



Murcia Climate Adaptation Plan: measuring social vulnerability and sectoral adaptive capacity

Murcia, Spain

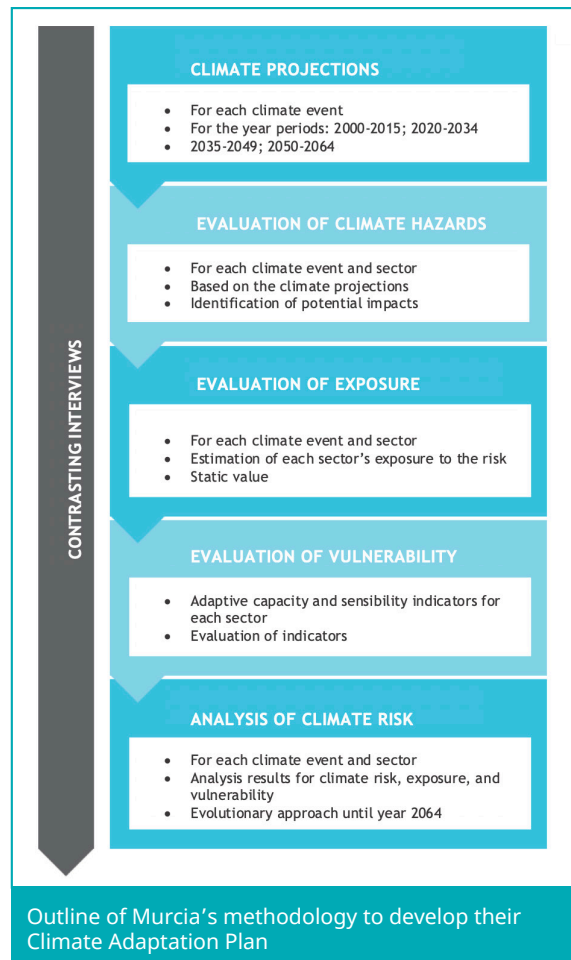
IN A NUTSHELL

Murcia has developed its Climate Adaptation Plan through an innovative and insightful methodology that not only assesses climate risk, but also measures social vulnerability and the adaptive capacity of the different sectors in the city.

Context

Murcia, a pioneer city in the fight against climate change, was one of the first Spanish cities to sign the Covenant of Mayors in 2008. Through the implementation of its Sustainable Energy Action Plan 2020, it reduced emissions by 24.5% in 2015, exceeding the 20% emission reduction objective for 2020. The Spanish city, acknowledging the climate challenges ahead and the urgency of building resilience, developed a Climate Adaptation Plan in 2018 that not only assesses climate risk, but also evaluates the adaptive capacity and climate hazards of the different sectors - water, agriculture, health, urbanism, and natural environment – until year 2064 to prioritise actions accordingly.

One of the main strong points of Murcia’s Adaptation Plan is its innovative methodology to analyse climate risk, which allows the municipality to prioritise different sectors every 15 years based on climate projections. This methodology is an adaptation of one of the UK Climate Impacts Programme (UKCIP) tools, recognised by the United Nations Framework Convention on Climate Change. The adaptation was done based on the 2014 IPCC report evaluation, and the creation of a vulnerability index was inspired by various international assessments on adaptive capacity.



MURCIA

Population: 453,258	Area 885.90 km ²
Signatory to the Covenant of Mayors since: 2008	CO₂ emission reduction target: 40% emissions reduction by 2030

Measuring exposure, vulnerability and sensitivity – 15 years at a time to plan for long-term scenarios

Before calculating the climate risk, Murcia conducted a climate projection study, divided into 15-year periods until the year 2064, to use in their analysis of the different sectors. These 15-year periods, with the climate projections and climate hazards in the different sectors, allow the municipality to prioritise short term and long-term actions according to the changing vulnerability of each sector. Then, Murcia assessed the climate risk by the interaction of three main indicators measured on a 1 to 6 scale: potential impact, exposure, and vulnerability.

The potential impact is defined as the climate tendencies, such as heatwaves, floods and droughts, and their potential physical impacts. The exposure indicator considers the existent information of each sector to assess the presence of people, services and resources in risk zones. Finally, vulnerability is defined as the sector's predisposition to be negatively affected. This last indicator also measures the adaptive capacity and sensitivity of the different sectors. While sensitivity refers to the historic climate events affecting each sector, adaptive capacity evaluates the sectors' capability to respond to new challenges, taking into consideration their capacity planning, economic resources, infrastructure, technology, and social capacity.

As a result of the analysis and taking into consideration the climate projections, Murcia was able to identify water, health, agriculture, natural environment, and urbanism respectively as priority sectors in the 2020-2034 timeframe. Following these findings, the Spanish municipality conducted expert interviews to verify the accuracy of their analysis and held 11 panel discussions with a total of 103 participants from the public sector, companies, experts, organisations, associations, universities and citizens, to collect their concerns regarding these questions: How should Murcia respond to the vulnerability factors identified? How should Murcia protect each sector from the potential climate impacts? How to complement or improve the ongoing actions in the municipality to make them more efficient in their response to the challenges ahead? Finally, Murcia integrated the participants' concerns to develop the Adaptation Plan's actions.

Working with vulnerable population groups

One of Murcia's main objectives is to build its citizens' prevention and reaction capacity to health risks associated with climate change, through capacity building and actions against energy poverty. The Spanish municipality recognises how energy poverty and poor building insulation is affecting 30,000 households in Murcia, which makes them especially sensitive to extreme temperatures and climate change hazards. In this context, Murcia has measured social vulnerability in reference to the health and urbanism sector. While the health sector is essential to care for citizens' well-being, the urbanism sector addresses citizens' capacity to afford their home energy bills. To determine the social vulnerability of each sector, Murcia evaluated a range of indicators, such as population poverty rate, unemployment rate, size of house in m² per person, and green areas hectares per habitant, based on data available and interviews with the relevant administration officials.

Beyond developing a Climate Adaptation Plan fit to the municipality's social needs, they have also implemented a Plan on Energy and Water Poverty, including actions such as the creation of a social fund for those suffering from energy poverty, campaigns on efficient energy consumption and an information desk for vulnerable citizens. As part of the municipality's effort to support citizens experiencing energy poverty, Murcia has distributed a total of 297 grants for the supply of electricity, which 1,317 people (1,027 adults and 290 minors) have benefitted from. A social fund of €800,138.97 for the supply of water was also established, which has aided a total of 17,331 people.

KEY FIGURES

Participative process that included **11** panel discussions with a total of **103** participants

A climate adaptation plan with **4** strategic objectives, **11** goals, and **25** lines of action to implement **61** adaptation measures



FINANCING THE PROJECT

- + **Financing source(s):**
Municipality of Murcia
- + **Total project budget:**
€35,000 to develop the climate adaptation plan and €17,567,900.84 dedicated to the implementation of the adaptation measures

USEFUL LINKS

► <https://www.energiamurcia.es/>



CONTACT

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