

## **GA3: Environmental**

*Mitigating the effects of heatwaves  
and drought in Southern Europe*

LAL ZEYNEP NİZAM



**Forum:** General Assembly: Environmental Committee (GA3)

**Issue:** Mitigating the effects of heatwaves and drought in Southern Europe

**Student Officer:** Lal Zeynep Nizam - President Chair

## Introduction

Recent years have seen a considerable increase in the consequences of heatwaves and droughts in Southern Europe, with climate change escalating its frequency and severity. Due to its geography, climate, and heavy reliance on agriculture and tourism, Southern Europe, which includes nations like Spain, Portugal, Italy, Greece, and Turkey, is particularly susceptible to these effects.

## Definition of Key Terms

**Sustainable development:** That meets the needs of the present without compromising the ability of future generations to meet their own needs.

**Mitigation:** The process of reducing or preventing the adverse effects of climate change by reducing greenhouse gas emissions or enhancing carbon sinks.

**Heatwaves:** A prolonged period of excessively hot weather, which may cause harm to human health, ecosystems, and infrastructure.

**Drought:** A period of abnormally dry weather that leads to water shortages, reduced crop yields, and ecological damage.

**Climate change:** A long-term shift in global weather patterns, caused by human activity, which has resulted in rising temperatures, sea level rise, and changes in precipitation.

**Greenhouse gasses:** Atmospheric gases, including carbon dioxide, methane, and nitrous oxide, trap heat and contribute to the warming of the earth's atmosphere.

## General Overview

Heatwaves, which are characterized as protracted episodes of extremely hot weather, can have a considerable negative impact on ecosystems, agriculture, and human health. For marginalized communities like the elderly and small children in particular, they can lead to dehydration, heat exhaustion, and heat stroke. Also, they can worsen air pollution and raise the

danger of wildfires, which can cause respiratory issues. Heatwaves can also have a negative impact on the agricultural industry, which is an important source of employment and economic activity in Southern Europe. High temperatures can have a negative impact on crop production, increase the likelihood of pests and illnesses, and cause farmers and agricultural businesses to lose a sizable amount of money. Droughts, which are extended times when exceptionally little precipitation falls, can have a negative influence on ecosystems, agriculture, and water resources.

Heatwaves and droughts in Southern Europe have a substantial negative influence on the economy and society as well as the physical environment. Particularly susceptible to these effects are the agricultural and tourism sectors, all of which account for a large portion of job creation and economic activity in many Southern European nations. Severe heat can deter visitors, and droughts can result in water crises and a decline in the standard of beaches and other attractions, which can result in big financial losses. In order to address these issues, the European Union and many Southern European nations have created initiatives and strategies that will lessen the effects of heat waves and droughts, as well as cut greenhouse gas emissions, and advance sustainable development. Despite these initiatives, however, the effects of heatwaves and droughts in Southern Europe continue to present significant challenges, and overcoming this challenge will necessitate a big commitment from all interested parties as well as a desire to adapt to changing conditions and embrace novel solutions.

The effect of heatwaves and droughts in Southern Europe is a serious problem that has persisted for many decades to lessen the consequences of heatwaves and drought in Southern Europe. Due to its dry environment and dependency on agriculture, which has caused it a hotspot for droughts and heatwaves in previous years, the region is especially sensitive to the effects of climate change. Since climate change has advanced and droughts and heatwaves have become more regular and severe in Southern Europe, the matter has become more serious. Significant agricultural losses, water shortages, and health issues brought on by the intense heat are just a few of the negative effects of these disasters.

Governments, non-governmental organizations, and members of civil society have all taken action to lessen the impact of heatwaves and droughts in Southern Europe. As part of these initiatives, steps have been taken to advance environmentally friendly agricultural and water management techniques, improve the availability of water resources, and boost public understanding of the dangers that climate change poses. Notwithstanding these initiatives, Southern Europe's problem with heatwaves and droughts continues to be a major obstacle. It is imperative that additional effort be done to solve this problem because it is anticipated that the effects of climate change will only get worse in the upcoming years.

## **Major Parties Involved and Their Views**

**United Nations Framework Convention on Climate Change (UNFCCC):** UNFCCC is an international organization that was established in 1992 to address climate change. The organization is actively involved in addressing the issue of heatwaves and droughts in Southern Europe through a range of initiatives and programs. The UNFCCC has played a crucial role in developing the Paris Agreement, which is a global agreement aimed at preventing global warming from rising no more than 2 degrees Celsius and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius.

**Intergovernmental Panel on Climate Change (IPCC):** IPCC is a body established by the United Nations in 1988 to provide policymakers with scientific information on climate change. The IPCC has been actively involved in researching the impacts of climate change, including the threats heatwaves and droughts and possess, and has provided recommendations and plans for adapting to and or mitigating these impacts.

**European Union (EU):** EU is a regional organization made up of 27 member states, and has been actively involved in addressing the issue of heatwaves and droughts in Southern Europe. The EU has developed a range of initiatives aimed at reducing greenhouse gas emissions and addressing the impacts of climate change. In 2019, the EU adopted a new climate change strategy, which aims to make the EU members climate-neutral by 2050. The strategy includes a set of measures, including the increment of the share of renewable energy, improving energy efficiency, and developing clean transport systems. The EU has also developed a European Climate Law, which establishes a framework for achieving climate neutrality by 2050 and includes a commitment to reducing greenhouse gas emissions by at least 55% by 2030.

**World Health Organization (WHO):** Another organization involved in addressing the issue of heatwaves and droughts in Southern Europe, the WHO. This organization has recognized the impact of extreme weather events on human health and has identified heatwaves and droughts as significant public health challenges. In 2015, the WHO launched a Heat-Health Action Plan, which provides guidance on how to develop and implement heatwave warning systems and response action plans. The plan includes a set of guidelines for countries to follow in order to develop their own heatwave and drought action plans, as well as recommendations for public health actions that can be taken during heatwaves.

**Mediterranean Strategy for Sustainable Development (MSSD):** The Mediterranean Strategy for Sustainable Development is a plan adopted in 2005 by the countries surrounding the Mediterranean Sea, including Southern European countries. It aims to promote sustainable

development in the region, including the protection of the environment and the conservation of natural resources.

## Timeline of Events

2003	<i>30,000 deaths in Southern Europe caused by heatwaves, underlining the urgent need to address the impacts and possible results of extreme heat.</i>
2007	<i>The Intergovernmental Panel on Climate Change releases its fourth assessment report, which shows the affect of climate change on Southern Europe, which consists of increased frequency and severity of heatwaves and droughts.</i>
2017	<i>A severe drought in Southern Europe leads to crop failures, water shortages, and increased wildfire risk.</i>
2020	<i>Inducing to increased health risks and fires, Southern Europe experiences a set of heatwaves.</i>
2022	<i>Chronic heatwaves affect Southern Europe, from June to August 2022, causing evacuations and over 20,000 heat-related deaths, making these heat waves the deadliest meteorological events in 2022. The highest temperature recorded was 47.0 °C in Pinhão, Portugal, on 14 July.</i>

## Treaties and Events

**The Kyoto Protocol:** The Kyoto Protocol was an international treaty that required industrialized countries and More Economically Developed Countries (MEDCs) to reduce their greenhouse gas emissions by an average of 5.2% below the levels of 1990. The treaty was seen as a major step in addressing climate change, but its effect was limited due to the fact that some countries with the largest emissions, including the USA, China and India, did not approve it.

**The Paris Agreement:** The Paris Agreement was a guiding light in the international climate agreement that had a goal to keep global temperatures from rising no more than 2 degrees Celsius above pre-industrial levels. The agreement includes commitments from countries to reduce their greenhouse gas emissions and to adapt to the impacts of climate change. Unlike the Kyoto Protocol, the Paris Agreement includes commitments from all countries, including LEDCs.

**EU adopts the Clean Energy Package:** The Clean Energy Package is a set of policies adopted by the European Union aimed at accelerating the transition to a low-carbon economy. The

package consists of a variety of measures, including targets for renewable energy, energy efficiency, and carbon emissions reductions. The EU has been a pioneer in addressing climate change and global warming, and the Clean Energy Package is a significant step towards achieving its goal of becoming climate and carbon-neutral by 2050.

**EU Climate-neutral by 2050:** The EU has set the ambitious goal of achieving climate neutrality by 2050. This means that greenhouse gas emissions will be reduced to a level where they can be balanced out by removing or reducing emissions from other sources, such as carbon sinks. To achieve this goal, the EU has adopted a number of policies and initiatives, including the European Green Deal, which aims to transform the EU into a sustainable, low-carbon economy.

## Evaluation of Previous Attempts to Resolve the Issue

While efforts to mitigate the impacts of heatwaves and droughts in Southern Europe have been ongoing for many years, progress has been slow and there is still much work to be done. Some of the challenges that have hindered progress include;

*Lack of political will:* Despite the clear and urgent need to address the impacts of climate change, many politicians and policymakers are reluctant to take strong action, due to concerns about the economic costs of transitioning to a low-carbon economy.

*Limited resources:* Many Southern European countries have limited resources to invest in adaptation and mitigation measures, which can make it difficult to implement effective solutions.

*The complexity of the issue:* Mitigating the impacts of heatwaves and droughts in Southern Europe is a complex and multifaceted issue, requiring coordinated efforts across different sectors and levels of government.

## Possible Solutions

In order to tackle the effects of heatwaves and droughts in Southern Europe, several solutions are possible;

*Investment in Renewable Energy:* Increasing investment in renewable energy can help reduce greenhouse gas emissions and promote sustainable development. The EU and individual member states can provide financial incentives for the development of wind, solar, and other renewable energy sources.

*Energy Sustainable Agriculture:* Promoting sustainable agricultural practices, such as precision farming and crop diversification, can help reduce the water footprint of agriculture and

increase the resilience of crops to droughts. Governments can provide financial incentives for farmers to adopt these practices.

*Water Management:* Improved water management can help reduce the impact of droughts on agriculture and society. Governments can invest in water infrastructure, such as dams and reservoirs, and promote water-saving technologies, such as drip irrigation.

*Public Awareness:* Raising public awareness about the impacts of climate change and the importance of sustainable development can help build support for strong action on climate change. Governments and NGOs can develop public awareness campaigns to promote low-carbon lifestyles and sustainable development.

*International Cooperation:* International cooperation is essential for addressing the transboundary nature of climate change. The EU can work with international organizations and other countries to promote global action on climate change and provide financial support for climate adaptation and mitigation efforts in Southern Europe.

## **Bibliography**

Kovats, R. Sari, and L. Ebi Kristie. "Heatwaves and public health in Europe." *European journal of public health* 16.6 (2006): 592-599.

Steffen, Will, Lesley Hughes, and Sarah Perkins. "Heatwaves: hotter, longer, more often." (2014).

Mukherjee, Sourav, Ashok Mishra, and Kevin E. Trenberth. "Climate change and drought: a perspective on drought indices." *Current climate change reports* 4 (2018): 145-163.

Cook, Benjamin I., Justin S. Mankin, and Kevin J. Anchukaitis. "Climate change and drought: From past to future." *Current Climate Change Reports* 4 (2018): 164-179.

Sutanto, Samuel Jonson, et al. "Heatwaves, droughts, and fires: Exploring compound and cascading dry hazards at the pan-European scale." *Environment international* 134 (2020): 105276.