

Deliverable Phase 3 – Climate risk management

QCATI (Climate Adaptation Toolbox Implementation)

Spain, Quart de Poblet

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HORIZON-MISS-2021-CLIMA-02-01 - Development of climate change risk assessments in European regions and communities based on a transparent and harmonised Climate Risk Assessment approach



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Abbreviations and acronyms

Abbreviation / acronym	Description
AEMET	Spanish Meteorological Agency
AVSRE	Valencian Agency for Security and Emergency Response
CEL	Local Energy Community
CHJ	Júcar Hydrographic Confederation
CRM	Climate Risk Management
DANA	Isolated high-altitude depression / Cut-off low
EVCC	Valencian Strategy for Climate Change and Energy
GEI	Greenhouse Gases
GVA	Valencian Government
NbS	Nature based Solutions
PAI	Integrated Action Plan
PACES	Action Plan for Climate and Sustainable Energy
PATRICOVA	Sectoral Territorial Action Plan on Flood Risk Prevention in the Valencian Community
QCATI	Climate Adaptation Toolbox Implementation for Quart de Poblet
SNCZI	National Flood Zone Mapping System
SUDS	Sustainable Urban Drainage Systems
UA QdP	Urban Agenda of Quart de Poblet

Executive summary

This report presents the results and conclusions of Phase 3 of the QCATI project, part of the European CLIMAAX project (Horizon Europe). The main objective was to lay the groundwork for a local climate risk management strategy, based on the risk analysis and assessment carried out during the previous phases. This facilitates a transition between scientific work and its practical application in the municipality's strategic, regulatory, and financial decision-making. Through this document, the reader will learn how the results of the risk assessment can be channeled through existing local planning tools, what institutional synergies and barriers play a role in risk management, what types of measures are applicable in the municipality, and different indicators that can be used to assess progress toward local climate resilience.

During this phase of the project, the main actions have focused on analyzing climate risk governance, identifying specific policy instruments for its management, and defining potential measures applicable in Quart de Poblet, as well as the available avenues for integrating them into local planning, strategies, and regulations. To this end, the work has also relied on a participatory process with key stakeholders and citizens.

The main results achieved are:

1) The current state of the municipality's resilience to the analyzed risks, in terms of knowledge, existing measures, gaps, and potential areas for action.
2) A description of the political context in Quart de Poblet regarding the governance of the climate risks addressed, and the identification of key stakeholders (institutions, organizations, civil society groups) involved in their management.
3) The definition of the Climate Risk Management (CRM) objectives, with associated monitoring and evaluation indicators to measure the implementation and impact of the adopted measures, and the identification of supporting elements within Quart de Poblet to ensure effective climate risk management.
4) A catalog of potential measures for managing the risks of heat waves, floods, and heavy rainfall, including integrated measures. This will be the main tool for contributing to political decision-making regarding Quart de Poblet's adaptation to the current climate reality and the improvement of its environmental, economic, and social resilience, through the integration pathways identified in the document.
5) Results of participatory actions for incorporating stakeholder's and citizen perspectives into the project. This includes the responses from the public consultation and the contributions obtained from the working session held with the local Environmental Council.

These results form the basis of a comprehensive report, thus concluding the QCATI project. The next step must ensure the usability of the results, so that the knowledge generated informs and guides new actions implemented to improve the municipality's climate adaptation, and that the project's findings are integrated into future decision-making and planning.

1 Introduction

1.1 Main objectives of the project

To date, the QCATI project, in its two previous phases, has focused on assessing certain climate risks within the municipality of Quart de Poblet, namely heat waves, river floods, and heavy rainfall. This has been accomplished using the assessment Workflows provided by the CLIMAAX Consortium, identifying hazards, exposure, and vulnerabilities within the context of climate change, in order to evaluate the risk and its potential future evolution.

This third and final phase of the project aims to bridge the gap between the technical analysis carried out, the results of the Key Risk Assessment, and the future implementation of local actions to improve safety and well-being in the face of these risks.

Specifically, the following objectives can be highlighted:

- Identify the measures that have been taken to date in the municipality to address or adapt to the assessed climate risks.
- Identify opportunities and needs for improving climate risk management (CRM).
- Develop a catalog of potential adaptation measures for the municipality.
- Seek public participation to contribute and prioritize proposals, achieving greater acceptance of the actions.
- Communicate the information in an understandable way to public managers.
- Provide the city council with a tool (catalog) adapted to the local context, enabling improved preparedness for climate change.
- Enhance local adaptive capacity.

The aim is to contribute to the future creation of a robust, coherent, and community-based adaptation strategy for the municipality.

1.2 Project team

The people involved in this phase of the project are:

- David Valdearcos Teruel: technician from the European projects department in the municipality of Quart de Poblet, in charge of financial follow-up and technical issues.
- Aitana Navarro Molina (Sequoia consultancy): Environmental and climate consultant, responsible for the research on local CRM and writing of the deliverable.
- Lorena Núñez Iranzo (Sequoia consultancy): European Projects manager, responsible for the internal communication with the city council of Quart de Poblet, about aligning all project outcomes with EU financing initiatives, and to developing stakeholders' engagement strategy and public participation plan.
- María López Devesa and Emma Gómez Pastor (Sequoia consultancy): Communication officer and consultant, responsible for managing press releases, posts and social media engagement.
- Verónica Sánchez-Ferragut (Sequoia consultancy): graphic designer in charge of the project image and the elaboration of all communication products.

1.3 Outline of the document's structure

This document presents the progress made during the third phase of the QCATI project, carried out between February and July 2026.

The introduction outlines the objectives of this phase and the team responsible for its development.

The following section (Local Profile) establishes the context of Quart de Poblet with respect to climate risk management. First, it references the results of the key risk analysis obtained in the previous phase, and then describes the key mechanisms and stakeholders involved in risk management in the municipality and, more broadly, in the Valencian region. It also highlights key lessons learned from extreme weather events experienced in the municipality, which can be crucial in developing a risk management strategy.

The main body of the document presents a catalog of potential measures to improve climate risk adaptation in Quart de Poblet. To this end, it first establishes the objectives of climate risk management and describes the elements that support effective climate risk management in the region. In addition, the document explains how the results of climate risk assessments can be integrated into municipal policies, plans, and strategies.

The project is then evaluated based on the usability of the results obtained and the lessons learned during this phase. The document concludes with a section of conclusions and a final progress assessment.

2 Local profile

2.1 Summary of Key Risk Assessment results

During the previous phase of work, the QCATI team assessed three climate risks: river flooding, extreme rainfall, and heat waves. The results of the key risk assessment, based on severity, urgency, and capacity, are shown in the following panel:

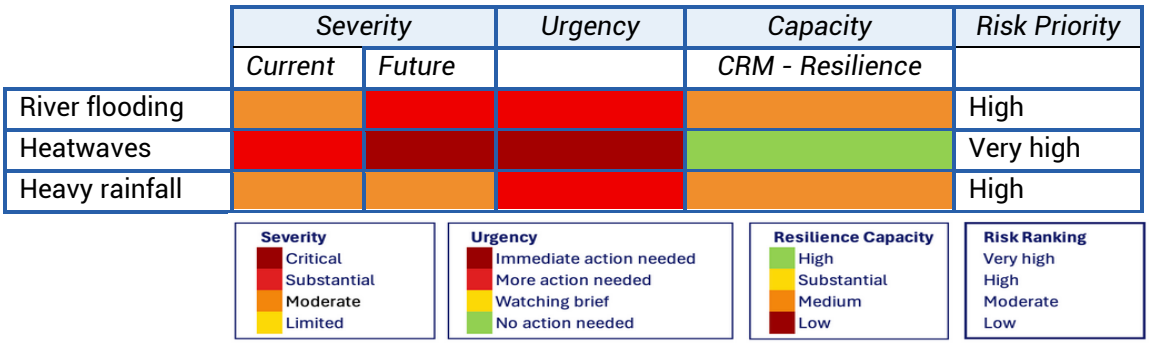


Figure 1 – Phase 2 Key Risk Assessment

Water-related risks are considered a high priority, while heatwaves, being a more constant and persistent threat with direct effects on people's health and well-being, are considered a very high priority.

The following tables describe the municipality's resilience capacity for each risk, understood as the ability to cope with, adapt to, and transform itself in the face of real and potential damage caused by climate change.

Table 1 Description of the resilience capacity of Quart de Poblet

Priority climate risk	Resilience capacity
HEATWAVES	High
Description of the resilience capacity (such as existing knowledge, planned measures, gaps)	
Knowledge: Warnings from AEMET (the Spanish State Meteorological Agency), knowledge of the areas most affected by the heat within the city and the municipality. Knowledge of vulnerable groups and their distribution. AEMET's climate projections for different scenarios. **Planned measures**: Alert and action protocols by health authorities, local climate shelters (City Council and Trenquem Barreres buildings) and natural shelters (Turia Park), telephone calls from Social Services to all elderly people with telecare during heat waves to warn them not to go outside and to take precautionary measures. **Gaps**: Jurisdiction over certain public facilities (for example, the City Council has requested that the Regional Education Department install air conditioning in schools). **Opportunities**: Financial capacity and the possibility of obtaining funds for adapting other buildings and public spaces as shelters, implementation of bioclimatic urban planning projects, rehabilitation of public buildings, improvement of green areas and implementation of new shaded areas, and drafting of the Local Plan to address the risk of high temperatures.	

Priority climate risk	Resilience capacity
RIVER FLOODS	Medium

Description of the resilience capacity (such as existing knowledge, planned measures, gaps)

Knowledge: Official hazard and risk mapping (SNCZI, PATRICOVA) with direct influence on land-use planning and urban development, warning system between authorities (AEMET, CHJ, GVA, municipalities), gauging stations to measure flows in real time (CHJ), local knowledge of the impacts of past events.
Planned measures: CHJ flood risk management plan, regional and municipal action plans for flood risk and emergencies, local preventive measures (road and path closures), riverbed cleaning and maintenance, river restoration to improve the river's flood control capacity (NaTURTURia project). A pilot adaptation project was also developed in industrial facilities (Cantisa Pilot Program[1]) using the PIMA Adapta tool of the Ministry for Ecological Transition and the Demographic Challenge. The City Council will allocate €23 million, funded by the Spanish Government, to reconstruction work on the A-3 industrial park following the 2024 DANA storm. This funding will repair structural damage and improve and incorporate new flood prevention infrastructure (stormwater collectors, retention basins, etc.). There is also an ongoing project by the CHJ to address the Poyo and Saleta ravine basins. The project aims to establish controlled floodwater storage areas and modify the riverbeds (*Figures S-1 and S-2, Supporting Documentation*).
Recovery options: Regional/national/European funding. Insurance Compensation Consortium.
Challenges: Large-scale events may exceed municipal capacity. Certain actions concerning riverbeds and/or flood-prone areas will depend on the jurisdiction of the CHJ.

Priority climate risk	Resilience capacity
HEAVY RAIN	Medium

Description of the resilience capacity (such as existing knowledge, planned measures, gaps)

Knowledge: Warning system between authorities (AEMET, CHJ, GVA, municipalities) and the population. Various research studies on changes in rainfall patterns in the Júcar basin in recent decades. Climate projection studies. Local knowledge about the impacts of heavy rainfall.
Planned measures: Improvements have been made to the sewage systems in certain urban areas, and SUDS (Sustainable Urban Drainage Systems) have been implemented (Avda. Ramón y Cajal, Molí d'Animeta) (*Figure S-7, Supporting Documentation*). Local planning exists (Municipal Prevention Plan in case of heavy rainfall). Preventive action is taken in response to weather warnings (access closures, school suspensions, police surveillance, etc.). The reconstruction work planned for the A-3 industrial park following the 2024 DANA storm, to repair structural damage and improve and incorporate new flood prevention infrastructure, will also help reduce the risk of flooding from heavy rainfall.
Gaps: Sudden changes in the occurrence of weather phenomena can hinder preparedness.

Stakeholders, experts and priority groups involved in the key risk assessment & modality of engagement

Local Environmental Council, Quart de Poblet Senior Citizens' Association, Municipal Department of the Environment, Municipal Department of European Projects.

The risk assessment was carried out in a participatory manner with the Local Environmental Council and the City Council's technical staff, based on the results of the analysis, which were explained in a clear and accessible way to facilitate understanding. Prioritization decisions were made collaboratively with each group, and subsequently, the project drafting team, also taking into account the input from the senior citizens' association, made the final allocation.

[1] Available at https://www.miteco.gob.es/es/agua/temas/gestion-de-los-riesgos-de-inundacion/usos-del-suelo-en-zonas-inundables/programas-piloto-adaptacion-riesgo-inundacion.html

2.2 Key implementation mechanisms and policy context for CRM

In the area of climate risk management, two key types of policies are found in Quart de Poblet: policies and instruments focused on **civil protection**, and policies and strategies for **adapting to climate change**.

Regarding **civil protection**, Spain operates under a decentralized model, whereby the State, Autonomous Communities, and local authorities share responsibilities. The common framework, defined by the National Civil Protection System, establishes the responsibilities of each administration and the form of cooperation between them. Thus, each municipality assumes initial responsibility for responding to an emergency, escalating to higher levels when the event exceeds local response capacity. The functions of the administrations include: actions in prevention and planning, promotion of a preventative culture, training for personnel involved, monitoring and alert systems, operational coordination in emergencies, and recovery efforts. The legal framework that regulates these aspects in the Valencian Community is based on:

- Law 13/2010, of November 23, on Civil Protection and Emergency Management.
- Law 17/2015, of July 9, on the National Civil Protection System.
- Royal Decree 524/2023, of June 20, which approves the Basic Civil Protection Standard.
- Royal Decree 903/2010, of July 9, on the assessment and management of flood risks.

Taking this into account, it is considered that Civil Protection Plans constitute implementation mechanisms that can define the management of climate risks considered by the QCATI project. This table describes the instruments that affect Quart de Poblet.

Table 2 - Supra-municipal and municipal mechanisms for civil protection and risk management

CLIMATE RISK MANAGEMENT AND CIVIL PROTECTION INSTRUMENTS		
Level	**Name**	**Description**
National	National Plan for Prediction and Monitoring of Adverse Weather Phenomena. Meteoalerta.	Its objective is to provide citizens and public institutions, especially Civil Protection authorities, with the best and most up-to-date information possible on the danger of adverse weather phenomena that are expected, up to 72 hours in advance, as well as to maintain timely information on their evolution, once their development has begun.
Regional	Special Plan to address the risk of flooding in the Valencian Community (PEIN)	It aims to guarantee a rapid, effective, and coordinated response from public and private resources in flood emergencies. It includes a risk analysis and establishes a structure, organization, and operational framework for emergencies within the Valencian Community.
	Territorial Action Plan on Flood Risk Prevention in the Valencian Community (PATRICOVA)	It focuses on understanding and assessing flood risks in the Valencian Community. It establishes flood hazard and risk maps for the Valencian Community.
	Flood Risk Management Plan (PGRI) of the Júcar	River basin authorities manage risk by identifying areas of significant potential flood risk, developing flood hazard and risk maps, and implementing measures through Flood Risk Management Plans. These plans focus on prevention, protection, and preparedness, including flood

	River Basin Authority (CHJ)	forecasting and early warning systems, as well as recovery after floods. They may also include hydrological and forestry restoration measures, improved water retention, and controlled flooding of specific areas.
	Plan for the recovery and improvement of resilience against floods in the territory affected by the DANA storm in the Valencian Community (CHJ)	This has served as a preview to the review and update of the Júcar River Basin Authority's PGRI, which is due for approval in 2027. This plan includes recovery, prevention, preparedness, and protection measures. Prevention and preparedness measures include land-use planning and urban development, reducing vulnerability and adapting structures located in flood-prone areas, improving knowledge about flood risk, and developing tools to enhance available hydrological information. Protection measures include Nature-based Solutions, such as hydrological and forestry restoration and reforestation, controlled storage areas, channel improvements, and structural interventions, such as diversions and greenways, flood protection levees, and improved cross-drainage of roads.
	Program for the prevention and treatment of health problems arising from high temperatures in the Valencian Community	It outlines measures to reduce the health effects associated with high temperatures and to coordinate the various institutions and entities involved. It aims to provide information to the public, especially high-risk groups, as well as to healthcare and social services personnel, regarding declared alert levels and preventive measures.
Local	Municipal Territorial Emergency Plan	Planning for the management of diverse emergencies at the municipal level. The analysis includes two climate risks: flooding and forest fires. It establishes the organization of resources and operational procedures for response.
	Municipal Action Plan to address the risk of flooding	Specific planning to address flood risk. It establishes a hierarchical and functional structure of the municipality's resources, both public and private, to enable it to respond to situations of risk or serious emergency. It identifies vulnerable elements in the different areas of the municipality. (*Figures S-3 and S-4, Supporting Documentation*)
	Municipal Prevention Plan for the risk of heavy rains	Local protocol for action in the face of heavy rainfall events to reduce the potential for flooding: cleaning of storm drains, drainage channels, checking of municipal building drainage pumps, clearing of vegetation…

Regarding **adaptation to climate change**, in the Valencian Community the framework is established by three key documents, which are presented in the following table. Adaptation is presented as a way to mitigate the effects of climate change and reduce vulnerability to negative impacts.

Table 3 – Regional mechanisms for adaptation to climate change

REGIONAL ADAPTATION POLICIES AND STRATEGIES		
Level	**Name**	**Description**
Regional	Law 6/2022, of December 5, on Climate Change and Ecological Transition	Its purpose is to establish the regulatory framework and development regulations for the adoption of measures aimed at mitigating and adapting to climate change that guarantee an orderly transition towards

	of the Valencian Community.	a resilient and carbon-neutral social, economic and environmental model.
	Integrated Valencian Plan for Energy and Climate Change 2030 (PVIECC)	It is the integrated and cross-cutting instrument for the organization and planning of sectoral objectives and specific actions that will be developed to respond to the climate change adaptation and mitigation objectives established in Law 6/2022.
	Valencian Strategy for Climate Change and Energy 2030 (EVCCE)	It is established as the tool to advance towards a sustainable socioeconomic model, minimize GHG emissions and increase territorial resilience to the effects of climate change. Its general objectives are established at three levels: mitigation, adaptation, and research, awareness-raising, and cooperation. Some of the actions it proposes are: ● Minimizing flood risks and promoting the rational use of land, leaving the necessary areas free to allow for natural runoff, [...], in accordance with the PATRICOVA plan. ● Improving the living conditions and thermal insulation of homes for vulnerable people. ● Maintaining the system for transmitting alerts of adverse weather events to the municipalities and relevant agencies through pre-emergency declarations.

In the area of climate change adaptation, **urban planning** should also be mentioned:

State Land Law (Royal Legislative Decree 7/2015) establishes the obligation, in land use planning, to prevent natural hazards (floods, extreme weather events, fires, etc.).

The Valencian Law on Territorial Planning, Urban Development, and Landscape (LOTUP) restricts urban development on hazard-prone land, reclassifying these areas as protective "green infrastructure."

Royal Decree 638/2016 on the Public Water Domain establishes that "new urban and industrial developments must incorporate sustainable drainage systems, such as permeable surfaces, to mitigate any potential increase in flood risk."

Regarding the promotion of **climate change adaptation at the local level**, the following plans and strategies are noteworthy:

Table 4 - Local mechanisms for adaptation to climate change

LOCAL ADAPTATION POLICIES AND STRATEGIES		
Level	**Name**	**Description**
Local	Sustainable and Integrated Urban Development Strategy of Quart de Poblet	A planning tool aimed at transforming urban spaces into areas with a higher quality of life, seeking economic and social balance and environmental sustainability. The Integrated Sustainable Urban Development Strategy (EDUSI) for Quart de Poblet has been fully implemented and has included actions to connect and seamlessly integrate the town center with the Turia Natural Park, facilitating access to green spaces and promoting healthy outdoor recreation.

	Urban Agenda QdP (2025) and Integrated Action Plan	The UA includes urban renewal and renaturalization projects to be carried out in areas impacted by the October 2024 DANA storm, with the aim of regenerating vulnerable areas. The Integrated Action Plan (PAI) of Quart de Poblet, developed within the framework of the EDIL Plan (*Integrated Local Development Strategy Plan*) and financed by the ERDF, is linked to the Urban Agenda as it is an instrument for implementing it. One of the PAI's objectives is to strengthen the municipality's resilience to the challenges of climate change by reducing vulnerabilities. The renaturalization of urban spaces seeks to achieve more sustainable management of the hydrological cycle and also improve climate comfort, reinforcing resilience to phenomena such as heat waves.
	Environmental restoration projects: NaTURTURia Project	The main objective of NaTURTURia has been the restoration and protection of the Turia River Park as it passes through the town, addressing the conservation and rehabilitation of the natural ecosystem, which is affected by periodic flooding due to torrential rains that occur especially in autumn and spring. Thus, the actions have been geared towards mitigating the consequences of climate change by reducing the impact of flooding. (*Figure S-5, Supporting Documentation*)
	Sustainable Energy and Climate Action Plan (PACES) (2024)	The Sustainable Energy and Climate Action Plan (SECAP) is the strategic tool that enables local authorities to define actions to meet the emissions reduction targets set by the EU. It includes both mitigation and adaptation measures, which aim to manage resources efficiently, reduce energy costs, and anticipate the challenges of climate change.
	Environmental Promotion Plan for Adaptation to Climate Change	Its objective has been to implement projects that reduce vulnerability to the effects of climate change, anticipating potential impacts. In the area of flood risk, pilot adaptation projects have been developed at various industrial facilities in Spain affected by flooding, including the Cantisa Pilot Program (Quart de Poblet).

2.3 Key actors and systems for CRM

This section includes the **main governmental and non-governmental entities, organizations, and groups of people involved** in the development and implementation of climate risk management strategies. For these key actors, their roles and responsibilities, motivations and needs, as well as the opportunities and barriers related to their active participation in risk management, are defined.

Given the territorial context of Quart de Poblet as a municipality within the Valencian Community, and considering the regulatory and political context regarding climate risk management and the distribution of responsibilities in this area, entities and organizations from different administrative levels have been included.

A **summary diagram** of the different responsible bodies and their roles in the distribution of risk governance for the climate risks addressed by the QCATI project is included in the Supporting Documentation (*Figure S-8*):

Table 5 - Characteristics of key actors in risk governance

Key actors	*Role and responsibility*	*Motivation and needs*	*Opportunities related to the their active involvement in CRM*	*Barriers related to the their active involvement in CRM*	*Type of engagement*
State Meteorological Agency (AEMET)	Forecasting of meteorological phenomena and official modeling of climate scenarios.	Reliability of alerts and provision of accurate scientific data.	Its climate models have been integrated into risk analysis and assessment. Its alerts and pre-emergency warnings are now part of risk management.	Gap in translating technical data into local policy decisions.	No engagement.
Júcar River Basin Authority (CHJ)	Management of water resources (River Basin Management Plan) and flood risk management (FRM) in the river basins within the Júcar area.	Ensuring water security in the face of droughts, accurately delimiting flood zones, and maintaining the good ecological status of waterways.	Co-design of municipal green infrastructure and flood prevention and mitigation systems.	Institutional bureaucratic delays and rigidity in authorization processes.	No engagement.
Department of the Environment, Infrastructure, Territory and Recovery (GVA)	Directing policies on territorial planning, biodiversity, urban development and emergencies, prevention and recovery.	Ensuring legal compliance and resilient and sustainable regional development.	Coordinating regional policies with municipal investment. Access to public subsidies to develop plans and projects related to risk prevention and climate change adaptation.	Internal fragmentation of responsibilities and slow processing times.	No engagement.
Department of Health (GVA)	Prevention and monitoring of health impacts (heat waves, vectors, etc.).	Protecting public health and coordinating seasonal health alerts.	Integrating local actions with community health plans. Conducting emergency drills, as well as information and awareness campaigns for the population.	Lack of direct coordination channels with municipal urban planning.	Consultation during the climate risk analysis phase.

Valencian Agency for Security and Emergency Response (AVSRE) (GVA)	Operational management and coordination of emergencies and civil protection.	Minimizing human and material damage in the event of extreme events.	Optimizing early warning protocols and drills with the municipality. Periodic updating and review of local emergency plans.	Institutional focus on immediate reactive response rather than long-term preventive planning, which is dependent on other agencies.	No engagement.
Universities (UV and UPV)	Research, innovation, and technical knowledge transfer.	Validating scientific studies and obtaining funding for projects (R+D).	Assessing local risks and providing solutions. Developing plans and projects for local application.	Administrative rigidity, bureaucracy, processing times, budget limitations… Occasional or isolated collaborations with local entities, lacking long-term continuity.	No engagement.
Quart de Poblet City Council	Integrating climate adaptation into urban planning, managing local emergencies, managing green infrastructure, developing and implementing plans and programs…	Protecting citizens and adapting the municipality to climate change.	Leading direct urban transformation and securing public funding to achieve the objectives.	Limited budget and technical staff for large-scale challenges.	Commitment throughout all phases of the project.
Local Environmental Council	Municipal body for citizen and neighborhood participation.	Channeling public opinion and advocate for the municipality's sustainability.	Legitimizing political decisions through participatory governance.	Risk of politicization and lack of technical training in climate risks.	Commitment during the climate risk assessment phase and the CRM phase.

Quart Industrial Estate Business Association	Management of the industrial fabric and risk mitigation in industrial estates.	Business continuity, cost reduction, and infrastructure security.	Co-designing flood plans, securing funding for resilience, and creating eco-efficient industrial estates.	Initial economic resistance to long-term adaptation investment.	No engagement.
Neighborhood associations	Community co-management of basic emergencies, identification of vulnerable points in neighborhoods, and dissemination of best residential practices.	Protecting homes from flooding, improving thermal comfort in neighborhoods, and reducing vulnerability by supporting the elderly and dependent individuals.	Collaboration in urban design and in contributing to and prioritizing solutions to environmental problems. Direct source of information on needs, alerts, and risk situations.	Lack of structured channels for effective technical intervention and information asymmetry regarding risks in the area. Lack of training and/or capacity building.	No engagement.

2.4 Lessons learned from past events

DANA October 29, 2024 – River Floods

- Urbanized areas exist in flood-prone zones, a result of a lack of control during Spain's development boom (1960-1970) and the real estate bubble (1997-2008).
- The elderly population is more vulnerable to disasters and risk situations. In the 2024 DANA storm, 46.3% of the fatalities were 70 years of age or older *[1]* .
- More measures are needed for flood control and mitigation.
- Early warnings and alerts to the public are essential to reduce loss of life in risk situations.
- It is necessary to improve the public's perception of risk. The absence of rain in a municipality does not mean it cannot be affected by flooding if there has been heavy rainfall upstream.
- It is advisable to improve public awareness of risk, starting at all educational levels, although a portion of the population considers this measure less effective.
- Institutional coordination and the proactive activation of emergency planning are as important as risk identification and the provision of early warning systems.
- In a disaster situation, it is essential that information reaches the population quickly through reliable and accessible channels to prevent misinformation, chaos, and rumors.
- Lack of preparedness exacerbates the impacts and weakens public trust in the authorities.

Episodes of intense rainfall (09/2025, 09/2023, 11/2022, 03/2022)

- The areas most severely affected include the San José neighborhood, the Ciudad Mudeco and Nou d'Octubre industrial parks, and the A-3 highway underpass (Av. Nou d'Octubre).
- Urban drainage systems must be adapted to more intense episodes of torrential rainfall, capable of delivering a greater volume of water in a very short time.
- Existing sustainable urban drainage systems require improved maintenance for proper functioning.

Heatwaves (2024, 2025, 2026):

- Large elderly population, more susceptible to the risk of extreme heat.
- Residents complain about the lack of green spaces with natural shade.
- The trees that form part of the urban green infrastructure are considered unsuitable for the needs of the population: some ornamental trees (orange trees) do not provide shade, while others provide shade at times of the year when it is less needed and make parks and public spaces dirty (jacaranda trees).

3 Climate risk management – phase 3

3.1 CRM objectives

Climate risk management is the **means to reduce the effects of disasters**: loss of life, injuries, displacement, damage to critical infrastructure, loss of access to basic services, economic losses, environmental damage, etc. It therefore involves administrative and political decisions and the operational capacity to act, with the aim of reducing, preventing, and controlling risk.

This section describes a series of **objectives linked to the management of climate risks** such as floods, heavy rainfall, and heatwaves in Quart de Poblet. Evaluation indicators are established for these objectives to measure their degree of achievement.

Currently, there are no specific indicators for climate risk management at the local level. However, municipal planning instruments, such as the Urban Agenda (UA QdP 2025), include actions and evaluation indicators related to climate change adaptation. At the regional level, the Valencian Strategy for Climate Change and Energy establishes a series of indicators linked to climate change mitigation and adaptation that serve as a reference. The following table includes the objectives and indicators that have been defined within the framework of the QCATI project, also taking as a reference the indicators mentioned above.

Table 6 – Primary objectives of the climate risk management in Quart de Poblet

Primary objectives	*Assessment indicators*	*Source*
Recording and understanding of risk events and vulnerability	Number of extreme events related to climate factors recorded annually in the locality (num.)	EVCC
	Estimated population growth of the municipality in the next 10 years (%)	QCATI
	Annual subsidies obtained for actions related to risk reduction and/or adaptation to climate change (€)	QCATI
	Average time to restore basic services affected after a disaster (h)	QCATI
Reducing the risk of flooding - riverine and urban -	Days of emergencies due to extreme rainfall (pre-emergency levels – orange or red)	EVCC
	Economic damages caused by floods (€/year)	QCATI
	Reduction in the number of vulnerable people exposed to floods (%)	QCATI
	Number of people, residents or workers, in flood-prone areas (num.)	QCATI
	Review and update of the Municipal Action Plan for Flood Risk (yes/no)	Adapted from EVCC
	Annual flood prevention campaigns (yes/no)	EVCC
	Annual amount invested in maintenance and improvement of infrastructure and in human and material resources for emergencies (€)	Adapted from EVCC
	Hydrological-forestry restoration area (hectares)	EVCC

	m2 of renovated public spaces including SUDS	UA QdP
	number of emergency drills or training exercises carried out by the municipal staff involved (num.)	QCATI
Reduce the risk from extreme heat	Days of extreme heat alert (number/year)	EVCC
	Number of people exposed in highly heated areas (num.)	QCATI
	Number of vulnerable population (over 65 years old, under 5 years old)	QCATI
	Public facilities with vulnerable populations (senior residences, nurseries, schools, etc.) with prevention plans against high temperatures (num.)	Adapted from EVCC
	Health Promotion actions and resources linked to the care and promotion of green environments in municipalities (num.)	EVCC
	Investment in ecological transition in architecture (€)	EVCC
	Number of trees planted in urban public spaces	UA QdP
	m² of naturalized urban green areas	UA QdP
	m² of public spaces renovated as climate shelters	UA QdP
Protect the environment	Area of protected waterways (km^2) m^2 of regenerated or enhanced natural spaces	QCATI UA QdP
Protecting the population affected by disasters	Amount of damages covered by insurance or by the Insurance Compensation Consortium (€)	QCATI
	Recovery aid granted in the municipality, out of the total aid requested (%)	QCATI

Table 7 – Additional objectives of the climate risk management in Quart de Poblet

Additional objectives	*Examples of assessment indicators*	*Source*
Public health	Reduction in medical emergencies caused by heat waves (%)	QCATI
	Actions to reduce disease vectors (mosquitoes) favored by high temperatures (num.)	QCATI
Social well-being	Urban area covered by green spaces with natural shade (m^2)	QCATI
	Number of private homes renovated	UA QdP
	Number of people joining Local Energy Communities	UA QdP
Justice and equity	Percentage of vulnerable population residing within a 10-minute walk of a climate shelter (%)	QCATI
	Number of actions to reduce the digital divide and facilitate the transmission of weather alerts to the elderly, dependent, or those without digital skills	QCATI

	Percentage of municipal investment in climate change adaptation that has been decided through participatory processes in the most vulnerable neighborhoods of the municipality (%)	QCATI
Environmental quality	Number of nature or sports trails associated with the natural environment	UA QdP
	m^2 of municipal urban gardens enabled	UA QdP
	Annual public contracts that included evaluation based on climate change adaptation and sustainability criteria (%)	QCATI
Public participation	Number of people who are part of the Environment Council or belong to an association or group related to the environment, sustainability, or climate change	QCATI
	Number of participatory processes developed within the framework of local decision-making on climate change preparedness and adaptation actions	QCATI
Information, awareness and citizen preparedness	Target audience informed about climate change-related topics in programs, courses, workshops, and seminars (num.)	EVCC
	Number of training activities carried out (programs, courses, workshops, and seminars) on climate change and/or emergency response (num.)	EVCC
	Number of awareness and communication campaigns related to climate change (num.)	EVCC
	Dissemination materials on climate change or shared references for their use (num.)	EVCC
	Number of training activities on existing risks and civil protection protocols for citizens (num.)	QCATI

3.2 Supportive elements for effective CRM

This section describes different elements that support effective risk management in Quart de Poblet.

Table 8 - Supportive elements for climate risk management in the municipality

Supportive elements for effective CRM	*Description*
Knowledge and data	The risk of **river flooding** has been thoroughly analyzed and defined in the region by both the central (SNCZI) and regional (PATRICOVA) administrations. This information is shared openly. A wealth of scientific and technical information on flood hazards is available. Flood events, both from rivers and rainfall, are relatively frequent, and their consequences are **well known** to municipal staff and the public. Furthermore, the DANA storm of October 2024 set a precedent regarding the scale of a major catastrophe in the l'Horta Sud area. Regarding the risk of **high temperatures**, the current severity of the situation is acknowledged. Climate projections are less familiar to municipal staff and the public.

	The CLIMAAX project has provided an opportunity to improve knowledge of this risk within the municipality. In the area of climate change adaptation, the regional administration has provided various **guidance documents**[2] for municipalities.
Legal framework	Valencian Law 6/2022, of December 5, on Climate Change and Ecological Transition, lays the foundations for climate change adaptation in the region. In turn, the Law on Territorial Planning, Urbanism and Landscape mandates that specific urban plans undergo environmental assessments incorporating climate change mitigation and adaptation strategies. To minimize environmental risks, the regulation strictly restricts new developments near public water domains and high flood-risk zones.
Technology and infrastructure	Regarding **early warning systems**, the following are available: - AEMET: Within the Meteoalerta Plan, a warning system for adverse weather phenomena is established. This includes rainfall and extreme temperatures. - CHJ has gauging stations that transmit real-time flow data through the Automatic Hydrological Information System (SAIH). Regarding **infrastructure**, Quart de Poblet already has experience in implementing Sustainable Urban Drainage Systems (SUDS), combining gray infrastructure with nature-based solutions. Municipal buildings are also available as climate shelters for extreme summer temperatures.
Institutional capacity	The Quart de Poblet City Council has a proven institutional capacity for developing plans, projects, and programs. While local technical and financial resources are limited, there is a long track record of securing funding (regional, state, and European grants) and managing projects with external technical teams. In the area of risk management and adaptation to climate change, the **NaTURTURia project**[3], funded by Next Generation EU funds, stands out for its environmental and hydromorphological restoration of the river. Actions have focused on mitigating the consequences of climate change by reducing the impact of flooding and addressing the conservation and rehabilitation of the natural ecosystem. It is important to highlight in this section the **collaboration** with other administrations for the **post-DANA (2024) recovery**, which strengthens institutional capacity. In 2026, the City Council received €32.1 million, financed by the Spanish Government, for repair, restoration, and reconstruction work on infrastructure, equipment, facilities, and municipal services damaged by the flooding[4]. Almost 72% of these funds will be allocated to the repair, improvement, and reinforcement of the A-3 industrial areas.

[2] The Department of the Environment has compiled a catalog of adaptation initiatives in municipalities, showcasing inspiring, realistic, and viable adaptation solutions. In collaboration with the Alicante Provincial Council, they have also published the "Portfolio (Manual) of Nature-Based Climate Change Adaptation Solutions and Successful Implementation Experiences" (2024). Another example, developed by the Ministry of Housing and the Valencian Institute of Building, is the "Urban Design Guide for Mediterranean Areas to Mitigate the Heat Island Effect."

[3] This project, carried out between October 1, 2022, and December 31, 2025, was part of the Biodiversity Foundation's grant program for initiatives aimed at restoring river ecosystems and reducing flood risk in Spanish urban areas through nature-based solutions (NbS). More information is available at: https://quartdepoblet.es/ayuntamiento/articulos/naturturia-recuperacion-ambiental-e-hidromorfologica-del-rio-turia

[4] News available at: https://quartdepoblet.es/actualidad/noticia/quart-de-poblet-invertira-23-milions-d-euros-en-millorar-els-seus-poligons-industrials-i-reforcar-la-seua-resistencia-davant

	The Valencian Government is also working on a project for a network of floodable parks for the Valencia metropolitan area[5], which brings together the regional government, the municipalities of l'Horta Sud, and the CHJ. Quart de Poblet will be part of this green corridor (*Figure S-6, Supporting Documentation*). In addition, the CHJ has provided a series of new possible measures to reduce exposure, vulnerability and hazard, including actions in ravines, creation of greenways, protection levees and controlled storage areas for flood water (*Figures S-1 and S-2*).
Socio-behavioral aspects	The **perception of flood risk has been reinforced** in recent years due to the impact of the DANA storm of October 2024. The **citizen survey**[6] conducted during this phase of the project reflects that 86% of participants believe Quart de Poblet is exposed to climate risks. Therefore, there are demands from the community to address flooding and extreme heat, which are the risks of greatest concern locally, followed by heavy rainstorms. The areas of greatest concern to residents are the riverfront (where the residential area meets the natural environment) and the industrial sector, both of which are affected by flooding. The survey also revealed that over 90% of participants trust the scientific evidence on climate change, and that, for 88%, their concern about this phenomenon has increased in recent years. The survey served to identify the types of adaptation measures most valued by the residents of Quart de Poblet.
Citizen engagement	Quart de Poblet boasts an organized and participatory civil society. The Local Council for Citizen Participation serves as the coordinating body for citizen organizations, addressing issues related to active citizen participation in the daily life of the municipality. In addition, there are numerous **local organizations and associations** focused on neighborhood, educational, cultural, economic, and social welfare issues, as well as others related to the environment and climate change adaptation (Limne Foundation, L'Animeta Association, Equartlogistes…). These associations can function as trusted channels to foster participation and quickly disseminate relevant information, such as self-protection guidelines in emergencies.
Finances and resources	The municipal budget constraints are offset by a strategy of securing **public funding** through grants from various administrations (Valencian Provincial Council, Valencian Regional Government, Spanish and European funds). Numerous funding lines exist that allow for the **development of projects related to sustainability and climate risk prevention**. As mentioned previously, the City Council has the capacity to secure and manage these funds. Since the devastating 2024 DANA storm, the Spanish Government has allocated over €190 million[7] to the municipality across various categories, and the City Council has received €32.1 million for the reconstruction and improvement of affected infrastructure, facilities, and services.
Mechanisms of governance and political leadership	The Quart de Poblet City Council manages natural risks in a **cross-cutting** manner, through departments such as Sustainable Urban Development, Municipal Services, Health, and Social Services. The council's political and institutional stability allows for the development of long-term environmental strategies. In the event of an emergency, there is a clear delineation of **operational functions** through local civil protection planning. The structure and operation of local resources

[5] News available at: La red de parques inundables del Consell recuperará la Muntanyeta del Turia y los azudes de Favara y Rascanya | Valencia Plaza
[6] Available for consultation as Supporting Documentation for this Deliverable.
[7] Source: infoDANA Recovery, Ministry of Territorial Policy and Democratic Memory. Available at: https://infodanarecuperacion.es/visor/Informe/Municipios/46102_Informe%20municipio.pdf

	are, in turn, integrated into the higher-level emergency planning (of the Valencian Community), so that in situations that exceed local capacity, external mechanisms are activated in a coordinated manner. However, the theoretical framework for coordination in the comprehensive management of disaster risk among the different administrations has proven **ineffective**, as this cooperation is established in laws and programs but is rarely implemented in concrete actions *[2]* . One of the recent responses of the Valencian Government to this problem, particularly highlighted by the 2024 DANA storm, has been the development of the **Master Plan for the analysis, anticipation, and response to natural disasters**. Given that risk governance is shared, it is worth highlighting the **coordination** of municipal and regional authorities with the bodies responsible for river basins (CHJ) for the prevention and reduction of flood risk.

3.3 Potential CRM measures

Key climate risk	*CRM measure*	*Effectiveness / Risk reduction (high, medium, low)*	*Contribution to CRM objectives*	*Possible co-benefits*	*Timeline (short, medium, long term)*	*Responsible organisation*	*Possible adaptation limits*
HEATWAAVES	Increase and improvement of urban tree cover	High	Increased number of trees planted in urban public spaces.	Improved biodiversity, CO2 absorption, aesthetic value.	Long term	City Council (Sustainable Urban Development)	Availability of public land. Irrigation water consumption.
	Adaptation of urban tree pruning methods	Medium	Increase in urban area covered by green spaces with natural shade (m^2)	Optimized shade in summer, improved tree health.	Short term	City Council (gardening service).	Resistance to technical change among operators. Neighbor complaints. Lower economic efficiency.
	Creation of vertical gardens, green roofs, vegetated awnings…	Medium-High	Expansion of square meters of naturalized urban green spaces.	Thermal insulation of buildings, greater energy efficiency, rainwater retention, improved air quality.	Medium term	City Council (Sustainable Urban Development)	Availability of spaces. Installation and maintenance costs. Lack of community support. Structural or technical limitations.
	Peri-urban agriculture	Medium-Low	Expansion of square meters of designated municipal urban gardens.	Increased biodiversity, expansion of green spaces, benefits for mental health, social cohesion.	Short term	City Council (Sustainable Urban Development)	Limited space.Competition for land. Access to water. Soil quality. Distance to the urban center may hinder mobility.
	Solar photovoltaic pergolas	Medium	Investment in ecological transition in architecture (€)	Generation of renewable energy and shading of public spaces.	Medium term	City Council (Sustainable Urban Development)	Availability of suitable spaces. Conflict of use with green infrastructure. Initial investment. Bureaucratic process of

							legalization and connection to the grid.
	Expansion of the climate shelter network	High	Increased square meters of renovated public spaces as climate shelters.	Social cohesion, universal accessibility, health protection.	Short term	City Council (Social Welfare/ Health)	Restrictions on opening hours and consequent negative public perception. Air conditioning costs.
	Network of drinking and recreational water fountains	Medium	Decrease in medical emergencies caused by heat waves (%)	Reduction of single-use plastics. Promotion of healthy habits.	Short term	City Council (Sustainable Urban Development)	Vandalism. Usage restrictions due to drought. Loss of effectiveness due to water heating in the network. Maintenance and sanitary control costs.
	Local energy communities (CEL) for mitigating energy poverty	High	Growth in the number of people joining Local Energy Communities.	Improved summer thermal comfort, reduced energy bills, emissions savings, local autonomy.	Medium term	City Council and Community participants.	Availability of roofs. Complex digital procedures and the digital divide. Initial investment, maintenance, and membership fees. Bureaucratic problems with the electricity distributor.
	Promotion of thermal comfort in vulnerable households	High	Decrease in medical emergencies caused by heat waves (%)	Reduction of heat-related health problems, rehabilitation of the housing stock	Medium-long term	City Council, Valencian Housing Department	High cost of renovations. Bureaucracy and delays in granting public aid.
	Participation of vulnerable groups in the design of urban solutions	Low	% of municipal investment in climate change adaptation decided through participatory	Social justice, citizen empowerment, tailored solutions.	Short-medium term	City Council. Local Citizen Participation Council.	Limited participatory culture. Accessibility to participatory sessions (lack of awareness, lack of

			processes in the municipality's most vulnerable neighborhoods.				time, work-life balance, etc.).
	Public-private partnerships for local carbon footprint offsetting and tree planting	Medium	Increased number of trees planted in urban public spaces.	Involvement of productive sectors, public savings, increased green space.	Medium term	Collaboration between the City Council and the Business Association	Dependence on the economic situation. Resistance to change within organizations. Alignment of short-term business objectives with long-term resilience objectives.
	Regulations and tax incentives to promote private green roofs	Medium	Expansion of square meters of naturalized urban green spaces.	Citizen co-responsibility, revitalization of local businesses.	Short term	City Council (Finance and Sustainable Urban Development)	Drafting and approval of regulatory ordinance.
	Local action plan to address high temperatures	High	Reduce the risk of extreme heat	Reduction in the incidence of respiratory and cardiac diseases, relief from congestion in public health services, community empowerment and social cohesion, and reduced energy consumption.	Short term	City Council	Limited access to and availability of detailed data on health and vulnerabilities. Limited funding for improvements to buildings, infrastructure, and public spaces.
	Plan of protective measures for public sector workers (manual	Medium	Reduction in medical emergencies caused by heat waves (%)	Prevention of heat stroke, improvement in work efficiency, compliance with the Occupational Risk Prevention Law	Short term	City Council (Human Resources)	Episodes of extreme heat and high risk prevent outdoor work

	labor in the street)						
	Action protocol for the Day Care Center	Medium	Number of public facilities with vulnerable populations with prevention plans against high temperatures	Protecting the health of a highly vulnerable group	Short term	City Hall and Center Management	Overload of tasks for healthcare staff on alert days
	Inventory of public centers with vulnerable people	Low	Knowledge of the number of vulnerable people (over 65 years old, under 5 years old)	Optimization of emergency routes and priority direct assistance	Short term	City Hall (Social Services-Local Police)	Restrictions on cross-referencing and sharing data due to the Data Protection Act. Constant changes in information about center users. Exclusion of vulnerable, informally registered groups and private centers.
RIVER FLOODING AND HEAVY RAIN	Water lamination basin	High	Reduction of economic damage caused by floods (€/year)	Creation of biodiversity microhabitats, recharge of local aquifers	Long term	CHJ City Council and Valencian Department of the Environment	Land availability, expropriations
	Floodable urban parks	High	Reduction in the number of vulnerable people exposed to flooding (%)	Mitigation of the urban heat island effect, areas for citizen recreation, improvement of the landscape and	Medium-Long term	City Council (Sustainable Urban Development)	Economic investment, conflicts with urban planning, cleaning costs after floods, limited effectiveness in the face of major floods

				biodiversity, educational values			
	Naturalization of riverbeds	High	Increase in the area of hydrological-forestry restoration (hectares)	Elimination of invasive species (*Arundo donax*), improvement of green and blue corridors, water quality and biodiversity	Long term	CHJ, City Council and Valencian Deparment of the Environment	Available land, coordination between administrations, financing, political barriers
	Permeabilization of road infrastructure	Medium	Reduction of economic damage caused by floods (€/year)	Increased road safety	Long term	City Council, Valencian Department of Infrastructure	Economic investment
	SUDS in urban and industrial areas	High	Increase in m^2 of renovated public spaces that include SUDS	Filtering of water contaminants, reduced load on sewers, aesthetic improvement	Medium term	City Council (Sustainable Urban Development)	Technical difficulties of implementation in specific, already established areas
	Retention tanks/storm-water tanks	High	Reduction of economic damage caused by floods (€/year)	Protection of waterways by preventing the discharge of wastewater, possibility of reusing rainwater, contribution to the maintenance of wastewater treatment plants	Long term	City Council and Metropolitan Entity of Hydraulic Services (EMSHI)	Large financial investment. Technical complexity of the works
	SbN interventions in public facilities (schools)	Medium	Increase in m^2 of renovated public spaces that include SUDS	On-site environmental education, summer heat reduction, rainwater harvesting	Short-Medium term	City Council and Valencian Department of Education	Tight school budgets. Maintenance during holiday periods.
	Rehabilitation program for old	Medium-High	Number of private homes rehabilitated	Improvement of energy efficiency, accessibility	Long	City Council and Valencian	Limitations due to urban planning regulations

	houses or houses in flood-prone areas			and revaluation of the real estate stock		Housing Department	concerning heritage. Structural limitations of the buildings. Economic barriers. Slow administrative procedures.
	Public-private collaboration for the adaptation of SMEs	Medium-High	Reduction of economic damage caused by floods (€/year)	Continuity of business activity, protection of employment, increased awareness, and strengthened collaboration in other areas	Medium term	City Council, SMEs, Associations of merchants and business owners	Small businesses are reluctant to invest in low-frequency risks. Limited financial capacity. Lack of continuity in long-term projects due to political changes.
	Citizen education and awareness campaigns	Medium	Increase in the number of training activities and awareness campaigns related to climate change	Improving self-protection, promoting citizen participation in decision-making on local solutions	Short term	City Council	Information overload. Difficulty in assessing real behavioral changes.
	Improvement and definition of local alert systems	High	Training activities carried out (programs, courses, workshops, and seminars) on emergency response	Significant reduction in personal injuries	Short	AVSRE (112), City Council, AEMET	Margin of error in predictions of rapidly developing and highly localized torrential rains.
INTEGRATIVE ACTIONS	Promotion of bioclimatic design for new buildings	High	Investment in ecological transition in architecture and reduction of economic damage (€/year)	Energy efficiency, reduction of local emissions, well-being for the population	Long term	City Council (Sustainable Urban Development)	Application to new construction. Slow renewal of the housing stock.

	Application of sustainability, energy efficiency and climate change adaptation criteria in public procurement	Medium	Annual public procurements that included assessment based on climate change adaptation and sustainability criteria (%)	Promotion of new markets, innovative solutions and green jobs; increased climate awareness among public administration and suppliers	Short term	City Council (Contracting department)	Budgetary constraints. Selection based on price-quality ratio. *Greenwashing* or selection of solutions with unknown or potentially negative effects.
	Training and public awareness programs on climate change	Average	Increase in the number of training activities, awareness campaigns, informational materials and informed target audience, related to CC	Adoption of sustainable habits and greater citizen support for local environmental policies	Short term	City Council and organizations as Aliança per l'Emergència Climàtica	Difficulty in attracting sectors of the population with low awareness.
	Citizen training on risks in the municipality and civil protection protocols	High	Improved knowledge and citizen preparedness	Promoting self-protection, improving operational capacity in emergencies	Short term	City Council (Local Police)	Low attendance at information workshops if citizens do not perceive imminent risk.
	Monitoring of research on planned changes in the CV due to climate change and of projects in the field of	Low-Medium	Knowledge of risk events and vulnerability	Updating plans based on scientific evidence, participating in new projects	Medium-Long term	City Council, Universities and Research Centers	Lack of technical staff with time to perform these functions.

	mitigation and adaptation						
	Implementation and review of the Adaptation Plan for Climate and Sustainable Energy (Mayor's Covenant)	High	Annual grants obtained for actions related to risk reduction and/or adaptation to climate change (€)	Cross-cutting actions between local departments, access to subsidies	Medium term	City Council, Provincial Council of Valencia, external technical consultancy	Dependence on external funding. Bureaucratic burden in monitoring.
	Formation of a Civil Protection volunteer group	Medium-High	Number of emergency drills or training exercises carried out by the municipal staff involved	Promoting public participation, supporting vulnerable groups	Short term	City Council (Local Police)	Complexity in maintaining volunteer commitment. Equipment costs.
	Improvement in the transmission of alerts for adverse weather phenomena	High	Reducing the digital divide to facilitate the transmission of weather alerts to the elderly, dependent or those without digital skills	Significant reduction in personal injuries and economic losses, optimization of response times, and reduction in insurance costs.	Short	City Council, AVSRE (112), AEMET	Risk of saturation or indifference to frequent alerts. Digital divide.

The measures proposed in this section have been validated by the Environment Department of the Quart de Poblet City Council. Furthermore, participatory processes have been carried out to consult with stakeholders and citizens regarding the applicability and perceived effectiveness of a number of them, considering the areas of the municipality where they would be most needed.

3.4 Integration into planning and decision making

The climate risk assessment of Quart de Poblet has identified heatwaves as a very high risk priority, given their more constant and persistent nature and direct impact on people's health and well-being. It also identified water-related risks (floods and heavy rainfall) as a high priority. Since the aim is to integrate the project findings into municipal policies and strategies, plans, and future investment decisions, the following **sectoral and regulatory tools are outlined below**. These tools can serve as vehicles for transformation and implementation, enabling the application of the potential measures defined above:

- **Urban Agenda** [prepared]: The Quart de Poblet agenda (2025) already incorporates actions for the improvement of the connection between the urban edge and the Turia Natural Park, for the re-naturalization of urban spaces, the increase of trees, the rehabilitation and conservation of the river ecosystem, the creation of climate refuges and the integration of more sustainable urban drainage systems, among other aspects related to adaptation to climate change.
- **Integrated Action Plan (PAI)** [prepared]: Urban planning instrument for the implementation of the Urban Agenda. It has been developed within the framework of the **EDIL Plan** (*Integrated Local Development Strategy Plan),* financed by the European Regional Development Funds (ERDF). The PAI aims to promote urban greening and the restoration of natural spaces to improve adaptation to and mitigate the effects of climate change, integrating environmental and social revitalization, as well as improving climate comfort and strengthening resilience to extreme events such as heatwaves and droughts.
- **Sustainable Energy and Climate Action Plan** [prepared]: The lines of action foreseen in this plan, promoted by the Covenant of Mayors, must now be implemented, and take advantage of future reviews to integrate the results of the QCATI project evaluation.
- **Local Action Plan for High Temperatures** [not yet developed]: This is a key operational tool for managing the risk of heat waves, which was identified as a "very high" priority in the risk assessment. It establishes a catalog of measures and protocols to mitigate the effects of these events, coordinate a response with social stakeholders, and protect the most vulnerable population groups. This plan should be coordinated with other previously developed local tools that include actions related to heat risk prevention or management (PACES, Urban Agenda, etc.).
- **Emergency planning** (Municipal Territorial Plan, Municipal Action Plan for Flood Risk) [developed]: Actions related to civil protection, alert transmission, public information on risks, and training in self-protection protocols can be implemented as part of these plans. It should also be noted that, to date, municipal emergency management plans do not include an analysis incorporating projections of natural risks under climate change. However, the recent **Master Plan for the analysis, anticipation, and response to natural disasters of the Valencian Regional Government** establishes, among its strategic guidelines for strengthening risk analysis, the application of "*regionalized scenarios and projections using adapted and updated methodologies, prioritizing the integration of the influence of climate change […] and other factors*." It remains to be seen how these aspects will be incorporated into local planning, since the guidelines provided by the AVSRE for the preparation and review of municipal plans will need to be updated.

- **Sustainability plans in educational centers** [not yet developed]: Under Decree 253/2019 (Article 67), public early childhood and primary schools must collaborate with municipal technicians to develop a *Sustainability Plan* focused on resource management, energy efficiency, and waste management. This presents an opportunity to incorporate actions for the prevention and management of the risks studied in the context of schools, especially through nature-based solutions (NbS), protecting the child population.
- **Local regulations and ordinances:** Existing ordinances, such as the *Municipal Ordinance on Parks, Gardens, and Green Spaces*, can be amended to introduce new criteria for selecting tree and shrub species, such as their resilience to heat and water stress, or to establish the minimum percentage of shade per square meter that these spaces must have. The *Ordinance on Environmental Protection relating to sewage and discharges into the municipal network can also* be amended to incorporate provisions on sustainable drainage systems. Furthermore, new ordinances can be created to meet municipal needs. In this regard, the UA QdP proposes the implementation of a *Sustainable Construction Ordinance*. Similarly, an ordinance for the regulation and promotion of Local Energy Communities can be developed.

Regarding **synergies and tensions** in climate risk management, local climate governance presents a complex dynamic where both opportunities for collaboration and sectoral frictions coexist.

Synergies: There is a high degree of alignment between local political will, the technical capacity to attract European funding, and citizen involvement through associations and participatory bodies. This is further enhanced by the existing collaboration between the local administration and other entities such as the Provincial Council of Valencia, the various Valencian Regional Departments, and the Júcar River Basin Authority.

Tensions: Balancing climate security with economic development can be a source of tension. The need to maintain the economic competitiveness of sectors like industry, a priority in the municipality, can clash with the requirement to impose strict urban planning regulations (limitations on developable areas, prevention infrastructure, etc.) in areas occupied by this activity. Furthermore, institutional coordination, both for risk prevention and management, presents a challenge, often due to bureaucratic rigidity and slowness. Improving this situation requires fostering the active and ongoing participation of all stakeholders, including municipal technicians, river basin authority technicians, and representatives of civil society.

It is important to note that **integrating climate risk assessment into local policies and strategies must be based on a solid understanding of those risks.** Section 2.1 briefly outlines the current state of knowledge regarding the risks considered in the QCATI project. We start from a very well-established institutional foundation: official warnings and climate scenarios from AEMET, civil protection alerts, detailed flood risk mapping, real-time data from gauging stations, and numerous scientific studies, particularly those conducted by Valencian universities.

This project has also improved local knowledge about potential changes in risks due to climate change and has led to previously unperformed analyses, such as the study of the urban heat island effect. These types of analyses can be expanded and further refined with the incorporation of new data.

To better understand the risks, the real challenge today lies not only in obtaining and analyzing more data to try to overcome the uncertainties associated with the models, but in managing to **translate highly specialized scientific information into an operational format** understandable to municipal technical staff and also to the general public.

Finally, it should be noted that Quart de Poblet currently lacks a dedicated **monitoring and evaluation system** for tracking progress toward achieving climate risk management objectives, although planning instruments such as the PACES (Action Plan for Climate and Energy) and the Urban Agenda, which address climate risk management to varying degrees, do include their own monitoring and evaluation systems. In this case, the indicators established in section 3.1 serve as the structural basis for developing the methodological framework of this specific system at the local level. These metrics allow the City Council to periodically monitor the reduction of physical and socioeconomic impacts, the progress of structural adaptation solutions, and the success of preventive and governance policies.

Therefore, the key elements for proper monitoring will be:

- Definition of the monitoring group and personnel in charge of the system.
- Clear and measurable progress and outcome indicators over time.
- Digital and interconnected control panel for dynamic monitoring.
- Scheduling the review frequency.
- Preparation of annual reports, which must be presented to the public and/or key stakeholders to ensure accountability.

4 Project Evaluation

4.1 Usability of the results

For Quart de Poblet, the QCATI project has provided an opportunity to **deepen its understanding of the climate risks present in the municipality**, as well as their potential evolution in the coming decades. In this regard, new knowledge has been developed, adapted to local characteristics. The most innovative contribution is the study of extreme heat risk.
Furthermore, the review of key risk management mechanisms, policies, actors, and systems carried out in this phase has helped to situate Quart de Poblet within its **risk management context**, identifying the key aspects that can **facilitate or hinder preparedness** and adaptation to the risks studied. In a context where institutional and social alliances are also being strengthened to work on post-DANA (2024) recovery, these mechanisms, policies, and actors are very much present at the local level.
The review of strategies and actions implemented to date in Quart de Poblet to address climate risks, and of existing regional tools, reflects an **institutional commitment to sustainability and adaptation** that is expanding year after year, and a favorable position for the municipality given its track record. Of course, the project has also identified shortcomings in terms of actions, mechanisms, and awareness. There is room for improvement, so work must continue.

The various **participatory sessions** have allowed us to share the project's findings, fostering greater knowledge and awareness of climate change issues in the town among the City Council's technical

staff, key stakeholders in the municipality's environmental sustainability, vulnerable groups (older adults), and the general public. Through these activities, we have been able to understand these individuals' perspectives, their views on the risks, concerns, and needs they identify. Furthermore, participation in this final phase of the project has helped define applicable adaptation measures in Quart de Poblet and understand the public's views on them. The residents and key stakeholders have identified which measures they consider most appropriate or important, revealing which ones would have the greatest public support. This also allows us to determine what kind of information and awareness-raising is needed so that the public can understand and accept less popular measures, should they be implemented.
Communicating the project through **digital media** has also been an important factor. The project's objectives, progress, and key aspects have been shared with the public, fostering awareness of climate change and its effects in the local context.

As defined in the previous section, **there are mechanisms to ensure the usability of the results of this project**, improving the municipality's preparedness for climate change.

4.2 Lessons learned

Regarding the lessons learned during this third phase of the project, they focus on climate risk management approaches and their context at the municipal and regional levels. **Shared management across different administrative levels** is a key aspect. This management has two facets: **preventive or adaptive measures**, and **emergency planning and management**. As described in sections 2.2 and 2.3, various actors and mechanisms are involved in the system's operation, with defining responsibilities and fostering coordination and cooperation among institutions being paramount.

As has been demonstrated, there are **numerous opportunities to address climate risks and improve municipal preparedness**, along with a wealth of information available from various regional, national, and international institutions and organizations. **Sharing knowledge and experiences across regions is essential for building climate resilience**.

Regarding **stakeholders**, this phase sought their participation to identify applicable adaptation measures in Quart de Poblet, locate them in key areas of the municipality, and prioritize them based on existing needs (*Supporting Documentation*). To also incorporate the perspective of Quart de Poblet's residents, a **digital survey** was conducted to understand the population's views on the current situation in the municipality within the context of climate change, the affected sectors and geographical areas of greatest concern, and the measures they consider most effective against extreme heat and hydrological risks. The results reflect a population aware of climate change and primarily concerned about the risks addressed by the QCATI project. Participants highlighted the municipality's flood-prone areas as the most critical in the face of climate risks. They considered **climate risk planning and strategies** the most necessary action and showed similar support for both **gray and green solutions**.

Furthermore, to ensure the **learning and applicability of the potential adaptation measures** outlined in this document, a catalog of descriptive fact sheets for each measure on section 3.3. has been prepared and made available to the City Council's technical and political staff for future decision-making. This catalog will also be available to the public through the project website (

www.quartclimaax.eu/). These final results have also been shared through the publications included in the project's communication plan, via the website, and through Quart és Europa profiles on Facebook and Instagram.

In this phase, the work dynamic has been positive, and the objectives have been achieved without major problems. Though, there has been a **technical difficulty** that we must mention: the absence, for administrative reasons, of environmental technical staff in the City Council between the months of January and June. This resulted in a lack of internal technical support for the project and delayed certain aspects of stakeholder engagement. Despite this, their return in July facilitated the validation of the catalog of potential CRM measures and the overall project results. This staff member has been informed about the results obtained with the CLIMAAX-QCATI project so that they can be considered and effectively applied in future local climate change adaptation policies and strategies.

Regarding the **efficient use of resources** during this phase, the QCATI team developed the materials (deliverables, supporting documentation, publications, survey) and participatory activities in accordance with the planned timeline and budget, achieving the desired results. These results are considered appropriate and meet the requirements of the CLIMAAX project.

Finally, we believe that the climate risk management proposed by the QCATI project can have a very **positive impact on the municipality**, since it focuses on action in different areas (infrastructure, nature-based solutions, social measures, awareness and training, and improvements in emergency management) and is supported by both existing or ongoing projects and new possibilities that can be applied in the future.

5 Conclusions Phase 3

The climatic elements of the Mediterranean area are undergoing changes due to global warming, which compel us to **introduce adaptation measures and improve risk management in our policies**, plans, and strategies. Comprehensive climate risk management must consider all aspects affected by these changes, with the review and improvement of territorial planning, water management, economic activities, the adaptation of housing and public spaces, and emergency planning being essential *[2]*.

The third phase of the QCATI project aimed to address the findings of the risk assessment conducted in previous phases. To this end, a **catalog of potential measures for managing the risks** of heatwaves, river flooding, and heavy rainfall at the local level was developed. This catalog serves as a tool to **support future local decision-making** regarding preparedness, improving adaptive capacity, and strengthening climate resilience.

Reviewing the strategies and actions previously implemented in the municipality, it has been observed that **hydrological risk (flooding) has been addressed more frequently and through different mechanisms, while the risk of heatwaves or extreme heat has been less addressed to date**. This is due to several factors. On the one hand, Quart de Poblet has a very close relationship with the Turia River and the ravines that cross the municipal area, with flooding episodes being recurring historical and current events. Due to the urban and topographical configuration, flooding

also occurs as a result of torrential rains. On the other hand, the CHJ must guarantee the management of water resources in the basins located within the municipality, as well as the management of flood risk. Furthermore, current civil protection protocols require municipalities affected by flood risk to develop emergency plans. However, the risk of heatwaves is relatively more recent, in the sense that it has intensified markedly in recent decades, and there is no higher mandate that compels action on this matter, although there is a need.

To understand the **political and institutional context** in which climate risks are managed, we have considered the different implementation mechanisms, policies, and strategies that establish the framework for action in Quart de Poblet, identifying **laws, strategies, and plans** related to climate change adaptation, civil protection, and risk management. We have also defined the **key actors** involved in climate risk management, taking into account the distribution of institutional responsibilities among agencies, as well as the contributions of the scientific and technical community and the participation of key groups and citizens.

Regarding **stakeholder participation** in this phase, the work has focused on identifying, prioritizing, and locating potential measures for the municipality, based on a list previously prepared by the QCATI team. The contributions of the local Environmental Council have been used to assess the suitability of various proposed measures (from section 3.3.) to the local context through a participatory process. For these measures, related to the different risks analyzed during the project, the areas with the greatest need for action and the most appropriate solutions were identified. Other considerations included the need for improved maintenance of the Sustainable Urban Drainage Systems (SUDS) already implemented in the city, and the advisability of conducting emergency flood drills. In addition, the published citizen survey has provided us with valuable information on the population's perspectives on the effects of climate change in Quart de Poblet, on climate risks and the areas of greatest concern, and on the types of adaptation measures most highly valued.

Finally, **35 proposals** have been submitted to improve the management of the risks analyzed in Quart de Poblet. Of these, sixteen are aimed at preventing or reducing the risk of extreme heat, given the "Very High" priority level assigned to this risk as a result of the project's second phase. Eleven proposals address the risk of flooding, both from rivers and heavy rainfall. The remaining eight are considered integrated measures, as they do not focus on responding to a single risk but rather contribute to improving the overall management of climate risks in the municipality. Since there is no specific local monitoring system for climate-related risk management, a series of **objectives and indicators** have been defined to facilitate the evaluation of the measures implemented through current and future plans and strategies.

Regarding the **project's boundaries**, developing a Climate Risk Management Strategy would be the logical next step in the work carried out for the municipality. However, this strategy has not been developed because it would require more work and time than the CLIMAAX-QCATI project itself allows. Looking ahead, the City Council will consider the possibility of developing this type of integrated strategy, or implementing the various management and adaptation measures through the different instruments and policies outlined in this report.

6 Progress evaluation

6.1 Project outputs

Table 4-1 Overview key performance indicators

Key performance indicators	*Progress*
Number of stakeholders involved in the activities of the project (at least 5: other municipalities, supramunicipal entities, local organisations, Universities, research centres, etc.)	Completed in phase 1, with at least we have 5 stakeholders mapped (University of Valencia and Polythecnic University of Valencia, municipality of Manises, municipality of Aldaia, municipality of Mislata and Mancomunidad Horta Sud). Then, we have involved 3 key areas from the municipality: local police and emergencies, environment and senior citizens. Completed in phase 2 and 3, with 2 more relevant stakeholders: L'Animeta Association for Organic Agriculture, and Limne Foundation. At this point, a total of 7 key stakeholders have been involved in QCATI project.
Number of local and European data collection sources (at least 3 different sources)	At least 3 completed: Joint Research Centre, Aqueduct Floods, EuroHEAT and XCLIM (EURO-CORDEX), RSLab, Worldpop Hub, Climate-ADAPT. And then from Spain: AEMET and Ministry of Health
Number of complementary actions useful for the municipality climate plans (at least useful for two local mentioned policies, paragraph 3.1)	Useful for two mentioned policies: Municipal Urban Action Plan (EDIL: Integrated Local Development Strategy) and Urban Agenda
Number of communication actions taken to share results with the stakeholders (at least 1 per project phase).	1 communication action successfully completed in Phase 1: website implementation and presentation. 1 communication action successfully completed in Phase 2: elderly people workshop for sharing project results. At this point, a total of 2 communication action has been completed. 1 communication action successfully completed in Phase 3: final event with citizens and environmental stakeholders
Number of publications and dissemination actions (at least 1 per month): social media publications, website, explanatory video. Correction: number of publications and dissemination actions in social media (1 per project month: total 22 publications). For reaching that amount of publications, we will elaborate a dissemination plan where we will publicate on a scheduled basis the progress of the project (meetings, information about CLIMAAX, implementation of actions, good	6 publication and dissemination actions in Phase 1 completed: kick off meeting, press release, 4 social media posts. 6 social media posts completed in Phase 2, plus 3 dissemination material: 1 training material pack, 1 elderly people workshop presentation, 1 local environmental association workshop. 7 social media posts completed in Phase 3 and 1 video. At this point, a total of 22 publication and dissemination actions has been completed.

Key performance indicators	Progress
practices, etc.). On the other side, we will have dissemination actions (1 per month: website Phase 1; infographics Phase 2; Explanatory video Phase 3)	
Number of articles in regional media mentioning the project: 2 press releases (minimum).	In Phase 1: one press release published. Any press releases in Phase 2. In Phase 3: one press release published At this point, a total of 2 press released has been published.
Number of workflows successfully applied on Deliverable 1 (at least 2 workflows, to ensure flexibility but to obtain a full vision about the most important risks for Quart de Poblet)	2 workflows applied successfully in D1: heatwaves and floods.
Number of workflows successfully applied on Deliverable 2 (3 to ensure a full risk assessment and that all relevant hazards are addressed)	3 workflows applied successfully in D2: heatwaves, floods and heavy rainfall.

Table 4-2 Overview milestones

Milestones	Progress
M1: External services hired	Completed
M2: Test of the workflow Phase 1 made	Completed
M3: Workflow Phase 2 successfully applied	Completed
M4: Stakeholders meeting done	Completed
M5: Attend the CLIMAAX workshop held in Barcelona	Completed
M6: Correct Assessment of the Workflow Phase 3	Completed
M7: Publication of the press releases (1 at Phase 1: beginning of the project; 1 at Phase 3: end of the project)	Completed publication of phase 1 press release
M8: Publication of graphic material (Phase 2)	Completed
M9: Video Upload to the website (Phase 3)	Completed
M10: Presentation of the results to policy and decision makers in the municipality of Quart the Poblet (Phase 3)	Completed
M11: Attend the CLIMAAX workshop held in Brussels	Not yet, expected in 2027

7 Supporting documentation

The supporting documentation for this Deliverable includes:

- Main Report
- Supportive illustrative material: Visual examples of the CRM measures implemented or planned for Quart de Poblet
- Results of the citizen survey
- Results of the stakeholder engagement
- Results of the communication plan (social media)
- Dissemination of information

8 References

[1] Vulnerabilidad estructural en la vejez: lecciones de la DANA de 2024 en la Comunidad Valenciana - Structural vulnerability in old age: lessons from the 2024 DANA in the Valencian Community. Rosa Mari Roig Berenguer y Carmen Pineda Nebot. September 2025. In book: Longevidad, justicia social y políticas públicas: miradas interseccionales desde los territorios (pp.69-79). Publisher: Sociedade Brasileira de Administração Pública - SBAP, 2025

[2] El riesgo del cambio climático y su influencia en el aumento de emergencias de protección civil. Jorge Olcina Cantos. Revista d'Estudis Autonòmics i Federals – Journal of Self-Government, 41, junio 2025, pp.35-71. DOI: 10.57645/20.8080.01.54