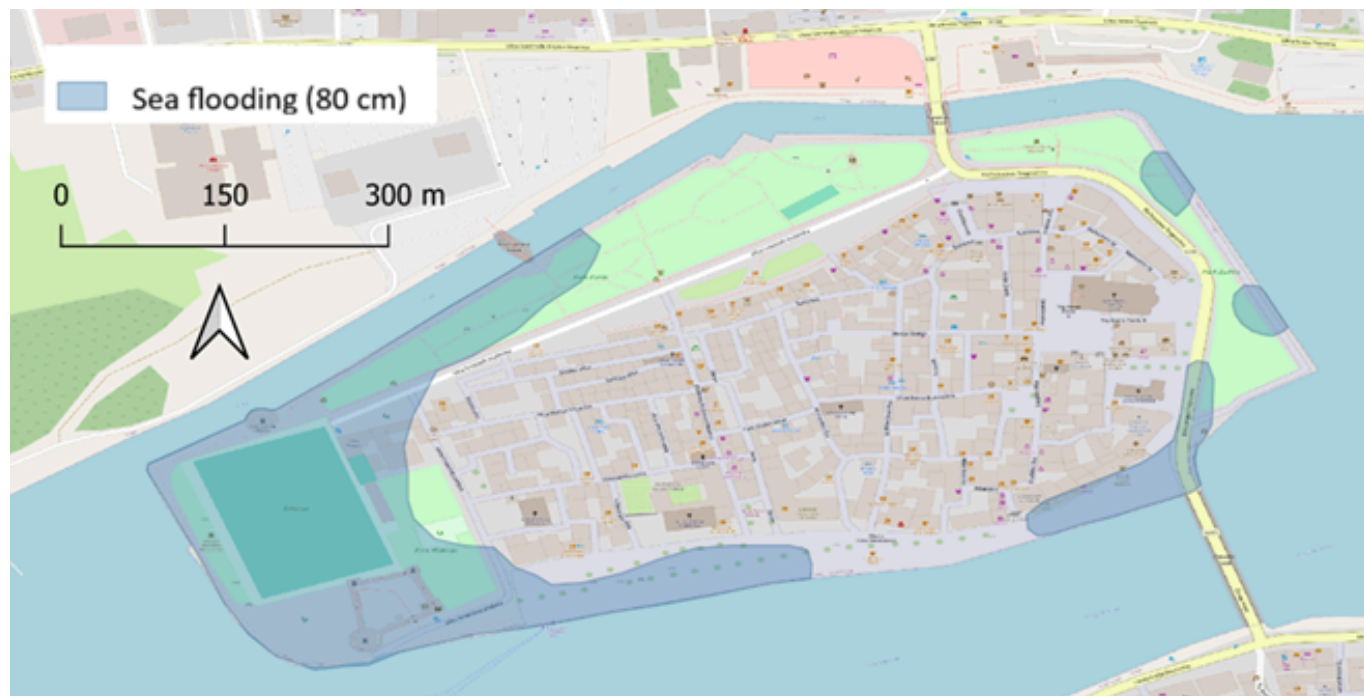


Figure 13. Projected Flooding of the Island Core of Trogir under an 80 cm Sea-Level Rise Scenario
GIS analysis by the author, based on source: <https://coastal.climatecentral.org/map/>



Impacts of Sea-Level Rise

Sea-level rise will primarily affect the lower-elevation parts of the island, with the western and central sections of the historic core, as well as certain parts of the south-eastern edge, being the most exposed. These areas are located at the lowest elevations and are already more sensitive to flooding under conditions of high tides and intense precipitation events.

The western part of the island lies at approximately one metre above sea level, making it particularly vulnerable in the context of a gradual rise in sea level. Toward the east, the terrain gradually rises, reaching approximately four metres above sea level, which places the eastern parts of the historic core in a somewhat more favourable position.

Coastal erosion

Coastal erosion occurs as a result of the long-term action of the sea. It is associated with mechanical marine processes (wave energy), sea-level rise, and increasingly frequent storm conditions. The process is gradual and takes place over an extended period of time. However, under conditions of more frequent and more intense storms, which have become more pronounced in recent decades, coastal erosion is intensifying and progressing more rapidly than in the past.

In the Trogir area, coastal erosion affects only certain sections of the shoreline and does not occur uniformly across all locations. The historic core of Trogir benefits from relative topographic protection from the impact of stronger wave action.





Figure 14. Coastal Erosion Risk Assessment

Impact of coastal erosion as a climate risk

The vulnerability assessment indicates that the south-western parts of the historic core of Trogir are potentially the most exposed to erosion processes, while the western part of the core is subject to a moderate level of exposure. These areas also represent the lowest-lying parts of the historic core and are more open to prevailing westerly winds, making them more susceptible to long-term marine action. In the eastern part of the historic core, a lower intensity of this risk has been identified.

Overall, the geomorphological position of the historic core, located between the mainland and the island of Čiovo, provides a certain degree of protection and contributes to reduced exposure to coastal erosion. Nevertheless, due to long-term changes in climatic conditions, it is necessary to ensure continuous monitoring of the shoreline and to incorporate this risk into the further planning of protection measures.

According to the stakeholder survey, the risk of coastal erosion is also perceived as lower when compared to flooding.

Spatial Extent of Impacts Associated with Climate-Related Risks

A GIS-based analysis was conducted based on the spatial distribution and assessment of climate-related risks, taking into account the geomorphological characteristics of the area, including elevation, terrain slope, and coastal orientation. The analysis covered the risks of flooding, sea-level rise, and coastal erosion, with all datasets examined in their interrelated context. Based on the results, two main spatial zones can be identified: one area characterised by higher exposure and a higher level of risk, and another area with lower exposure and reduced risk levels. This differentiation enables a clearer understanding of the spatial distribution of risks and provides a foundation for further planning and the targeted prioritisation of adaptation measures.



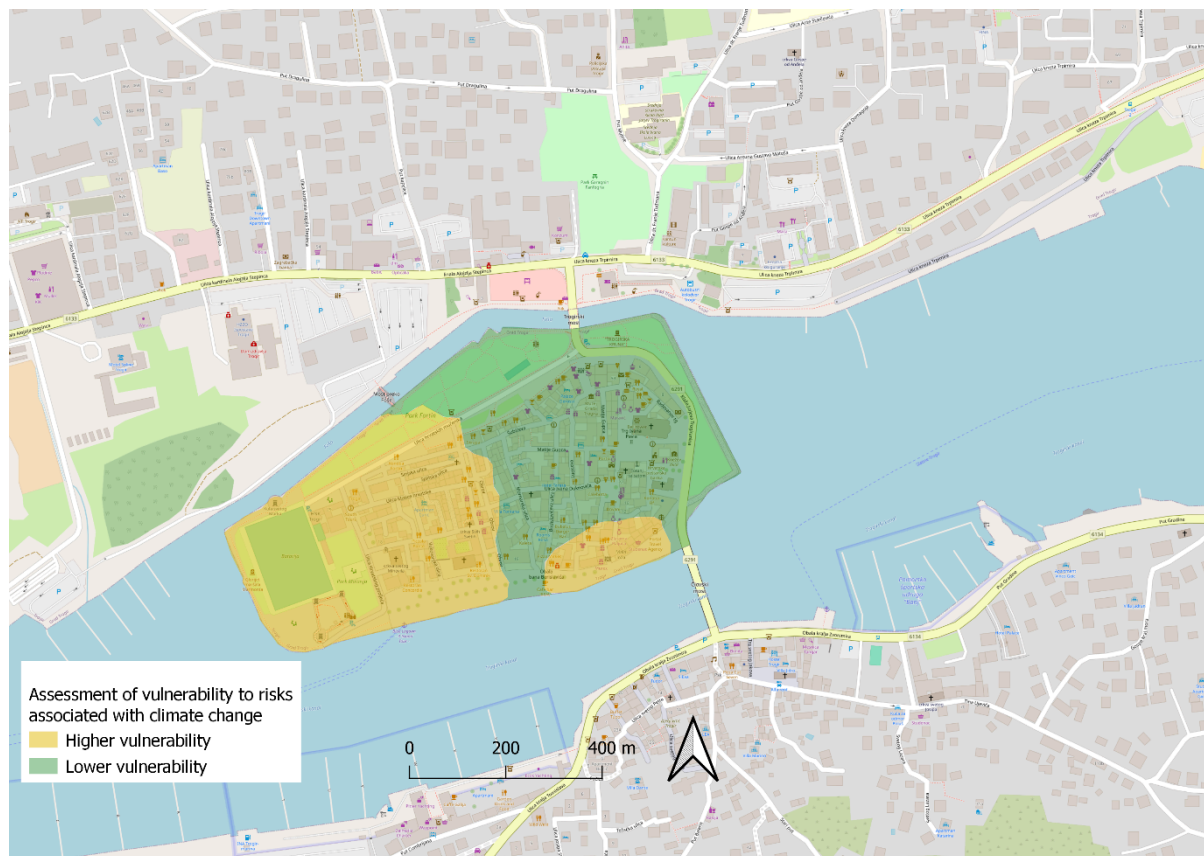


Figure 15. Assessment of Areas with Higher and Lower Exposure to Climate-Related Risks

Table 10. Share of UNESCO Core and Buffer Zone Areas by Level of Exposure to Climate-Related Risks

Zone	Higher exposure	Lower exposure
UNESCO protected area	51,3 %	48,7 %
Buffer (adjacent) zone	48 %	52 %
Total (UNESCO site + buffer zone)	49,9 %	51,1%



The table shows that the UNESCO core zone is somewhat more exposed to higher levels of risk compared to the buffer zone. Within the protected core itself, higher exposure slightly prevails, whereas in the buffer zone a larger share of the area is characterised by lower exposure, confirming its protective and buffering role.

When the entire area is considered as a whole, the proportions are almost balanced, with a slight predominance of lower exposure. This indicates that the buffer zone partially mitigates overall risk, while also highlighting that a substantial portion of the area still requires careful planning, monitoring, and the implementation of protection measures, particularly within the UNESCO core zone.

Climate Risk Scoring – Trogir

Table 11. Climate Risk Scoring Table

Climate risk	Probability (P)	Impact (I)	Overall risk	Risk level
Flooding	5	4	20	Very high
Sea-level rise	4	4	12	High
Drought	4	3	12	Medium
Coastal erosion	2	2	4	Low

Climate risk indicators

Table 12. Climate Risk Indicators

Climate risk	Indicators	Data sources
Flooding	Number of fire service water-pumping interventions; spatial concentration of interventions (GIS heatmap); frequency of	Fire service intervention records; GIS analysis; survey; Living Lab



	flooding during autumn months; share of the historic core population exposed to flooding; share of cultural heritage assets exposed to flooding	
Drought	Trend of increasing average monthly air temperature; respondents' perception of drought periods; monitoring of tourism-related pressure	Climate data; survey; Living Lab
Sea-level rise	Estimated sea-level rise according to scenarios; share of areas at low elevation; overlap with coastal infrastructure	MedECC; IPCC; GIS analysis; field observations
Coastal erosion	Condition of coastal structures; exposure to wave action; perception of risk among respondents	Survey; Living Lab; expert assessments



Action and interventions

Table 13. Adaptation Objectives

Objective	Measures
Increase the resilience of the City of Trogir, particularly the historic core, to the impacts of climate change through systematic risk management and the protection of cultural heritage.	All measures
Reduce flood risk and enhance the capacity for timely response.	Flood Reporting System; Early Warning System; Regulation and Maintenance of Torrential Watercourses
Protect cultural heritage from climate-related risks.	Protection of Cultural Heritage Assets
Increase the resilience of the urban area to heat extremes and drought.	Tree Planting and Expansion of Green Areas
Reduce the exposure of coastal parts of the city to long-term climate change impacts.	Elevation and Reinforcement of the Coastal Zone; Mobile Sea Barrier
Strengthen capacities for sustainable stormwater management and drainage.	Regulation and Maintenance of Torrential Watercourses and Drainage Systems
Ensure the feasibility and acceptability of measures within the historic and institutional framework.	All measures



Measures

Based on the identified climate risks—flooding, drought, sea-level rise, and coastal erosion—targeted adaptation measures have been defined with the aim of protecting cultural heritage, reducing spatial exposure, and strengthening the resilience of the urban and coastal system. Their implementation represents a practical response to the identified climate challenges and provides a foundation for the long-term preservation of the historic core of Trogir under changing climate conditions.

Table 14. Measure 1 – Cultural Heritage Protection

Reference number:	1.
Measure title:	Protection of Cultural Heritage Assets
Type of measure:	Educational / infrastructural
Associated climate risk:	Flooding
Key indicators:	Exposure of cultural heritage assets; frequency of flooding; GIS analysis
Risk level:	Very high
Implementation timeframe:	Short-term to medium-term
Priority:	Very high
Target stakeholders:	City administration, conservation authorities, cultural institutions, municipal utility companies
Measure description:	The cultural heritage protection measure is aimed at reducing the negative impacts of flooding. It encompasses a combination of infrastructural interventions, technical solutions, and educational activities designed to protect buildings, foundations, and both movable and immovable heritage. Emphasis is placed on preventive action, increasing the resilience of structures, and raising awareness among owners and users regarding protective measures.



Table 15. Measure 2 – Early Warning System

Reference number:	2.
Measure title:	Early Warning System
Type of measure:	Infrastructural
Associated climate risk:	Flooding; heatwaves
Key indicators:	Frequency of extreme events; operational data
Risk level:	High
Implementation timeframe:	Short-term
Priority:	High
Target stakeholders:	City administration, civil protection services, municipal utility companies, media, Croatian Meteorological and Hydrological Service (DHMZ)
Measure description:	The Early Warning System is aimed at providing timely information to residents, services, and visitors regarding impending climate extremes, particularly heavy rainfall, flooding, and heatwaves. The system may include meteorological alerts, digital communication tools, and clearly defined response protocols. The objective of the measure is to reduce potential damage, enhance safety, and enable faster and more effective responses by competent authorities.



Table 16. Measure 3 – Flood Reporting System

Reference number:	3.
Measure title:	Flood Reporting System
Type of measure:	Organisational
Associated climate risk:	Flooding
Key indicators:	Number of interventions; spatial concentration (GIS heatmap)
Risk level:	Very high
Implementation timeframe:	Short-term
Priority:	Very high
Target stakeholders:	Fire services, civil protection authorities, residents, municipal utility companies
Measure description:	This measure is based on improving the system for recording and reporting flood events through fire service interventions. Systematic collection of data on the locations, frequency, and intensity of flooding enables more robust risk analysis, GIS processing, and the monitoring of changes over time. The measure plays a key role in establishing a reliable database that serves as a foundation for further planning and implementation of adaptation measures.



Table 17. Measure 4 – Regulation and Maintenance of Torrential Watercourses

Reference number:	4.
Measure title:	Regulation and Maintenance of Torrential Watercourses
Type of measure:	Infrastructural
Associated climate risk:	Flooding; coastal erosion
Key indicators:	Surface runoff; torrential flows
Risk level:	High
Implementation timeframe:	Medium-term
Priority:	High
Target stakeholders:	City administration, municipal utility companies, Croatian Waters (<i>Hrvatske vode</i>), construction sector
Measure description:	The measure focusing on the regulation and maintenance of torrential watercourses aims to reduce uncontrolled surface runoff during heavy rainfall events. It includes regular maintenance, cleaning, and adaptation of existing watercourses and channels in order to reduce water retention and rapid runoff towards the historic core. By doing so, the risk of flooding and erosion is reduced, and the resilience of the drainage system to extreme precipitation events is increased.

Table 18. Measure 5 – Tree Planting and Greening of Areas

Reference number:	5.
Measure title:	Tree Planting



Type of measure:	Landscape-based
Associated climate risk:	Drought; heatwaves; coastal erosion
Key indicators:	Temperature increase; lack of shade; respondents' perceptions
Risk level:	Medium
Implementation timeframe:	Medium-term to long-term
Priority:	Medium
Target stakeholders:	City administration, municipal utility companies, residents
Measure description:	The tree planting measure plays a multifunctional role in climate change adaptation. It is aimed at mitigating the impacts of heatwaves and drought, reducing the urban heat island effect, and partially limiting erosion processes. Within the historic core and its adjacent areas, planting is planned in locations where it is spatially and conservation-wise acceptable, with an emphasis on creating shade, improving microclimatic conditions, and enhancing the quality of use for residents and visitors.

Table 19. Measure 6 – Raising and Reinforcement of the Coastal Zone

Reference number:	6.
Measure title:	Elevation and Reinforcement of the Coastal Zone
Type of measure:	Infrastructural
Associated climate risk:	Sea-level rise; flooding
Key indicators:	Low elevation; overlap with coastal infrastructure



Risk level:	Medium (long-term)
Implementation timeframe:	Medium-term to long-term
Priority:	Medium
Target stakeholders:	City administration, municipal utility companies, designers/planners, construction sector, public institutions
Measure description:	This measure addresses the long-term adaptation of the coastal zone of the historic core of Trogir to sea-level rise and associated flood risks. It involves the structural reinforcement of existing coastal structures and, where spatially and conservation-wise acceptable, the moderate elevation of the coastal edge. The objective of the measure is to reduce seawater intrusion into low-lying parts of the historic core during high tides and storm conditions, while preserving the historical and ambient values of the area.

Table 20. Measure 7 – Mobile Sea Barrier

Reference number:	7.
Measure title:	Mobile Sea Barrier
Type of measure:	Infrastructural
Associated climate risk:	Sea-level rise; flooding
Key indicators:	Low elevation; overlap with coastal infrastructure
Risk level:	Medium (long-term)
Implementation timeframe:	Medium-term to long-term
Priority:	Medium



Target stakeholders:	City administration, Port Authority, municipal utility companies, civil protection services
Measure description:	The mobile sea barrier represents a flexible infrastructural measure that enables temporary coastal protection under extreme conditions, such as the combination of high tides, southerly winds (<i>jugo</i>), and heavy precipitation. The key advantage of this measure lies in its activation only during periods of increased risk, thereby minimising permanent impacts on the space and the visual identity of the historic core. The measure is considered as a complementary solution to permanent coastal protection measures.



Results

The measures were evaluated against four objectives: environmental impact, social impact, protection of heritage and space, and implementation potential. Each objective consists of predefined indicators, and weights were assigned to the objectives to reflect their relative importance in the context of the historic core of Trogir.

Evaluation of measures

Each measure was assessed for each indicator using a numerical score ranging from 1 to 5, where a score of 1 indicates a very low impact or acceptability, and a score of 5 indicates a very high impact or acceptability. The scores were determined based on the analysis of spatial and climate data, GIS analyses, survey results, the Living Lab process, and expert judgement in relation to the local context.

Calculation of values

For each indicator, a weighted value was calculated as the product of the numerical score and the indicator weight. Indicator values were aggregated within each objective, and the final score for each measure was obtained as the sum of the weighted values across all objectives.

Descriptive ratings and ranking

To improve clarity, weighted indicator values were translated into descriptive levels (very high, high, moderate, low, very low). Based on the final scores, measures were ranked according to their overall acceptability and recommended implementation priority.

Scoring system

Numerical and descriptive scores used in the evaluation of adaptation measures.

Table 21. Numerical scores for the evaluation of adaptation measures

Numerical score	Meaning
1	very low impact / very low acceptability
2	low impact / low acceptability



3	moderate impact / moderate acceptability
4	high impact / high acceptability
5	very high impact / very high acceptability

Table 22. Descriptive scores for the evaluation of adaptation measures

Result (numerical score × weight)	Descriptive score
≥ 2,00	very high
1,50 – 1,99	high
1,00 – 1,49	moderate
0,50 – 0,99	low
< 0,50	very low

Table 23. Measure 1: Cultural Heritage Protection

Environmental impact (weight 0,30)			
Indicator	Weight	Score (1-5)	Rating
Reduction of exposure to climate-related risks	0,50	3	High
Reduction of negative impacts of climate-related risks	0,30	3	Low
Contribution to long-term spatial resilience	0,20	3	Low
Social impact (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of material damage	0,50	4	Very high
Contribution to quality of life	0,50	4	Very high
Protection of heritage and spatial values (weight 0,25)			
Indicatoe	Weight	Score (1-5)	Rating
Reduction of vulnerability of cultural heritage assets	0,50	5	Very high
Acceptability of interventions in the historic environment	0,50	4	Very high
Implementation potential (weight 0,20)			
Indicator	Weight	Score (1-5)	Rating



Feasibility of the measure within the existing institutional and spatial framework	0,50	4	Very high
Spatial and technical feasibility of the measure	0,50	4	Very high

Table 24. Measure 2: Early Warning System

Environmental impact (weight 0,30)			
Indicator	Weight	Score (1-5)	Rating
Reduction of exposure to climate-related risks	0,50	3	High
Reduction of negative impacts of climate-related risks	0,30	3	Low
Contribution to long-term spatial resilience	0,20	3	Low
Social impact (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of material damage	0,50	5	Very high
Contribution to quality of life	0,50	5	Very high
Protection of heritage and spatial values (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of vulnerability of cultural heritage assets	0,50	4	Very high
Acceptability of interventions in the historic environment	0,50	5	Very high
Implementation potential (weight 0,20)			
Indicator	Weight	Score (1-5)	Rating
Feasibility of the measure within the existing institutional and spatial framework	0,50	5	Very high
Spatial and technical feasibility of the measure	0,50	5	Very high

Table 25. Measure 3: Flood Reporting System

Environmental impact (weight 0,30)			
Indicator	Weight	Score (1-5)	Rating
Reduction of exposure to climate-related risks	0,50	4	Very high



Environmental impact (weight 0,30)			
Reduction of negative impacts of climate-related risks	0,30	4	Moderate
Contribution to long-term spatial resilience	0,20	4	Low
Social impact (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of material damage	0,50	5	Very high
Contribution to quality of life	0,50	5	Very high
Protection of heritage and spatial values (weight 0,25)			
Indicatoe	Weight	Score (1-5)	Rating
Reduction of vulnerability of cultural heritage assets	0,50	5	Very high
Acceptability of interventions in the historic environment	0,50	5	Very high
Implementation potential (weight 0,20)			
Indicator	Weight	Score (1-5)	Rating
Feasibility of the measure within the existing institutional and spatial framework	0,50	5	Very high
Spatial and technical feasibility of the measure	0,50	5	Very high

Table 26. Measure 4: Regulation and Maintenance of Torrential Watercourses

Environmental impact (weight 0,30)			
Indicator	Weight	Score (1-5)	Rating
Reduction of exposure to climate-related risks	0,50	4	Very high
Reduction of negative impacts of climate-related risks	0,30	4	Moderate
Contribution to long-term spatial resilience	0,20	4	Low
Social impact (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of material damage	0,50	4	Very high
Contribution to quality of life	0,50	4	Very high
Protection of heritage and spatial values (weight 0,25)			
Indicatoe	Weight	Score (1-5)	Rating



Reduction of vulnerability of cultural heritage assets	0,50	3	High
Acceptability of interventions in the historic environment	0,50	3	High
Implementation potential (weight 0,20)			
Indicator	Weight	Score (1-5)	Rating
Feasibility of the measure within the existing institutional and spatial framework	0,50	3	High
Spatial and technical feasibility of the measure	0,50	3	High

Table 27. Measure 5: Urban Tree Planting

Environmental impact (weight 0,30)			
Indicator	Weight	Score (1-5)	Rating
Reduction of exposure to climate-related risks	0,50	3	High
Reduction of negative impacts of climate-related risks	0,30	4	Moderate
Contribution to long-term spatial resilience	0,20	4	Low
Social impact (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of material damage	0,50	4	Very high
Contribution to quality of life	0,50	3	High
Protection of heritage and spatial values (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of vulnerability of cultural heritage assets	0,50	3	High
Acceptability of interventions in the historic environment	0,50	3	High
Implementation potential (weight 0,20)			
Indicator	Weight	Score (1-5)	Rating



Feasibility of the measure within the existing institutional and spatial framework	0,50	4	Very high
Spatial and technical feasibility of the measure	0,50	4	Very high

Table 28. Measure 6: Elevation and Reinforcement of the Coastal Zone

Environmental impact (weight 0,30)			
Indicator	Weight	Score (1-5)	Rating
Reduction of exposure to climate-related risks	0,50	4	Very high
Reduction of negative impacts of climate-related risks	0,30	4	Moderate
Contribution to long-term spatial resilience	0,20	5	Moderate
Social impact (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of material damage	0,50	4	Very high
Contribution to quality of life	0,50	4	Very high
Protection of heritage and spatial values (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of vulnerability of cultural heritage assets	0,50	3	High
Acceptability of interventions in the historic environment	0,50	2	Moderate
Implementation potential (weight 0,20)			
Indicator	Weight	Score (1-5)	Rating
Feasibility of the measure within the existing institutional and spatial framework	0,50	2	Moderate
Spatial and technical feasibility of the measure	0,50	2	Moderate



Table 29. Measure 7: Mobile Sea Barrier

Environmental impact (weight 0,30)			
Indicator	Weight	Score (1-5)	Rating
Reduction of exposure to climate-related risks	0,50	2	Moderate
Reduction of negative impacts of climate-related risks	0,30	2	Low
Contribution to long-term spatial resilience	0,20	2	Very low
Social impact (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of material damage	0,50	3	High
Contribution to quality of life	0,50	3	High
Protection of heritage and spatial values (weight 0,25)			
Indicator	Weight	Score (1-5)	Rating
Reduction of vulnerability of cultural heritage assets	0,50	2	Moderate
Acceptability of interventions in the historic environment	0,50	2	Moderate
Implementation potential (weight 0,20)			
Indicator	Weight	Score (1-5)	Rating
Feasibility of the measure within the existing institutional and spatial framework	0,50	1	Low
Spatial and technical feasibility of the measure	0,50	1	Low

Table 30. Priorities of Adaptation Measures

Rank	Measure	Priority
1	Flood Reporting System and Intervention Logging	Very high
2	Early Warning System for Flooding and Extreme Weather Events	Very high
3	Protection of Cultural Heritage Assets from Climate-Related Impacts	High



4	Tree Planting and Expansion of Green Areas within the Historic Core	High
5	Regulation and Regular Maintenance of Torrential Watercourses and Drainage Systems	Medium
6	Elevation and Reinforcement of the Coastal Line in the Most Exposed Areas	Lower
7	Installation of a Mobile Sea Barrier	Very low

Monitoring system for climate change adaptation measures

The monitoring system for climate change adaptation measures is established to enable systematic, continuous, and measurable tracking of the effectiveness of the proposed measures within the historic core of Trogir. The system is designed as an integral part of the Climate Change Adaptation Plan and allows for the timely identification of changes in climate risk levels, the evaluation of the impacts of implemented interventions, and the adjustment of future activities.

Monitoring is based on clearly defined indicators covering physical, spatial, environmental, and organisational aspects of adaptation, using a combination of quantitative and qualitative data. The system is tailored to the local context, the scale of interventions, and the capacities of stakeholders involved in the implementation of the measures.

The monitoring system is organised by individual adaptation measures. For each measure, monitoring objectives, a set of indicators, monitoring frequency, and the manner in which results are used in management and planning processes are defined. Data are collected on a continuous or periodic basis, depending on the type of measure and the nature of the climate risk.

Table 31. Proposed Monitoring System

Adaptation measure	Monitoring objective	Monitoring scope	Key indicators	Monitoring frequency
Protection of Cultural Heritage Assets	Reduction of damage to cultural heritage caused by flooding	Condition of cultural heritage assets	Frequency of damage; number of remedial interventions; coverage of	Annually; after major flood events



			protected assets	
Early Warning System	Timely information and reduction of impacts of climate extremes	System readiness and operational performance	Number of alerts; response time; system functionality	Continuous; annual evaluation
Flood Reporting System	Monitoring the frequency and spatial distribution of flooding	Recording and analysis of flood events	Number of events; flood locations; recurrence of events	Continuous; annual analysis
Regulation and Maintenance of Torrential Watercourses	Reduction of surface runoff and flood risk	Functionality of drainage systems	Condition of watercourses; frequency of blockages; surface runoff	Annually; before and after rainy periods
Tree Planting	Mitigation of heat stress and improvement of microclimate	Green infrastructure and microclimatic conditions	Number of planted trees; vitality; shaded areas	Annually; seasonally during the first three years
Elevation and Reinforcement of the Coastal Zone	Reduction of seawater intrusion and coastal flooding	Stability and resilience of coastal infrastructure	Condition of the coastline; frequency of flooding; affected areas	Annually; after storm events
Mobile Sea Barrier	Temporary coastal protection under extreme conditions	Effectiveness of temporary protection measures	Number of activations; response time; protection effectiveness	After each activation; annual review



Conclusion and recommendations

The future development of the Climate Change Adaptation Plan of the City of Trogir is based on the results of the climate risk analysis, the defined objectives and measures, and the conducted assessment that identified implementation priorities.

Table 32. Implementation phases and adaptation measures

Implementation phase	Planned implementation timeframe	Measures	Implementation focus
Short-term measures	1–3 years	Flood Reporting System Early warning system	Rapid response, timely information, and coordination of services.
Medium-term measures	1–7 years	Protection of cultural heritage assets Tree planting Regulation and Maintenance of Torrential Watercourses	Reduction of spatial vulnerability, protection of heritage assets, and improvement of the microclimate.
Long-term measures	7+ years	Raising and reinforcement of the shoreline Mobile sea barrier	Reduction of coastal exposure to sea-level rise and extreme events.



Short-term measures

Short-term measures are focused on strengthening the capacity for timely identification of and response to climate risks, particularly flooding and extreme weather events. This group includes organizational and informational measures that can be implemented with relatively limited financial resources and by relying on existing institutional capacities.

Emphasis is placed on establishing a flood reporting system and intervention records, developing an early warning system, and improving coordination among competent services. These measures enable faster response, reduction of damage, and better preparedness for future extreme events, while also serving as a foundation for planning more complex interventions.

Medium-term measures

Medium-term measures are aimed at reducing spatial vulnerability and protecting cultural heritage assets from the cumulative effects of climate change. They require more detailed elaboration, cross-sectoral cooperation, and alignment with conservation guidelines, but can be implemented in a phased and targeted manner.

This group includes activities focused on the protection of cultural heritage assets, increasing green areas, and tree planting within the historic core, as well as improving microclimatic conditions. Their impact is not only adaptive but also contributes to preserving the identity of the area and improving the quality of life of residents and visitors.

Long-term measures

Long-term measures refer to interventions with greater spatial and infrastructural impact, particularly in the coastal zone of the city. Their objective is the gradual reduction of exposure of low-lying parts of the city to sea-level rise and extreme weather events, while respecting spatial constraints and the values of the historic core.

These measures, including the raising and reinforcement of the shoreline and the consideration of mobile protective solutions, require long-term preparation, detailed technical analyses, and secured financial resources. Their implementation is envisaged in phases, with continuous evaluation of their acceptability and effectiveness.



Governance, coordination, and implementing bodies

Implementation of the Adaptation Plan requires clearly defined roles and responsibilities. The City of Trogir has a key coordinating role, with the involvement of municipal companies, public services, civil protection, conservation institutions, and other relevant stakeholders. Cross-sectoral cooperation is recognized as a prerequisite for successful implementation of the measures.

Financing and integration into existing plans

Adaptation measures are planned to be financed through a combination of local budget resources, national programs, and European Union funds. Priority measures, identified through a multi-criteria assessment, form the basis for phased investment planning and the preparation of project documentation.

Implementation of the Plan will be aligned with existing spatial, development, and sectoral documents to ensure the long-term sustainability and institutional grounding of the measures.

Monitoring and updating of the Plan

The Climate Change Adaptation Plan is conceived as a dynamic document. Regular monitoring of measure implementation, analysis of new data, and incorporation of stakeholder experience will enable its adjustment to future climate challenges and the development needs of the City of Trogir.



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