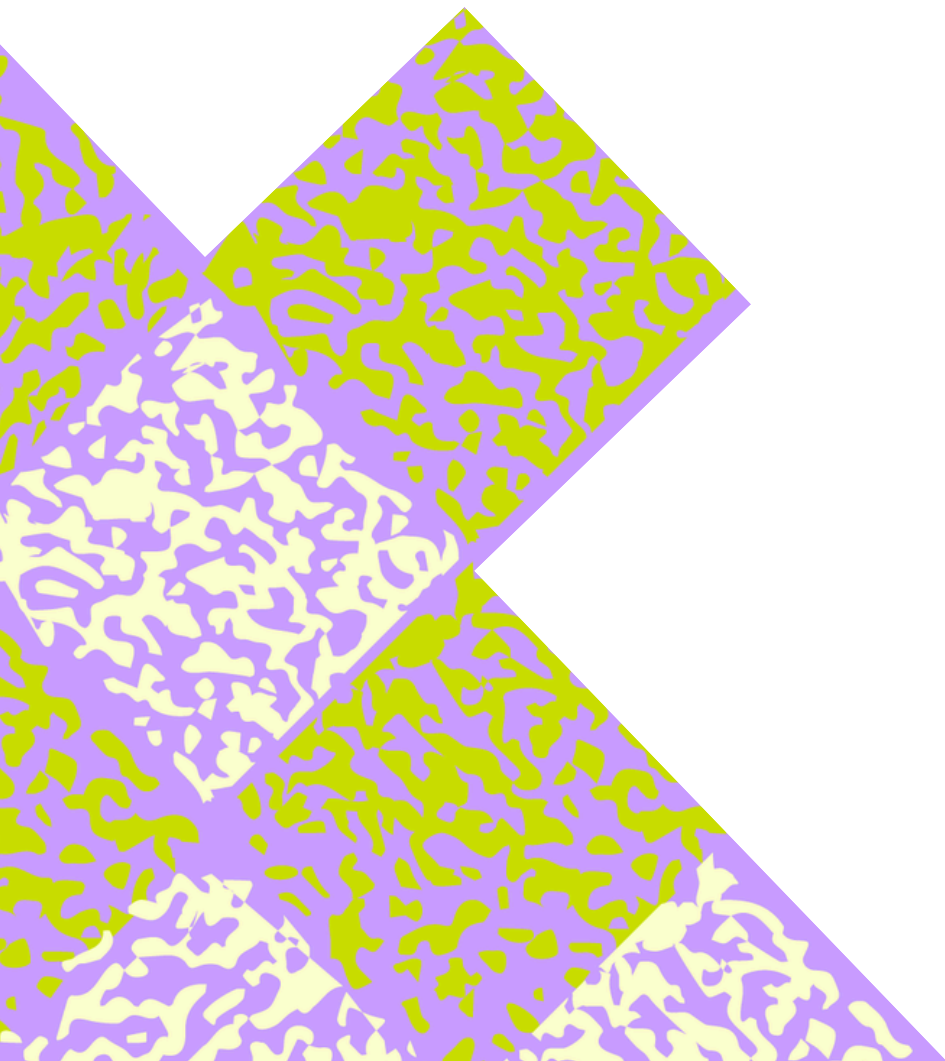


# MATCH

## The Mediterranean as the Climate Hotspot

### D2.1 – Research report and Mapping of best practices

September 2025



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**September 2025**

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## 1. Introduction

### 1.1 Project Overview and Objectives

**MATCH (Mediterranean as the Climate Hotspot)** is an interdisciplinary Creative Europe program that tackles the urgent challenges of climate change in the Mediterranean through arts, cultural production, and community-driven environmental action. Rooted in one of the world's most climate-vulnerable regions, the project explores how cultural heritage, artistic expression, gardening practices and local knowledge can strengthen climate resilience, environmental justice, and sustainability.

MATCH is implemented through a collaboration of organizations across five countries:

- **Cyprus** (D6:EU)
- **Portugal** (Mapa das Ideias)
- **France** (La Friche la Belle de Mai)
- **Greece** (National Technical University of Athens)
- **Italy** (BJCEM – Biennale des Jeunes Créateurs de l'Europe et de la Méditerranée)

Each partner brings distinct geographical, political, and cultural perspectives, enabling MATCH to investigate how creative, place-based practices can complement scientific research and policymaking in addressing environmental degradation.

#### About This Report

The Research and Conceptual Framework Report, compiled by the National Technical University of Athens (NTUA) and drawing on the national studies and contributions of all MATCH partners, provides an intellectual, methodological, and strategic foundation, serving as a roadmap and coordination tool to guide transnational activities such as artistic residencies, capacity-building workshops, policy development, and public engagement. Grounded in bottom-up, place-sensitive research, the report draws on national studies produced by each partner. These explore country-specific environmental contexts, climate vulnerabilities, cultural ecosystems, and policy frameworks. This comparative and localized approach ensures that MATCH's vision is not imposed but co-constructed—deeply rooted in Mediterranean realities and ecological diversity.

In addition, the report is accompanied by an annex of best practices, compiled by D6:EU. This annex documents exemplary cultural-environmental projects across the Mediterranean, highlighting innovative approaches to climate adaptation, Nature-based Solutions (NbS), heritage-led regeneration, and community engagement. By providing concrete examples alongside the conceptual framework, the annex allows practitioners, policymakers, and cultural organizations to draw inspiration and replicate successful interventions in diverse local contexts.

The report articulates MATCH's core values—regenerative environmental practices, inclusive cultural participation, socially engaged art, and collaborative governance—not as abstract ideals but as operational principles. These values inform every aspect of the project: from the design of artistic interventions and community partnerships to the development of tools like the Cultural Climate

Change Response and Impact Assessment (CRIA) and context-sensitive sustainability policies for cultural organizations.

### **Objectives of the Report**

As a shared reference point, the report aimed to:

#### **Strengthen coherence across the MATCH consortium.**

- **Contextualize the Mediterranean’s Environmental and Cultural Landscape**
  - by analyzing climate risks and socio-environmental dynamics in partner countries and exploring intersections between these challenges and cultural heritage, urban-rural inequalities, and local resilience.
- **Support Environmental Policy Development for Cultural Organizations**
  - by providing evidence-based guidance for crafting context-specific sustainability policies and encouraging ecologically responsible, community-engaged cultural production.
- **Identify and Map Best Practices**
  - by highlighting replicable cultural-environmental synergies, particularly those involving Nature-based Solutions (NbS), heritage-led regeneration, and civic participation, drawing on Mediterranean traditions, indigenous knowledge, and contemporary artistic innovation.
- **Promote Knowledge Exchange and Cross-Fertilization**
  - by ensuring findings inform MATCH’s residencies, policy work, capacity-building, and public engagement through platforms for peer learning among artists, researchers, policymakers, and communities.
- **Lay the Groundwork for Impact Measurement**
  - by defining conceptual and methodological foundations for the **Cultural Climate Change Response Impact Assessment Tool (CRIA)**.

Looking beyond the project’s timeframe, the report aspires to serve the wider cultural and environmental sectors.

### **Limitations and Considerations**

To ensure transparency, several methodological limitations should be acknowledged:

- **Comparative Scope:** While a shared research framework was used, the diverse national contexts across the Mediterranean limited direct comparability between country reports.
- **Data Sources:** The reliance on desk research and publicly available data may have overlooked some local, undocumented practices and was affected by uneven data availability between countries.
- **Defining Sustainability:** The cultural sector's fluid and diverse interpretations of "sustainability" complicated the creation of standardized frameworks, requiring a balance between structure and flexibility.

- Researcher Positionality: The perspectives and institutional backgrounds of the project partners inevitably influenced the research framing and interpretation.
- Evolving Context: The research was conducted amidst overlapping global crises, which affected stakeholder input and introduced a degree of provisionality to the findings.

These limitations do not diminish the report's value but highlight the need for the project's tools, like the CRIA, to remain adaptive and iterative through future collaboration and testing.

## 1.2 Report Structure

This report presents the MATCH project's findings on culture, climate change, and community resilience in the Mediterranean. It is structured to guide the reader from foundational research to actionable conclusions.

Chapter 1 introduces the project's goals and this report's objectives.

Chapter 2 outlines the research methodology and limitations.

Chapter 3 provides profiles of the five partner countries (Cyprus, Spain, France, Greece, and Italy).

Chapter 4 examines national environmental and cultural contexts, including climate challenges and policy responses.

Chapter 5 shifts to the local scale, analyzing civic engagement and traditional knowledge.

Chapter 6 reviews the relevant policy and governance landscape.

Chapter 7 summarizes the key findings and highlights overarching insights

Overall, the report is both a snapshot of current dynamics, and a contribution to ongoing dialogue. Its structure supports readers in engaging with specific chapters or reading the entire document — from research foundation to actionable tools.

## 1.3 Background context about Climate Change and the Mediterranean region

Over 150 million people live along the coasts of the Mediterranean, heavily relying on tourism and agriculture. The interplay of diverse ecosystems, ancient civilizations, and modern economies creates a unique and complex landscape, one that is increasingly vulnerable to the impacts of climate change. The Mediterranean region which is recognized as the cradle of human civilization, and is renowned for its cultural richness and historical significance, is facing unprecedented challenges and finds itself at the forefront of the global climate crisis as one of the world's most vulnerable hotspots to climate change. A unique combination of environmental, economic, and social risks threaten its **environmental stability, economic prosperity, and social cohesion.**<sup>1</sup>

<sup>1</sup> Intergovernmental Panel on Climate Change. (2021). *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (V. Masson-Delmotte, P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, & B. Zhou, Eds.). Cambridge University Press. <https://www.ipcc.ch/report/ar6/wg1/>

## A. The Mediterranean Climate, a delicate balance

The Mediterranean is home to a remarkable biodiversity, hosting 10% of the world's species, many of which are endemic. However, climate change poses significant risks to the Mediterranean region. The Mediterranean climate is characterized by hot, dry summers and mild, and wet winters highly dependent on seasonal rainfall. The region's ecological health hinges on the seasonal rainfall that sustains its agriculture, natural habitats, and water supplies. The Mediterranean climate is particularly sensitive to changes in global weather patterns. The delicate balance of this climate is being disrupted by rising temperatures and shifting precipitation patterns, leading to a cascade of environmental consequences. The Mediterranean is already one of the most water-stressed regions globally, compounded by the dense populations along its coasts and by the tourist industry. Temperatures are rising faster than the global average, with an increase of +1.5°C since pre-industrial levels, and projections indicate this could reach +2.2°C or more by 2040. The region is experiencing more frequent and intense heatwaves, such as the record-breaking temperatures in 2023. Additionally, the risks of wildfires have surged, with recent years witnessing devastating fires in Greece, Turkey, and Algeria, as well as in Italy, France and Spain. The Mediterranean region has been experiencing a range of climate change-induced risks that are reshaping its landscapes and livelihoods the most significant of which are the following:

1. Rising Temperatures & Heatwaves: As previously mentioned, the Mediterranean is warming faster than the global average, with temperatures having increased by 1.5°C since pre-industrial levels. Heatwaves are becoming more frequent and intense, exemplified by record-breaking temperatures in 2023. These extreme heat events pose serious health risks, particularly to vulnerable populations such as the elderly and those with pre-existing health conditions.
2. Increased Wildfire Risks: The rising temperatures and prolonged drought conditions have contributed to an increase in the frequency and intensity of wildfires. In recent years, devastating fires have swept through Greece, Turkey, Spain, South of France, and Algeria, destroying homes, livelihoods, and natural habitats. The Mediterranean's dense forests of conifers and shrublands, combined with human activities, create a volatile environment where wildfires can spread rapidly and cause widespread damage.
3. Biodiversity Under Threat: The Mediterranean is a biodiversity hotspot, home to 10% of the world's species, many of them endemic. This rich tapestry of life, which includes unique flora and fauna, is under severe threat from climate change.<sup>2</sup> Altered weather patterns, habitat loss, and the introduction of invasive species are contributing to a decline in biodiversity, with potentially irreversible consequences for the region's ecosystems.<sup>3</sup>

<sup>2</sup> Garrabou, J., Gómez-Gras, D., Ledoux, J. B., Linares, C., Bensoussan, N., López-Sendino, P., Bazairi, H., Espinosa, F., Ramdani, M., Grimes, S., Benabdi, M., Soufi, R., Soukissian, T., Kletou, D., Oscar, M. I., Kersting, D. K., Langar, H., Ocaña, O., Ramos-Esplá, A. A., ... Ziveri, P. (2022). Marine heatwaves drive recurrent mass mortalities in the Mediterranean Sea. *Global Change Biology*, 28(19), 5708–5725. <https://doi.org/10.1111/gcb.16202>

<sup>3</sup> World Wide Fund for Nature. (2021). *Mediterranean marine initiative*. WWF.

4. Water Scarcity and Resource Management: Water scarcity is a pressing issue in the Mediterranean, one of the most water-stressed regions globally. The combination of rising temperatures, reduced rainfall, and increasing demand from agriculture, tourism, and urban areas is exacerbating water shortages.

## B. Socio-Economic Impacts

The socio-economic fabric of the Mediterranean is intricately linked to its climate, with sectors such as tourism, agriculture, and fisheries particularly vulnerable to climate change.

5. Agriculture and Food Security: Agriculture is a cornerstone of the Mediterranean economy, with crops such as olives, grapes, and citrus fruits forming the backbone of the region's agricultural output. However, the changing climate is affecting crop yields and quality, threatening food security and livelihoods. Farmers are struggling to adapt to the new conditions, and there is an urgent need for innovative agricultural practices and technologies that can withstand the changing climate.<sup>4</sup>
6. Tourism Industry: The Mediterranean is one of the world's most popular tourist destinations, attracting millions of visitors each year. However, the region's tourism industry is facing challenges from climate change, including rising sea levels, coastal erosion, and extreme weather events. These changes are affecting the attractiveness and accessibility of tourist destinations, with potential long-term impacts on the local economies that depend on tourism revenue.

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<sup>4</sup> Food and Agriculture Organization of the United Nations. (2018). *The state of Mediterranean forests 2018*. FAO.

## 2. Research Methodology

### 2.1 Research Design and Objectives

The research methodology was structured around three thematic pillars—environmental context, local engagement, and policy landscape—which collectively framed the analysis of cultural responses to climate challenges. This design enabled a holistic investigation of climate-related phenomena, including extreme weather events, community-led adaptation practices, and the evolving role of cultural institutions and actors in sustainability efforts.

A set of guiding questions informed the national research conducted by each MATCH partner, allowing thematic insights to emerge while preserving the distinct environmental, cultural, and policy contexts of each country. Each national report contributed to a shared knowledge base, drawing on national climate reports, academic literature, and EU-level sources such as Copernicus Climate Data. Emphasis on local voices and practices ensured that cultural actors' situated knowledge was recognized while highlighting cross-national patterns and opportunities for collaboration.

This research provides the conceptual foundation for the wider MATCH project, supporting initiatives such as artistic residencies, community engagement, and capacity-building workshops. It also lays the groundwork for the Cultural Climate Change Response Impact Assessment (CRIA), which will be further developed in a separate report.

### 2.2 Data Collection Methods

The data collection strategy was based on a collaborative and comparative research design that ensured consistency across all participating countries, while respecting and capturing national and local specificities.

#### National Reports and Surveys

The National Technical University of Athens (NTUA) designed and distributed surveys to all MATCH partners to guide the preparation of their National Reports. NTUA also conducted interviews with local stakeholders, cultural actors, and community organizations to gain deeper insights into each national and local context. Each National Report was structured around a shared methodological framework and a common set of core questions, ensuring comparability across countries while reflecting local realities. This process produced a detailed mapping of partner organizations at national, regional, and local levels, highlighting key actors, networks, and potential synergies across the cultural and environmental sectors.

#### Desk Research

Desk research included the review of scientific and academic literature, national climate reports, EU-level sources such as Copernicus Climate Data, and relevant policy and planning documents.

## Case Study Analysis

Case study analysis focused on identifying innovative practices in areas such as community gardening, heritage conservation, climate-induced migration response, and community-based climate adaptation.

## Mapping of Best Practices

D6:EU led the organization and compilation of the Mapping of Best Practices, as described in the following section. This exercise identified exemplary initiatives that illustrate the potential for collaboration between cultural actors, environmental professionals, and community-based organizations at the local level.

The research was organized around three interrelated thematic pillars:

1. **Environmental context** (national climate challenges and trends)
2. **Local engagement** (community responses, cultural practices, and public awareness)
3. **Policy landscape** (governance, policy frameworks, funding mechanisms, and institutional collaboration)

These pillars provided a lens through which to examine and compare country-level dynamics, while highlighting the cultural dimensions of climate action.

Specifically, the research aimed to map and analyze the following elements:

- Major extreme weather events and climate-related incidents over the past 20 years
- Response strategies at national, local, and community levels, including prevention, adaptation, and mitigation measures
- The role of cultural actors, such as community gardens, museums, festivals, and heritage sites in advancing environmental awareness and ecological resilience
- Contributions of traditional ecological knowledge and Nature-based Solutions (NbS) to sustainability and biodiversity
- Patterns of climate-induced migration and associated cultural responses to mobility and displacement
- Opportunities and gaps for cross-sector collaboration between cultural and environmental institutions

By combining this multi-scalar and cross-disciplinary approach, the research supports the creation of a conceptual framework and actionable tools that reflect the complex realities of the Mediterranean

region—where climate change is both an ecological crisis and a cultural challenge. Together, these data collection methods helped answer the MATCH project's overarching research questions and informed the development of the Cultural Climate Change Response Impact Assessment Tool (CRIA). The insights gathered from the national reports provided the empirical grounding for CRIA's structure and indicators.

## 2.3 Identification and Mapping of Best Practices

*Lead by D6:EU in collaboration with NTUA*

The **Mapping of Best Practices (Annex 1)** identifies exemplary initiatives demonstrating collaboration between cultural actors and environmental, social, or grassroots organizations. These initiatives highlight local strategies in community engagement, cultural practice, advocacy, and liaison with decision-makers, often utilizing community spaces such as gardens and heritage facilities.

Partners were asked to nominate case studies to inform the Mapping of Best Practices, forming a 20-page annex to the **Background Research and Conceptual Framework Report** compiled by NTUA. The purpose of this mapping exercise was to:

- Ground the background research and contextual framework in concrete examples.
- Identify potential contributors and content for capacity-building workshops, including speakers and site visits.
- Inform the wider cultural and environmental sector through a publicly available report.

The brief to the partners outlined:

### **Geographic guidance for the overall selection of best practice examples included:**

- Europe (4 examples)
- The Mediterranean basin (7 examples)
- Beyond Europe (3 examples)

### **Proposed breakdown of initiatives mapped:**

- A profile of each local community garden partner to inform the national country reports within the Background Research, support the artists to prepare for their residencies and foster learning between the partners and community gardens engaged in the project
- Two further examples nominated by each partner to draw in a diversity of perspectives from our own network and support knowledge sharing between the partnership

## Methodology

Partners were asked to propose examples of best practices for the Mapping of Best Practices document using an Excel long-listing tool. Partners were asked to share the following information:

1. **Name**
2. **Country/city the initiative is based in**
3. **A written description of each initiative**
4. **Website**
5. **Against which indicator does the initiative most strongly represent best practice:**

Four indicators were identified for consideration, based on the long list of indicators developed by NTUA for CRIA, and grouped under four categories of Best Practice:

### 1. **METHODOLOGIES AND PROCESSES**

Reducing the carbon and environmental cost of cultural work and increasing climate resilience

### 2. **CONTENT: CULTURAL VIBRANCY AND INNOVATION**

Innovative, high quality and interdisciplinary examples of cultural projects and community gardens working addressing Climate and Ecological issues

### 3. **PARTICIPATION**

Innovative methods of fostering equitable processes of engagement

### 4. **ADVOCACY**

Increasing public and stakeholder awareness and action

The **scale** at which each initiative operates was recorded, with three levels identified:

- Organisational / Individual artist Level
- Municipal/ Local level
- Transnational Level

The **sustainability** of each initiative **over time** was also assessed, with partners providing information on how the initiative has been maintained or evolved, and the factors contributing to these changes.

Once all the suggestions were made, D6:EU and NTUA reviewed the proposals to define a final representative selection of case studies for the Mapping of Best Practices document that reflected a diversity of geography, scale and range of examples across the four selected 'indicators / categories' of best practice.

### 3. Partner Profiles per Country<sup>5</sup>

#### 3.1 Partner Organizations

This section presents a summary of the five national partner organizations involved in the MATCH project. Each partner brings unique expertise in arts, culture, environmental action, and community engagement. Together, they form a transnational network committed to advancing cultural responses to climate change across the Mediterranean.

Their national reports serve as the primary evidence base for this synthesis and comparative analysis.

The MATCH partners were asked to address a structured set of thematic questions related to:

- National and local environmental challenges
- Climate impacts on cultural life and heritage
- Community-based responses and traditional ecological practices
- Policy integration between culture and environment
- Stakeholder roles and collaboration potential

#### 3.2 Cyprus: D6:EU

##### National Context

Cyprus is among the countries most vulnerable to climate change in Europe, facing escalating risks including water scarcity, extreme heat, desertification, and biodiversity loss. As a small island nation, its environmental challenges are compounded by geopolitical complexities and high population density in coastal areas. Despite these pressures, Cyprus has seen increasing civil society engagement and policy momentum toward sustainable development, though integration between the cultural and environmental sectors remains limited.

##### Organizational Profile

**City of Operation:** Nicosia, Cyprus

**Location:** No fixed venue

**Established:** 2021

**Type:** Not-for-profit visual arts organization (NGO)

**Legal Structure:** Company limited by guarantee

**Number of Employees:** 1 employee + 5 freelance contractors (Artistic Direction, Production, Finance, Communications)

**Affiliation:** Sister organization to D6: Culture in Transit (UK)

**Website:** <https://d6.eu/>

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<sup>5</sup> **Note on BJCEM's involvement:** While BJCEM is based in Turin (outside the Mediterranean climate zone), Italy's southern and coastal regions fall squarely within the Mediterranean ecological and cultural sphere. BJCEM's participation enriches MATCH with national and regional perspectives, particularly through its network of young artists, cultural operators, and institutions across Italy and the broader Mediterranean.

D6:EU is a Cyprus-based, not-for-profit visual arts organization dedicated to creating new opportunities for artists and fostering cultural collaborations across Cyprus, Europe, and the Middle East. Since its founding in 2020, D6:EU has positioned itself at the intersection of artistic practice, cultural policy, and environmental activism.

Driven by the values of equity, sustainability, curiosity, and generosity, D6:EU engages a wide network of collaborators—including artists, heritage professionals, community actors, and policymakers—to advocate for social and environmental justice through culture.

The organization has been deeply involved in climate-oriented cultural programming. This includes the Emergency, Influence and Practice Conference (2022), which brought together cultural, environmental, and community experts to explore artistic responses to the climate crisis. In January 2025, D6:EU contributed to the CDCD(CE) conference with a session on Reimagining Colonial Heritage: Environmental Impact and Cultural Response. Looking ahead, D6:EU is preparing the Ecoscapes: Curatorial Symposium and Residency in November 2025, focusing on *Climate, Culture, and Mediterranean Futures*.

In practice, D6:EU is also engaged in on-the-ground ecological and community actions, such as collaborating with the Gardens of the Future—a community gardening initiative revitalizing neglected urban space in Nicosia—and contributing to reforestation efforts at the Skouriotissa Mine hill.

**Values:**

Equity · Sustainability · Curiosity · Generosity

**Focus Areas:**

- Climate and environmental justice
- Displacement, belonging, and postcolonial heritage
- Community-centered cultural practice
- Cross-border artistic exchange
- Sustainable cultural production

**Ways of Working:**

Operating without a fixed venue, D6:EU works in strategic partnership with environmentally conscious host spaces. It adopts a horizontal structure and values shared authorship and inclusive participation. Sustainability is embedded into project design—from clustered travel and local sourcing to reuse of materials and low-impact production.

**Funding & Structure:**

Primarily publicly funded with project-based staffing, D6:EU also receives occasional private support. The organization works resourcefully within economic constraints while advocating for ethical and sustainable funding models.

**Vision:**

D6:EU envisions sustainability as an interconnected ecosystem—environmental, social, cultural, and institutional. Through collaboration and experimentation, it seeks to build more just and resilient cultural futures, rooted in place, informed by history, and responsive to the planetary present.

### 3.3 Spain: MAPA DAS IDEIAS

#### National Context

Spain faces significant environmental risks, particularly in its southern and Mediterranean regions. Rising temperatures, desertification, and frequent wildfires are shaping both rural and urban ecologies. Climate-induced migration, gentrification of green spaces, and water stress are critical issues. Meanwhile, Spain's vibrant cultural sector is increasingly engaging with ecological themes, though access to sustainable infrastructure remains unequal across territories.

#### Organizational Profile

**City of Operation:** Lisbon, Portugal

**Location of MATCH Implementation:** Barcelona, Spain

**Location:** Fixed office (70 m<sup>2</sup>) + cafeteria venue at Maritime Museum (Lisbon)

**Established:** 1999

**Type:** Private cultural consultancy

**Legal Structure:** For-profit company

**Number of Employees:** 39

**Website:** <https://mapadasideias.pt/en/>

Mapa das Ideias is a Portugal-based organization with over 20 years of experience in the cultural sector, recognized for its innovative approach to museum mediation, cross-sector collaboration, and training. Originally founded to enhance communication within museum contexts, the organization has expanded its expertise to encompass broader cultural consulting, including audience engagement strategies, communication planning, and the design of educational programs.

With a strong track record of participation and leadership in EU-funded initiatives, Mapa das Ideias has worked extensively to foster social inclusion and community empowerment through culture. Its work is rooted in the belief that public space, culture, and environmental action are interconnected tools for enhancing social cohesion.

As the coordinating organization of the MATCH project, Mapa plays a central role in strategic oversight and content delivery. In particular, it is responsible for implementing the artists' residency and related activities in Barcelona, Spain, making its contributions to this national profile focused on the Spanish context.

Mapa's experience in designing collaborative frameworks between artists, educators, and environmental actors positions it as a key contributor to MATCH's mission of using culture to respond meaningfully to climate change and its social impacts.



**Values:**

Participation · Co-creation · Cultural equity · Social transformation

**Focus Areas:**

- Inclusive museum education
- Community engagement and civic participation
- Sustainability as social and relational practice
- Cross-sector collaboration
- Ethical cultural production

**Ways of Working:**

Mapa emphasizes flexible, project-based teamwork and collaborates with schools, museums, artists, and researchers. It actively reuses materials, avoids plastic in public kits, and encourages hybrid work to reduce environmental and emotional strain. While lacking a formal sustainability policy, the organization experiments with low-impact practices and sees care, creativity, and ethics as central to its approach.

**Funding & Structure:**

Mapa operates primarily through project-based contracts, often in response to client needs or public tenders. While this allows for innovation, it also limits the integration of long-term environmental strategies. The organization currently relies on outsourced expertise for environmental knowledge, and sustainability decisions are made on a case-by-case basis.

**Vision:**

For Mapa, sustainability is not only environmental—it's ethical, social, and procedural. It seeks support for reflective tools, qualitative metrics, and peer learning to better align its work with long-term cultural and ecological goals. Through CRIA, Mapa aims to move from fragmented practices to a shared internal strategy that values relationships, care, and community-centered cultural work.

**3.4 France: La Friche La Belle de Mai**

**National Context**

France's Mediterranean coast is highly exposed to sea-level rise, heatwaves, and flooding, with Marseille as a key urban hotspot. Climate risks intersect with issues of socio-economic inequality, urban density, and cultural heritage preservation. France has a robust environmental policy framework, yet cultural-environmental integration tends to concentrate in larger institutions and urban centers, leaving grassroots actors under-supported.

**Organizational Profile**

**City of Operation:** Marseille, France

**Location:** Former tobacco factory in the Belle de Mai neighborhood

**Established:** 1992 (cultural project); SCIC structure since 2007

**Legal Structure:** Société Coopérative d'Intérêt Collectif (SCIC)

**Number of Employees:** ~70 (core staff) + ~400 resident professionals

**Site Size:** 45,000 m<sup>2</sup> (100,000 m<sup>2</sup> total site)

**Website:** <https://www.lafriche.org/>

Friche La Belle de Mai is a major cultural and community hub located in Marseille, France, occupying the site of a former national tobacco factory. Since its grassroots inception in 1992, when artists took over the abandoned industrial space, La Friche has evolved into one of France's most dynamic spaces for cultural experimentation and urban regeneration.

Originally transformed without public funding by a collective of visual artists, performers, and independent producers, La Friche gradually gained institutional recognition. A turning point came with the 2007 proposal "*Jamais deux sans toi*", authored by architect Matthieu Poitevin, which laid the groundwork for large-scale public investment. In preparation for Marseille's title as European Capital of Culture in 2013, substantial renovations were undertaken—transforming La Friche into a leading site of artistic production, performance, and innovation.

Today, La Friche comprises a Social and Collective Interest Cooperative (SCIC) with 70 core employees and around 400 resident creatives, including artists, publishers, media producers, and cultural entrepreneurs. The organization continues to prioritize sustainability and ecological responsibility, integrating environmental concerns into both site management and programming.

La Friche's long-term vision is rooted in a commitment to the ecological transition and the promotion of inclusive cultural practices, making it a key contributor to MATCH's exploration of how cultural infrastructure and community-driven spaces can drive environmental change.

#### Values:

Democracy · Cultural diversity · Ecological responsibility · Urban inclusion

#### Focus Areas:

- Artistic experimentation and collective cultural production
- Community engagement and social accessibility
- Ecological resilience and urban sustainability
- Participatory governance and collective decision-making

#### Ways of Working:

La Friche integrates sustainability into site management and programming through experimental projects like solar energy generation, rainwater harvesting, microforests, and educational gardens. Artistic practices often emphasize reuse, low-impact production, and longer exhibition cycles to reduce waste. Ecological work is embedded across teams rather than housed in a dedicated department, reflecting the organization's integrated approach despite resource constraints.

### **Funding & Structure:**

La Friche operates as a SCIC with mixed public (55%) and private (45%) funding. It generates significant income through venue rentals but faces ongoing challenges in securing capital for ecological infrastructure investments. Its cooperative model supports shared governance among residents, public institutions, and workers, fostering a pluralistic approach to sustainability.

### **Vision:**

La Friche sees itself as a living laboratory for how cultural institutions can respond to climate breakdown and social inequalities by blending artistic innovation, democratic governance, and ecological care. It seeks support through CRIA to develop data-driven sustainability practices, peer learning platforms, and stronger cross-sector policy engagement—advancing collective approaches to environmental and social transformation.

## **3.5 Greece: The National Technical University of Athens**

### **National Context**

Greece’s Mediterranean geography makes it highly vulnerable to heatwaves, wildfires, and coastal degradation. Economic constraints have limited large-scale investment in sustainability, but local initiatives—especially in rural areas—have developed innovative, low-cost responses grounded in traditional knowledge and community solidarity. Cultural heritage plays a central role in shaping environmental identity and education.

### **Organizational Profile**

**City of Operation:** Athens, Greece

**Location (Map Pin):** <https://maps.app.goo.gl/oCu9ykGA188d5PxU6>

**Number of Employees:** <1300

**Website:** <https://www.ntua.gr/en/>

The National Technical University of Athens (NTUA) is Greece’s oldest and most esteemed academic institution, with a legacy dating back to 1836. Renowned for its academic excellence and cultural relevance, NTUA has played a vital role in shaping generations of engineers, architects, and researchers who are actively redefining the relationship between technology, culture, and society.

Ranked among Europe’s top technical universities, NTUA is recognized as a major force in EU-funded research. A recent survey places the university second among all European universities and fourth across all European organizations in terms of participation in EU-funded projects. Its dynamic research ecosystem includes over 500 active projects annually, many of which are situated at the intersection of science, culture, and societal transformation.

NTUA’s engagement in cultural and environmental issues is particularly visible through its leadership in Horizon Europe programs and interdisciplinary collaborations. The university fosters alliances between academia, communities, and practitioners, responding to contemporary crises with integrated approaches that combine heritage, innovation, and civic participation.

The School of Architecture leads several initiatives focused on cultural heritage preservation, participatory design, and inclusive urban regeneration. These efforts reflect NTUA's broader commitment to open science, technological transfer, and applied research that bridges academic insight with real-world impact.

Through its sustained contribution to research-driven cultural policy and creative experimentation, NTUA stands as a key partner in European efforts to cultivate sustainable, just, and culturally enriched futures.

### 3.6 Italy: BJCEM - Biennale des Jeunes Créateurs de l'Europe et de la Méditerranée

#### National Context

Italy faces a complex array of climate challenges: glacial retreat in the north, extreme heat and drought in central regions, and coastal erosion and sea-level rise in the south. It also grapples with rural depopulation, aging infrastructure, and the preservation of cultural landscapes under ecological stress. Italy's strong heritage sector has only recently begun to incorporate climate resilience into its strategic frameworks.

#### Organizational Profile

**City of Operation:** Turin, Italy

**Other Locations of Activity:** Milan, Procida, Nova Gorizia, and across the Euro-Mediterranean region

**Location (Map Pin):** 45°04'18.0"N 7°40'23.3"E

**Established:** 1984

**Type:** Transnational cultural network

**Legal Structure:** Non-profit association

**Number of Employees:** 2 employees + 2 external collaborators

**Website:** <https://www.bjcem.org>

BJCEM is an international network championing the mobility, artistic expression, and intercultural exchange of emerging artists from Europe and the Mediterranean. With a longstanding commitment to social engagement and transnational collaboration, BJCEM positions young creators at the forefront of dialogue, innovation, and change across cultural and environmental landscapes.

Beyond its flagship event—Mediterranea, a transnational biennale that brings together hundreds of artists across disciplines—BJCEM maintains an active year-round presence through research, residencies, and co-creation projects. These initiatives focus on urgent contemporary themes such as sustainability, climate justice, and the evolving role of art in society.

Environmental activism has increasingly shaped BJCEM's mission and programming. As a key partner in Food Wave, the organization mobilized young people through artistic interventions on climate action and sustainable food systems. One of its notable outcomes was *Every Food is a Landscape*, a collective exhibition exploring the environmental, cultural, and political dimensions of food and its role in shaping shared ecosystems and identities.

Currently, BJCEM is a partner in Feed the Future, a Creative Europe-funded project that addresses food sovereignty and climate resilience through community-based art practices. Its ongoing

involvement in *Contested Desires: Constructive Dialogues* reflects a parallel commitment to social and environmental justice, as it revisits colonial histories and cultural heritage through artistic inquiry.

In its operational ethos, BJCEM prioritizes low-impact artistic production, material reuse, and locally embedded programming. The network supports climate-conscious storytelling and encourages artists to envision more just, regenerative futures. As both a platform and a partner, BJCEM continues to connect art, ecology, and activism across diverse cultural and geographic contexts.

## Values

Mobility · Intercultural exchange · Youth empowerment · Social and environmental awareness

## Focus Areas

- Artist mobility and early-career support
- Intercultural dialogue and cross-border cooperation
- Environmentally themed programming
- Civic participation through contemporary art

## Ways of Working

BJCEM organizes open calls for young artists, frequently centering on themes such as climate change, food systems, and ecological transformation. Many selected artists already engage with sustainability through performance, video, and installation. While there is no formal sustainability policy, the organization strives to embed ecological values through everyday decisions, recognizing the constraints imposed by limited staff capacity and funding.

## Funding & Structure

BJCEM operates through a mix of membership fees and funding from project-based sources (EU, national and local administrations). The members —ranging from city governments to universities— co-develop and host events, nominate artists, and share production responsibilities. Financial constraints often affect sustainable choices, particularly in travel planning and infrastructure investment.

The network's flexible governance model supports responsiveness but also makes it harder to coordinate long-term environmental strategies. Strong partnerships with municipalities such as Milan have enabled access to public spaces and expanded programming capacity.

## Vision

BJCEM envisions a sustainable future where young artists are central actors in shaping cultural responses to ecological and social challenges. As a connector across borders and sectors, it aims to grow into a greener and more inclusive cultural network.

## 4. National Contexts

### 4.1 Key Environmental Challenges

#### Cyprus

Cyprus faces several urgent environmental challenges linked to climate change, with significant impacts on ecosystems, public health, and the economy.

#### ***Increasing Temperatures and Heatwaves:***

The island is experiencing rising average temperatures accompanied by more frequent and intense heatwaves. These extreme heat events elevate health risks, particularly for vulnerable populations such as the elderly and outdoor workers, and increase energy consumption due to higher cooling demands. Additionally, periodic Saharan dust intrusions worsen air quality, amplifying respiratory problems and further stressing health systems.

***Water Scarcity:*** Water availability is a critical concern. Declining rainfall over the past decades, combined with population growth, tourism expansion, and higher irrigation demands, has led to chronic water shortages. Reservoir levels have dropped substantially, forcing reliance on energy-intensive desalination plants. The government is considering water rationing measures for 2025, reflecting the severity of this issue and raising sustainability concerns.

***Urban Heat Island Effect:*** Urban centers like Nicosia suffer from the urban heat island phenomenon, where large expanses of concrete, brick, and asphalt absorb and re-radiate up to 80% of solar radiation, causing localized temperature increases compared to rural areas. This effect intensifies the impacts of heatwaves, contributing to thermal discomfort and higher energy use in cities.

***Biodiversity and Ecosystem Threats:*** Climate change is threatening Cyprus's biodiversity, with significant risks of species loss due to water scarcity and heat stress. These pressures reduce forest productivity and increase susceptibility to wildfires, further degrading ecosystems. The fragility of local habitats is compounded by changing rainfall patterns and desertification trends, jeopardizing the island's natural heritage.

#### Spain

Spain is confronting a range of serious environmental challenges driven by climate change, which are impacting its ecosystems, public health, agriculture, and urban areas. The following outlines the most pressing issues facing the country:

#### ***Rising Temperatures:***

Spain's average temperature has increased by approximately 1.7°C since 1850, surpassing the global average. The current rise of about +1.2°C contributes to significant climate stress across the country.

### ***Increased Frequency of Heatwaves:***

Since 1980, heatwaves have tripled in frequency, intensifying health risks—especially for vulnerable populations—and causing substantial agricultural losses. This trend worsens desertification risks, affecting over 75% of Spain’s land, particularly in Andalusia, Murcia, and Castilla-La Mancha.

### ***Desertification and Land Degradation:***

Driven by extreme weather events and unsustainable land management, nearly 20% of Spanish territory is severely affected by desertification, as reported by the national Action Program against Desertification.

### ***Water Scarcity:***

Water availability has decreased by around 20% since 1980, leading to water restrictions in regions such as Catalonia and Andalusia. Declining average annual rainfall over the last century has compounded these shortages, despite some replenishment from extreme rainfall events, such as those in March 2025.

### ***Extreme Weather Events and Flooding:***

The occurrence of isolated high-altitude depressions (DANA) has caused catastrophic flooding, with severe events impacting Valencia and Murcia in 2019, 2023, and 2024.

### ***Biodiversity Loss:***

The Iberian Peninsula is one of Europe’s most vulnerable areas to biodiversity decline. Rising sea temperatures threaten marine ecosystems, while many terrestrial species remain critically endangered.

### ***Wildfires:***

Wildfire intensity and frequency have increased dramatically, with 2022 being the worst year on record. Over 310,000 hectares burned, representing nearly 40% of the total forest loss across the EU.

### ***Sea Level Rise and Coastal Risks:***

Coastal cities like Barcelona and Cádiz face rising sea levels, which threaten infrastructure and increase the risk of coastal erosion.

### ***Additional Challenges:***

Air pollution and intensive agricultural practices exacerbate Spain’s climate vulnerabilities, affecting public health and ecosystem resilience.

## **France**

France, particularly its southeastern regions and the city of Marseille, faces multiple pressing environmental challenges driven by climate change that impact public health, biodiversity, and the economy. The key issues include:

### ***Rising Temperatures and Heatwaves:***

More frequent and intense heatwaves are increasing average temperatures, particularly in Marseille where the urban heat island effect exacerbates extreme summer temperatures. Dense infrastructure and lack of greenery cause the city to retain heat, leading to higher mortality rates, especially among the elderly and vulnerable populations, along with increased energy demand for cooling.

### ***Water Scarcity and Rainfall Deficits:***

The Sud region has experienced significant rainfall deficits, with 2022 being one of the driest years recorded. The Durance River, a vital water source, faces pressure from climate change and overuse, leading to water restrictions for households and agriculture. These conditions increase desertification risks, especially in inland areas, and spark potential conflicts over water usage among urban, agricultural, and industrial sectors.

### ***Wildfires:***

Rising temperatures and drought have fueled devastating wildfires in departments such as Bouches-du-Rhône, Var, and Alpes-Maritimes. Protected natural areas like Parc National des Calanques are particularly vulnerable due to dry vegetation and human activity. The wildfires cause biodiversity loss, habitat destruction, public health issues from smoke pollution, and economic damage to tourism and local communities.

### ***Coastal Erosion and Sea Level Rise:***

Mediterranean coastlines face accelerating coastal retreat driven by rising sea levels and stronger storms. Infrastructure including roads and ports in the Sud Region suffer damage, coastal land is lost, and tourism and fishing industries face economic disruptions. The need for costly coastal protection measures is increasing.

### ***Air and Marine Pollution:***

Marseille experiences high levels of nitrogen dioxide (NO<sub>2</sub>) and particulate matter pollution from heavy traffic, industrial activity, and shipping emissions. Marine pollution—including plastic waste, industrial runoff, and sewage discharge—threatens marine ecosystems, leading to biodiversity degradation, fisheries decline, and impacts on tourism. These pollution issues contribute to higher respiratory illnesses among residents and increased pressure on authorities to enforce stricter controls.

### ***Loss of Marine Biodiversity:***

Rising sea temperatures, pollution, and urbanization cause habitat loss in key protected areas such as the Camargue, Calanques National Park, and Luberon Natural Park. Changes in marine ecosystems include species migration and coral degradation, disrupting the ecological balance essential for tourism and natural heritage.

### **Greece**

Greece is increasingly affected by a complex interplay of environmental challenges driven by climate change, including rising temperatures, extreme weather events, biodiversity loss, and land degradation, all of which threaten ecosystems, the economy, and public health.

### ***Increasing Temperatures and Heatwaves:***

Greece has experienced a steady rise in average temperatures, contributing to more frequent and intense heatwaves. These heatwaves increase the risk of wildfires, strain energy systems due to higher cooling demand, and pose severe health risks, particularly to vulnerable populations.

### ***Wildfires and Forest Loss:***

Greece has seen some of the worst wildfires in recent history. The 2021 wildfire season was catastrophic, with over 125,000 hectares burned, including large parts of Evia Island, the Peloponnese, and Attica regions. These fires destroyed vast forests and agricultural lands, forcing evacuations and causing significant economic and ecological damage. Wildfires are often worsened by prolonged droughts and rising temperatures.

### ***Droughts and Water Scarcity:***

The country frequently suffers from prolonged drought periods, reducing water availability for agriculture, industry, and domestic use. Over-extraction of groundwater coupled with decreased rainfall has exacerbated shortages, affecting irrigation and drinking water supplies in regions like Thessaly, Crete, and the islands.

### ***Flooding and Soil Erosion:***

Following droughts, Greece experiences episodes of intense rainfall and flash floods. The Thessaly region, in particular, has faced significant flooding events in recent years, causing damage to infrastructure, agriculture, and communities. Flash floods contribute to soil erosion and land degradation, further impacting ecosystems and human livelihoods. Notably, in September 2023, Storm Daniel brought unprecedented rainfall to Thessaly, leading to catastrophic floods that inundated entire villages, destroyed farmland, and resulted in significant loss of life .

***Biodiversity Loss and Desertification:*** Greece's rich biodiversity faces threats due to habitat loss from fires and land degradation. Desertification affects large areas, especially in southern Greece and the islands, reducing soil fertility and ecosystem health.

### ***Environmental Degradation and Land Use Pressures:***

Urban expansion, intensive agriculture, and infrastructure development add to environmental pressures, fragmenting habitats and increasing pollution. Coastal erosion caused by sea-level rise threatens ecosystems and settlements along the Aegean and Ionian coastlines.

### **Italy**

Italy is increasingly vulnerable to the impacts of climate change, with mounting evidence of rising temperatures, intensified extreme weather events, biodiversity decline, and growing environmental degradation.

### ***Rising Temperatures and Heatwaves:***

Italy has experienced a temperature increase of over 1.5°C since pre-industrial times, a trend confirmed by ISPRA. Heatwaves are becoming more frequent and prolonged, particularly in urban areas like Rome and Milan. These temperature spikes negatively impact public health, especially among the elderly, and strain energy systems due to increased demand for air conditioning.

### ***Extreme Weather Events and Droughts:***

The intensity and frequency of extreme weather events have significantly increased. In 2022, the worst drought in 70 years caused the Po River to fall to record-low levels, threatening agriculture and water security in the north. Meanwhile, episodes of heavy rainfall have led to devastating flash floods, especially in regions like Emilia-Romagna (2023) and Liguria.

### ***Biodiversity Loss and Ecosystem Stress:***

Sensitive ecosystems such as alpine habitats, Mediterranean coasts, and wetlands are under pressure due to shifting precipitation and temperature patterns. According to the Ministry of Environment, native species face growing threats from climate stress and invasive species.

### ***Land Degradation and Urbanization:***

Italy lost 69.1 km<sup>2</sup> of natural land in 2021 alone (ISPRA), largely due to urban sprawl and infrastructure expansion. This land loss contributes to hydrogeological instability, erosion, and flood risk, especially in mountainous and coastal areas.

## **4.2 Climate Change Impacts Over the Last 20 Years**

### **Cyprus**

Over the past twenty years, Cyprus has faced increasingly severe impacts from climate change, reflecting both its Mediterranean geography and semi-arid climate. The island has witnessed rising temperatures, declining precipitation, and a greater frequency of extreme weather events, resulting in significant environmental, economic, and societal consequences. These changes are supported by a growing body of scientific and institutional research which provides critical insight into the environmental and spatial dimensions of climate change in the Cypriot context.

Temperature trends over the past two decades clearly point to a warming trajectory. Data indicate that Cyprus has already experienced an average temperature increase of approximately 1°C compared to the 1960–1990 baseline. Projections suggest that this warming will continue, with average temperatures rising by 1.3°C by 2030 and 1.6°C by 2050 if current emissions trends persist (Zachariadis 2012). The frequency and intensity of heatwaves have also risen markedly, with more days exceeding 40°C, particularly in the inland plains and urban centers like Nicosia. These patterns mirror broader Mediterranean warming trends observed by the Copernicus Climate Change Service and are particularly concerning given the island’s exposure to heat stress and limited natural water reserves (Cyprus Institute 2023).

In parallel with rising temperatures, precipitation in Cyprus has exhibited a steady decline. According to the Cyprus Energy Agency, annual rainfall has decreased by approximately 40 millimeters per decade over the past 30 years (Cyprus Energy Agency 2021). This decline is particularly evident during the crucial winter months, which typically account for the bulk of the island’s water recharge. This decrease in precipitation, combined with rising evaporation rates due to higher temperatures, has significantly aggravated water scarcity across the island. Reservoir levels have become more difficult to maintain, and the frequency of droughts has increased, placing stress on agriculture, ecosystems, and urban water supply systems.

Water scarcity stands out as one of the most pressing consequences of climate change in Cyprus. Agriculture, which accounts for a substantial share of national water use, has been particularly affected. Irrigated crops such as potatoes, citrus fruits, and vegetables are increasingly at risk due to both lower groundwater levels and reduced surface water availability. Farmers have had to adopt more drought-resilient crop varieties or switch to less water-intensive practices, but the adaptation remains uneven and under-resourced. Additionally, urban water supplies have faced growing pressure, leading to increased reliance on desalination plants and water reuse programs (Zachariadis 2012; Cyprus Institute 2023).

The ecological impacts of climate change are also significant. Cyprus hosts a range of endemic species and habitats that are particularly sensitive to climatic shifts. The warming climate and changes in seasonal rainfall have resulted in altered plant phenology and species migration to higher altitudes or cooler northern slopes. Wetland habitats, such as those at Larnaca Salt Lake and Akrotiri Marsh, have been increasingly threatened by reduced inflow and evaporation, jeopardizing bird populations and aquatic biodiversity. According to the Cyprus Institute, these stressors compound other human-induced pressures like land use change, habitat fragmentation, and pollution, placing the island’s biodiversity at heightened risk.

Urban environments are also undergoing substantial transformation in the face of climate change. Cities like Nicosia, Limassol, and Larnaca are grappling with the urban heat island effect, which amplifies nighttime temperatures and exacerbates energy demand for cooling. Public health risks are on the rise, especially among vulnerable groups such as the elderly and those with pre-existing conditions. Municipal governments have begun implementing adaptation strategies that include increasing green urban infrastructure, promoting energy-efficient building design, and improving emergency response systems for heat-related events (Community Avli 2023).

In response to these mounting challenges, Cyprus has developed several national and regional climate policy frameworks. The National Adaptation Strategy, adopted by the Ministry of Agriculture, Rural Development and Environment, prioritizes action in key sectors such as water management, agriculture, public health, and biodiversity conservation. The strategy emphasizes integrated water resource management, improved monitoring systems, and community-level engagement in adaptation planning (Cyprus Energy Agency 2021).

In parallel, the country has accelerated its transition toward renewable energy to curb greenhouse gas emissions and enhance energy security. Cyprus enjoys high solar potential, and efforts to expand photovoltaic installations have been significant in recent years. These initiatives are aligned with EU directives under the European Green Deal and supported by national incentives for energy efficiency and decarbonization in transport and building sectors.

Scientific research plays a critical role in shaping Cyprus's climate responses. Institutions such as the Cyprus Institute and the Cyprus University of Technology have been instrumental in generating localized climate models, vulnerability assessments, and policy recommendations. Their work, often supported by EU programs like Horizon Europe and Copernicus, provides the evidence base for informed decision-making and long-term resilience planning.

In conclusion, the last twenty years have underscored Cyprus's vulnerability to the multifaceted impacts of climate change. Rising temperatures, declining precipitation, water scarcity, and biodiversity loss are reshaping the island's environment and economy. While policy measures and renewable energy initiatives have gained momentum, continued investment in science-based adaptation, ecosystem restoration, and climate-resilient infrastructure will be essential to safeguard Cyprus's future.

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## Spain

Over the past two decades, Spain has experienced increasingly severe climate change impacts, making it one of Europe's most climate-vulnerable countries. Rising temperatures, altered precipitation patterns, intensifying droughts, and extreme weather events have converged to threaten the nation's environmental stability, biodiversity, and socio-economic infrastructure. The evidence drawn from national meteorological data, scientific research, and European Union climate observatories underscores the urgency of enhancing Spain's adaptive capacity.

Spain's average temperature has risen by approximately 1.7°C since the pre-industrial period, a rate that exceeds the global average (AEMET 2023). The period between 2011 and 2021 was the warmest decade on record, and 2022 was the hottest year ever documented, followed closely by 2023 and 2024 (Copernicus Climate Change Service [C3S] 2023). The increase in temperature has manifested in a tripling of heatwave events since 1980. For example, during July 2022, Spain experienced extreme heat exceeding 45°C in multiple regions, with implications for public health, energy demand, and infrastructure resilience. In 2024, the average annual temperature reached 15°C, positioning it as the third warmest year since records began.

The direct impact of extreme heat has been observed in the surge in electricity consumption due to increased reliance on air conditioning. Spain's energy grid is under mounting pressure during summer months, particularly in urban and southern coastal regions, highlighting the intersection between climate change and energy infrastructure.

Spain faces chronic water stress, exacerbated by declining precipitation and increased evaporation rates. Over the last 50 years, annual precipitation has dropped by 15–20% in various regions, especially in the southern half of the country (Ministerio para la Transición Ecológica y el Reto Demográfico [MITECO] 2022). Reservoirs such as those in the Guadalquivir and Tagus river basins have seen water storage fall below 35% capacity during prolonged droughts.

The desertification process now affects over 75% of Spain's land area, with 20% already classified as severely degraded. This environmental degradation is most evident in Andalusia, Murcia, and Castilla-La Mancha, where poor soil quality and water scarcity have hindered agricultural productivity and rural livelihoods.

While 2025 witnessed episodes of intense rainfall, including during Storm Martinho, the inconsistent nature of precipitation—with alternating periods of intense rain and long droughts—poses new challenges for water management. Despite recent increases in reservoir levels (65.8% in March 2025), the variability of water availability underscores Spain's vulnerability to both water scarcity and flood risk.

Spain has also seen an increase in the frequency and intensity of extreme weather events, particularly DANA (Depresión Aislada en Niveles Altos) storms. In September 2019, such an event caused record-breaking rainfall in Murcia and Valencia, displacing thousands and causing over €2 billion in damages (Copernicus EMS 2019). A more catastrophic event occurred in October 2024, when another DANA storm brought unprecedented rainfall—up to 300 mm per hour—to several regions, leading to catastrophic flooding.

The October 2024 floods became one of the most devastating natural disasters in Spanish history, affecting 306,000 people across 103 municipalities, resulting in 225 fatalities and extensive material losses: 11,242 homes and 141,000 vehicles damaged, with economic losses approaching €18 billion (Guy Carpenter 2024). This event underscores the vulnerability of Spain's infrastructure and emergency response systems to increasingly volatile climatic conditions.

Climate change has exerted severe pressure on Spain's biodiversity. The Iberian lynx, among the world's most endangered species, has seen its habitat shrink by 35% due to climate-induced desertification and habitat fragmentation (WWF España 2023). In marine ecosystems, especially the

Mediterranean Sea, rising sea surface temperatures have led to significant ecological shifts. Jellyfish blooms have increased by 400%, driven by warming waters and the reduction of natural predators through overfishing (C3S 2022).

Such ecological changes reflect broader disruptions in ecosystem services, such as pollination, fisheries, and soil fertility, with cascading effects on agricultural output, tourism, and public health.

One of the most visually and environmentally destructive consequences of climate change in Spain has been the rise in wildfires. In 2022 alone, Spain lost more than 310,000 hectares of forest—accounting for nearly 40% of all wildfire damage across the EU (EFE Verde 2023). These fires are fueled by prolonged droughts, high temperatures, and forest mismanagement.

However, recent years have shown improvement, with a notable reduction in wildfire extent as of 2025, partly due to increased prevention measures and wetter-than-average winters (Copernicus EFFIS 2025). Nonetheless, the threat remains high during dry summers, especially in regions with accumulated forest biomass.

Recognizing these threats, Spain has launched several policy frameworks to address climate vulnerabilities. The National Energy and Climate Plan (NECP) and the National Climate Change Adaptation Plan (PNACC) serve as pillars for Spain’s long-term resilience strategy. These align with broader EU initiatives, such as the European Green Deal and Climate Adaptation Mission, promoting cross-border cooperation, funding for green infrastructure, and enhanced climate data sharing through platforms like Copernicus.

Effective adaptation will require continued investment in early warning systems, water conservation infrastructure, urban heat mitigation, and ecosystem restoration. Integrated spatial planning—accounting for flood-prone areas, drought corridors, and biodiversity hotspots—will be essential for minimizing risk and building resilience across regions.

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## France

Over the past twenty years, France has undergone profound environmental transformations directly linked to climate change. Rising temperatures, altered precipitation regimes, and increasing frequency of extreme weather events have impacted natural systems, public health, infrastructure, and key sectors such as agriculture and tourism. The spatial and environmental dimensions of these impacts are particularly evident in southern France, notably in the Provence-Alpes-Côte d’Azur (PACA) region, which serves as a microcosm of national vulnerability to climatic shifts.

Average temperatures in France have risen steadily, with an increase of approximately 0.95°C over the 20th century—exceeding the global mean—and a pronounced acceleration in the 21st century (Météo-France 2023). The year 2020 became the warmest on record, with a national average of 14.0°C. In the PACA region, warming has been especially marked, with summer temperatures rising by about 0.5°C per decade since the late 1970s. These trends are consistent with broader European observations, and projections by the French High Council for Climate anticipate an additional rise of 1.9°C to 4.6°C by 2100 under different emissions scenarios, with summer temperatures potentially increasing by up to 5.7°C (Haut Conseil pour le Climat 2023).

One of the most visible outcomes of this warming trend is the growing frequency and intensity of heatwaves. The 2003 heatwave, a landmark event that caused over 15,000 deaths in France, has been followed by multiple severe heat events—particularly in 2019 and 2022. These episodes have intensified the urban heat island effect in cities like Marseille and Nice, increasing public health risks and energy demand for cooling. In response, municipal authorities have prioritized green infrastructure, such as planting urban trees and redesigning buildings to improve thermal efficiency, as outlined in regional adaptation strategies supported by initiatives like Nature4CityLife (Nature4CityLife 2023).

Changes in precipitation patterns further compound France’s climate challenges. While annual precipitation totals have remained relatively stable nationally, seasonal and regional distributions have shifted significantly. In the PACA region, summer rainfall has declined, while autumn and winter precipitation has increased by 5–35%, depending on locality (Climate-ADAPT 2023). This imbalance heightens the risk of summer droughts and winter floods. Such dual risks have materialized with increasing severity: for instance, the devastating floods triggered by Storm Alex in October 2020 caused loss of life and widespread infrastructure damage in the Alpes-Maritimes, disrupting transport, utilities, and housing across multiple communes.

Water resources in southern France are particularly strained under these evolving conditions. Reduced summer rainfall, increased evapotranspiration, and earlier snowmelt in alpine zones have led to lower river flows during peak agricultural and touristic seasons. As a result, water availability for irrigation, hydropower, and domestic use is under growing pressure. France’s national adaptation plan includes measures such as the reuse of treated wastewater, improved irrigation efficiency, and regional water governance reforms to address this multifaceted threat (Ministère de la Transition écologique 2021).

Sea level rise presents another significant spatial dimension of climate risk, especially along France’s Mediterranean coastline. The PACA region, with its densely populated coastal zones and critical infrastructure, faces mounting challenges from erosion, storm surges, and permanent inundation.

Projections indicate a potential sea-level rise of at least one meter by 2100, threatening over 140,000 homes and 80,000 residents in low-lying areas (Copernicus CDS 2023). Key economic sectors, including tourism and maritime transport, are directly exposed to these hazards, necessitating investment in protective infrastructure, coastal retreat strategies, and ecological restoration of dunes and wetlands.

France's biodiversity has also been deeply affected. The Sud region, a recognized biodiversity hotspot, is seeing ecological shifts as species migrate toward higher altitudes or latitudes in response to warming. Forests are increasingly affected by pests such as bark beetles and disease outbreaks, while wetlands are under threat due to changing water regimes. Marine ecosystems in the Mediterranean are particularly vulnerable to temperature and salinity changes, with direct impacts on fisheries, coral habitats, and endemic species.

Climate variability has also taken a toll on agriculture. In 2024, extreme weather conditions—including drought and unseasonal frost—led to a 30–40% drop in winter crop production in certain areas of southern France, severely affecting cereal, grape, and olive yields. Farmers have begun shifting sowing dates, diversifying crops, and adopting precision irrigation, but such measures remain unevenly applied and often cost-prohibitive without targeted public support.

In response to these growing risks, France has developed several policy tools at both national and regional levels. The National Adaptation Plan for Climate Change (PNACC) outlines a cross-sectoral framework to guide resilience planning. Additionally, France participates actively in EU-wide initiatives, including Climate-ADAPT and Copernicus Climate Services, which provide data, projections, and policy integration tools to support evidence-based decision-making across regions.

As climate impacts accelerate, France's experience over the past twenty years highlights the need for place-based adaptation strategies, robust climate monitoring systems, and sustained investment in both ecological and infrastructural resilience. The ongoing transformation of its landscapes, cities, and rural areas underlines the urgency of embedding climate considerations into all levels of planning and governance.

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## Greece

Over the past two decades, Greece has undergone significant and measurable climatic changes due to the impacts of global climate change. The country, known for its temperate Mediterranean climate, is increasingly exposed to extreme weather events such as intense heatwaves, droughts, floods, and wildfires. These developments are altering the country's environmental and spatial dynamics, threatening ecosystems, infrastructure, human health, and cultural heritage. A growing body of academic and institutional research highlights the accelerating nature of these changes and the urgent need for adaptation and mitigation measures.

One of the most pronounced trends in Greece is the rise in temperatures. According to long-term data, the average temperature across Greece has increased by approximately 1.5°C over the past 30 years, with some regions exceeding 2°C increases (Founda et al. 2023). This aligns with broader Mediterranean trends and surpasses the global average rise of 1.1°C–1.2°C in the same period. The number of frost days—once a common winter occurrence—has steadily declined, while summer days with temperatures exceeding 35°C have become more frequent. The year 2024 marked the hottest on record globally, with Greece among the countries experiencing prolonged heatwaves that significantly affected urban centers, agriculture, and public health.

In addition to warming, Greece has witnessed notable changes in precipitation patterns. Contrary to some Mediterranean areas experiencing drying, a large part of Greece has seen a slight increase in annual precipitation. However, this is accompanied by more erratic rainfall, characterized by intense, short-duration downpours that increase the risk of flash flooding. An analysis of rainfall data shows that 86% of Greek territory now experiences more days with heavy rainfall (>20 mm), even as the trend in consecutive dry days remains statistically non-significant in much of the country (Tsiouri et al. 2023). This irregularity creates a dangerous climate paradox: increased flood risk during storm events, and prolonged drought stress during dry spells.

One of the most visible consequences of climate change in Greece is the escalation of wildfires. The 2023–2024 fire seasons were particularly destructive. In 2023, the Evros region in northeastern Greece experienced the largest wildfire ever recorded in Europe, burning approximately 96,000 hectares (Copernicus EMS 2023). These fires were driven by a combination of heatwaves, low humidity, accumulated fuel due to poor forest management, and strong winds - conditions exacerbated by climate change. The Greek dry season, stretching from May through October, has lengthened and become more intense, leading to more frequent and severe fire outbreaks. Notably, July and August have become high-risk months, with extreme temperatures and persistent winds forming a volatile mix that often overwhelms fire management systems.

The spatial impacts of climate change in Greece are significant. Coastal areas face increasing risks due to sea-level rise and storm surges, particularly in low-lying urbanized zones such as Thessaloniki and parts of Athens' coastal belt. Island ecosystems, from the Cyclades to the Ionian islands, are particularly vulnerable to water scarcity and loss of biodiversity, while mountain regions such as Pindus face declining snow cover and altered hydrological cycles. Additionally, climate change has begun to affect tangible cultural heritage sites. Sites such as Delphi, Mycenae, and the Acropolis are increasingly threatened by extreme weather events, including heavy rainfall and wildfires, which can erode or damage ancient structures.

In response, Greece has taken several strategic steps toward adaptation. The National Climate Law, passed in 2022, aims to reach net-zero emissions by 2050 and includes sectoral targets for renewable energy, transportation, and building efficiency. Regional adaptation action plans (RAAPs) have been developed for each of the country's thirteen administrative regions, focusing on risk assessment and localized adaptation measures. These plans incorporate Copernicus climate data and national meteorological inputs to inform decisions on water resource management, civil protection, and urban planning.

Additionally, academic institutions and national bodies such as the Hellenic National Meteorological Service (HNMS) and the National Observatory of Athens contribute to ongoing climate monitoring and research. For instance, the 2023 study *Exploring Recent (1991–2020) Trends of Essential Climate Variables in Greece* offers comprehensive trend analyses for temperature, rainfall, humidity, and wind data, facilitating a better understanding of Greece's evolving climate system (Tsiouri et al. 2023). These efforts are essential for the country to anticipate future risks and strengthen climate resilience.

In conclusion, climate change is reshaping Greece's environmental landscape in profound ways. Rising temperatures, extreme weather events, wildfires, and shifting precipitation patterns pose serious challenges to both natural systems and human society. While the country has begun to implement comprehensive climate action policies, the pace and scale of adaptation must accelerate to match the severity of projected impacts. Continued investment in scientific research, infrastructure resilience, and climate-smart planning will be vital to safeguarding Greece's ecosystems, cultural heritage, and communities in the decades to come.

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## Italy

Over the past two decades, Italy has experienced profound environmental transformations directly linked to climate change, affecting ecosystems, agricultural productivity, infrastructure, and public health. The national climate has shifted toward higher average temperatures, more frequent and intense extreme weather events, and altered hydrological and ecological dynamics. These changes are increasingly documented in scientific studies and national reports, underlining the urgency of coordinated policy responses.

Between 2003 and 2022, Italy's average annual temperature rose by approximately 1.2°C compared to the 1971–2000 baseline, with northern regions such as the Po Valley experiencing increases up to 1.6°C. According to data from the Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), 20 of the hottest years ever recorded in the country occurred within this period. Major urban centers like Milan, Bologna, and Florence have recorded persistent heatwaves, particularly in the summers of 2003, 2015, 2022, and 2023. These heat events have heightened health risks—especially for vulnerable populations such as the elderly—and have sharply increased energy demand for cooling, placing pressure on both infrastructure and energy systems (ISPRA 2023).

Climate change has also driven an increase in hydrogeological hazards. Intense rainfall events have become more frequent and severe, leading to flash floods and landslides across several Italian regions. Catastrophic weather incidents include the Liguria and Tuscany floods in 2011, Cyclone Cleopatra in Sardinia in 2013, and the devastating Emilia-Romagna floods in 2023, which caused widespread infrastructure damage and population displacement. At the same time, droughts have grown in frequency and intensity. The Po River, Italy's most important waterway, reached its lowest level in 70 years in 2022, jeopardizing agriculture, energy production, and water supply systems in northern Italy (ISTAT 2024; Copernicus 2023).

Agriculture has been particularly vulnerable to these changes. Fluctuating weather conditions, including late frosts, heatwaves, and irregular rainfall, have disrupted planting cycles and harvests. For example, the spring frost of 2018, followed by heatwaves in 2017 and 2022, led to widespread crop failures. In 2023, agricultural output declined by 3.9%, with permanent crops such as grapes and olives showing losses above 11%. Wine production dropped by 17%, a significant blow to one of Italy's most iconic and economically valuable sectors. In the south, prolonged drought conditions and rising temperatures have contributed to increased pest outbreaks, further impacting yields and rural livelihoods (ISTAT 2024).

Climate-induced changes have also taken a toll on Italy's biodiversity and ecosystems. According to the Ministry of the Environment and Energy Security (MASE), glacier retreat in alpine regions has accelerated, with protected areas like Gran Paradiso and Stelvio National Parks reporting a 30–40% reduction in glacial surface since 2000. Ecosystem shifts have also been observed in wetlands and coastal zones, where salinization, habitat loss, and invasive species are increasingly common. Rising sea levels and more frequent storm surges have led to coastal erosion along over 40% of Italy's sandy shorelines, particularly in the regions of Emilia-Romagna, Veneto, and Lazio. The Venice Lagoon and Po Delta are also experiencing subsidence and saltwater intrusion, endangering both natural ecosystems and cultural heritage sites (MASE 2022; ISPRA 2023).

Land degradation is another major concern. The expansion of urban and industrial areas has resulted in the sealing of over 1,200 km<sup>2</sup> of permeable soil between 2006 and 2021. This land-use change, concentrated especially in the Po Valley and along the coasts, has increased runoff and reduced groundwater recharge. Southern regions such as Apulia, Basilicata, and Sicily face compounding pressures from soil erosion and desertification, intensified by prolonged dry spells and inappropriate land management (ISPRA 2023).

Public health impacts are growing as well. Heat-related illnesses have become more frequent, particularly during the summers of 2015, 2017, and 2022. Urban areas face amplified risks due to the heat island effect, which compounds heat exposure for city dwellers. Furthermore, climate change has contributed to the spread of vector-borne diseases such as West Nile virus, especially in the Po Valley where warmer and wetter conditions are becoming more common (WHO 2021; ISS 2022).

In response to these challenges, Italy has developed key policy instruments. The Strategia Nazionale di Adattamento ai Cambiamenti Climatici (SNAC), approved in 2015, serves as the country's strategic framework for addressing climate-related risks. It is complemented by the forthcoming Piano Nazionale di Adattamento ai Cambiamenti Climatici (PNACC), which emphasizes the integration of climate considerations into spatial planning, water management, agriculture, and infrastructure. Italy also benefits from the Copernicus Climate Change Service, which provides high-resolution climate data essential for local adaptation planning and policy-making (Presidenza del Consiglio 2015; Copernicus 2023).

Italy's experience illustrates how climate change is not a distant threat but a current and complex reality that affects all regions and sectors. Coordinated actions—anchored in robust scientific evidence, targeted investments, and multilevel governance—are essential to build resilience and protect ecosystems, communities, and the national economy.

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## 4.3 Major Environmental Disasters and Local Responses

### Cyprus

#### Major Environmental Disasters

- **Limassol Wildfires (July 2021):** Originating near the village of Arakapas on July 3, 2021, amid a heatwave with temperatures exceeding 40 °C, these wildfires rapidly spread across the Limassol District. Four Egyptian workers tragically lost their lives, over 55 square kilometers of forest and farmland were destroyed, and entire communities were evacuated. It was one of the most devastating fire events in Cyprus’s recent history.
- **Nicosia Floods (2015):** An intense rainfall event caused widespread flooding in the capital, submerging streets, disrupting traffic, and damaging buildings. Emergency services were stretched thin as residents in several areas had to evacuate or were temporarily trapped in their homes.
- **Cyclone Julia Floods (February 2012):** Cyprus was affected by heavy rains from Cyclone Julia, leading to flash floods in low-lying areas, damage to road infrastructure, and localized soil erosion.
- **Droughts (2018, 2023–2024):** Consecutive dry winters, culminating in the 2023–2024 season—the driest in 50 years—reduced dam levels to just 25% of their capacity. In 2018, Cypriot farmers also faced strict restrictions on public water use, intensifying competition between agricultural, domestic, and tourism demands.
- **Troodos Ice Storm (2018):** Severe winter conditions in the Troodos Mountains brought heavy snow and ice, cutting off villages and causing power outages. Roads became impassable, delaying emergency and utility services for days.

#### Response and Recovery Actions

Cyprus has seen a growing ecosystem of institutional and grassroots responses to climate-related disasters. *The Cyprus Environment Foundation (CEF)* plays a key role in supporting local conservation initiatives, directing funding to effective, community-led projects with transparent oversight. Urban greening efforts, such as *Reforest Nicosia*, contribute to climate mitigation by increasing biodiversity and reducing the urban heat island effect.

*BirdLife Cyprus* has been instrumental in ecological monitoring and advocacy, especially in the face of habitat loss and biodiversity threats exacerbated by wildfires and changing land use. Through bird population monitoring and public engagement, they raise awareness and push for stronger protections of critical habitats.

Innovative agricultural responses are also emerging. The *Kot-Kot Project* integrates circular farming practices by using retired hens to enhance soil health and reduce chemical input in olive groves, showing how climate-smart farming can adapt to environmental stressors like drought and soil degradation.

Civic organizations such as the *Cyprus Environmental Movement* and *Friends of the Earth Cyprus* foster environmental awareness through clean-up campaigns, workshops, and policy advocacy. The *Let's Do It! Cyprus* initiative, which mobilizes thousands of volunteers each year, reflects the strength of public participation in climate action. Similarly, *Urban Gorillas*, a cultural and architectural collective, promotes sustainable urbanism through public art installations and participatory design for greener, more livable cities.

Overall, while Cyprus's institutional and grassroots responses are gaining traction, sustained investment in integrated climate adaptation, improved emergency preparedness, and ecosystem restoration remains essential to enhance long-term resilience.

## Spain

### Major Environmental Disasters

- **Droughts (2004–2009, 2015–2019, 2022–2023):** Prolonged droughts have impacted large regions such as Andalusia, Catalonia, and Castilla-La Mancha. The 2022–2023 drought was the most severe in recent decades, with reservoir levels dropping below 30% and agricultural losses mounting due to water scarcity.
- **Heatwaves (2017, 2021, 2022, 2023):** Spain recorded its hottest day on August 14, 2021, when temperatures hit 47.6°C in Montoro, Córdoba. The summer of 2022 became the hottest ever recorded, contributing to over 4,600 excess deaths linked to extreme heat, mostly affecting elderly and vulnerable populations.
- **Wildfires (2012, 2017, 2022, 2023):** In 2022, wildfires burned more than 310,000 hectares, one of the worst seasons in recent memory. The Bejís fire in July 2022 (Valencia) alone destroyed over 19,000 hectares and forced the evacuation of numerous villages. Similar fires in 2023 threatened natural parks and rural settlements.
- **Floods & Storms (2019, 2020, 2021, 2023, 2024, 2025):** Torrential storms from DANA events in 2019 and 2024 caused massive flooding in Murcia, Alicante, and Almería. Storm Filomena (2021) brought unprecedented snowfall to Madrid, paralyzing transport and urban activity. In March 2025, historic rainfall led to severe flooding in Andalusia, damaging homes, farmlands, and infrastructure.

### Response and Recovery Actions

In the wake of escalating extreme weather events, Spain has undertaken a series of immediate and long-term climate resilience actions involving both institutional and grassroots actors. In response to the March 2025 floods, the Spanish Civil Protection and regional emergency services rapidly deployed over 3,000 personnel for evacuations, temporary shelters, and critical infrastructure repairs across Andalusia and Valencia. At the European level, the *EU Solidarity Fund* (EUSF) provided emergency financial assistance to support affected communities and restoration works.

To address water scarcity, the *Confederación Hidrográfica del Guadalquivir* (CHG) and other basin authorities optimized reservoir operations and redirected water flows to drought-prone areas like Almería. Although the March rains increased national reservoir capacity to 65.8%, localized shortages persist, underscoring the need for improved distribution systems.

Wildfire risk management has been intensified by the *Ministry for Ecological Transition* (MITECO) and *AEMET*, which expanded aerial surveillance and funded prescribed burns to reduce fuel loads ahead of summer. These efforts are part of a broader national wildfire prevention strategy that includes community awareness campaigns and investment in rural fire brigades.

At the policy level, Spain has committed €3.2 billion toward adaptation infrastructure, including reinforced coastal defenses and upgraded drainage systems in cities like Murcia and Valencia. Innovations in water reuse and desalination, led by the *Agència Catalana de l'Aigua* (ACA) and companies like *Aqualia*, have scaled up to reduce dependency on overdrawn aquifers.

On the technological front, the *Barcelona Supercomputing Center* (BSC) has developed AI-driven forecasting tools for improved extreme weather prediction, while the *Valencian Institute of Agricultural Research* (IVIA) introduced drought-resilient crops and smart irrigation systems, reducing agricultural water use by up to 30%.

Community-level efforts such as those led by *Mesa del Agua de Almería* have revived traditional rainwater harvesting techniques, while reforestation programs in Castilla y León are restoring fire-damaged ecosystems and increasing biodiversity.

While significant progress has been made, challenges remain—particularly related to cost, coordination, and climate volatility. Nevertheless, Spain's growing reliance on smart technologies, ecosystem-based solutions, and active civic participation signals a shift toward a more adaptive and sustainable climate response model.

## France

- **Heatwaves (2003, 2019, 2022, 2023):** The 2003 heatwave caused nearly 15,000 excess deaths in France, marking a turning point in the country's climate awareness. More recently, the summer of 2022 became the second-hottest on record, with temperatures exceeding 42°C in many areas, prompting wildfires, droughts, and increased health emergencies, especially among the elderly.
- **Droughts (2011, 2017, 2022–2023):** Prolonged dry spells have repeatedly stressed France's water systems. In 2022 and 2023, France experienced its worst droughts in decades, with over 100 municipalities running out of drinking water. Rivers like the Loire and Rhône dropped to critically low levels, affecting agriculture, hydropower, and transport.
- **Wildfires (2016, 2021, 2022, 2023):** The 2022 wildfire season devastated regions in Gironde and Provence-Alpes-Côte d'Azur. In July 2022 alone, more than 62,000 hectares were burned nationwide—the most in over a decade. Fires around Landiras (Gironde) forced thousands to evacuate and destroyed homes, forests, and vineyards.

- **Floods & Storms (2010, 2018, 2020, 2021, 2024):** Storm Xynthia in February 2010 caused catastrophic coastal flooding along the Atlantic, killing 47 people. In October 2020, Storm Alex struck the Alpes-Maritimes, with flash floods destroying bridges, roads, and entire villages. In 2024, flash floods in the southwest again caused mass displacement and infrastructure loss.

## Response and Recovery Actions

France has developed an increasingly coordinated response framework to handle the escalating impact of climate-related disasters. The *Ministère de la Transition Écologique* leads national strategies in cooperation with regional préfetures, civil protection units, and specialized agencies like *Météo-France*. During events such as the 2022 wildfires and the 2023 drought, firefighting units from across the EU were deployed through the *EU Civil Protection Mechanism*, showcasing growing European solidarity and resource pooling.

On a local scale, *ONF* (Office National des Forêts) and fire services have enhanced wildfire prevention via forest thinning, firebreak maintenance, and public education campaigns. The Vigicrues flood warning system has also been expanded to cover more river basins and provide real-time data to residents and emergency services.

Long-term resilience measures are accelerating. The *Plan National d'Adaptation au Changement Climatique* (PNACC-2) outlines adaptation strategies in key sectors like agriculture, health, and infrastructure. Implementation is supported by regional climate plans and EU-funded programs, but progress varies across territories.

Innovation has also emerged at the grassroots. Projects like “*Des arbres pour demain*” support urban tree planting across Paris and Lyon to counteract urban heat, while “*Rivière Propre*” mobilizes volunteers in flood-prone regions to clean riverbanks and improve water quality. Organizations like *France Nature Environnement* (FNE) and *Les Eco Maires* (a network of environmentally active mayors) play critical roles in civic engagement, ecological education, and policy advocacy.

While France’s emergency responses are increasingly agile and its climate policy framework is evolving, persistent challenges include administrative complexity, uneven regional capacities, and securing long-term funding. Nevertheless, the integration of national policy, local action, and EU cooperation offers a promising foundation for building climate resilience across the country.

## Greece

- **Wildfires:**
  - *2018 Attica Wildfires (Mati):* One of Greece’s deadliest disasters, resulting in 104 deaths and the destruction of thousands of homes.
  - *2021 Wildfire Crisis:* Record-breaking heat led to over 125,000 hectares burned, with major impacts in Evia and the Peloponnese.
  - *2023 Alexandroupolis Fire:* The largest recorded wildfire in EU history, devastating vast forest areas and threatening nearby settlements.

- *2024 Varnavas Wildfire*: A massive fire near Marathon reached the outskirts of Athens, prompting evacuations and extensive emergency response.
- **Heatwaves and Droughts:**
  - *2021 Heatwave*: Temperatures exceeded 47°C, marking the most intense heatwave since 1987, and significantly worsening fire conditions.
  - *2024 Water Crisis*: Severe drought led to historically low levels in Lake Mornos, Athens' primary water reservoir, revealing the long-submerged village of Kallio.
  - *2022 Winter Storm Elpis*: Brought unusual heavy snowfall to Athens, disrupting transport, power, and daily life.
- **Flooding and Storms:**
  - *Cyclone Numa (2017)*: Flooded Western Attica, killing 22 in Mandra and damaging infrastructure.
  - *2021 River Flooding*: Northeastern Greece experienced significant river overflows, affecting homes and agricultural areas.
  - *Storm Ballos (2021)*: Inundated Athens and Ionian islands, causing severe urban disruption.
  - *2025 Flash Floods*: Struck the Aegean islands (Paros, Mykonos, Crete), damaging coastal infrastructure and tourism operations.

## Response and Recovery Actions

Greece has undertaken a mix of immediate and strategic long-term responses to deal with increasingly severe environmental disasters. In terms of wildfire preparedness, the government has invested heavily in both manpower and technology. In 2025 alone, 18,000 firefighters were deployed, backed by €2 billion in new equipment—including aircraft, drones equipped with thermal cameras, and meteorological stations. The focus on early detection and rapid aerial response has significantly improved fire containment in initial stages, especially in high-risk areas like Attica and Evia.

Flood and water resource management have also seen regional and international coordination. A significant example is the 2025 bilateral agreement between Greece and Bulgaria to regulate the River Arda's flow. This supports northern Greek agriculture and compels Greece to upgrade its reservoir infrastructure, particularly in the vulnerable Evros region.

Ecosystem restoration and climate adaptation are central to national strategy. The *LIFE GrIn Project*, led by the Ministry of Environment and Energy, created a registry of urban green areas to inform development and climate resilience planning. In Maroussi and Heraklion, pilot areas have demonstrated improved urban cooling and water absorption. Complementary to this, the Attica Regional Authority partnered with the *Greek Biotope Wetland Centre* to restore wetland ecosystems, creating green corridors that support biodiversity and mitigate flood risks.

Recognizing the threat to its cultural legacy, Greece launched an international initiative in 2019—backed by *UNESCO* and the *World Meteorological Organization*—to safeguard cultural and natural heritage from climate threats. The initiative promotes cross-border research and policy development for vulnerable heritage sites.

Research and data-driven decision-making are coordinated by the *National Observatory of Athens* through the Climate Change and Impact Network. This body develops climate services, early warning systems, and a centralized environmental data platform to guide national climate policies.

Lastly, public engagement is fostered through educational initiatives like *ECOWEEK*. Since 2005, it has promoted sustainable urban design and environmental awareness among young professionals and students, encouraging a culture of proactive climate responsibility.

While these measures mark significant progress, challenges remain in governance coordination, securing long-term investment, and adapting to the increasingly unpredictable nature of climate risks. Nonetheless, Greece’s integration of scientific, civic, and institutional efforts provides a promising foundation for climate resilience.

## Italy

- **October 2011 Floods and Landslides:** Torrential rains in Liguria and Tuscany, especially in the Cinque Terre and Genoa, caused floods and landslides that killed 13 people and severely damaged cultural sites, homes, and infrastructure.
- **November 2013 Cyclone Cleopatra:** This cyclone struck Sardinia, particularly around Olbia, causing 18 deaths and extensive flooding, along with damage to roads and public services.
- **October 2018 Vaia Storm:** Hurricane-force winds and heavy rain hit the northeastern Alps, uprooting over 14 million trees across Veneto, Trentino-Alto Adige, and Friuli Venezia Giulia, drastically changing alpine ecosystems.
- **Droughts (2017 and 2022):** Severe and recurrent droughts significantly reduced water availability. In 2017, central and northern Italy experienced notable shortages, and in 2022, the Po River reached its lowest level in 70 years, leading to a state of emergency in five regions due to threats to agriculture, hydroelectric power, and drinking water supplies.
- **Heatwaves (2015, 2017, 2022, 2023):** Repeated heatwaves caused thousands of excess deaths and increased hospital admissions, especially among elderly urban residents.
- **Wildfires (July 2021, August 2023):** Large fires in Sardinia in 2021 burned over 20,000 hectares of forest, farmland, and wildlife habitats. In 2023, wildfires in Sicily and Calabria forced mass evacuations and damaged natural reserves.

## **Response and Recovery Actions**

Italy’s immediate response to extreme weather disasters is primarily coordinated by the *Civil Protection Department* (Protezione Civile), which collaborates closely with regional and local

authorities, firefighters, and volunteer networks. During major events such as the Sardinia floods of 2013, the Vaia storm in 2018, and the Emilia-Romagna floods in 2023, emergency efforts included evacuations, provision of temporary shelter, damage assessment, and deployment of specialized rescue units. This integrated system has generally been effective in managing crises, though it still faces challenges related to preparedness and proactive risk prevention.

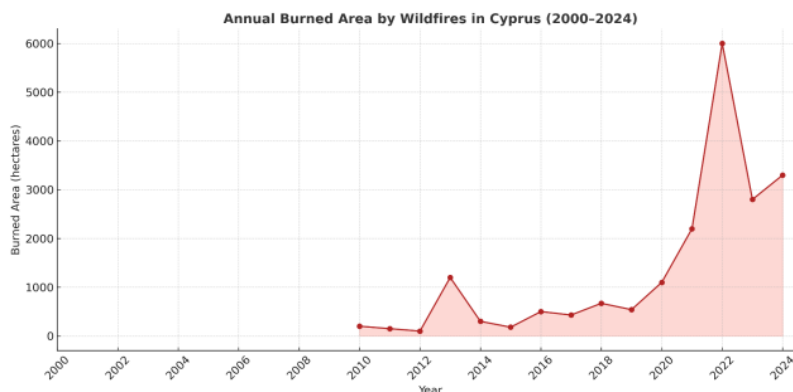
For long-term adaptation, Italy approved the *National Adaptation Plan to Climate Change* (PNACC) in December 2023, led by the Ministry of Environment and Energy Security (MASE). The plan provides a comprehensive national framework addressing vulnerabilities in water resources, agriculture, health, infrastructure, and cultural heritage. Successful implementation relies on coordinated action with regional authorities and sustainable funding streams.

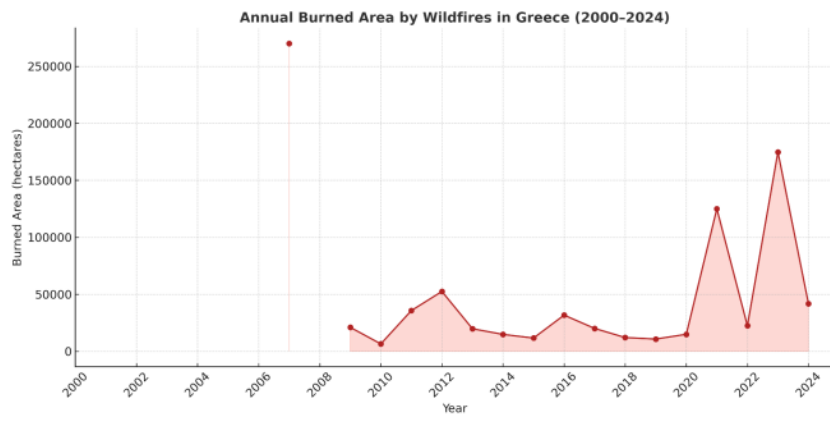
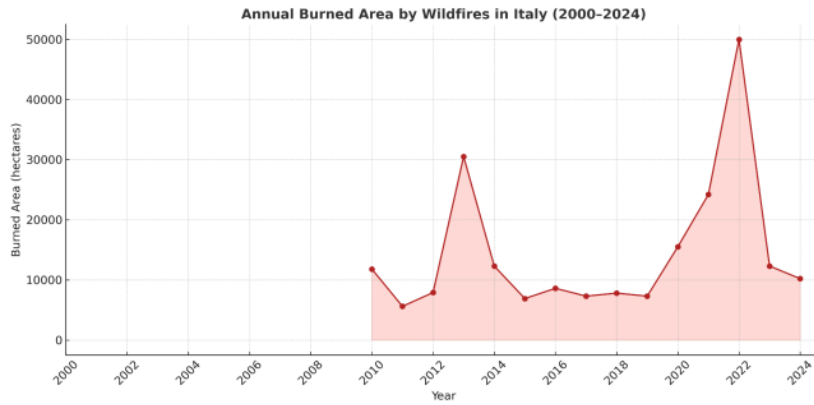
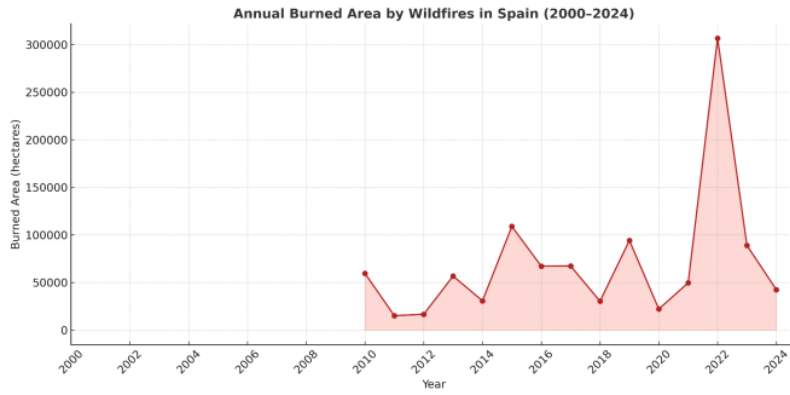
Several local initiatives have complemented national efforts. Milan’s Metropolitan City launched *Forestami*, an ambitious public project aiming to plant 3 million trees by 2030 to mitigate air pollution and urban heat island effects. This initiative involves partnerships between local governments, scientific bodies, and civil society organizations. In Liguria, the Boschi Vivi cooperative manages ecological memorial forests that blend sustainable forestry practices with biodiversity conservation. Additionally, the national environmental volunteer campaign “Puliamo il Mondo” actively engages citizens in cleanup and environmental awareness activities.

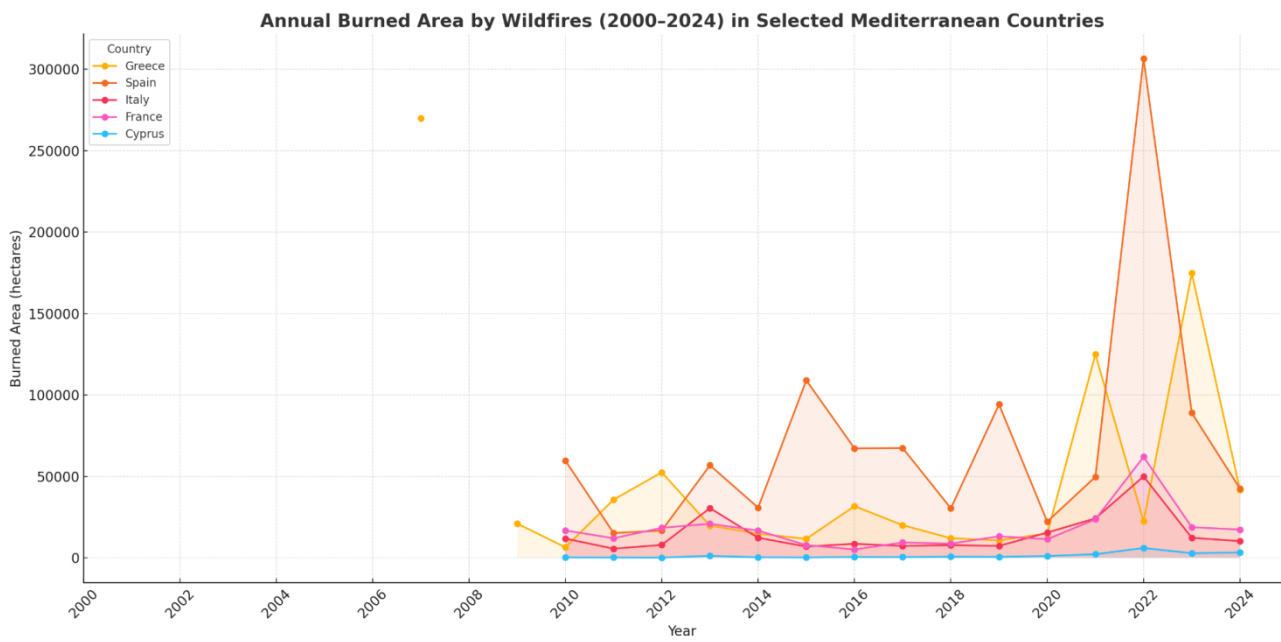
Despite progress, Italy faces ongoing challenges in securing consistent political commitment, sufficient resources, and effective governance integration. Strengthening ties among institutions, communities, and cultural stakeholders will be crucial for building a resilient and inclusive climate adaptation framework moving forward.

### Indicative Mapping of Wildfires and Burned Areas in the Mediterranean Region

The following diagrams provide an indicative overview of recent wildfires and burned areas in the Mediterranean region. They focus exclusively on wildfire events and do not represent other types of environmental disasters such as floods, storms, or droughts. These visuals are intended to illustrate trends and patterns rather than serve as a comprehensive record, highlighting the scale and frequency of fire-related impacts across different countries. The diagrams are sourced from the Copernicus unless noted otherwise.





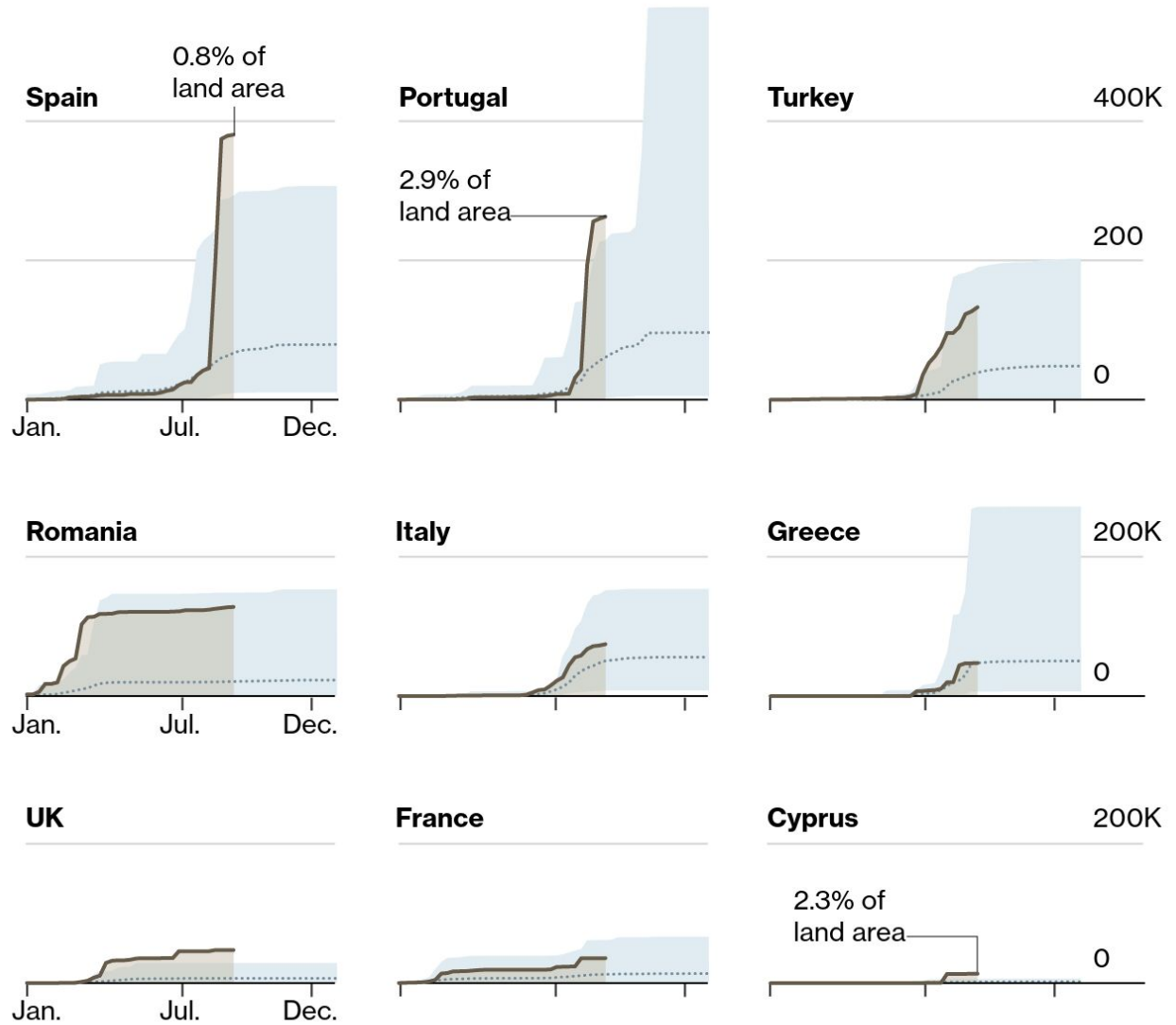


Charts showing burned areas (in hectares) per year (2000 to 2024)

## Wildfires Surged Across Europe in 2025 Summer

Cumulative hectares of land area burnt by forest fires

■ 2025 burnt area    ▨ Average 2006–2024    ■ Minimum and maximum 2006–2024



Source: European Forest Fire Information System

Note: Note: Data as of Sept. 4. Fires of approximately 30 hectares or larger

Bloomberg

#### 4.4 Innovations and Gaps in Cultural-Environmental Collaboration

Across the Mediterranean, the integration of cultural and environmental sectors remains uneven, with countries demonstrating varying levels of institutional maturity and strategic development in their collaborative efforts. While promising innovations are emerging, significant gaps persist, particularly in long-term planning, cross-sector training, and coordinated funding.

In Cyprus, cultural-environmental collaboration is still at a nascent stage, with limited institutional mechanisms in place to support sustained partnerships. While the Deputy Ministry of Culture offers general funding for the arts, there is an identified need for targeted schemes that incentivize cultural responses to environmental issues. Proposals include joint funding programs between the Cyprus Environment Department and the Office of the Environment Commissioner, as well as collaboration with municipal governments—particularly in cities like Nicosia, where there is political will for sustainable development. Training workshops that connect municipal, environmental, and cultural stakeholders could enhance mutual understanding, while also fostering community-based networks and non-competitive synergies among cultural actors.

Spain has demonstrated more advanced engagement at both institutional and grassroots levels. However, there is a growing call for a national sustainability fund jointly managed by the Ministry of Culture and the Ministry for Ecological Transition, aimed at supporting interdisciplinary initiatives such as climate-themed residencies and sustainable cultural festivals. Capacity-building remains a priority, with training needed for both cultural and environmental professionals. Universities and civil society organizations like Fundación Biodiversidad are seen as key facilitators. Spain also highlights the importance of policy incentives—such as eco-certifications for cultural institutions and tax benefits for sustainable practices—and suggests expanding EU-funded platforms like Creative Europe to enhance networking and knowledge exchange. The upcoming 2025 UNESCO MONDIACULT conference in Barcelona is expected to play a pivotal role in pushing these discussions toward policy commitments.

In France, collaboration is gaining momentum, yet would benefit from improved interministerial coordination—particularly between the Ministry of Culture and the Ministry of Ecological Transition. Dedicated, cross-sectoral funding streams and private sponsorships are necessary to sustain initiatives that bridge cultural expression and ecological awareness. France also emphasizes the need for structured capacity-building tools, including peer learning workshops, residencies, and sustainability toolkits tailored to cultural practitioners. Furthermore, the establishment of formal networks and research alliances is essential to anchor innovation in shared knowledge systems and practice-based learning.

Greece underscores the importance of developing interdisciplinary collaboration as a foundation for addressing environmental challenges through cultural means. Key areas of support include fostering joint ventures in research, education, and policy development, and building technical and social competencies for reducing ecological impact. The approach advocated by Greek stakeholders places strong emphasis on solidarity and collective action across cultural and environmental domains, calling for integrated strategies that simultaneously protect ecosystems and cultural narratives.

In Italy, collaboration between cultural and environmental sectors is steadily growing, yet remains largely project-based and lacks structural continuity. Dedicated funding mechanisms—beyond the fragmented support currently provided by foundations such as Fondazione Cariplo or the PNRR—are urgently needed to sustain interdisciplinary initiatives over time. Joint training programs could address knowledge gaps on both sides, enhancing environmental literacy among cultural professionals and promoting creative communication strategies among environmentalists. Italy also points to the need for policy incentives, including the inclusion of sustainability criteria in cultural grants and tax advantages for green cultural practices. Networking platforms at both regional and national levels are seen as essential for scaling best practices and encouraging replicable models of cooperation. Above all, stronger institutional recognition of the cultural sector’s role in ecological transition is required to embed it within Italy’s broader environmental strategies.

Collectively, these national insights reveal a Mediterranean region rich in innovation yet marked by common challenges: the absence of stable, cross-sector funding; insufficient training infrastructures; fragmented governance; and limited institutional recognition of culture as a driver of environmental transformation. By fostering cross-sectoral dialogue and emphasizing the socio-cultural dimensions of the climate crisis, culture positions itself not just as a witness to change but as an active force for adaptation and regeneration. Addressing these gaps requires not only technical and financial resources but a fundamental shift in policy thinking—one that places cultural actors at the heart of the climate response.

## 5. Local Contexts and In-Situ Practices

### 5.1 Civic Engagement and Environmental Awareness

Environmental awareness and civic engagement across the Mediterranean partner countries reveal diverse but complementary approaches to climate action. From grassroots initiatives and youth movements to policy-driven programs, communities are actively responding to local environmental challenges. While each region faces unique social and ecological conditions, a common thread is the strong role of community-driven projects and cultural activism in fostering sustainability and resilience.

#### Cyprus – Nicosia

Environmental awareness in Nicosia has been steadily increasing in response to the island's heightened vulnerability to climate change. Civil society and local authorities have both played an expanding role in fostering sustainable practices, while grassroots and community-driven projects have gained momentum in recent years.

Several organizations actively promote environmental consciousness and civic participation. The *Cyprus Environmental Movement*, *Friends of the Earth Cyprus*, and *Terra Cypria* are key actors advancing public education, policy advocacy, and direct action on issues such as pollution, biodiversity loss, and sustainable living. *AKTI Project and Research Centre* focuses on applied environmental research and island-specific solutions, bridging science, policy, and community engagement.

Initiatives like *Let's Do It! Cyprus* mobilize thousands of volunteers annually for cleanup and waste management efforts. *Urban Gorillas* promotes sustainable urbanism and participatory design through interventions such as the *Pame Kaimakli festival*, which reimagines public space through community collaboration. *Let's Make Cyprus Green* focuses on shifting public behavior through the 3R model: Reduce, Reuse, Recycle.

Support from the municipality of Nicosia has also been visible, particularly through EU-funded initiatives such as *HUB-IN*, which aims to integrate sustainability and innovation into urban development and heritage zones.

#### Spain – Catalunya/Barcelona

Catalunya has a well-established culture of environmental activism and civic participation, with 72% of its population identifying climate change as a serious threat, according to the Catalan Climate Barometer 2023. This awareness translates into vibrant community engagement and a diverse ecosystem of grassroots initiatives.

Local responses to the ongoing water crisis are led by advocacy groups such as *Aigua és Vida*, while public agencies like the *Agència Catalana de l'Aigua* (ACA) expand water recycling and desalination infrastructure. Climate justice movements—including *Rebel·lió o Extinció Barcelona* (Extinction Rebellion) and *Fridays for Future Catalunya*—maintain a strong public presence, organizing regular demonstrations and lobbying for robust climate policies.

Urban innovation projects like *Superilla* (Superblocks) reclaim streets for pedestrians and green zones, reducing vehicular emissions and reshaping public space around sustainability principles. *Rezero* champions zero-waste lifestyles and plastic reduction, while *Som Energia*, a citizen-led cooperative, advances the transition to renewable energy across Spain.

Environmental research centers such as *CREAF* lead reforestation and biodiversity conservation efforts, often following wildfire damage. The cultural sector also plays a key role in fostering eco-awareness. Events like *Drap-Art Festival*, the *Bestiari* exhibition at the Venice Biennale, and *Llum BCN* combine art and environmental consciousness, transforming ecological issues into immersive public experiences.

### **France – Southern Region/Marseille**

Marseille, a Mediterranean port city with deep historical layers and a diverse demographic profile, presents a distinctive context for environmental action. While grappling with long-standing industrial pollution and socio-economic disparities, the city also harbors a strong civic energy centered on ecological awareness and grassroots resilience.

Marine and coastal conservation efforts are anchored in areas like the Parc National des Calanques, a marine reserve threatened by tourism pressure and water pollution. Public and NGO initiatives focus on protecting biodiversity, reducing runoff, and promoting responsible access to natural sites.

Environmental challenges such as air pollution from port activities and waste management inefficiencies have spurred both policy reforms and community engagement. Stricter regulations on maritime emissions and increased urban greening projects seek to improve air quality, while local organizations tackle recycling and sustainable habits.

Civic mobilization in Marseille is dynamic and often driven by grassroots efforts. Initiatives like *Les Alchimistes* (urban composting), *Déchet Par Jour* (anti-litter campaigns), and numerous community gardens foster both environmental stewardship and social cohesion. In marginalized neighborhoods, local groups link ecological goals with broader issues of equity, inclusion, and cultural identity.

Despite urban renewal efforts—particularly in the redeveloped waterfront district of La Joliette—tensions around gentrification and displacement persist. Nonetheless, Marseille exemplifies how environmental action in complex urban settings can be rooted in community agency and intersectional solidarity.

### **Greece – Attica Region/Athens**

In Athens and the broader Attica region, environmental awareness has grown substantially over the past two decades, shaped by increasingly frequent and severe climate-related events such as wildfires, floods, air pollution, and water shortages. As Greece's most urbanized and densely populated area, Attica faces acute environmental challenges that have mobilized both institutional and grassroots responses.

Local authorities, including the Region of Attica and city municipalities, are taking steps to integrate sustainability into urban policy. Efforts include the expansion of public green spaces, improved waste

management systems, and water conservation strategies. Projects like the *Attica Wetlands Strategy* aim to restore degraded ecosystems and enhance climate resilience.

Civil society plays a pivotal role in this landscape. NGOs such as *WWF Greece*, *MedSOS*, and numerous local environmental collectives lead reforestation, coastal restoration, and public awareness campaigns. Volunteer firewatch teams, often operating in wildfire-prone peri-urban zones, exemplify strong community-led climate adaptation practices, while citizen-funded drone programs for fire surveillance are innovative examples of localized environmental action.

Academic institutions, including major universities based in Athens, contribute through applied research and community-engaged sustainability projects. Programs like *ECOWEEK* empower students and young professionals to take part in eco-design and participatory planning.

### **Italy – Piedmont Region/Torino**

In Italy, environmental awareness has gained increasing traction in recent decades, fueled by climate-related emergencies, youth-led mobilizations, and an expanding civil society sector. National organizations such as *Legambiente*, *WWF Italia*, and *Fridays for Future* have been instrumental in shaping public discourse, coordinating national campaigns, and supporting local action. On a community level, grassroots environmental engagement is widespread—ranging from clean-up campaigns and urban gardening to zero-waste initiatives and sustainable food networks—though often constrained by short-term funding and limited institutional support.

In Torino, the capital of the Piedmont region, civic engagement in climate-related issues is particularly active. While Torino itself is not located within the Mediterranean climate zone, it serves as the operational base for BJCEM, Italy’s representative in the MATCH project. This geographic distinction underscores the importance of framing Italy’s contributions to MATCH within a national—rather than strictly local—climatic context, recognizing that Italy as a whole includes both Mediterranean and non-Mediterranean areas.

Local initiatives in Torino reflect a growing environmental consciousness. *Fridays for Future Torino* regularly organizes mass demonstrations and public forums to engage youth in climate advocacy. *Orti Generali*, in the Mirafiori Sud district, has revitalized abandoned land into community gardens, integrating environmental education with social inclusion. Projects like *proGireg* employ nature-based solutions to regenerate post-industrial areas, while *CoFarm4Cities* promotes peri-urban agriculture as a sustainable alternative to urban sprawl.

## **5.2 Local Climate Impacts on Communities and Environments**

Across Southern Europe, climate change is no longer a distant threat but a present and intensifying force that reshapes daily life, public health, infrastructure, ecosystems, and cultural identity. From the scorching summers of Nicosia and Barcelona to the storm-battered coastlines of Marseille and the wildfire-prone hills of Athens, local communities are grappling with complex and overlapping climate challenges. Urban centers face rising temperatures, air pollution, and heat-related illnesses, while rural areas suffer from drought, declining agricultural yields, and water scarcity. Coastal zones are threatened by erosion and sea-level rise, disrupting tourism and traditional livelihoods. Cultural practices—such as seasonal festivals, outdoor gatherings, transhumance, and agricultural rituals—

are being restructured, postponed, or lost altogether due to environmental pressures. Yet amid these disruptions, communities across Cyprus, Spain, France, Greece, and Italy are also showing resilience.

### **Cyprus-Nicosia**

Climate change has increasingly impacted Nicosia and its surrounding areas, exacerbating vulnerabilities in both urban and rural communities. The city's dense urban core experiences intensified heatwaves with summer temperatures frequently surpassing 40°C. This urban heat island effect disproportionately affects vulnerable groups such as low-income families, the elderly, and migrant workers, who face elevated risks of heat-related illnesses due to limited access to cooling and healthcare. Dust storms originating from the Sahara further degrade air quality, aggravating respiratory conditions like asthma.

Water scarcity is a pressing concern, with aging infrastructure and seasonal shortages causing frequent water restrictions. This strains households and businesses, often forcing reliance on costly bottled water, which deepens economic hardship for vulnerable populations. Additionally, increased electricity demand for air conditioning has driven up energy costs, disproportionately affecting those with limited financial means. While solar energy use is widespread, limitations in the electricity grid hinder its full potential.

Agricultural production across Cyprus is also disrupted by extreme weather events including droughts, floods, and cold snaps, leading to reduced crop yields and rising food prices. This affects traditional diets and food security, especially among low-income urban residents.

Socio-culturally, climate change has reshaped community practices and cultural activities. Festivals and markets have adapted by shifting to cooler seasons or times of day, and many social events now take place indoors. Seasonal migration to cooler mountainous areas during summer has increased. Traditional ecological knowledge is being revived, such as tree-planting with native drought-resistant species to provide shade and combat soil erosion. Moreover, the long-standing use of solar water heating in over 90% of Cypriot households exemplifies a successful integration of heritage and modern sustainability.

### **Spain - Catalunya/Barcelona**

Across Catalunya, climate change is having a profound impact, affecting urban centers, rural areas, and coastal communities. Barcelona faces intense urban heat island effects, with summer temperatures regularly exceeding 40°C. Heatwaves have become more frequent, increasing health risks such as heat-related illnesses and mortality, particularly among the elderly and low-income groups. Along the coast, areas like Costa Brava and the Ebro Delta experience severe coastal erosion and rising sea levels, threatening local fisheries, tourism, and residential areas. The 2020 Storm Gloria caused significant damage, accelerating beach and wetland loss.

In rural Catalunya, drought and water scarcity are pressing concerns. Reservoirs such as the Sau Reservoir have dropped to historic lows, forcing water restrictions for both cities and agriculture. Farmers in regions like Lleida and Tarragona have reported crop losses of 30-50%, especially in olives

and vineyards. Wildfires, fueled by hotter and drier conditions, have destroyed thousands of hectares, notably in Alt Empordà and central Catalunya.

Infrastructure also suffers from extreme weather events. Flash floods caused by intense DANA storms have damaged roads, railways, and metro lines in Barcelona, disrupting daily life. Rising temperatures exacerbate air pollution, contributing to respiratory and cardiovascular health problems.

Culturally, traditional ecological knowledge (TEK) is actively used to build resilience. In the Montseny massif and Tordera River basin, communities integrate historical land management practices to reduce wildfire risks. Projects like Life Pletera restored salt marsh habitats by removing urban structures and applying nature-based solutions, reflecting a deep-rooted cultural commitment to environmental stewardship. Museums like Museu Terra connect rural heritage with environmental education, showcasing ancestral plant knowledge and agroecological methods that inspire sustainable living and adaptation.

### **France- Marseille/Southern Region**

In Marseille and the broader southern French region, communities are already feeling the accelerating impacts of a warming Mediterranean climate. Heatwaves have become longer and more intense, with cities like Nice experiencing over 70 tropical nights per year. In Apt, the number of days exceeding 30°C has doubled since the 1960s, severely affecting public health, particularly for vulnerable populations such as the elderly, unhoused individuals, and low-income families without access to air conditioning.

Rural and alpine areas are also being transformed. In the Southern Alps, snow cover has declined dramatically, impacting winter tourism and traditional mountain economies. Between 1,000 and 2,000 meters altitude, snow days have decreased by 8 days per decade, threatening ski resorts and local livelihoods.

Water scarcity and seasonal droughts have become a recurring challenge across the region. Summers are marked by precipitation deficits, while autumn and winter bring increasingly severe Mediterranean episodes—sudden, high-intensity storms that have doubled in frequency and increased in intensity by 22% over the past fifty years. These extreme weather events have overwhelmed drainage systems, disrupted transportation infrastructure, and damaged cultural venues and public spaces.

In response, cultural institutions like La Friche la Belle de Mai are adjusting practices to adapt to climate realities. Summer events are rescheduled to avoid extreme heat, and the upcoming "Friche Refuge du Vivant" project will transform the site into a climate-resilient cultural hub through large-scale greening, biodiversity support, and rainwater management. Collaborating with the École Nationale Supérieure du Paysage, the project draws from ancestral knowledge of Mediterranean plant species to create sustainable, shaded urban environments.

### **Greece - Attica Region/Athens**

Athens and the wider Attica region face growing climate pressures that intersect with urban infrastructure, public health, and cultural life. The city's dense construction and limited green areas intensify the urban heat island effect, with temperatures exceeding 44°C during peak heatwaves. Vulnerable communities—particularly low-income households, migrants, and the elderly—struggle with limited access to cooling, exacerbating health risks such as heatstroke and respiratory illness. At the same time, increased reliance on air conditioning strains the energy grid, while wildfires on the urban fringe produce smoke that blankets the city and degrades air quality.

Severe drought in 2024 led to critically low water levels in Lake Mornos, highlighting systemic vulnerabilities in the city's water supply. Flash floods from Mediterranean cyclones, like Cyclone Numa (2017), have overwhelmed infrastructure in low-lying neighborhoods such as Mandra, resulting in loss of life and major property damage. Coastal zones along the Athens Riviera face sea-level rise and saltwater intrusion, threatening tourism assets and urban ecosystems.

Cultural life in Athens is also deeply affected. High summer temperatures and poor air quality have led to the rescheduling or cancellation of traditional festivals, open-air cinemas, and concerts—key elements of Athenian community life. Historic sites, including the Acropolis, now close during extreme heat to protect visitors and preserve ancient structures from accelerated decay. These shifts limit public engagement with cultural heritage and strain the livelihoods of artists and cultural workers.

However, climate challenges have sparked creative responses. Community-based initiatives—such as environmental art, climate-focused performances, and educational programs—are reshaping public awareness and promoting resilience. These efforts reconnect Athenians with their natural environment and cultural traditions, helping communities navigate change while affirming collective identity in an increasingly unstable climate.

### **Italy - Piedmont Region/Torino**

Climate change is reshaping social life and cultural traditions across Italy, particularly in regions like Piedmont where seasonal rhythms and agricultural heritage play a central role. Longstanding practices—such as harvest festivals, mountain transhumance, and rural rituals—are shifting or fading due to environmental disruptions.

In Piedmont's wine-growing areas, earlier grape harvests caused by hotter summers have altered the timing and atmosphere of vendemmia, the traditional community harvest. This affects not only wine quality but also the cultural calendar, as festivals and rural gatherings are compressed or rescheduled. Similarly, transhumance—the seasonal movement of livestock to alpine pastures—is becoming less predictable due to drought and changing vegetation patterns. Some herders are responding by combining traditional ecological knowledge with climate data to adjust migration routes and grazing periods.

In urban areas like Torino, extreme heat and air pollution are transforming daily routines. Public outdoor life has declined in the summer months, reducing opportunities for intergenerational

gatherings and cultural events in piazzas and parks. Vulnerable groups—such as elderly residents and recent migrants—often lack access to cool, safe communal spaces, deepening social inequalities.

At the same time, climate stress has sparked creative forms of cultural resilience. There is a growing revival of seed-saving traditions, with community-led efforts to preserve regional biodiversity and promote climate-resilient crops. Urban gardening, local food networks, and educational workshops—often supported by cultural associations—are connecting younger generations to sustainable practices rooted in local heritage.

### 5.3 Cultural Sector Engagement with Climate Change

In Cyprus, artists and cultural institutions are increasingly addressing climate change through innovative and collaborative initiatives. The *CoRES* project, launched in 2025 with support from the EU and Cyprus’ Deputy Ministry of Culture, brings together stakeholders to develop sustainable practices within the cultural sector. Events like the 2024 *Eco-Digital Art Festival*, hosted by the French Embassy, highlighted ecological themes through digital media, while street art projects by *YAS!* and *Allospas* in Nicosia’s old town use murals to raise awareness about environmental and social justice issues. The 2025 symposium “*Thinking Like a Mountain; Art and Planet*” underscored the integration of environmental consciousness into contemporary art—a tradition rooted in the 1970s. Additionally, *Phytorio’s Environmental Art Research Program* explores how art both influences and responds to ecological challenges. Institutional efforts such as *Project A(RT)CTION* focus on training young artists and youth workers as green entrepreneurs and climate advocates.

In Catalonia, climate themes are increasingly embedded in cultural programming and institutional practices. *Pol Clusella’s* 2025 exhibition at La Capella explored environmental crises through immersive installations, while the *Manifesta 15* biennial promoted “ecosocial action” and community-driven responses to climate change. Institutions like MACBA formed dedicated groups such as *MACBA PLANET* to incorporate sustainability, and the CCCB actively supports marine conservation and pollution prevention. The *Barcelona + Sostenible* network connects over 1,000 organizations, fostering environmental and social sustainability. Public policies such as the *Catalan Institute of Cultural Enterprises’ 2022 Plan C\** further encourage sustainable practices, exemplified by *La Recicladora Cultural*, which reuses exhibition materials and supports rural communities transitioning to greener economies. Collaborative projects like *Cooltorise* engage local residents in co-designing outdoor spaces that improve summer comfort and climate resilience.

In southern France, cultural institutions and artists actively raise climate awareness and promote sustainability. Marseille’s *La Friche la Belle de Mai* adapts events to extreme heat and is developing the “*Friche Refuge du Vivant*” project, aiming to create a climate-resilient cultural hub through re-greening, biodiversity, and rainwater management inspired by Mediterranean traditions. Eco-friendly practices such as energy-efficient lighting and carbon-neutral productions are increasingly common, and festivals work to minimize environmental impacts. Community engagement through talks, workshops, and partnerships with scientists, activists, and policymakers fosters dialogue and climate education. Collaborations with local governments support climate-friendly policies and awareness campaigns.

In Greece, climate change engagement spans national policy and grassroots creativity. The Ministry of Culture integrates climate resilience into policies for vulnerable heritage sites, while museums adopt sustainable practices and showcase environmental exhibitions. Events like the Athens Biennale address ecological collapse through participatory art, and festivals collaborate with NGOs like WWF Greece to highlight climate justice. Local eco-art festivals on islands like Tinos use recycled materials to promote waste reduction, and urban collectives in Athens use street art to communicate climate messages. Traditional practices such as Lemnos's drystone wall restoration and agroecological workshops in Chios revive heritage as climate adaptation tools. Municipalities including Thessaloniki and Heraklion incorporate climate themes into cultural programs and citizen science, fostering local participation despite funding and coordination challenges. The cultural sector's community trust and heritage significance position it to expand climate action with support from EU Green Deal initiatives.

In Italy, particularly in Torino and the Piedmont region, cultural engagement with climate change is growing both thematically and practically. The *Earthink Festival* blends performing arts with environmental themes, while contemporary art spaces like *Fondazione Sandretto Re Rebaudengo* host exhibitions on the Anthropocene and ecological grief, fostering emotional connections to the climate crisis. Cultural centers such as *Officine Caos* and *Casa del Quartiere di San Salvario* collaborate with NGOs on urban ecology and climate education, engaging residents through workshops and participatory art. Partnerships between museums and environmental groups, including *Legambiente Piemonte*, produce educational programs and citizen science projects. Museo A come Ambiente (MACA) offers interactive environmental education targeting families. Artists are shifting narratives by using natural materials, reducing carbon footprints, and involving communities in co-creative climate actions. Despite challenges around funding and policy support, Torino's cultural sector demonstrates the vital role of art in fostering awareness, inclusion, and sustainable behaviors at the local level.

#### **5.4 Socio-Cultural Impacts, Traditional Knowledge and Nature-based Solutions (NbS) in the Mediterranean**

Mediterranean Traditional Knowledge offers a timeless and always relevant resource for climate action, rooted not in dominating the elements, but in a profound collaboration with them. For millennia, communities have engineered their lives around the region's climatic realities, devising strategies for climate protection that are inherently sustainable and resilient. In agriculture, this is seen in the clever use of terracing, which fights erosion and captures every drop of precious rainwater, and in the cultivation of drought-resilient crops like olives and figs, which thrive in the dry summer heat.

Architecture collaborates with the sun and wind through the design of thick, white-washed walls that provide thermal mass for coolness, and narrow, shaded streets that create cooling ventilation corridors—a natural, zero-energy form of air conditioning. Water, the most sacred of elements, is managed with meticulous care through systems of cisterns for collection and intricate networks of acequias for equitable distribution. This knowledge embodies a holistic philosophy where human settlement is woven into the ecosystem's fabric, not imposed upon it.

The lesson for modern climate action is clear: true resilience comes from observing, understanding, and aligning with the natural world, using localized wisdom to create adaptive systems that protect

resources, moderate extremes, and ensure community survival for generations. It is a masterclass in working with the elements, rather than against them, a direction revisited today as Nature-based solutions (NbS).

In Cyprus, vernacular architecture demonstrates how local materials and techniques were adapted to an arid climate. Mud-brick walls coated with lime plaster act as natural insulation, while windcatchers channel breezes indoors to provide cooling without energy input. These elements reflect both practical ingenuity and cultural exchange, showing how built forms evolved in dialogue with climate realities.

In Catalonia, traditional building design emphasizes climate moderation through internal courtyards that generate shaded, ventilated spaces and often include vegetation or water features that enhance cooling. Thick stone walls, ceramic facades, and adjustable shutters further regulate temperature and airflow, illustrating how aesthetic and environmental considerations are combined in everyday living spaces.

In southern France, thick stone and terracotta walls serve as thermal buffers, absorbing heat during the day and releasing it at night, while features such as courtyards, balconies, and pergolas promote natural light, air circulation, and shaded outdoor areas. The integration of vegetation in courtyards and rooftop gardens creates cooler microclimates and strengthens the bond between architecture and its surrounding environment.

In Greece, traditional settlements developed distinctive strategies to mitigate intense summer heat. Whitewashed houses reflect sunlight to reduce heat absorption, while thick stone walls provide thermal mass that balances daytime and nighttime temperatures. Typical Athenian houses were arranged around shaded courtyards that promoted cross-ventilation, allowing cool air to circulate through interior spaces. These features reveal a deep-rooted understanding of sustainable living and natural climate control.

Across these contexts, the unifying principle is the careful alignment of human settlement with natural forces. Traditional Mediterranean knowledge consistently demonstrates how to achieve comfort, resilience, and sustainability through locally grounded practices. By reinterpreting these principles within modern NbS frameworks, societies today can recover lessons of balance, resource efficiency, and ecological harmony that remain essential in the face of accelerating climate change.

## 5.5 Cultural Dimensions of Climate Migration

The phenomenon of climate migration is often framed in starkly material terms: sea levels displacing populations, mega-fires wreaking havoc and destruction, and drought rendering land uninhabitable. However, its most profound dimensions are cultural, representing a deep rupture in the human relationship with place.

For communities with deep-rooted ties to their ancestral lands, the landscape is not merely a location but a repository of memory, identity, and meaning. It is the soil where ancestors are buried, the language shaped by local topography, and the rituals tied to seasonal cycles. When climate forces migration, this sacred tapestry is torn. The loss is not only of homes, but also of intangible heritage: traditional ecological knowledge—such as farming or fishing techniques honed over generations—

often becomes obsolete upon arrival in an urban center or a new country. This creates cultural dissonance and a profound sense of grief for a home that is physically transformed or lost.

Displacement and resettlement also test the social fabric, often forcing a renegotiation of gender roles, community hierarchies, and cultural practices within new and sometimes hostile environments. At the same time, receiving areas face both challenges and opportunities of cultural transformation, as new traditions and worldviews are introduced and gradually woven into the social fabric.

Therefore, viewing climate migration solely through an economic or environmental lens is a critical failure. Addressing it humanely requires cultural sensitivity—supporting not only physical relocation but also the continuity of identity, the preservation of linguistic and artistic traditions, and the creation of spaces for cultural integration. In this way, both migrants and host communities can forge new, resilient, and pluralistic identities in a changing world.

## 6. Policy Landscape and Governance

### 6.1 Current Environmental and Cultural Policies

#### Cyprus

Cyprus is increasingly integrating climate action within cultural policies through national and local strategies, funding programs, and legislative measures. The **Integrated National Energy and Climate Plan (NECP)**, submitted in 2020, outlines Cyprus’s commitment to reducing greenhouse gas emissions and promoting renewable energy. While primarily focused on energy and climate sectors, the NECP stresses the importance of embedding sustainability across all fields, including culture. Complementing this, the **Cyprus Government Initiative for Coordinating Climate Change Actions in the Eastern Mediterranean and Middle East (EMME)**, launched in 2019, fosters regional cooperation and encourages cross-sectoral collaboration, implicitly inviting cultural institutions to engage in sustainability efforts.

Funding for culture-climate initiatives remains limited. The **Deputy Ministry of Culture**, through the Department of Contemporary Culture, supports projects addressing social issues such as climate action, but budget constraints limit long-term planning. Cypriot cultural organizations can also apply for the EU’s **LIFE Programme**, which funds environment- and climate-related projects. The **Youth Initiatives Funding Scheme**, managed by the Youth Board of Cyprus, promotes youth-led cultural and creative projects that incorporate environmental themes.

On the legislative front, Cyprus enforces environmental laws promoting sustainable resource management that encourage all sectors, including culture, to adopt greener practices. Locally, **Nicosia’s Urban Green Network Initiative** aims to expand green spaces to improve biodiversity and air quality—initiatives that cultural organizations can integrate through community engagement and programming. Overall, while direct policy integration of culture and climate is nascent, Cyprus’s frameworks offer foundational support, with scope for enhanced funding and strategic focus.

#### Spain

Spain implements comprehensive climate and cultural policies at national, regional, and local levels. The **Plan Nacional de Adaptación al Cambio Climático (PNACC)**, established by Law 7/2021, outlines the framework for climate adaptation from 2021 to 2030. This participatory plan promotes coordinated action to mitigate climate risks, including the protection of cultural heritage, supported by a detailed 2021–2025 Work Plan with specific measures and monitoring mechanisms.

In Catalonia, the **Estratègia Catalana d’Adaptació al Canvi Climàtic 2021-2030 (ESCACC 2030)** assesses vulnerabilities across 17 sectors, including cultural heritage, outlining over 300 measures to reduce risks. The **Climate Change Law of Catalonia (Llei 16/2017)** mandates emissions reduction and cultural heritage protection within resilience frameworks. The **Smart Specialisation Strategy (RIS3CAT 2030)** promotes green transition through innovation, including studies on culture-climate intersections. Additionally, the **Avantprojecte de llei de drets culturals** (Draft law on cultural rights) fosters inclusive access and participation in cultural life and is open for public consultation.

At the local level, **Barcelona's Climate Plan 2018-2030** targets a 45% reduction in emissions by 2030 and carbon neutrality by 2050. Notably, it includes a dedicated chapter on "Cultural action for the climate," promoting climate awareness and education through cultural initiatives. The **Barcelona Lab for Urban Environmental Justice and Sustainability (ICTA-UAB)** researches environmental inequalities and advocates for justice-driven climate responses that center vulnerable communities within urban and cultural planning.

## France

France actively promotes ecological transition within the cultural sector through various policies, funding programs, and strategic guidelines. The **Guide for Guidance and Inspiration for the Ecological Transition of Culture** (adopted in 2023) provides a comprehensive roadmap for cultural organizations to reduce carbon footprints, promote clean mobility, and raise environmental awareness, offering practical tools and best practices.

The **Green Alternatives program**, with a €25 million budget for 2023–2024, finances innovative ecological projects encouraging sustainable practices. Increasingly, local authorities impose **funding conditionalities** requiring cultural projects to meet environmental criteria such as energy efficiency, responsible procurement, and sustainable materials.

In southern France, especially Marseille, eco-conditionality measures are particularly robust. Funded projects must address carbon footprint reduction, use recycled or sustainable materials, engage in public education on environmental topics, and implement effective waste management, including recycling and waste minimization.

## Greece

Greece has begun actively addressing the nexus of climate change and culture through national and local policies that protect cultural heritage, promote climate-conscious practices, and integrate culture into adaptation strategies.

The **Greek Initiative for the Protection of Cultural and Natural Heritage from Climate Change** (2019), led by the Ministries of Foreign Affairs and Culture and launched at the UN Climate Action Summit, promotes interdisciplinary cooperation and research to integrate climate risk into heritage management. Supported by UNESCO and WMO, it highlights climate adaptation as essential for safeguarding cultural sites.

The **National Climate Law (Law 4936/2022)** designates climate adaptation a strategic goal, requiring municipalities to assess climate risks to cultural assets in local plans. The **National Adaptation Strategy (NAS)** (2016) identifies cultural heritage as vulnerable and promotes climate adaptation in conservation strategies alongside education programs.

Locally, Greece's 13 regions develop **Regional Adaptation Action Plans (RAAPs)** to localize national strategies. The **Attica RAAP** targets heat mitigation, urban greening near heritage sites, and infrastructure resilience. The **Athens Resilience and Sustainability Strategy (2017)** integrates culture

and public space to build community resilience through public art and adaptive reuse of heritage buildings.

Cultural policy increasingly embeds sustainability in funding and programming. The Ministry of Culture supports climate-related projects, while events like the Athens Epidaurus Festival follow sustainability guidelines, reducing plastics and energy use and promoting climate-themed productions.

Research partnerships between cultural institutions and scientific bodies advance heritage resilience. The **Ephorate of Antiquities of Athens** and the **National Technical University** study climate impacts on monuments, with smart monitoring systems deployed at sites like the Acropolis. The **National Observatory of Athens' CLIMPACT network** offers tools for heritage managers to assess environmental risks.

Municipal policies promote environmental education through museums and cultural centers. Initiatives like **ECOWEEK**, supported locally, engage youth and creatives in sustainable urban and cultural design aligned with broader policy objectives.

## Italy

Italy recognizes the growing intersection of climate change and culture through national strategies, funding programs, and legislative measures designed to embed environmental sustainability in cultural governance.

The **National Adaptation Plan to Climate Change (PNACC)**, coordinated by the Ministry of Environment and Energy Security (MASE), identifies cultural heritage as a vulnerable sector. It advocates for integrating heritage protection into local adaptation plans, especially in regions vulnerable to floods, wildfires, and heatwaves. Cooperation between cultural and environmental institutions is strongly encouraged.

The **National Recovery and Resilience Plan (PNRR)** supports the ecological transition in cultural and creative sectors through funding schemes promoting sustainable production, low-impact cultural events, and environmental criteria in public procurement. The Directorate-General for Contemporary Creativity fosters innovation and eco-conscious practices across the cultural value chain.

Legislatively, while no single law explicitly links culture and climate change, frameworks like the **Green Public Procurement (GPP)** system (aligned with EU law) require cultural organizations to adopt Minimum Environmental Criteria (CAM) for services and events. The **Cultural Heritage Code (D.Lgs. 42/2004)** is increasingly referenced in regional climate adaptation plans addressing environmental risks to heritage sites. Funding bodies have begun incorporating environmental sustainability as a key criterion in project evaluation.

These policies collectively signal a shift toward embedding environmental responsibility in Italy's cultural sector, although more systemic coordination and sustained policy integration remain necessary for greater impact.

## 6.2 Policy and Cultural Sector Shifts towards Resilience

### Cyprus

Over the past two decades, Cyprus has introduced several precautionary policy adaptations aimed at mitigating climate risks and enhancing community resilience, with indirect benefits for the cultural sector. Although direct integration of climate and culture remains limited, many environmental programmes incorporate cultural and artistic components to raise awareness and foster public engagement.

A key recent initiative is the **Grant Scheme for Strengthening Resilience and Adaptation of Communities to Climate Change**, launched in 2023. This fully funded programme offers grants ranging from €10,000 to €150,000 to support Community Councils, Partnerships, and Service Clusters in implementing nature-based adaptation actions such as tree planting, green corridors, permeable paving, and bioswale development. These projects not only improve environmental resilience but also help preserve cultural landscapes and community identity.

Cyprus's **National Adaptation Strategy and Action Plan** addresses climate-related health risks by implementing public advisories on heatwaves, emergency preparedness for healthcare facilities, and training for medical personnel. While primarily focused on health, these measures enhance overall community resilience and indirectly contribute to protecting cultural assets by maintaining social stability.

The **National Climate Change Adaptation Strategy**, initially approved in 2017 and updated in 2024, sets priorities for sectors such as water resources, biodiversity, and tourism. Though it does not explicitly emphasize culture, it reflects the country's evolving response to emerging climate vulnerabilities.

Funding programmes like the EU's **LIFE Programme** remain essential for Cypriot cultural organizations, enabling projects that combine climate awareness with cultural and educational activities. An example is **PartArt4OW (Participatory Art for Society Engagement with Ocean and Water)**, which uses participatory art to build emotional connections between communities and marine environments, merging cultural expression with environmental stewardship.

### Spain

Spain has enacted significant policy adaptations over the past 20 years addressing the intersection of climate change and culture at national, regional, and local levels. These measures respond both to environmental emergencies and the increasing need to protect cultural heritage from climate risks.

At the national level, the **Plan Nacional de Adaptación al Cambio Climático (PNACC)**, established in 2006 and regularly updated, provides a structured framework that increasingly integrates cultural heritage resilience. Following extreme weather events like the recent DANA (Depresión Aislada en Niveles Altos) emergency, the government launched initiatives supporting local reconstruction, reflecting a reactive but necessary response to disasters impacting communities and cultural assets.

Internationally, Spain has pledged over €70 million to the **Adaptation Fund**, demonstrating commitment to global climate adaptation efforts, including projects protecting cultural heritage.

Regionally, Catalonia has implemented progressive policies. The **Catalonia Climate Fund**, established in 2017 and financed through CO2 emission taxes on vehicles and polluting industries, supports community resilience projects, including those benefiting cultural heritage. Catalonia also developed the **Global Indicator on Adaptation (IGA)**, introduced in 2014 and updated through 2024, to monitor resilience and guide adaptive actions. The latest revision integrates climate justice principles, broadening the social scope of climate policies.

In 2025, Catalonia launched the **Consultoria Cultura 2024**, an open call supporting consultancy services for cultural organizations—including performing arts, visual arts, music, publishing, audiovisual, and digital culture—with a specific focus on environmental sustainability plans, waste management improvements, energy efficiency, and environmental communication. This initiative promotes sustainable practices within the cultural sector and helps reduce its environmental footprint.

## France

France has progressively adapted its policies over the last 20 years to address climate change and enhance the resilience of the cultural sector. The country's first formal climate adaptation strategy emerged in 2007, comprising 43 recommendations that emphasized research and government commitment.

Since 2011, France's adaptation strategy has been structured around three types of responses to climate hazards:

- **Autonomous or spontaneous adaptation**, as direct reactions to climate impacts;
- **Preservation adaptation**, aiming to maintain the integrity of systems or processes at specific scales;
- **Transformative adaptation**, involving fundamental changes to systems in response to climate effects.

This framework allows for a nuanced, multifaceted approach balancing reactive and proactive resilience measures.

The strategy underwent two major revisions:

- The **2018 update** introduced 33 detailed recommendation sheets across six thematic areas—governance and management; knowledge and information; prevention and resilience; environmental adaptation and preservation; economic sector vulnerabilities; and international cooperation—reflecting the increasing complexity of climate challenges.

- The **2025 revision** expanded the framework with 52 measures and over 200 concrete actions, incorporating a critical +4°C warming trajectory as a planning benchmark. This encourages local authorities to adopt precautionary and resilient policies.

Though primarily environmental, the strategy lays the groundwork for integrating cultural heritage protection and cultural sector resilience, particularly through local governance and sector vulnerability assessments. Complementary funding schemes, such as the 2023 **Guide for the Ecological Transition of Culture** and the **Green Alternatives** program, incentivize cultural actors to reduce carbon footprints and environmental impacts.

## Greece

Over the last 20 years, Greece has advanced policies addressing the nexus of climate change and culture, recognizing the vulnerability of cultural heritage and the role of culture in fostering resilience. This has resulted in a more integrated policy framework embedding cultural preservation within broader climate governance.

A landmark was the **2019 Greek International Initiative for the Protection of Cultural and Natural Heritage from Climate Change**, launched by the Ministries of Foreign Affairs and Culture and Sports. Supported by UNESCO and the World Meteorological Organization, this initiative positions Greece as a global advocate for climate-resilient heritage preservation, promoting international cooperation, research, and policy integration to safeguard sites against heatwaves, wildfires, sea-level rise, and flooding.

The **National Adaptation Strategy (NAS)** adopted in 2016 explicitly identifies cultural heritage as a vulnerable sector, requiring targeted adaptation. It mandates that regional and municipal climate plans incorporate cultural preservation, especially in areas prone to extreme weather and environmental degradation.

The **National Climate Law (Law 4936/2022)** institutionalizes climate action across government levels. While not culture-specific, it encourages inclusion of cultural and historic sites in adaptation strategies, reinforcing integrated approaches.

Locally, cities like Athens have linked cultural resilience to sustainability policies. The **Athens Resilience Strategy (2017)** connects climate adaptation with public space preservation and cultural identity, promoting adaptive reuse of heritage buildings and cultural programming that raises environmental awareness.

## Italy

Italy has increasingly recognized the vital intersection between climate change and cultural heritage over the past two decades, adapting policies and strategies to protect its rich assets from environmental threats.

The **National Adaptation Plan to Climate Change (PNACC)** explicitly identifies cultural heritage as highly vulnerable to floods, heatwaves, and wildfires, advocating for its integration into wider adaptation strategies at national and local levels to safeguard both tangible and intangible heritage.

A major milestone came with the **February 2022 constitutional reform** amending Article 9, which now enshrines environmental protection, biodiversity, and ecosystems as fundamental principles, emphasizing intergenerational responsibility. This constitutional change provides a strong legal foundation for sustainable environmental and cultural heritage stewardship.

Funding priorities reflect these goals. The **National Recovery and Resilience Plan (PNRR)** dedicates significant resources to the green transition, including investments aimed at enhancing the sustainability and climate resilience of cultural heritage sites. These initiatives support sustainable conservation, climate-proofing of historic sites, and environmentally responsible asset management, showcasing Italy's commitment to embedding climate considerations in cultural governance.

At the local level, many municipalities have implemented strategies aligning heritage preservation with climate mitigation and adaptation. Initiatives include urban greening near historic sites, sustainable tourism management, and cultural programs promoting environmental awareness.

### 6.3 Gaps, Challenges, and Opportunities for Advocacy

Across diverse contexts, significant gaps and challenges hinder the effective integration of culture within climate change policies, while promising opportunities for advocacy and action remain underexploited. Addressing these requires coordinated efforts to recognize culture not only as a vulnerable asset but also as an active driver of resilience and transformation.

#### Challenges

One pervasive challenge is the **limited integration of cultural sectors—particularly practicing cultural organizations—within climate policies**. For example, in Cyprus, climate strategies tend to focus on sectors like energy, agriculture, and tourism, while the active cultural sector often lacks specific guidelines or sustained support for addressing climate change through cultural activities. Similarly, in Italy, although heritage sites are considered in climate risk planning, there is limited recognition of culture as a dynamic force for climate transformation.

**Fragmented Governance and Coordination Issues** compound this problem, especially in decentralized systems like Spain, where environmental competences and funding are divided between central and regional governments. This fragmentation creates administrative complexity and inconsistent priorities, making it difficult for cultural organizations to secure continuous support or engage meaningfully in policy processes.

**Project-Based Approaches** dominate the sector's engagement with climate issues. For instance, Cyprus's "Increasing Marine Environmental Awareness Through the Creative Arts" project exemplifies creative efforts to raise environmental consciousness but remains isolated and time-limited. Similarly, France's LaboFriche space in Marseille serves as a dynamic hub for ecological reflection and experimentation but depends on specific funding streams that may not guarantee long-term sustainability.

**Limited Participation and Representation** of cultural actors in climate policymaking further constrain influence. Spain's Citizens' Assembly for the Climate demonstrates efforts to involve diverse societal voices, but challenges persist in ensuring marginalized groups and cultural professionals are fully

represented and their inputs translated into policy actions. Greece's national and regional climate frameworks include cultural heritage, yet many municipalities lack the technical capacity to operationalize these policies or integrate intangible heritage, such as local knowledge and rituals, into adaptation strategies.

**Resource Constraints and Capacity Gaps** are another critical barrier. Many cultural organizations, particularly smaller or independent ones, face unstable funding and low climate literacy. In Italy, this is compounded by limited involvement in environmental planning and the highly technical nature of climate policies. This gap restricts the cultural sector's ability to participate actively in resilience-building efforts.

**Political and Economic Contexts** can also limit progress. Spain and Greece, for example, experience political polarization and competing economic priorities that can delay or dilute climate action, creating uncertainty for cultural organizations trying to develop long-term strategies.

### Opportunities and Recommendations

To overcome these challenges, several interlinked opportunities emerge to strengthen the cultural sector's role in climate resilience and policy:

1. **Inclusive and Collaborative Policy Platforms:** Developing formal, multi-sectoral platforms that connect cultural, environmental, scientific, and policy actors can enhance coordination and ensure culture is systematically integrated into climate decision-making.
2. **Advocacy for Institutional Recognition and Representation:** Embedding cultural organizations and professionals into national and European climate strategies and environmental policymaking processes can secure their role as active contributors, not peripheral participants.
3. **Capacity Building and Knowledge Exchange:** Strengthening climate literacy, technical expertise, and cross-sector knowledge transfer can empower the cultural sector to engage meaningfully in resilience planning.
4. **Long-Term, Sustainable Funding Mechanisms:** Establishing predictable and programmatic funding streams can move beyond short-term project dependency and enable cultural organizations to plan sustained climate engagement.
5. **Embedding Culture as an Active Driver of Climate Transformation:** Positioning culture as an active force in shaping values, behaviors, and collective imagination can amplify societal transitions toward sustainability.
6. **Integrating Intangible Cultural Heritage and Community Knowledge:** Recognizing traditional practices, local knowledge, and community rituals within adaptation frameworks can enrich resilience strategies with socially embedded resources.
7. **Innovative Spaces for Reflection and Experimentation:** Supporting hubs or urban resilience initiatives provides environments where interdisciplinary knowledge is generated, enabling

local and international responses to climate and cultural challenges.

8. **Aligning Cultural Resilience with Urban and Regional Planning:** Aligning cultural resilience with urban, regional, and territorial planning can strengthen both ecological function and community cohesion.
9. **Addressing Political and Economic Barriers:** Building broad alliances across sectors and communities can help depoliticize climate–cultural action and highlight its long-term social and economic benefits.

Bridging the gap between cultural sectors and climate policies requires deliberate, coordinated action grounded in inclusive governance, stable funding, capacity building, and visionary integration of culture as a catalyst for climate resilience. By positioning cultural organizations as equal partners in environmental policymaking—not just beneficiaries or communicators—there is an opportunity to harness culture’s full potential in shaping sustainable, equitable futures in the face of climate change.

## 7. Conclusions

The MATCH project aims to reveal that the Mediterranean, a region of unparalleled cultural and ecological richness, is experiencing a climate crisis that is not only an environmental emergency but a profound cultural challenge. The report underscores that climate impacts—from devastating wildfires and extreme heat to water scarcity and coastal erosion—are fundamentally reshaping the landscapes, livelihoods, and cultural practices that have defined the region for millennia.

Several critical conclusions emerge:

1. **Culture is a vital resource for resilience.** While cultural heritage is highly vulnerable to climate threats, the active cultural sector—including artists, community hubs, and heritage practitioners—is a powerful agent of adaptation. The documented case studies, from urban greening projects in Marseille to traditional knowledge revival in Greece, demonstrate that cultural creativity and community-led initiatives are essential for building social cohesion, fostering environmental awareness, and developing innovative, locally-grounded solutions.
2. **A significant policy-implementation gap persists.** Although national climate adaptation strategies increasingly acknowledge cultural heritage, there is a stark disconnect between high-level policy and on-the-ground action. The cultural sector remains largely peripheral in environmental governance, hampered by fragmented funding, project-based interventions, and a lack of structured mechanisms for cross-sectoral collaboration. Truly resilient futures require culture to be integrated as a strategic pillar within climate policy, not merely an afterthought.
3. **Collaboration is key, but barriers remain.** The potential for synergy between environmental and cultural actors is immense, yet unrealized. Promising collaborations exist, but they are often hindered by siloed institutions, limited capacity for environmental literacy within the cultural sector, and insufficient long-term investment. Overcoming these barriers demands dedicated funding streams, shared training platforms, and formal spaces for co-creation between scientists, policymakers, artists, and communities.
4. **Informing the development of the CRIA framework.** The Cultural Climate Change Response Impact Assessment Tool (CRIA) is being developed simultaneously, with its full formation presented in a subsequent report. The research and conceptual framework outlined here provide critical insights to guide its design, helping to identify sectoral needs, policy gaps, and practical approaches for integrating culture into climate resilience. This work lays the foundation for CRIA to support cultural organizations in assessing sustainability practices, aligning with climate goals, and strengthening their role in transformative ecological action.

In conclusion, safeguarding the Mediterranean's future in the face of climate change requires a paradigm shift. It demands that we recognize culture not as a separate domain, but as the very fabric of resilience. By empowering cultural actors, bridging policy gaps, and fostering genuine collaboration, the region can harness its enduring creative spirit to navigate the climate crisis and build more just, adaptive, and sustainable societies.

## ANNEX 1: MAPPING OF BEST PRACTICES

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## 1. INDICATOR 1: METHODOLOGIES AND PROCESSES

The examples in this section demonstrate best practice in reducing the carbon and environmental cost of cultural work and increasing climate resilience.

### 1.1 Cascina Cuccagna

**Based in:** Milan, Italy  
**Website:** <https://www.cuccagna.org/>  
**Nominating Partner:** BJCEM  
**Scale of initiative:** Municipal/Local level



Cascina Cuccagna is a restored 18th-century farmhouse turned urban agriculture and cultural hub. It hosts vegetable gardens, artist-curated installations, open-air theatre, workshops, farmers' markets, and a 'creative residency' format - all co-managed via a community consortium.

Image: Cascina Cuccagna

#### How does the initiative represent best practice against Indicator 1: Methodologies and Processes?

Cascina Cuccagna integrates sustainability into its everyday operations and long-term vision. From using reclaimed materials to supporting local food systems and reducing waste, its practices demonstrate a concrete commitment to lowering the environmental footprint of cultural work. It serves as a replicable model of how a cultural hub can align its internal processes with ecological values, contributing to climate resilience while fostering community wellbeing.

**How well has the initiative sustained itself over time?** Managed by Associazione Consorzio Cantiere Cuccagna since 2005, it is supported by farmers' market revenue, event sponsorships, and volunteer contributions.

### 1.2 MOVING GROUND at the Duncan Dance Research Centre

**Based in:** Athens, Greece  
**Website:** <https://www.mdpi.com/2413-8851/7/1/19>  
**Nominating Partner:** NTUA  
**Scale of initiative:** Municipal/Local level



Image: MOVING GROUND at the DDRC

MOVING GROUND (2021-22) was a year-long initiative conceived and implemented by the Isadora and Raymond Duncan Dance Research Center (DDRC). Through MOVING GROUND, the DDRC set out to address climate change issues interweaving the social, physical and artistic spheres by introducing the concept of a garden both literally and metaphorically aiming to inspire the artistic community and shift mindsets of the local community. By a gradual transformation of its grounds, infrastructure and social fabric, the long-term goal of MOVING GROUND at DDRC is meant to function as a tangible model that can be experienced and replicated as a whole or in parts, in the city or elsewhere.

### How does the initiative represent best practice against Indicator 1: Methodologies and Processes?

The principles of permaculture, Nature-based Solutions (NbS) and net-positive design functioned as a compass to the initiative and were evolved throughout its duration. MOVING GROUND was framed by four interconnected pillars: dance, space, community, education. These four pillars were addressed and developed equally and in parallel. Their combination was meant to encourage rhizomatic growth, and to embed sustainability in practice. The programme was implemented collectively with the participation of the communities involved and invited speakers, mentors, or instructors through a series of milestone actions and events.

**How well has the initiative sustained itself over time?** DDRC has been going strong for almost 40 years. For the past two decades, DDRC has produced innovative and experimental dance work, has encouraged research and allowed emerging artists to try ideas in a supportive environment. Unfortunately, its status has changed over the last year and a half due to a new law about ‘public law legal entities’, making DDRC dependent on another public entity, which in its case is the municipality of Byron. After the MOVING GROUND project, the momentum began to dissipate. A small number of people (including two participants engaged in MATCH) are hoping not just to bring it back to life, but to secure its continuation for a mid-term phase and a long-term vision, transforming it into an innovative center for water retention, water reuse, community action, urban food production and climate change mitigation. An issue that this experience raises is how specific goals that succeed throughout the duration of a funded programme may continue being viable and sustainable beyond the initial funding and how a monitoring system can be put in place to support this process.

### 1.3 Nohye Al Ard

**Based in:** Beirut, Lebanon  
**Website:** <https://www.instagram.com/nohye.alard>  
**Nominating Partner:** D6:EU  
**Scale of initiative:** Municipal/Local level



This community garden is all about reclaiming green spaces, promoting food sovereignty, and building local resilience. As Lebanon faces rising food insecurity and urban expansion, this garden sets a powerful example of what community-led solutions can look like. Nohye Al Ard began with a group of community members determined to restore a neglected plot of land. Once polluted and littered with waste, the space has since been transformed into a green sanctuary. It now offers a peaceful escape from the chaos of the city.

Image: Nohye Al Ard

### **How does the initiative represent best practice against Indicator 1: Methodologies and Processes?**

This is a good example because this community garden is all about reclaiming green spaces, promoting food sovereignty, and building local resilience. It's now a space where children grow up understanding the value of the food on their plates. They witness firsthand the care and effort it takes to nurture crops. The community behind the garden shares a deep passion for preserving natural resources and passing that awareness on to future generations.

**How well has the initiative sustained itself over time?** Every week, Nohye Al Ard hosts a farmers market, where the community sells home-grown crops and prepares fresh meals for visitors. Families gather for picnics and quality time in nature, where children can roam freely. Musicians, artists, entertainers, and poets come together to exchange ideas and share their work.

## **2. CONTENT: CULTURAL VIBRANCY AND INNOVATION**

The examples in this section demonstrate best practice as innovative, high quality and interdisciplinary examples of cultural projects and community gardens working addressing Climate and Ecological issues

### **2.1 Gardens of the Future**

**Based in:** Nicosia, Cyprus  
**Website:** <https://gardensofthefuture.com>  
**Nominating Partner:** D6:EU  
**Scale of initiative:** Organisation/Individual



Gardens of the Future is a community garden and environmental and creative hub near the UN Buffer Zone dividing the North and South sides of Cyprus. International Winners of the Global Climathon Competition, and the New European Bauhaus public award, Gardens of the Future is innovative in its interdisciplinary approach, bringing together architects, cultural producers, social entrepreneurs, activists and environmental experts and working with a team of over 600 volunteers to develop community-led responses to the climate emergency.

Image: Garden of the Future garden space

**How does the initiative represent best practice against Indicator 2: Content: Cultural Vibrancy and Innovation?** Gardens of the Future stands as a unique example of a grassroots initiative that merges ecological action with cultural expression. Rooted in a repurposed heritage site in the heart of Nicosia, the project blends urban regeneration, environmental awareness, and artistic engagement. Its innovation lies in its interdisciplinary methodology - bringing together artists, climate scientists, educators, gardeners, and residents to co-create experiences that are both poetic and practical. Workshops on cyanotype storytelling, community cooking led by women who are immigrants, sensory garden walks for elders, and upcycling festivals not only raise awareness of ecological issues but also foster emotional connection and civic participation. The initiative is locally embedded but globally aligned, having received the New European Bauhaus Prize in 2022, which further affirms its role as a forward-thinking, culturally vibrant actor in the Mediterranean climate dialogue.

**How well has the initiative sustained itself over time?** The initiative has shown remarkable resilience. Like many grassroots movements, its sustainability has relied heavily on the vision and personal dedication of its founder team and director, who continuously mobilises a diverse network of volunteers, artists, educators, and partner organisations. There have been both challenging and promising periods, with financial and bureaucratic constraints often hindering stability. Nevertheless, the Gardens have become a beloved community hub, growing stronger through consistency in action, the loyalty of its audience, and the adaptability of its programming. The community's active participation and response have been a critical source of continuity, making the project more than just a space—it's a living organism shaped by collective care.

## 2.2 R-Urban Bagneux

Based in: Outside of Paris, France  
 Website: <http://r-urban.net/en>  
 Nominating Partner: NTUA  
 Scale of initiative: Municipal/Local level



Image: R-Urban

R-Urban is a citizen-driven ecological transition network of civic hubs. It promotes the regeneration of urban land in deprived neighbourhoods, based on eco-designed reversible facilities. R-Urban hubs are built mostly from locally sourced and/or recycled materials. They offer vegetable plots, training programmes and cooking sessions using food grown onsite. By changing lifestyles on a local scale, fostering citizen initiative and participation, the R-Urban strategy creates social and ecological value while contributing to a wider ecological transition.

**How does the initiative represent best practice against Indicator 2: Content: Cultural Vibrancy and Innovation?** R-Urban exemplifies best practice in urban resilience by fostering community-driven sustainability through circular economy principles. Located in Bagneux, France, it integrates urban farming, recycling hubs, and cooperative housing.

**How well has the initiative sustained itself over time?** R-Urban (founded by Doina Petrescu and Constantin Petcou) have sustained themselves well over time, given that they were a finalist for the 2022 New European Bauhaus Prize. Through strong local partnerships with municipalities, NGOs and citizens Bagneux has expanded its impact through participatory governance, proving that bottom-up, scalable models can thrive in diverse urban contexts for over a decade and remain self-sufficient.

### 2.3 Parque Q’mandá

**Based in:** Quito, Ecuador

**Website:** <https://www.quitoinforma.gob.ec/2025/06/25/teatro-danza-artes-marciales-y-mas-en-los-laboratorios-educativos-del-parque-urbano-cumanda/>

**Nominating Partner:** NTUA

**Scale of initiative:** Municipal/local

Parque Q’mandá (also written as Qmandá or Kamandá) is a relatively new and innovative urban hub and park which combines cultural, sports and social activities in Quito, designed to promote community engagement, sustainability and experimentation. The name ‘Q’mandá’ is derived from the Kichwa word \*kamana\*, meaning ‘to take care of,’ reflecting the park’s focus on environmental stewardship and social wellbeing. It became Parque Q’mandá by converting an abandoned and dilapidated bus station into a cultural and sports hub for adults and kids of the two adjacent ‘rival’ neighborhoods, bridging the gap of the quebrada (ravine) by bringing them together metaphorically and physically. The park was developed under Quito’s ‘Plaza Grande’ urban regeneration



Image: Parque Q'mandá

programme, which aimed to create inclusive public spaces ahead of Habitat III (held in October 2016). It was inaugurated in 2016 as part of Quito's urban renewal projects linked to Habitat III, the United Nations Conference on Housing and Sustainable Urban Development. It was built on a former neglected lot in La Mena, a historically underserved neighborhood in southern Quito near its historic center, to provide recreational and cultural spaces for residents transforming it into a green area with playgrounds, sports facilities, walking paths, and spaces for cultural events. The park also incorporates eco-friendly features, such as

rainwater harvesting systems and native vegetation. It has also served at times as a community garden.

**How does the initiative represent best practice against Indicator 2: Content: Cultural Vibrancy and Innovation?** Parque Q'mandá provides accessible space for a wide range of cultural events, and importantly addresses the long-standing prejudice and animosity between the two working class neighborhoods facing each other across the ravine (quebrada), which was literally and metaphorically addressed with the construction of a bridge which connected the two communities.

**How well has the initiative sustained itself over time?** The project was inaugurated in 2014. It has been through many ups and downs, but it is still holding on, providing precious cultural, recreational and ecological awareness services to the nearby working class communities. Its main weakness is that it is completely dependent on municipal funding and being completely free, its upkeep remains vulnerable and exposed to each mayor and economic fluctuations. It is a unique case of a completely public-funded programme of its kind in the country and probably elsewhere.

## 2.4 Basurama

- Based in:** Bilbao, Spain
- Website:** <https://basurama.org>
- Nominating Partner:** Maps das Ideias
- Scale of initiative:** Transnational

Basurama is a collective dedicated to cultural and environmental research, creation, and production. Founded in 2001, it has focused its study and action on production processes, the waste they entail, and the creative possibilities these contemporary situations inspire. Born at the Madrid School of Architecture, it has evolved and adopted new forms since its inception. It aims to study phenomena inherent to the mass production of real and virtual waste in the consumer society, providing new perspectives that act as generators of thought and attitude. It detects loopholes within these processes of generation and consumption that not only raise questions about how we exploit resources, but also about how we think, work, and perceive reality. Basurama aims to find waste

where it wouldn't be so obvious to find it and to study trash in all its forms. It has become a multidisciplinary space where diverse activities take place simultaneously, but with a common focus.



Alongside visual arts in their broadest sense, it also hosts all kinds of workshops, lectures, concerts, screenings, and publications. It also aims to establish a platform for connecting and working together among figures from the social fabric who occupy very different places, yet are not far removed, considering itself a creative hub and meeting place. It has completed more than 100 projects on four continents and is based in Madrid with a permanent office in Bilbao, Spain.

Image: Basurama

**How does the initiative represent best practice against Indicator 2: Content: Cultural Vibrancy and Innovation?** Basurama has, since its inception, studied how to intervene in waste management and proposed concrete actions. It has implemented over 100 projects in different countries in Europe, Latin America, the USA, China, etc.

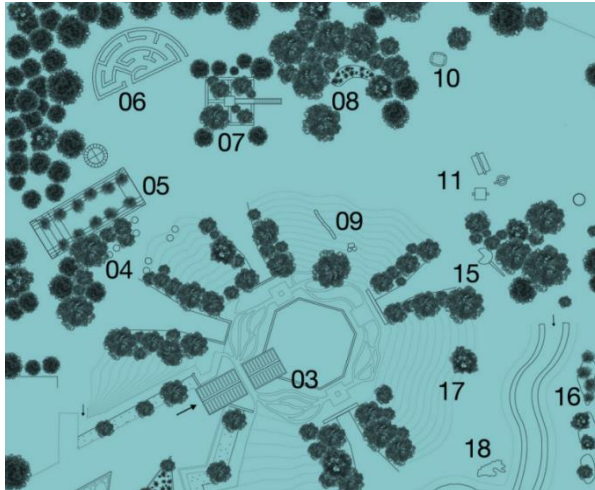
**How well has the initiative sustained itself over time?** It was one of the initiatives Mapa das Ideias identified in their study of best practices in 2018, and Basurama continue to develop many projects in Spain and worldwide.

## 2.5 Parco d'Arte Vivente (PAV)

**Based in:** Turin, Italy  
**Website:** <http://parcoartevivente.it>  
**Nominating Partner:** BJCEM  
**Scale of initiative:** Municipal/Local level

Founded in 2002 by artist Piero Gilardi, PAV is a six-acre eco-sculptural park on reclaimed industrial land. It combines community gardening with site-specific installations, scientist-artist workshops, and interactive performances focused on ecology. PAV is an experimental centre for contemporary art and includes an open-air exhibition site and an interactive museum intended as a meeting place and laboratory experiences aimed at dialogue between art and nature, biotechnology and ecology, between the public and artists.

The park is a green territory in continuous evolution and occupies a former 23,000 m<sup>2</sup> industrial area. The programme, developed by Italian and international artists, includes contemporary artworks and installations and permanent and temporary interventions both in external and internal exhibition areas. The field of investigation is the Art of the living, a declination of contemporary trends that includes bioart, biotech art, transgenic art and so-called ecological art; experiments that



include organic and inorganic materials, and where life - with the current bioethical reflections on the use of certain practices - is induced through biotechnological means.

Image: Parco d'Arte Vivente

**How does the initiative represent best practice against Indicator 2: Content: Cultural Vibrancy and Innovation?** PAV blends contemporary artistic practice with ecological research and scientific inquiry, resulting in projects that are both intellectually rigorous and experientially rich. It continuously experiments with formats that bring together artists, scientists, and citizens, offering a vibrant, cross-disciplinary platform that expands our understanding of environmental issues and inspires new ways of thinking and acting.

**How well has the initiative sustained itself over time?** It features long-term municipal funding and project grants and has been continuously active since 2002.

### 3. PARTICIPATION

The examples in this section demonstrate best practices in the form of innovative methods of fostering equitable processes of engagement

#### 3.1 Dingy Butterflies

- Based in:** Gateshead, UK
- Website:** <https://www.dingybutterflies.org>
- Nominating Partner:** D6:EU
- Scale of initiative:** Organisation/Individual

Dingy Butterflies Community Interest Company (CIC) is a community focused arts organisation that provides opportunities for communities, primarily in the urban neighbourhoods of Bensham and Saltwell, Gateshead, UK, to work with and co-create projects with artists, experts and academics. Through social engagement and activism that materialises through creative endeavour they explore issues through a place-based approach in an area with low participation and engagement. They work with local communities to develop and improve creative skills, create pride amongst residents and increase opportunities for people to have a voice in local decision-making.



Through creativity they increase accessibility and enjoyment of local resources and support people in learning new creative skills through participation in cultural events and projects. Their 'Bees of Bensham' project connecting residents with their local habitat won the tackling Climate Change award from Gateshead Council.

Image: Dingy Butterflies' *Bees of Bensham* poster

**How does the initiative represent best practice against Indicator 3: Participation?** Dingy Butterflies works with a group of residents and freelancers, formed from the communities it engages. People come together to co-create projects and are integral to the future direction through devolution of decision making, taking a lead on projects and the organisation as a whole, where everyone is on an equal footing and learning together.

**How well has the initiative sustained itself over time?** In 2015, Ben Jones founded Dingy Butterflies CIC as a response to the research questions from his then recently completed PhD. He asked: *'How could I, as an artist and curator, work within the community I live in, Bensham and Saltwell? Are there opportunities for creative social engagement around the issues affecting the community? How could creative activity support people's health and wellbeing? How could we be guided by the communities and in partnership with the community organisations that work in the area? What could it look like to live, work and play in Bensham and Saltwell?'* Ten years later, this collaborative project has sustained itself through working with residents and artists and in partnership with the many fantastic local and cross-sector organisations working in the community and towards a shared set of values embracing collective local action, environmental care, creativity and wellbeing.

### 3.2 Serra Madre

**Based in:** Bologna, Italy  
**Website:** <https://kilowatt.bo.it> / <https://leserredeigiardini.it>  
**Nominating Partner:** BJCEM  
**Scale of initiative:** Municipal/local level



Serra Madre is a cultural and ecological space located within Le Serre dei Giardini Margherita in Bologna. It integrates art, science, and environmental practices through artist residencies, workshops, performances, and educational programmes focused on ecological transition and climate resilience.

Image: Serra Madre

**How does the initiative represent best practice against Indicator 3: Participation?** Serra Madre reimagines participation as a horizontal, collaborative process, integrating community involvement at every stage of its projects. By working with artists, farmers, and local residents, it cultivates a space where diverse perspectives and lived experiences actively contribute to cultural production. Its practices challenge traditional top-down models and foster a deeper, more democratic form of engagement rooted in place and community.

**How well has the initiative sustained itself over time?** Serra Madre is managed by Kilowatt, a social enterprise awarded a 16-year concession by the Municipality of Bologna. It is supported through public funding, EU projects, and private partnerships. Its programme has been active since 2023 and builds on a broader ecosystem of sustainability, innovation, and cultural accessibility.

### 3.3 Jardins do Bombarda

**Based in:** Lisbon, Portugal  
**Website:** <https://largoresidencias.com/jardinsdobombarda>  
**Nominating Partner:** Mapa das Ideias  
**Scale of initiative:** Organisational/Individual Artist

Jardins do Bombarda (Bombarda Gardens) is a cultural and community center located in Lisbon, developed in part of the former Miguel Bombarda Psychiatric Hospital. Launched in 2024 by the collective LARGO Residências, the project emerged as a continuation of a vibrant ecosystem of cultural and social initiatives previously based at the Quartel do Largo do Cabeço de Bola. In response to the lack of existing infrastructure, residents and partners came together to co-design and build modular structures, ensuring that nearly all former projects could transition and thrive in this new space.



Image: Jardins do Bombarda

Positioned as a ‘Third Place of Culture,’ Jardins do Bombarda combines artistic creation, civic engagement, and social justice within a regenerated urban environment. It offers an inclusive, safe, and accessible space that integrates a variety of uses - including gardens and leisure areas, co-working spaces, artist and social residencies, a gallery shop, a restaurant, a performance venue, and cultural activity zones.

Rooted in values of sustainability, creativity, solidarity, accessibility, and wellbeing, the project fosters intercultural and intergenerational participation. It serves as a cooperative hub for dozens of permanent residents and collectives, spanning visual arts, design, architecture, community radio, literature, theatre, independent journalism, activism, and ecology - forming a dynamic laboratory for civic imagination and social impact.

**How does the initiative represent best practice against Indicator 3: Participation?** Jardins do Bombarda is a strong example of inclusive and sustainable cultural participation. All events are free

and open to the public, ensuring accessibility for people from diverse socio-economic backgrounds. The programming removes financial barriers and encourages broad community involvement. With a focus on ecology, reuse, and biodiversity, the initiative engages local residents in sustainability-themed activities through hands-on workshops, walks, and interactive installations. It actively amplifies marginalized voices, particularly those of local, migrant, and female artists. Jardins do Bombarda also maintains partnerships with environmental and gardening groups, contributing to ecological awareness and action. Educational collaborations with schools and universities further strengthen its impact on environmental education and civic engagement. Residents are invited to co-create content and participate in the transformation of public spaces, fostering a sense of ownership and creative expression. Additionally, the project works closely with urban ecology groups to preserve and regenerate local green areas.

**How well has the initiative sustained itself over time?** Jardins do Bombarda is the third temporary cultural and community space created by LARGO Residências in Lisbon. It is self-sustainable. It is envisioned as a transitory project with a 5-10 year lifespan, continuing LARGO's mission to activate underused urban spaces through art, social inclusion, and collective regeneration.

### 3.4 Children's Orchard

**Based in:** Panagitsa, Greece  
**Website:** [https://www.facebook.com/spiresporo?locale=el\\_GR](https://www.facebook.com/spiresporo?locale=el_GR)  
**Nominating Partner:** NTUA  
**Scale of initiative:** Municipal/Local



Children's Orchard is a cooperative youth centre that focuses on cultivating a new education founded in ecology, creation, conviviality and self-sufficiency. It was founded in 2012 by three siblings, educators and craftsmen with a common interest in sharing the creative process with others. The first seeds of this project were sown many years ago, growing up in a small mountain village of northern Greece.

Image: Children's Orchard workshop

In their own words, the Children's Orchard team say: *'The reason for such a workshop is twofold: on the one hand, it offers the children of this remote area creative employment and teaches practical arts that are useful in their lives. On the other hand, a new pedagogy of practice is cultivated in small steps. There is cooperation with the formal school with the aim of enriching the practical and experiential part of education that is absent from the daily program or is considered inferior to theoretical knowledge. The Garden comes into contact with public formal education through school visits and seminars or discussions with teachers and kindergarten teachers.'*

*Closing the first cycle of three years, the children's plans were put into motion and the next step begins this Winter. In a large area next to the workshop, the creation of a botanical garden begins that will embrace it and offer it everything it needs for its self-sufficiency. Paths are being designed, nurseries of rare trees and plants are being started, fencing is being erected and the space for the first plantings is being shaped. Thus, a different small school within a beautiful large garden will be able to continue its life.'*

**How does the initiative represent best practice against Indicator 3: Participation?** Innovative methods of fostering equitable processes of engagement from an early age are implemented, which educate the next generation to seek common goals and collaborate with each other towards achieving them.

**How well has the initiative sustained itself over time?** Over the past eight years, those involved have focused as well on other complimentary activities for their subsistence (farming, wood-carving, academic research, etc), but as they act as a team they complement each other towards a consistent outcome, and with community support the Children's Orchard continues to thrive.

### 3.5 La Escocesa

- Based in:** Barcelona, Spain
- Website:** <https://laescocesa.org/en>
- Nominating Partner:** Mapa das Ideias
- Scale of initiative:** Organisational / Individual artist



La Escocesa is an artist-led contemporary visual arts organisation and residency space managed collectively through the artists' association 'Associació d'Idees EMA'. They focus on supporting artists and cultural agents, offering workspaces and resources for the development of their projects. As a space inhabited by the artistic community, they focus not only on the production and creation of works, but also on the common generation of knowledge, networks of care and new ways of building and practising cultural institutions. The associative nature of the centre enables the active participation of the artists, generating a horizontal collective structure through which the centre is managed.

Image: La Escocesa's Seed House

Their [Seed House](#) project seeks, on the one hand, to recover, preserve and disseminate the plant diversity of their neighbourhood, and on the other hand, to create new conditions for the

dissemination and exchange of knowledge linked to the care of plants and people, and to create a community through seeds.

**How does the initiative represent best practice against Indicator 3: Participation?** La Escocesa demonstrates innovative methods of fostering equitable processes of engagement because the organisation is managed by its members through open methods of coordination and decision-making.

**How well has the initiative sustained itself over time?** La Escocesa is present in the city's artistic and creative landscape and is part of the Barcelona City Council 'Art Factories' programme that supports the transformation of old unused industrial buildings into new spaces for artistic experimentation, exchange, and conversations.

### 3.6 Vall de Can Masdeu

**Based In:** Barcelona, Spain  
**Website:** <https://canmasdeu.net>  
**Nominating Partner:** Mapa das Ideias  
**Scale of initiative:** Municipal/local level



Can Masdeu is a squatted social centre, residence and community garden in the Collserola Park on the outskirts of Barcelona. The building, owned by Sant Pau hospital, was occupied by international activists in 2001 after being abandoned for roughly 53 years and has had an interesting history with a sequence of trials by the owner until, recently, a status quo and balance has been achieved. This is what they say about themselves:

*'The Vall de Can Masdeu is a popular community infrastructure. We understand public ownership as a recovery of the commons, that is, the construction of spaces and resources removed from the commercial logic and self-managed by the community.'*

Image: Poster for Vall de Can Masdeu's *Mans a la Vall* event

The estate covers 35 hectares and is part of the Collserola Natural Park. The property ownership papers are held by the Hospital de Sant Pau real estate foundation, but the actual custodianship of

this rural territory is exercised by those who brought it to life since 2001. Thus, through a kind of eco-social masoveria, Vall de Can Masdeu support among residents and participants:

- the agroecological and regenerative agroforestry management of the valley
- the maintenance of heritage using green building criteria
- the self-management of sociocultural and political activity
- the construction of a cooperative and community economy
- the fight to halt the climate and biodiversity crisis

**How does the initiative represent best practice against Indicator 3: Participation?** Vall de Can Masdeu is an excellent example of how an informal, community-led initiative slowly takes shape and acquires both political relevance within the city and commitment from a very diverse set of stakeholders (public and private).

**How well has the initiative sustained itself over time?** It is an example of resilience, activism and of, finally, a balance found with the legal owner of the space. Can Masdeu has a very strong local presence, with a strong network.

### 3.7 Le Jardin des Rails

**Based in:** Marseille, France  
**Website:** <https://www.lafriche.org/parcours/la-biodiversite-a-la-friche>  
**Nominating Partner:** La Friche la belle de Mai  
**Scale of initiative:** Organisational/Individual Artist



Place des Quais, you can admire, behind the fences the cultivated plots of the Jardin des Rails, named after the railway line along which it is located. Cultivated since 2013 by around 80 gardeners from the Belle de Mai district and led by landscape gardener Jean Robaudi, it includes a dry garden, planter boxes for educational gardening, planting pits, and a rock garden area designed for vegetable and ornamental experiments. In the heart of this largely mineral site, the Jardin des Rails is more than just a collective urban vegetable garden - it is also a lively, refreshing space for social interaction, with its small paths, tables, benches, and shelters.

Image: Le Jardin des Rails

**How does the initiative represent best practice against Indicator 3: Participation?** The Jardin des Rails at La Friche la Belle de Mai is a living example of a participatory approach rooted in the local territory. It is not merely a landscaped area, but a co-designed and co-inhabited space, brought to life by the active involvement of residents, associations, and local users.

**How well has the initiative sustained itself over time?** The Jardin des Rails has managed to sustain itself over time as a hybrid space of ecological experimentation, community engagement, and cultural integration. Initiated as part of a broader strategy to reconnect the site with its natural environment, the garden has gradually become a key element of the Friche's ecological redirection. Its sustainability is reflected in several ways:

(i) Long-term use by local residents and community groups, who have adopted the space for gardening, workshops, and informal gatherings.

(ii) Integration into artistic and educational programming, allowing for a cross-pollination between ecological thinking and cultural production.

(iii) Maintenance through partnerships and local stewardship, involving both professional teams and volunteer networks, which helps preserve the space despite limited institutional resources.

However, like many urban gardens, it faces ongoing challenges related to water access, seasonal maintenance, and the balance between open public use and programmatic planning. Overall, the Jardin des Rails stands as a successful and resilient initiative, showing how a cultural venue can support ecological and civic engagement in the long term.

## 4. ADVOCACY

The examples in this section demonstrate best practice by increasing public and stakeholder awareness and action on environmental issues.

### 4.1 El Huerto del Rey Moro

<b>Based in:</b>	Seville, Spain
<b>Website:</b>	<a href="https://www.huertodelreymoro.org/nuestro-huerto">https://www.huertodelreymoro.org/nuestro-huerto</a>
<b>Nominating Partner:</b>	NTUA
<b>Scale of initiative:</b>	Municipal/local level



Image: El Huerto del Rey Moro green space

The Huerto del Rey Moro (The Moorish King's Garden) is a green space self-managed by the La Noria residents' association and was recovered from administrative abandonment in 2004. It is located in the historic center of Seville and covers approximately 5,000 square meters. This space is named after the Casa del Rey Moro (House of the Moorish King), declared a Site of

Cultural Interest in 2001 and currently ceded by the Andalusian Regional Government to the Blas Infante Foundation. It is one of the oldest domestic buildings in the city, estimated to have been built between the late 15th and early 16th centuries.

**How does the initiative represent best practice against Indicator 4: Advocacy and Awareness?** El Huerto del Rey Moro is a strong example of drawing together environmental and heritage interests in advocacy processes. The garden is the fruit of a historical process strongly marked by its horticultural heritage, and its transmission aims to foster its knowledge and enjoyment. Alongside the ecological value of the green space, El Huerto del Rey Moro advocate for the need for action to raise awareness and sensitivity about the historical values of the property against the backdrop of a loss of heritage interest among users and residents. In the words of the El Huerto del Rey Moro team: ‘We understand the Huerta del Rey Moro as a dynamic organism that has been able to transcend the concept of an object, evolving toward a sense of a comprehensive natural, social, and intangible asset, generating quality of life and social and cultural benefits.’

**How well has the initiative sustained itself over time?** The organisation is managed exclusively by its members through open methods of coordination and decision-making. The initiative was launched in 2004 and still exists testifying to the resilience of citizen-led initiatives when they respond to the needs of a local community.

## 4.2 Harinera ZGZ

**Based in:** Zaragoza, Spain  
**Website:** [https://es.wikipedia.org/wiki/Harinera\\_ZGZ](https://es.wikipedia.org/wiki/Harinera_ZGZ)  
**Nominating Partner:** Mapa das Ideias  
**Scale of initiative:** Municipal/local level



Image: Harinera ZGZ

Harinera ZGZ was a creative space for community culture located at 201 Avenida San José in Zaragoza. It was a place of creation and collaboration co-managed by cultural stakeholders, the community, and Zaragoza City Council. It no longer exists but is an example of a very interesting, successful initiative that, at one point, had to close down because the City Council decided to discontinue its participation in the co-management of the site. In 2024, the Collective Llámallo H, which co-managed the space with Zaragoza City Council and the local community, received the Gold Medal for Merit in Fine Arts for the work carried out in the space demonstrating the echo and visibility that Harinera ZGZ achieved.

**How does the initiative represent best practice against Indicator 4: Advocacy and Awareness?** Harinera ZGZ worked to engage the local community in its everyday life to promote citizen awareness of environmental issues.

**How well has the initiative sustained itself over time?** Harinera ZGZ sustained itself very well over 20 years. When the City Council reduced the funding, the local community spontaneously took a leading role in advocating for the relevance and importance of the organisation in the neighborhood/city. Unfortunately, they were not successful and la Harinera closed down.

#### 4.3 K2 Contemporary Art Centre and K2 Urla Breathing Zone

**Based in:** Izmir, Turkey  
**Website:** <https://k2.org.tr>  
**Nominating Partner:** BJCEM  
**Scale of initiative:** Transnational

K2 Contemporary Art Center is a non-profit organisation that provides a sustainable space for contemporary art, supporting both emerging and established artists through exhibitions, discussions, and public programs. Their K2 Urla Breathing Zone artist residency space is set on a 45-acre forested



site in Urla, Izmir. Designed for artists to live and create in harmony with nature, the residency features eight handcrafted wooden bungalows serving as both living and working spaces alongside communal working, performance, cooking and gathering spaces. A central area at the heart of the site is surrounded by pine forest and has hosted numerous artistic activities. A small pond is also available for biological research, emphasising the connection between art, nature, and science.

Image: K2 Urla Breathing Zone

**How does the initiative represent best practice against Indicator 4: Advocacy and Awareness?** K2 actively creates space for artistic practices that raise awareness around urgent environmental and social issues. Through its exhibitions, residencies, and public programming, it encourages critical reflection and empowers both local and international communities to engage in meaningful civic dialogue and action.

**How well has the initiative sustained itself over time?** K2 Contemporary Art Center has sustained itself over time through a combination of local institutional support and international funding. In particular, it receives regular backing from the Municipality of Izmir, which recognizes K2's important cultural role in the city. In addition, the establishment of the K2 Contemporary Art Association in

2006 as a non-profit has allowed the center to apply for and receive national and international funding, including grants from Turkish government cultural programs and the European Union. This diversified funding strategy, alongside a dynamic and interdisciplinary program - featuring exhibitions, public events, publications, and the K2 Urla Breathing Zone artist residency - has ensured the initiative's financial resilience and cultural relevance over time.