

REPORT OF THE WORKSHOP ON METROPOLITAN INITIATIVES  
FOR CLIMATE ADAPTATION IN THE MEDITERRANEAN

# Mediterranean Climate Change-Adaptation

Metropolitan Initiatives Workshop



Barcelona, 18-19 September 2024

Event hosted and organised with the support of:



# 7 countries

# 75 participants

The event was celebrated in a hybrid mode with a total of 75 participants, 46 in presence and 29 online. The workshop counted on the participation of 7 countries (Turkey, Spain, Albania, Italy, Bosnia, France, Jordan) and 9 metropolitan areas (Barcelona, Mersin, Tirana, Ancona, Sarajevo, Roma, Valencia, Montpellier, Irbid) with 12 city climate adaptation good practices.



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# Introduction & key takeaways

## Workshop on metropolitan initiatives for climate adaptation in the Mediterranean

The Mediterranean is one of the regions most affected by climate change. It is currently experiencing critical shocks, stresses and challenges: the increase in temperature, the reduction in water availability, the sea level rise with coastal erosion, and the intensification of extreme meteorological phenomena pose risks to the ecosystems and the human communities that depend on them. The Mediterranean metropolitan areas are essential in developing innovative solutions to strengthen territorial resilience.

It is in this context that the Mediterranean Climate-Change Adaptation Metropolitan Initiatives Workshop took place, bringing together actors from the metropolitan areas of the Mediterranean region to share experiences, strategies, and good practices for adapting to the effects of a changing climate.

MedCities organised this seminar as part of two projects: on the one hand, the project of the Metropolitan Area of Barcelona (AMB) on *Urban Metropolitan Sustainable Policies in the Mediterranean*, and on the other hand, the project *Make a Move for Adaptation to Climate Change*, in which MedCities gives support to the metropolitan municipality of Mersin to develop its *Climate Change Adaptation Action Plan* (CCAAP).



Fig.1: Seminar's visit to Llobregat river. Source: MedCities

## Key takeaways learned from this workshop:

- **Holistic Climate Adaptation Approaches:** Mediterranean metropolitan areas need climate resilience strategies that integrate urban planning, the built environment, green and blue infrastructure, sustainable mobility, and public health in a systemic way.
- **Nature-based Solutions (NBS) for Resilience:** NBS (e.g., climate shelters, eco-built environment and urban green spaces) mitigate climate risks and provide ecological and social benefits. Green and blue infrastructure combat urban heat, improve air quality and manage water resources.
- **Coastal Resilience and Ecosystem Restoration:** By regenerating and preserving coastal ecosystems, such as dune restoration, ecological restoration enhances biodiversity protection while supporting tourism and offering natural defences against flooding, sea-level rise, and erosion."
- **Sustainable Mobility and Urban Planning:** Reliance on private cars reduction through active mobility (e.g., cycling, e-mobility) and public transport promotion are essential for cutting carbon emissions, improving urban living conditions and well-being and enhancing social equity.
- **Public Engagement and Governance Coordination:** The success of climate adaptation projects relies heavily on public participation and effective multi-level governance. All the initiatives shared in the workshop underscored the importance of involving local communities and ensuring coordination between municipal, regional, and national authorities.
- **Challenges and Barriers:** Common barriers identified across cities included technological barriers, governance hurdles, social resistance to change, and funding constraints. Public-private partnerships are needed to build robust financial mechanisms.
- **Replication and Scaling Potential:** Many of the initiatives presented, particularly those involving green infrastructure, ecosystem restoration and mobility solutions, demonstrated high potential for replication in other Mediterranean cities. Key factors for scalability include adaptive strategies, local stakeholder engagement, and sufficient funding sources.

# Case studies

Case studies showcased in the workshop were instructive in applying real options to climate adaptation strategies in metropolitan areas, reflecting on challenges and sharing successful initiatives in various urban contexts to deal with current climate crisis shocks, stresses and challenges. They also demonstrated the contribution of reliable funds, governance schemes, public participation approaches, and innovative solutions to enhanced urban resilience.

They offered lessons learned through in-depth analysis by pinpointing similar environmental, social, economic and infrastructural current and forecasted problems that Mediterranean cities face.

The workshop was organized into four main thematic areas:

## 1. Enhancing coastal resilience to climate change and ecosystem restoration

Focusing on protecting coastal regions and restoring ecosystems affected by climate change. Key strategies included dune reconstruction, ecosystem rehabilitation, and addressing pollution in coastal cities and marinas, with 3 case studies:

- 1.1. Make a move for climate action, Mersin, Turkey
- 1.2. Urban Forestry Contract, Ancona, Italy
- 1.3. Regeneration, improvement and protection of Dunes, Barcelona Metropolitan Area (AMB), Spain

## 2. Promoting sustainable metropolitan urban planning and mobility

Discussing integrating climate considerations into urban planning and promoting sustainable mobility options, such as e-mobility and free public transport, to reduce emissions and enhance the liveability of metropolitan areas, with 3 case studies:

- 2.1. First Mobility Island, Sarajevo, Bosnia and Herzegovina
- 2.2. Free Public Transport Strategy, Montpellier Metropole, France
- 2.3. Active and E-Mobility Strategies, Barcelona Metropolitan Area (AMB), Spain



Fig.2: Seminar's mediterranean cities Source: Amaia Celaya

## 3. Promoting climate resilient built environment

Emphasising creating infrastructure and buildings that can withstand climate risks while promoting energy efficiency. Solutions included environmental criteria for projects, cleaner energy in public buildings, and sustainability protocols, with 3 case studies:

- 3.1. Cleaner Energy Saving Multi-use Public Building, Irbid City, Jordan
- 3.2. Tree Planting Campaign, Tirana, Albania
- 3.3. Sustainability Protocol for Public Spaces, Barcelona Metropolitan Area (AMB), Spain

## 4. Green and Blue infrastructure for resilient cities

Centring on using nature-based solutions to adapt cities to climate change. Proposals included the implementation of green infrastructure like parks and urban water systems to manage heat and enhance ecosystem services, with 3 case studies:

- 4.1. Climate Adaptation Strategy, Rome, Italy
- 4.2. Green Schools in Valencia, Spain
- 4.3. Green and blue infrastructure for resilient cities, Barcelona Metropolitan Area (AMB), Spain

Thematic 1: Enhancing coastal resilience to climate change and ecosystem restoration

# Make a move for climate action, Mersin, Turkey

## 1. City Context and Background

Mersin is located in southern Turkey, in the western part of the Çukurova plain. It covers an area of 16,080 km<sup>2</sup>, with approximately 2.5 million people, and thirteen districts, four of which are central. Its economy is driven by its port, free and industrial zones, and it is also the most important domestic tourist centres of Turkey.

Mersin faces rising sea levels, storms, changing precipitation patterns, and coastal erosion. The city's coastal waters are particularly vulnerable to eutrophic conditions, and the risk of

extreme weather events poses threats to both infrastructure and local livelihoods.

The Mersin Metropolitan Municipality leads climate adaptation efforts with collaboration from regional and national bodies.

## 2. Challenges and Barriers

Mersin's climate adaptation initiatives face technical and logistical hurdles such as complex water and wastewater managing systems and coastal resilience maintenance against unpredictable weather patterns. Coordination between local government and



Fig.3: Mersin. Source: Mersin

stakeholders remains a challenge, particularly in implementing long-term adaptation measures. Socio-economic disparities across districts affect climate projects implementation. Public awareness about climate risks is growing, but financial resources remain constrained.

## 3. Initiative/Action Description

Mersin's climate initiative *Make A Move For Adaptation To Climate Change* focus on renewable energy, wastewater treatment, specific maritime activities, forecast and early warning systems, smart and eco-friendly mobility, coastal resilience, and public awareness.

Key projects include using biogas from waste for electricity, solar-power for food drying facilities, or artificial reefs for marine biodiversity protection. The success of the initiative is a result of the collaborative efforts of key actors, including the Mersin Metropolitan Municipality, TÜBİTAK MAM, Mersin Chamber of Commerce and Industry, and MedCities.

## 4. Impact and Replication/Scaling Possibilities

Initiatives such as *the Sustainable Energy and Climate Action Plan (SECAP)*, *the Ecosystem-based Monitoring and Management Plan*, *the Agricultural forecast and Early Warning Systems*, *the Coastal Ecosystem Monitoring or*



Fig.4: Mersin wastewater treatment plants. Source: Mersin

*the Educational and Community Engagement Programmes* have reduced Mersin's carbon footprint and enhance coastal resistance and marine biodiversity. Mersin's approach, especially in coastal resilience and waste-to-energy initiatives, is replicable in other Mediterranean cities with similar environmental conditions.

## 5. Lessons Learned and Future Directions

Successful climate adaptation in Mersin relies on integrating urban planning with environmental strategies and increasing stakeholder involvement. Future policies will focus on scaling renewable energy use, strengthening coastal protections, and enhancing public-private collaborations for climate adaptation.

Thematic 1: Enhancing coastal resilience to climate change and ecosystem restoration

# Urban Forestry Contract, Ancona, Italy

## 1. City Context and Background

Ancona has a population of 101,480 people and covers 12,484 Ha. The city's economy relies heavily on its port and industries related to naval commerce and services.

Ancona faces high urban temperatures and flooding risks that pose significant challenges to its urban environment.

## 2. Challenges and Barriers

While facing technological and logistical challenges, Ancona has to create pervious surfaces that are difficult to realize, together with the increase in green spaces, in a densely urbanized structure. These limitations severely impede efforts at mitigating flood risks and ensuring water management.

Private property rights are a big constraint to micro-forestation in a heavily built-up area and requires coordination at multiple levels of governance.

Public engagement is essential, and a participation process has been undertaken

with more than 21 meetings held to involve citizens, institutions, and businesses in climate adaptation efforts.

## 3. Initiative/Action Description

The *Urban Forestry Contract* aims to increase the green spaces and enhance their quality. The project focuses on cooling urban environments and reducing thermal stress through nature-based solutions, developing a multi-level and multi-actor governance, and strengthening the administrative capacity related to climate adaptation of all governance levels involved in land planning and management (Region, Provinces, Municipalities).

Tactics could also include strategies that ensure that urban heat and water runoff are managed through the use of permeable surfaces, de-paving, and micro-forestation

## 4. Impact and Replication/Scaling Possibilities

This initiative raised a sense of ownership at the community level among stakeholders, who started taking responsibility for putting



Fig.5: Assessment and planning of green spaces in urban parks: A review, Sustainable Cities and Society Volume 88, January 2023, 104280. Source: Wiktor Halecki

into practice the climate solutions proposed. The project opened avenues leading to public funding to support the interventions.

Small-scale interventions, such as the creation of urban green areas and permeable surfaces, have begun transforming Ancona's urban areas and impacting in its environment.

The success of the *Urban Forestry Contract* in Ancona suggests that similar initiatives could be replicated in other Mediterranean cities.

## 5. Lessons Learned and Future Directions

Public engagement and nature-based solutions are effective strategies for climate adaptation in densely urbanized areas. Success requires coordination among governance levels.

*Thematic 1: Enhancing coastal resilience to climate change and ecosystem restoration*

# Regeneration, improvement and protection of Dunes, Barcelona Metropolitan Area (AMB), Spain

## 1. City Context and Background

The Barcelona Metropolitan Area is a dense region covering 636 km<sup>2</sup> with a population of approximately 3.24 million, representing 42.6% of Catalonia's total. This area features 30 km of sandy coastline, 17 km of dunes, and 12 ports, blending urban centres with suburban areas.

Economically diverse, it has solid industries, service sectors, technology, and tourism, along with a strong focus on transport connectivity and urban planning. However, it faces significant climate risks including sea-level rise (30 cm between 1990 and 2020), cyclonic tides, increasing sea temperatures, more frequent storms, severe beach erosion (25% of beach areas lost due to urbanization and lack of river sediment), flooding from heavy rainfall, increasing heatwaves (including the heat island effect), water scarcity, coastal erosion, and biodiversity loss. These risks are exacerbated by the metropolis' dense urban layout and its reliance on coastal infrastructure.

The multi-tiered governance structure involves local municipalities, metropolitan areas, regional authorities (Catalonian Government), and national governance bodies (Spanish Ministry for Ecological Transition).

## 2. Challenges and Barriers

The presence of urbanization along the coasts limits space that is available for the restoration of dunes. The processes of erosion and transport in coastal drift further complicate maintaining the integrity of the dunes. Designing nature-based solutions that can function within the constraints of the urban environment and the need to integrate these projects into existing urban infrastructure and ensure effective management of resources like water, are severe constraints added to the need for balancing tourism and environmental protection.

The unequal distribution of resources across municipalities leads to disparities in the

accessibility of sustainable solutions, green spaces and climate adaptation resources. The perception of beaches as recreational spaces rather than ecosystems can obstruct conservation efforts, and public opposition to changes in densely populated urban areas can hinder progress. Also, citizens' perception of such solutions and fear of change can be additional challenges. In the end, the implementation of naturalisation solutions can improve the public perception of the beaches, including that of neighbours.

The unpredictability of climate makes long term infrastructure planning challenging while necessitating the protection of natural ecosystems amid urban expansion. Balancing biodiversity preservation with new urban development remains a critical challenge for AMB moving forward.

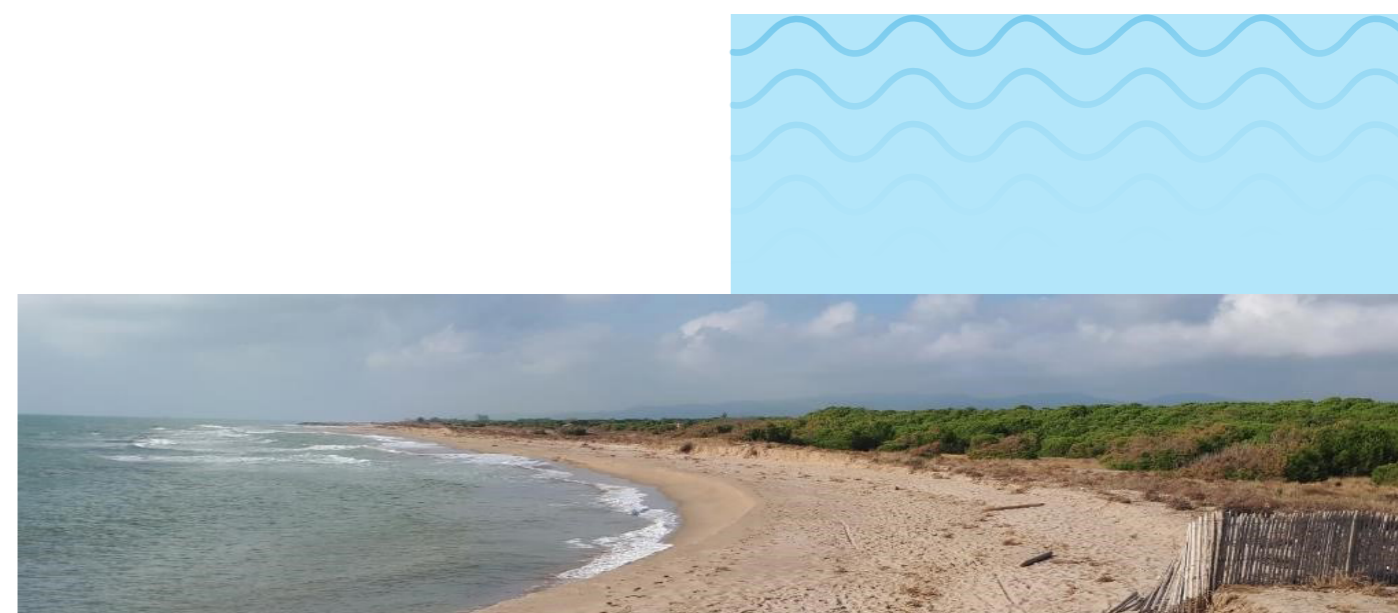


Fig.6: Metropolitan Area of Barcelona beaches. Source: AMB



Fig.7: Llobregat Delta Semi-urban beaches. Source: AMB

### 3. Initiative/Action Description: Regeneration

The goal was to protect the coastal dunes in the Metropolitan Area of Barcelona in order to enhance biodiversity, improve landscape management, and reduce the risks of coastal erosion. The actors primarily concerned were the AMB, the Spanish Ministry for Ecological Transition, and the local municipalities. This project ran from 2000 up to 2024.

The key strategies have ranged from the creation and reinforcement of dunes using local beach sands to the management of native plant species and manual cleaning of vegetation areas. Public awareness campaigns and participatory activities, such as citizen science, were also to be embedded within the implementation of this initiative.

### 4. Impact and Replication/ Scaling Possibilities

Socially, the dune regeneration project has drastically changed people's perception toward the dunes; residents are now advocates of the dune systems-valued community spaces that improve quality of life and contribute to climate resilience. Economically, it enhances the touristic value of the beaches, improves natural space, and develops eco-tourism, contributing positively to local economies. Environmentally, it has enlarged the dune area by more than 20%, and considerable topographic enhancement, with a biodiversity increase, has been recorded because more protected species are now present in the restored dunes.

Additionally, the model for dune regeneration

is very fertile and ensures excellent potential for replication across other metropolitan areas of the Mediterranean. From a focus on natural solutions to scalable strategies, the utilization of local resources, native vegetation, and robust community involvement makes it adaptable in approach for similar regions.

The project was awarded the New European Bauhaus award by the European Commission.

### 5. Lessons Learned and Future Directions

Key insights show that dune management needs to be integrated into daily beach maintenance routines of the public and continuous flora and fauna monitoring. Public awareness and engagement were pivotal in making the dunes a protected community asset.

Future work should be done to enhance the cooperation among public bodies in addition to environmental education. The policy makers are encouraged to develop stronger protocols of invasive species and foster cross institutional coordination. Continue monitoring vegetation and biodiversity, create protocols for managing invasive species, and further integrate citizen science into ecological protection efforts are also crucial for future endeavours.



Thematic 2: Promoting sustainable metropolitan urban planning and mobility

# First Mobility Island, Sarajevo, Bosnia and Herzegovina

## 1. City Context and Background

Sarajevo is located in a narrow valley of the Miljacka River, at the foot of Mount Trebević. The metropolitan area has 275,524 residents within four core municipalities, and 413,593 more within nine more municipalities.

Sarajevo faces various climate challenges, with temperatures rising from 0.4 to 1.2°C annually. The city risks urban flooding due to intense

rainfall, increased heatwaves, and air pollution.

Sarajevo Canton plays a critical role in the city's sustainable governance. *The Green Cantonal Action Plan* (GCAP) links environmental to social and economic objectives, in alignment with other frameworks like the *Cantonal Environmental Action Plan* (KEAP) which includes mobility.

## 2. Challenges and Barriers

The implementation of the project faced several logistical hurdles, including the need for advanced infrastructure (e.g., electric charging stations, smart benches, and secure bicycle parking).

A critical challenge was navigating the legal and regulatory environment. There needs to be faster progress in cohesive policies from higher governmental levels.

Public resistance to the shift from private vehicles posed a significant barrier. Despite promoting the benefits of cycling and electric cars, the citizens are accustomed to conventional transportation modes. More



Fig.8: Mobility Island. Source: Sarajevo

funding is needed to address the inequalities in access to sustainable mobility.

Sarajevo's reliance on individual motor vehicles, intense traffic congestion, and seasonal air pollution contribute to environmental pressure. The city's topography and unpredictable weather patterns further complicate the implementation of environmentally friendly transport solutions.

## 3. Initiative/Action Description

The First Mobility Island is part of Sarajevo's vision for sustainable urban mobility. It is supported by the *EU's Interreg Adrion program* and supplemented by local government budgets. The island, located in the Skenderija area, offers electric vehicle charging stations, smart benches with USB and wireless chargers, and secure bicycle parking. It aims to reduce reliance on private cars, promoting clean energy solutions.

Some of the most important stakeholders are international partners, such as GIZ, and national stakeholders like the City of Sarajevo, Ministry of Transport, and nongovernmental organizations. Partnership with international organizations brings extra resources, which have borne very rich fruit during public awareness campaigns. The strategy of implementation integrated infrastructure projects with public awareness.

Sustainable transport infrastructure development and the participation approaches had been an important part of such a strategy.

## 4. Impact and Replication/Scaling Possibilities

The promotion of cycling and electric vehicles is reducing carbon emissions. Improved mobility options contribute to a better quality of life for residents, although there is still a need for greater public acceptance of electric mobility.

Environmentally, the initiative is expected to lower urban emissions and enhance air quality, though Sarajevo continues to struggle with seasonal air pollution.

The project transferability is supported by the alignment with EU climate adaptation strategies, though successful scaling will depend on securing similar resources in other metropolises.

## 5. Lessons Learned and Future Directions

A multi-stakeholder approach, combining infrastructure development and public engagement, is essential for advancing resilience-based sustainable urban mobility solutions. Overcoming public resistance to change requires sustained education efforts and policy support.

Further projects could increase pedestrian and cycling pathways to mitigate urban congestion.

Thematic 2: Promoting sustainable metropolitan urban planning and mobility

# Free Public Transport Strategy, Montpellier Metropole, France

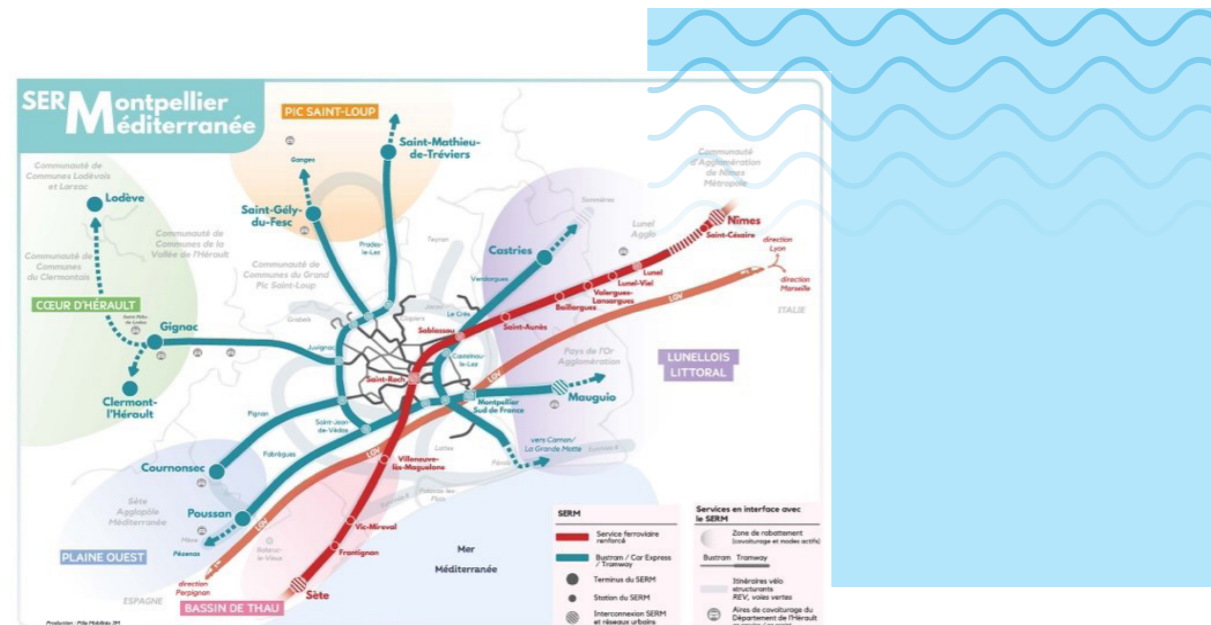


Fig.9: Free public transport strategy. Source: Montpellier

## 1. City Context and Background

Montpellier Metropole consists of 31 cities and is home to approximately 500,000 residents. With a population density of 1,200 inhabitants/km<sup>2</sup>, it welcomes 8,000 new inhabitants and 6,000 new vehicles annually. This comes along with deterioration of air quality because of traffic congestion, shoreline retreat due to coastal erosion, heat waves, extreme precipitations, and flooding. The regional transport policies outside of Montpellier fall under the jurisdiction of the Region Occitanie, while the urban mobility policy for Montpellier Metropole is led locally

by the Metropole President and their team. It allows the city to implement strategies such as the free public transport initiative.

## 2. Challenges and Barriers

Implementing free public transport required building a new system to manage ticket distribution and subscription services, accommodating nearly 400,000 residents. Additionally, expanding the transport network necessitated new tramlines and buses, alongside infrastructure upgrades.

As the free public transport initiative was a locally governed decision, there were few governance-related obstacles, being one of the most significant challenges to managing the economic implications: the initiative resulted in an estimated €30 million revenue loss, prompting the city to establish a multi-year investment plan to maintain infrastructure development while absorbing the financial impact. Air quality issues and vehicles did not directly hinder the project but remained part of the broader urban mobility and sustainability constraints.

## 3. Initiative/Action Description

The free public transport strategy aims at improving air quality and offering free mobility to residents. To date, it has been developed in three phases: free weekend transport in 2020, free transport for the younger and older residence in 2021, and free transport for all its inhabitants by December 2023.

A steering committee comprised by the Road-mobility and financial experts was created. The main stakeholders are the administration of the Metropole and TaM (an operator of transport in the metropolis). The team worked on expanding the infrastructure and creating awareness among the public on free transport services.

## 4. Impact and Replication/ Scaling Possibilities

Free public transport has enhanced mobility for all 500,000 residents, promoting economic stimulation in the city center and has improved the metropolis' public image. The broader economic impact remains difficult to quantify due to the initiative's recent and multifactorial implementation.

The strategy aims to reduce carbon emissions and improve air quality, though these improvements stem from free transport and the overall mobility policy. Montpellier's strategy is easily replicable, but cities must conduct thorough financial analyses before adoption. Key factors include the loss of transport ticket revenue, increased transport supply, and local taxes.

## 5. Lessons Learned and Future Directions

Local elected officials must firmly support the decision to offer free public transport, and it should be part of a broader mobility strategy that includes financial logic for long-term success.

The following steps include expanding the public transport network beyond the Metropole and increasing the frequency of services. Further investments in infrastructure and green mobility are essential.

Thematic 2: Promoting sustainable metropolitan urban planning and mobility

# Active and E-Mobility Strategies, Barcelona Metropolitan Area (AMB), Spain

## 1. Context and Background

The Barcelona Metropolitan Area (AMB) encompasses 36 municipalities with a combined population of over 3.24 million residents. The region's population density ranges from 130 to 21,400 inhabitants/km<sup>2</sup>.

In 2022, residents of the AMB made 11.2 million daily trips, with 54.4% using private vehicles, 20.5% relying on non-motorized modes like walking and cycling, and 25.1% opting for public transport. 70,49 out of total were sustainable travels.

## 2. Challenges and Barriers

Key challenges include encouraging a shift from private vehicle use to sustainable modes like public transport and non-motorized travel; completing and maintaining a safe and accessible mobility network; harmonizing regulations across municipalities for equitable implementation; scaling e-mobility options to meet user needs; and reducing carbon emissions while promoting active transport.

Cultural resistance to abandon the use of private vehicles; delay in completing safe and accessible infrastructure; coordination challenges between 36 municipalities; financial problems; scaling and adoption difficulties of e-mobility technologies; involvement of transport authorities and private sector partners that often leads to delays in implementation; and the need for a balance in urban space with effectively reduced emissions are some of the barriers to implementing active and e-mobility strategies in the AMB.

## 3. Initiative/Action Description:

### Active and E-Mobility Strategies

The initiative aims to reduce carbon emissions and promote sustainable travel by increasing public and active transport options like bikes and e-scooters, while reducing private vehicle use. It enhances urban resilience to climate change, involving stakeholders such as the AMB and its 36 local municipalities, mobility agencies, private sector partners, and community groups.

Significant investments, include expanding bike and e-scooter parking, building charging points for electric vehicles, and creating 9 biking and walking routes have been done. So far, 66% of the bike network has been completed, alongside efforts to raise public awareness of sustainable commuting and shared mobility systems, such as electric bike-sharing programs. public awareness of sustainable commuting and shared mobility systems, such as electric bike-sharing programs.

## 4. Impact and Replication/Scaling Possibilities

The initiative has significantly increased the use of sustainable transport, with 74.9% of daily trips in 2022 using non-motorized or public transport. This shift has improved safety, health, and equity, while reducing congestion and pollution, boosting public health and liveability. Environmentally, it has cut carbon emissions by promoting electric and active mobility, lowering reliance on private vehicles, and mitigating climate risks.

The initiative's strategies, such as cycling infrastructure and shared mobility systems, are highly transferable to other Mediterranean cities. Key factors for scaling include government investment, stakeholder engagement, and funding for electric vehicle infrastructure.

The success of the initiative lies in its comprehensive approach, combining infrastructure improvements with public engagement and policy support. A critical insight is the need for strong multi-level governance and sustained investment in both physical infrastructure and public education. Next steps include further expanding the bike network and charging stations to ensure universal access across the metropolitan area. Monitoring the usage of sustainable mobility options and adapting strategies based on data insights will be essential for continued success.



Fig.10: Electric Vehicles. Source: AMB

Thematic 3: Promoting climate resilient built environment

# Cleaner Energy Saving Multi-use Public Building, Irbid City, Jordan

## 1. City Context and Background

Irbid covers 359 km<sup>2</sup> and is home to 1 million people, with 23 districts. Its economic profile includes agriculture, industry, tourism, and education. Over 250,000 Syrian refugees reside in Irbid, adding societal complexity to its urban growth challenges. The city faces flooding, heatwaves, and water scarcity, and the most severe stresses are related to waste management and mobility, with population and vehicle numbers increasing.

The Greater Irbid Municipality is part of the *Covenant of Mayors for Climate and Energy*. Irbid implements the *Sustainable Energy and Climate Action Plan*, supported by the *Jordan's Climate Change Adaptation Plan*.

## 2. Challenges and Barriers

Energy-efficient systems for a multi-use public building and green mobility transition in a congested urban environment come with great challenges. Additionally, the need for bio-climatic designs added complexity to

the project's eco-design and infrastructure. Centralized decision-making, financial constraints, and the need for navigating regulations hindered the project. Irbid faces traffic congestion, especially in its downtown area, driven by a rising number of vehicles, and insufficient parking. It is worsened by returning expatriates and tourists in the summer months, which further downgrades the quality of life, accessibility, and air quality.

The city's green spaces are minimal with volumes of traffic very high, and an inadequate urban planning. Further development is needed in the mobility options and in the land use redesign to make urban services more reliable and sustainable.

## 3. Initiative/Action Description

This initiative promotes transition towards greener and more efficient cities making optimum use of climate finance instruments. It will establish a Green Car Park, and a Ride

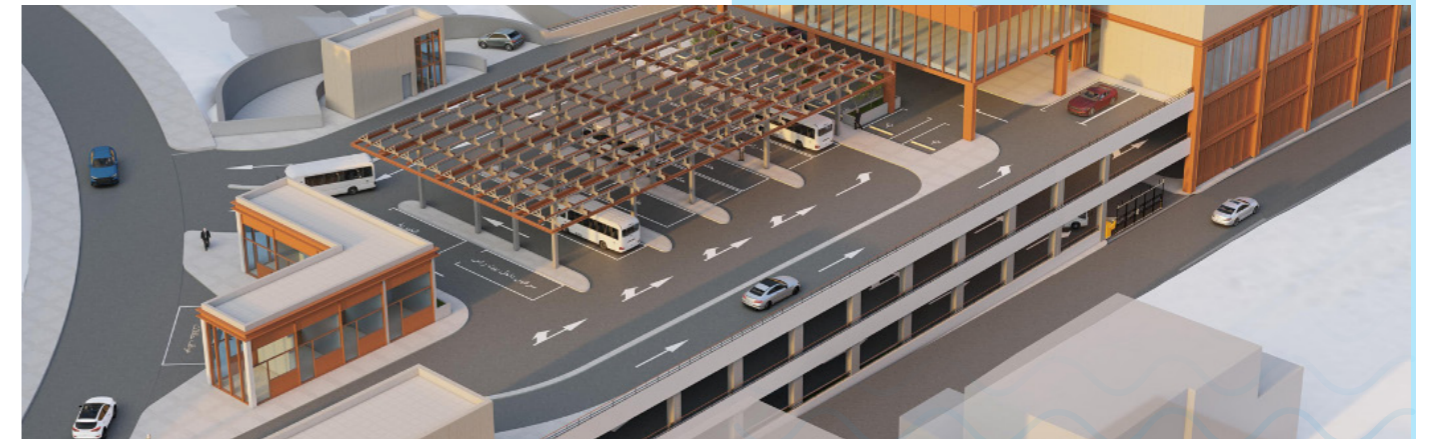


Fig.11: Multi-use Public Building. Source: Irbid.

and Connect facility (an energy-saving multi-use public building powered by solar energy) focusing on bio-climatic design and public engagement.

The main stakeholders involved are the Greater Irbid Municipality, Yarmouk University, Future Pioneers, and the Cities and Villages Development Bank (CVDB). The operation has an estimated budget of approximately €5.2 million and is financed from local and international sources, among which is the C4C Climate for Cities program; complementary financing will come from the CVDB.

## 4. Impact and Replication/Scaling Possibilities

The project enhances Irbid's resilience and improves social cohesion through participatory design and City Lab activities. It also revitalizes the downtown area, activating green businesses and cultural innovation.

It is expected to reduce greenhouse gas (GHG) emissions by limiting traffic and enhancing air quality, while promoting green mobility models like walking and cycling. The initiative is highly replicable, with successful vital factors such as effective financial mobilization, robust stakeholder engagement, and coherent community involvement in decision-making.

## 5. Lessons Learned and Future Directions

It is crucial to integrate bio-climatic design and green building practices into urban planning, along with public engagement for the success of green initiatives.

Future steps include expanding green mobility infrastructure and replicating the energy-saving model in other public buildings. Further investment in green business opportunities and public awareness campaigns will enhance Irbid's long-term sustainability.

Thematic 3: Promoting climate resilient built environment

# Tree Planting Campaign, Tirana, Albania



Fig. 12: Tree planting Campaign. Source: Tirana

## 1. City Context and Background

Tirana, Albania's capital, has 888,559 residents across 1,110 km<sup>2</sup> and 27 administrative units. Its economy relies on tourism, construction, and agriculture. The city faces climate challenges including air pollution, flooding, wildfires, and extreme weather events, impacting infrastructure, health, and biodiversity. Climate adaptation efforts are managed jointly by the Ministry of Tourism and Environment, Tirana Municipality, and the General Directorate of

Environment and Sustainable Development.

These initiatives align with Albania's national climate change law and strategy, addressing urban and rural needs while working towards sustainable development and EU goals.

## 2. Challenges and Barriers

The tree planting campaign needed to ensure that the planted species were adapted to local soil and climatic conditions, with environmental

and topographical constraints, varying climatic conditions, pollution, biodiversity concerns, pest-related challenges, and a lack of adequate funding and resources for post-planting care and maintenance. Bureaucratic delays and insufficient cooperation between government institutions hindered progress, and law enforcement for environmental policies was weak.

Public awareness about the importance of tree planting was initially low. Financial constraints also limited participation, especially for individuals and small businesses.

## 3. Initiative/Action Description

The campaign aimed to expand green spaces, improve urban air quality, enhance community well-being, and create a more sustainable and healthier environment in Tirana. Key stakeholders included the Municipality of Tirana, citizens, students, businesses and public figures. NGOs and private sector organizations also contributed through donations and partnerships. Funding came from public and private sources, including donations from businesses, NGOs, and citizen contributions, with the Municipality of Tirana playing a central role. The project followed a strategic plan which included defining goals, securing funding, mobilizing stakeholders, raising public awareness, and monitoring the initiative's impact.

## 4. Impact and Replication/Scaling Possibilities

The campaign helped educate young people in the community on environmental stewardship. Infrastructure costs were reduced due to controlling flood hazards. It also helped improve residents' mental health, enhancing green spaces for development and tourism in Tirana, thereby enabling recreational opportunities.

It contributes to reducing pollution, enhances biodiversity, offers a better quality of the air, and diminishes the risks of floods. The trees provided natural shading and urban heat island effect reduction; hence, it is highly replicable in other Mediterranean cities facing such challenges as pollution, heat islands, and lack of green spaces.

## 5. Lessons Learned and Future Directions

The campaign demonstrated the importance of community engagement, the environmental benefits of urban greening, and the need for better coordination between governmental bodies. The success of the initiative also influenced decision-making in local urban planning.

Expanding the campaign to more areas within Tirana and increasing citizen participation are key next steps, while enhancing policy support for environmental initiatives and securing greater financial contributions from businesses and NGOs will ensure sustainability.

Thematic 3: Promoting climate resilient built environment

# Sustainability Protocol for Public Spaces, Barcelona Metropolitan Area (AMB), Spain

## 1. Context

The Barcelona Metropolitan Area (AMB), with its population of over 3.24 million residents, is a signatory of the *Covenant of Mayors for Climate and Energy*, joining other cities committed to ambitious goals in the climate and energy fields. AMB implements its *Sustainable Energy and Climate Action Plan* actively, following the 2030 European Union climate objectives and the Paris Agreement. This is further undergirded by the national *Spanish Climate Change and Energy Transition Law*, which outlines the ways in which local governments should adapt to and mitigate climate impacts.

Significant technical coordination is involved in applying resilient strategies that constrain energy consumption, decrease material usage, and integrate biodiversity into urban projects.

## 2. Challenges and Barriers

The AMB faces several in implementing sustainability and climate resilience targets in its public spaces and built environment: First and foremost, there are quite ambitious targets on carbon reduction by 2024 and beyond (40% in building-related and 25% in reurbanization emissions). Second, as for water management, it has to incorporate Sustainable Urban Drainage Systems (SUDS), increase water reutilization, and reduce water use for irrigation (with an average reduction of 12%).

Other challenging objectives involve enhancing biodiversity with no loss of habitats, by designing biological corridors, and increasing green infrastructure.

There are various barriers to overcome, such as economic constraints - since cost-efficiency has to be balanced with the necessary investments

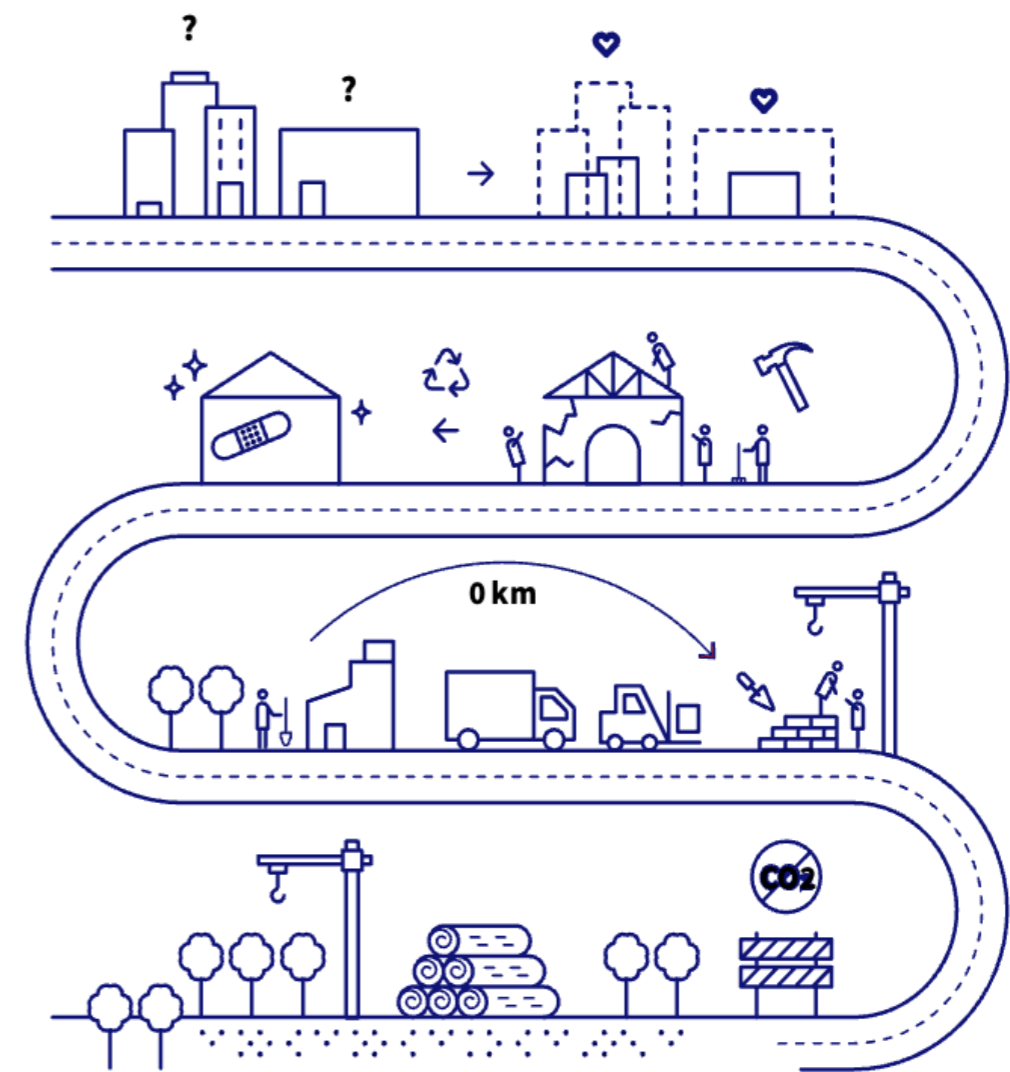


Fig. 13: AMB Sustainable protocol, Source: AMB

in renewable energy and water systems -; on the importance of sustainable development harmonizing policies across municipalities; and biodiversity conservation - . compliance and monitoring progress - in the technological and logistical areas, including Overcoming these obstacles is essential to scaling sustainable construction practices and achieving the protocol's objectives and creating integrating innovative materials-; and public a resilient and sustainable urban future. awareness and engagement - which need to be promoted through information and training



Fig.14: Barcelona Public Space Source: AMB

### 3. Initiative / Action Description: Sustainability protocol for Public Spaces and works

The protocol is a tool on how to incorporate environmental criteria when carrying out works in public buildings and public spaces, addressing the climate challenges already mentioned. It tries to reduce emissions, urban heat islands, improve public health, and decrease mortality rates related to urban features, which requires a detailed approach in urban planning and environment-friendly construction.

Key stakeholders include international organizations contributing to climate and sustainability goals such as European Commission, private sector and public space stakeholders, such as community groups focusing on biodiversity and urban health improvements, and AMB.

The initiative follows a phased implementation, with short-term goals for 2024 focused on reducing embodied emissions with mid-term goals for 20+30 targeting a 55% reduction in overall emissions to meet EU climate objectives, and long-term goals for 2050 aimed at achieving net-zero emissions. The protocol's implementation is included in the AMB local budget for public works.

It also benefits from collaboration with institutes like the Catalonia Construction Institute for data and material sustainability analysis.

### 4. Impact and Replication / Scaling Possibilities

It has positively impacted public health by increasing green spaces and reducing urban heat island effects by 20-40%, while also boosting housing and employment through sustainable, low-carbon development projects. Environmentally, it has achieved a 40% reduction in energy demand, a 12% decrease in water use, and enhanced biodiversity with a 110% increase in vegetation layers in parks. These efforts contribute to the EU's climate goals of reducing carbon emissions by 55% by 2030 and reaching net-zero by 2050. The initiative's construction and water management strategies are highly transferable to other Mediterranean regions, with scalability supported by adaptable infrastructure and long-term cost savings from green investments.

### 5. Lessons Learned and Future Directions

Some key takeaways from this initiative are that adding biodiversity enhancement to urban design yields a wide array of health and environmental dividends; there has to be strong collaboration between public and private stakeholders if the sustainable development goals are to be achieved. Carbon reduction must rely on data-driven decision-making based on the continuous development of materials and emissions databases. Also given is the future direction of extending green infrastructure in order to extend the mitigation of heat effects, considering advanced water-saving technologies, focusing on research into long-term climate resilience, and sustainable construction materials.

Thematic 4: Green and Blue infrastructure for resilient cities

# Climate Adaptation Strategy, Rome, Italy

## 1. City Context and Background

Rome has a population of 2.8 million people, spread across an area of 1,287 km<sup>2</sup> divided into 15 municipalities. The city has a mixture of urban and suburban environments, with tourism and services as primary sectors. Increased heavy rainfall and flooding are expected to intensify between 2036 and 2065. Prolonged droughts threaten water supply security, heat waves coupled with the urban heat island effect put some neighbourhoods at high risk, and storm surges and tornadoes intensification further exacerbate coastal erosion.

Climate adaptation efforts are supported by a comprehensive adaptation strategy that targets key risks. The strategy is governed by local, regional, and national bodies, focusing on long-term climate resilience. Initiatives are aligned with European Union adaptation targets and SDGs.

## 2. Challenges and Barriers

Engineering difficulties for existing infrastructure upgrading, such as wastewater plants, have been prominent. Projects face challenges in maintaining operational water resources amid

prolonged droughts. Lack of coordination between different institutions, complex regulatory frameworks, and financial constraints have hindered large-scale implementation efforts.

Rome's diverse population faces varying levels of vulnerability to climate, and economic inequalities exacerbate the effects of heatwaves and water shortages in lower-income areas. Unpredictable weather patterns complicate planning and implementation. Coastal and urban ecosystems are under strain, making balancing development and conservation efforts difficult.

## 3. Initiative/Action Description

The city aims to reduce flooding risks, improve water management, mitigate the urban heat island effect, and protect coastal areas through green infrastructure and nature-based solutions. Key stakeholders include the Rome Climate Office, local government bodies, private sector players, NGOs, and local communities. International organisations also contribute to funding and knowledge sharing.

600,000 trees plantation and five parks creation along the Tiber River will be finished by 2026. Urban planning standards revision and 16 new park developments will be completed by 2026. Funding comes from both local government budgets and European funds. The *Fair Local Green Deal* and EU adaptation projects also provide financial support. Rome's adaptation strategy includes green and blue infrastructure, wastewater recycling, and nature-based solutions such as coastal dune parks and green spaces.

## 4. Impact and Replication

The initiatives have social benefits such as improved public health, reduced heat exposure, and increased community engagement in green projects. They contribute to water conservation efforts and green job creation in infrastructure management and maintenance.

The projects enhance the city's resilience by improving flood defences and conserving natural habitats. Wastewater recycling initiatives reduce water consumption and mitigate the impacts of drought. There is a high potential for replication. Rome's focus on nature-based solutions and community engagement provides a scalable model, with adaptable timelines and funding strategies.

## 5. Lessons Learned and Future Directions

Successful adaptation involves integrating green and blue infrastructure with community engagement and long-term planning. Coordination between institutions and securing consistent funding remain critical challenges. The next steps include expanding green projects, increasing water recycling efforts, and revising urban planning standards to align with future climate scenarios.



Fig.15: Rome planting tree scheme. Source: Rome



Thematic 4: Green and Blue infrastructure for resilient cities

# Green Schools, Valencia, Spain



Fig.16: School Orchard. Source: Valencia

## 1. City Context and Background

Valencia has a population of approximately 807,000 inhabitants, covering an area of 13,465 km<sup>2</sup>. It is connected to two natural parks (Albufera and the Turia River), characterized by its wetland areas, which the *Ramsar Convention* recognizes.

The city is vulnerable to heatwaves and the urban heat island effect, sea level rise, coastal erosion, flooding from extreme weather events, drought, and desertification. These factors also contribute to the spread of diseases and affect

both human and animal health. Its climate adaptation efforts are guided by multiple governance levels, with frameworks such as the Adaptation and Cities Missions, the Urban Strategy 2030, the Biodiversity Plan and the European Green Capital Award.

## 2. Challenges and Barriers

As for technical issues, some schools were relocated, and modifications could only be applied to schoolyards, not buildings since the school year was already in progress.

Climate denial and a lack of coordination between educational and administrative timelines presented significant challenges. It required shared competencies across departments, with limited budgets and a predefined timeline, and the need for a participatory process to gain community acceptance posed difficulties.

The environmental limitations included difficulties in modifying schoolyards, which had become fossilized and rigid. Furthermore, nearby buildings and public space regulations restricted flexibility for green transformations.

## 3. Initiative/Action Description.

The initiative pursued green schoolyards, a participatory process, co-education, better usage of public spaces, and an enhancement of environmental practices in general in schools. The main actors of the process were the Valencia City Council, school boards, parents, tutors, students, and the general community. Funding came from the *Fair Local Green Deal* (FLGD) project, coordinated by ICLEI Europe, with local government budgets supporting the implementation phase.

The strategy included technical assistance, preliminary meetings with school boards, and the formation of a core group and Green Assembly to facilitate collaboration and decision-making.

## 4. Impact and Replication

The project increased awareness of climate change, particularly the urban heat island effect, and emphasized the health risks associated with heat exposure. It fostered a shared sense of ownership among students and staff in addressing environmental challenges. It resulted in tangible outcomes, such as plans for greening schoolyards and fostering a stronger connection between schools and nature. The perception of schools as green spaces increased ecological awareness.

The project holds high potential for replication, particularly in other public schools across Valencia and similar Mediterranean metropolitan areas. Co-creation with local stakeholders and resource allocation are crucial for scaling the project.

## 5. Lessons Learned and Future Directions

The initiative underscored the importance of community participation, trust-building, and overcoming psychological and bureaucratic barriers to infrastructural changes.

Next steps include evaluating the effectiveness of the implemented changes, replicating the process in other schools, and incorporating lessons into future European project proposals.

Thematic 4: Green and Blue infrastructure for resilient cities

# Green and blue infrastructure for resilient cities, Barcelona Metropolitan Area (AMB), Spain

## 1. Context

The Metropolitan Area of Barcelona (AMB) encompasses 36 municipalities over a surface of 636 km<sup>2</sup>, and around 3.24 million inhabitants. It is developing a wide framework of actions to address vulnerabilities to climate change, which includes the *Climate and Energy Plan 2030*, among others, which has been initiated after the declaration of a climate emergency in 2021 and informs adaptation strategies focusing on green infrastructure and climate-resilient urban planning.

## 2. Challenges and barriers

Several significant challenges lie in the path of AMB towards sustainability. It has to overcome heat vulnerability for 16% of its population (those most vulnerable to heat: elderly, and residents in older and/or poorly maintained buildings and from low-income households).

Energy poverty prohibits the use of efficient cooling technologies and renewable energy systems by 30% of the households during the summer. Green infrastructure, such as urban

forests, shadow maps, and climate routes, needs large investments, cross-municipal coordination, and public engagement.

The economic constraints and the technical challenges, such as the deployment of bioclimatic solutions and biosolar roofs, are further factors added to the complexity. In this regard, effective communication and active citizen participation are important if the public is to fully support and benefit from adaptation measures. Coordination across 36 municipalities and a lack of synchronization between regional and municipal governance frameworks poses difficulties, especially in securing permits and managing land use. Managing diverse interests, from tourism to environmental protection, adds complexity to the institutional and governance schemes.

These challenges and constraints call for sustained innovation, stakeholder collaboration, and financial resources to achieve the region's climate resilience goals.

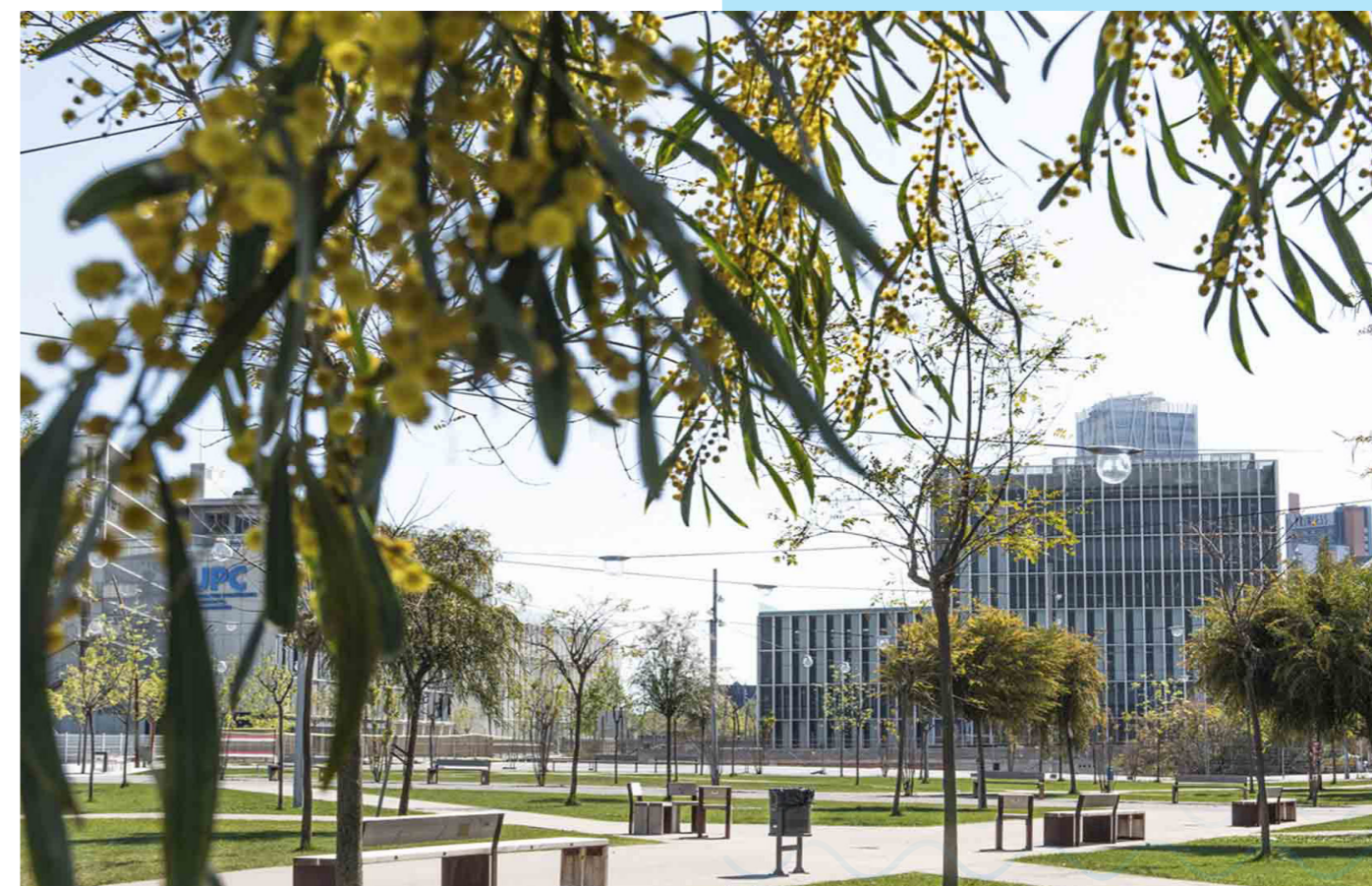


Fig. 17: Campus Diagonal-Besos park. Source: AMB

## 3. Initiative / Action Description: Network of Climate Shelters

The initiative aims to enhance resilience to climate change by creating a Metropolitan Network of Climate Shelters, both indoor and outdoor, across the metropolitan area of Barcelona.

It focuses on reducing vulnerability to heat and protecting vulnerable populations such as the elderly, people in older buildings, and communities lacking green coverage.

Key stakeholders are the 22 municipalities involved in local adaptation plans,

community groups and vulnerable populations (particularly those in areas identified through the Climate Vulnerability Index (IVAC), and AMB.

The initiative includes the implementation of 22 local adaptation plans (PLACCs) by 2023, the development and expansion of climate shelters and biosolar projects across several municipalities from 2021 to 2024 and aims for carbon neutrality and comprehensive climate adaptation by 2050.

It is funded through an allocation of 6,7 million euros from the AMB, with specifically dedicated to the development of climate shelters. Partnerships with local municipalities and regional entities facilitate technical assistance and support for shared projects. The implementation strategy focuses on establishing climate shelters in various community spaces such as libraries, parks, and civic centres throughout the metropolitan area.

Additionally, the AMB works for the creation of urban green infrastructure, including solar roofs, small urban forests, and climate itineraries featuring shaded routes. Engagement efforts are bolstered through public communication, technical training for staff, and coordinated efforts among municipal stakeholders, ensuring a comprehensive approach to climate adaptation and resilience.



Fig. 18: Campus Diagonal-Besos park. Source: AMB



Fig. 19 AMB Climatic shelters. Source: AMB

#### 4. Impact and Replication / Scaling Possibilities

The shelters set up through the initiative care for 526,000 citizens in nine municipalities targeted on vulnerable groups: elderly people and people suffering energy poverty. These shelters help with better public health since they give cool spots, and therefore alleviate shortages in housing stock, including leaky, damp, and outdated buildings. Environmentally, the shelters contribute to mitigating the heat island effect of cities and enhance local biodiversity due to urban greening. Another contribution includes benefits related to carbon reduction by encouraging renewable energy production through biosolar roofs.

This would further be a highly replicable initiative at other Mediterranean urban areas, where the infrastructure is flexible and can be easily adapted and upscaled; and partnerships with local governments are strong, hence there would be technical support.

#### 5. Lessons Learned and Future Directions

The creation of climate shelters effectively reduces vulnerability to heat, particularly in densely populated urban areas lacking green spaces. Green and blue infrastructure plays a key role in both mitigation and adaptation efforts, enhancing urban resilience.

The next steps for AMB's climate adaptation initiative will focus on expanding green infrastructure and climate shelters to enhance urban resilience. Further research is needed to maximize the biodiversity benefits of urban forests and explore other nature-based solutions. Additionally, strategies to improve housing conditions and promote energy efficiency are crucial, particularly for vulnerable communities that are more exposed to the impacts of climate change. This comprehensive approach will ensure continued progress in creating a climate-resilient metropolitan area.

# Conclusion & recommendations

The Mediterranean Climate Change-Adaptation Metropolitan Initiatives Workshop presented innovative urban strategies by cities throughout the region for responding to climate risks. The case studies showcased the need to:

- Integrate nature-based solutions for ecosystem services protection & restoration.
- Promote sustainable mobility into reasonable urban planning.
- Redesign the built environment through the lens of blue and green infrastructure.
- Stimulate citizen awareness and engagement to co-produce climate adaptive solutions, and ensure multi-level and multi-stakeholder coordination and solid funding schemes to foster economic, social and climate resilience.

**Innovative urban strategies encompass experiences such as:**

- **Mersin's** work on specific maritime activities, forecast and early warning systems and coastal protection.
- **Rome's** focus on water management to mitigate the heat island effect.
- **Valencia's** commitment to green schools and climate social awareness.
- **Ancona's** Contract on Urban Forestry and
- **Tirana's** Tree Planting Campaign to increase the green spaces quantity and quality, minimising air pollution.
- **Irbid's** cleaner Energy Saving Multi-use Public

Building facilities to transition towards bio-climatic and more efficient buildings as well as sustainable transportation,

- **Montpellier Metropole**, implementing free public transport and expanding the mobility network,
- **Sarajevo's** Mobility Island transforms urban living conditions by enabling a healthier experience in downtown for citizens and tourists, reducing carbon emissions to its minimal without forgetting
- **Barcelona Metropolitan Area (AMB)** efforts include the regeneration, improvement, and protection of Dunes, the promotion of smart and proactive mobility, the Sustainability Protocol for Public Spaces and Works, and Green and Blue Infrastructure for Resilient Cities, including climate shelters.

All these initiatives are seen as pioneering models that can inspire other cities facing similar climate shocks, stresses and challenges while paving the climate-resilient way with some lessons learnt and recommendations to be shared:

## 1. Understanding vulnerability:

Vulnerability and exposure need to be understood to be overcome. Public and private administrations must measure, monitor, and evaluate progress through thoughtful, trustable data collection processes to forecast positive transformation.

## 2. Scaling Nature-Based Solutions:

Policymakers should prioritise implementing green and blue infrastructure projects to enhance the urban built environment. Cities should integrate these solutions into holistic, systemic, and long-term urban planning, focusing on co-benefits like biodiversity conservation, air quality, urban cooling, and coastal protection.

## 3. Sustainable built environment:

Metropolises must integrate climate-resilient designs and materials into urban development to reduce emissions and improve energy efficiency. Retrofitting existing buildings, implementing passive cooling and heating strategies, and promoting renewable energies' sources are key to creating an adaptive and sustainable built environment.

## 4. Promoting Sustainable Mobility:

Metropolises and cities should invest in promoting smart and proactive mobility systems and expanding infrastructure for electric vehicles, cycling, and public transport to reduce dependence on private cars. Strategies like free public transport must be supported by thorough financial planning to ensure sustainability in maintenance and equitable access.

## 5. Encouraging Public Engagement:

Engaging citizens in the planning and implementation phases of climate projects fosters ownership and ensures the success of adaptation strategies. Public information,

awareness, and co-productive campaigns from participatory processes should be prioritised to address social resistance to change.

## 6. Strengthening Governance Coordination:

Strengthening cooperation between local, regional, and national authorities is crucial to ensure the smooth implementation of climate adaptation initiatives. Multilevel and multistakeholder policies should align with broader national and international frameworks to ensure long-term success.

## 7. Securing Financial Resources:

Municipalities should explore diverse funding sources for public-private partnerships and support large-scale adaptation initiatives, including international grants, EU funds, and private investments. Creating robust financial mechanisms will help overcome economic barriers, speed up urgent climate solutions, and ensure projects' sustainability.

Future directions for the cities involved include expanding successful pilot projects, innovating on solutions like renewable energy, water waste management, smart mobility, eco-buildings and the integration of green and blue urban spaces, while fostering further collaboration through knowledge-sharing platforms. By building on lessons learned from these case studies coupled with further recommendations, Mediterranean cities can be drivers in climate resilience and set models that can easily be replicated for other regions facing similar climate challenges.

# Acknowledgements

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# Annex (Event's program)



Event hosted and organised with the support of:



*A workshop to discuss the shared challenges faced by Mediterranean cities and the innovative solutions implemented to achieve metropolitan adaptation by creating a space for the debate between Mediterranean metropolises.*

*The workshop is co-financed by the "Make a move for adaptation to climate change project"*



## Mediterranean Climate Change-Adaptation Metropolitan Initiatives

Barcelona, 18 and 19 September 2024

### Context

Urban areas are especially vulnerable and face numerous challenges in addressing and adapting to climate change due to their dense populations, infrastructure and economic activities. According to the United Nations, cities are estimated to account for around 70% of global energy-related CO2 emissions, which are a major component of total greenhouse gas (GHG) emissions. In addition, the Mediterranean region is particularly vulnerable to climate change due to its unique geographical and climatic characteristics. Climate change impacts in this region are multifaceted and profound, affecting ecosystems, water resources, agriculture and human health and its impacts are even more evident in urban and metropolitan areas. Addressing these challenges requires a holistic metropolitan perspective that integrates climate adaptation and mitigation strategies into urban planning, infrastructure development, public health initiatives and social equity policies. Such strategies rely upon an improved coordination between metropolitan public and private stakeholders in order to optimise land use, plan multimodal transport systems to reduce car use, and promote green and blue infrastructure.

The European Union (EU) encourages its member states, regions and local governments to develop climate change adaptation action plans (CCAAP) as part of its broader efforts to address climate change impacts. CCAAP are strategic documents outlining specific actions and measures aimed at reducing vulnerability, enhancing resilience, and adapting to the changing climate conditions with a long-term vision and through multilevel governance with public and private stakeholders.

The objective of the "Mediterranean Climate Change-Adaptation Metropolitan Initiatives Workshop", co-organised with the Barcelona Metropolitan Area (AMB), is to share experiences between MedCities members on planning climate change adaptation and mitigation strategies and articulating territorial stakeholders around them. Focusing on the implementation of such plans, the workshop will discuss the shared challenges faced by Mediterranean cities and the innovative solutions implemented to achieve metropolitan adaptation by creating a space for the debate between Mediterranean metropolises in this regard. The workshop is part of the "Make a move for adaptation to climate change project", in the frame of which the Mersin Metropolitan Municipality is currently developing its CCAAP with the financial support provided by the EU.

The first day of the seminar will include round table discussions on the challenges faced by Mediterranean Metropolises and the adaptation strategies implemented in their territories, as well as a detailed discussion on good practices. The second day of the conference will feature a technical study visit to showcase good practices in the Barcelona Metropolitan Area.



## Programme

Wednesday 18<sup>th</sup> of September

Where: *Barcelona Metropolitan Area, Sala de Plens, edifici A, 7a planta, Carrer Número 62, 16, 18, 08040 Barcelona*

Interpretation: English – Turkish – Catalan

If you want to follow the session online, please register through this link: [https://docs.google.com/forms/d/e/1FAIpQLSe6Qm\\_D5qq2WpjTXbVJQM7\\_f4liY7srsss-g-FWERO5wYzxdw/viewform](https://docs.google.com/forms/d/e/1FAIpQLSe6Qm_D5qq2WpjTXbVJQM7_f4liY7srsss-g-FWERO5wYzxdw/viewform)

**9:00 – 9:30 Welcome remarks:**

Mrs. Elisenda Alamany, Vice-President of the Barcelona Metropolitan Area

Mr. Josep Canals, Secretary General of MedCities

Dr. Bülent Halisdemir, Head of the Department of Environmental Protection and Control of Mersin Metropolitan Municipality

**9:30 – 10:00 Keynote speech on EU mission on climate neutral and smart cities**, Mr. Thomas Osdoba, Coordinator of NetZero Cities project, EIT Climate-KIC (*online participation*)

**10:00 – 10:30 Adaptation to Climate Change as part of the Barcelona Metropolitan Area strategy and action**, Mr. Ramon Torra, General Manager, Barcelona Metropolitan Area

**10:30 – 11:30 Round table 1: Enhancing coastal resilience to climate change and ecosystem restoration**

Reconstruction of dunes on the Barcelona metropolitan coast, Mr. Daniel Palacios, Head of the Beach Department, AMB

Initiatives for enhancing coastal resilience in Mersin, Dr. Bülent Halisdemir, Head of the Department of Environmental Protection and Control of Mersin Metropolitan Municipality

The "Urban forestry contract" in Adriatic coastal cities and the depollution of marinas, Mr. Fabio Vallarola, Architect, Municipality of Ancona

11:30 – 12:00 *Coffee break*

**12:00 – 13:00 Round table 2: Promoting sustainable metropolitan urban planning and mobility**

Active and E-Mobility strategies at the Barcelona Metropolitan Area, Mr. Marc Iglesias, Head of sustainable mobility management service, AMB





Implementing the free public transport strategy, Mr. Thibaut Vigouroux, Chargé de mission « Gratuité des Transports Publics » au Pôle Mobilités, Montpellier Métropole

Towards sustainable urban living with the first Mobility Island in Sarajevo, Mrs Nejra Selimović, Head of Cabinet of the Chairman, Municipality of Sarajevo

### 13:00 – 14:00 Round table 3: Promoting climate resilient built environment

Sustainability protocol: Environmental criteria for the projects and works, Barcelona Metropolitan Area, Mr. Albert Gassull, Director for Public Space, AMB

Initiatives on climate resilient built environment, Ms. Julinda Dhame, Director General of Environment and Sustainable Development, Municipality of Tirana

Irbid initiatives for cleaner energy saving in multi-use public buildings, Ms. Leila Adel Youssef, Director of the Directorate of International Programs and Development, Municipality of Irbid (*online participation*)

14:00 – 15:00 Lunch break

### 15:00 – 16:00 Round table 4: Green and Blue infrastructure for resilient cities

Targeting climate vulnerability by promoting green infrastructure and climate shelters, Barcelona Metropolitan Area, Mr. Frederic Ximeno, Director for Climate Action, AMB

The case of Valencia: climate solutions in the framework of a green capital, Mr. Andreu Escrivà, Environmental Projects Officer, Municipality of Valencia

Rome Climate Adaptation strategy: nature and water to reduce the heat island effect, Mr. Edoardo Zanchini, Chief of Rome's Climate Office, Municipality of Rome

### 16:00 – 16:30 Concluding remarks

#### Thursday 19<sup>th</sup> of September

Study visit displaying good practice cases in Barcelona Metropolitan Area.

Interpretation: English - Turkish

#### 9:30 – 11:00 Visit to Llobregat river.

- Environmental recovery projects of the Llobregat river, Mr. José Alonso, AMB architect

#### 11:30 – 13:00 Visit to a Waste Water Regeneration Facility

- Presentation of the integrated water cycle management and plan in the Metropolitan Area of Barcelona. Presentation and technical visit of the water regeneration plant, Mr. Francisco Salguero, AMB Officer

