Understanding the Perceptions of Persons with Vision Impairment Regarding the November 2024 Floods in Málaga, Spain: A Qualitative Study

Gustavo Christofoletti

University of Groningen

MSc Student in Cultural Geography: Climate Adaptation Governance

May, 2025

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Preface

During my undergraduate studies in Portugal, at the University of Coimbra, I began to experience severe back pain caused by disc protrusions in the lumbar, thoracic, and cervical regions. As I walked through the streets near my home, feeling significant discomfort, it became common for me to cross paths with blind persons coming out of an institute for vision impairment located nearby. I was always struck by the fact that they had to navigate extremely narrow sidewalks while vehicles sped by them at over 60 km/h.

These scenes left a lasting impression on me. Although my own pain was real, it seemed insignificant compared to the daily challenges faced by persons with vision impairment in an urban space that was clearly not designed with their inclusion in mind. I began to question myself: instead of focusing solely on my own limitations, how could I be of help? How could I contribute, with my work and abilities, to making the world more accessible and inclusive?

It was within this context, shortly after the pandemic, that my interest in studying the impacts of COVID-19 on populations with vision impairment emerged. Although this project did not come to fruition, the seed of concern for inclusion and the urban experience of blind people remained. Thus, my current research focuses on the perceptions of persons with vision impairment regarding climate-related flooding in Málaga—a topic that combines my concerns about spatial justice, inclusion, and the growing challenges posed by climate change.

Abstract

This research explores the perceptions of persons with vision impairment in Málaga, Spain, regarding the floods of November 2024. Grounded in the social model of disability and the human rights approach, the study frames disability as the outcome of social and environmental barriers, rather than individual impairment. These barriers, rooted in ableist norms, limit access to fundamental rights and services, especially during climate-related emergencies. The main objective was to understand participants' experiences during the flood. Secondary aim included identifying key challenges and gathering recommendations to inform more inclusive disaster risk reduction (DRR) planning in Málaga. Seven semi-structured interviews were conducted, each lasting approximately 30 minutes. Data were analyzed through a theoretically informed thematic analysis. Findings revealed that while participants generally viewed the local government's early warning systems as effective, they also experienced fear and heightened vulnerability. Environmental barriers—such as water accumulation, mud, and debris on sidewalks—significantly impaired their mobility. Issues such as obstructed paths and inadequate communication formats further exacerbated their risk during the event. Participants emphasized the need for improved urban planning and infrastructure maintenance, including better sewage systems and regular riverbed cleaning. They also recommended more accessible emergency protocols and clearer, inclusive communication strategies during crises. This study underscored the need for a more robust and systemic inclusion of persons with vision impairment into disaster risk reduction plans and national climate policies, in order to mitigate their vulnerability in the face of increasingly frequent extreme weather events as a consequence of climate change

Introduction

This research presents an exploratory qualitative analysis of the perceptions of people with vision impairment regarding the floods that affected the city of Málaga, Spain, in November 2024, caused by a Isolated Depression at High Levels (DANA) storm.

The current environmental context of the Anthropocene is marked by an urgent societal imperative to confront the multifaceted challenges posed by climate change, while simultaneously safeguarding human well-being and planetary biodiversity. These three interconnected goals cannot be addressed in isolation, as actions targeting one domain inevitably impact the others. This underscores the necessity for holistic, cross-sectoral public policies that can respond to the complex social and ecological demands of the 21st century (Seddon et al., 2020).

In this context, it is essential to adopt an inclusive, transversal framework in national climate policies—one that ensures the inclusion of persons with disabilities in climate adaptation, mitigation, and disaster risk reduction (DRR) strategies. The exclusion of persons with disabilities from climate governance and environmental justice agendas exacerbates their levels of exposure, risk, and vulnerability to climate-related hazards. Moreover, during extreme weather events—such as the floods that impacted Málaga—persons with disabilities often experience disproportionate harm and disruption. It is therefore critical to approach disability from a heterogeneous perspective, recognizing the diversity within this group. Factors such as age, gender, socioeconomic status, and the co-occurrence of multiple disabilities significantly influence an individual's risk and vulnerability. For instance, women and children are known to be disproportionately affected by extreme climate events (Gomes et al., 2022; Jodain et al., 2022; Johnson et al., 2011).

According to Nixon's (2011) theory of *slow violence* and the *environmentalism of the poor*, the persistent non-representation of persons with disabilities in climate justice narratives constitutes a form of structural harm. Nixon defines *slow violence* as "a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all" (p. 2). This conceptual lens draws attention to the long-term, cumulative, and often invisible nature of the marginalization experienced by people with disabilities when they are excluded from environmental and climate-related decision-making processes.

Nixon further emphasizes the importance of addressing representational challenges—specifically, the urge to raise awareness and visibility of hidden forms of violence that are often overlooked in policy and public discourse. These challenges are evident, for instance, in national climate policies that fail to include people with disabilities, thereby reinforcing their social invisibility. Such exclusions obscure forms of slow violence that degrade lives silently and over time. Mainstream media and public policy often prioritize immediate, highly visible disasters, thereby sidelining slower, structural forms of harm that lack media attention and political urgency. A paradigm shift is required—one in which public policy is informed not only by the visible impacts of disaster but also by the invisible, enduring consequences of neglect and exclusion.

The literature review revealed a significant research gap in understanding the intersection between disability, viewed through a human rights perspective, and climate change—particularly regarding the lived experiences of individuals with vision impairment during flooding events.

This research is theoretically grounded in a combination of the social model and the human rights model of disability. These frameworks converge in emphasizing the necessity of

accessible national policies that promote the full and equitable participation of persons with disabilities in society by dismantling social barriers and upholding fundamental human rights (Focke-Bakker & van Gelder, 2025). The social model of disability rejects the view that disability arises solely from individual impairments. Instead, it understands disability as a socially constructed phenomenon—produced by physical, institutional, and attitudinal barriers that limit the autonomy and participation of persons with impairments (Berghs et al., 2021; Gladman, 2008; Gomes et al., 2022).

A key contribution of the social model is its distinction between *impairment* and *disability*: the former refers to a biological condition of the body or mind, while the latter refers to the disabling effects of an unaccommodating society (Della Fina et al., 2017).

The human rights model of disability—articulated in the United Nations Convention on the Rights of Persons with Disabilities (2006)—reinforces this perspective by affirming the inalienable right of persons with disabilities to participate equitably in all areas of life. This model promotes a multidimensional view of inclusion that spans political, social, cultural, and economic spheres, ensuring the dignity and full citizenship of people with disabilities (Della Fina et al., 2017).

Given the urgent need for inclusive climate governance and the current lack of data on how people with disabilities experience extreme weather events, it is both necessary and timely to document these experiences. Such data are essential for building inclusive, evidence-based environmental and DRR policies (Smith, Simard et al., 2017, as cited in Gomes et al., 2022).

This research aims to contribute to equitable climate governance by amplifying the voices of people with disabilities and encouraging environmental justice movements to incorporate disability rights into their agendas and action plans. Furthermore, it aligns with the priorities

set out in the **Sendai Framework for Disaster Risk Reduction (2015–2030)**, which emphasizes the need for a comprehensive understanding—by both policymakers and society—of disaster risks in all their dimensions: exposure, vulnerability, and hazard characteristics, as a means to strengthen governance practices in disaster risk contexts. The framework also calls for the adoption of people-centered disaster risk reduction approaches that fully include individuals through an intersectional lens, acknowledging how disability, ethnicity, age, gender, and socioeconomic status shape different levels of risk and resilience. By collecting first-hand accounts from persons with disabilities during a climate-related emergency, this study generates insights that may inform improvements in accessible urban planning and contribute to the development of inclusive and preventive flood risk strategies in the city of Málaga, Spain.

The qualitative analysis in this research is based on semi-structured interviews lasting approximately 30 to 45 minutes. The interviews were conducted with seven residents of Málaga with vision impairment, aged between their late 20s and early and 60s, via the Google Meet platform and regular phone calls. The participant group is gender-diverse and all are professionally affiliated with a local non-profit association that provides social services for persons with vision impairment. Given their lived experiences and professional knowledge, their perspectives offer critical insights for shaping inclusive climate and disaster risk reduction policies at the national level.

Anthropogenic environmental context

The human species has always depended on the environment for survival, with changes in climatic conditions often serving as significant factors influencing the risk and vulnerability of social groups. Although climate change has occurred naturally throughout Earth's history—as evidenced by geological formations, ice ages, and interglacial periods (Verma, 2019)—the

Industrial Revolution marked a critical turning and tipping point in the global climate system. Since then, there has been a marked and sustained increase in the Earth's average temperature, primarily driven by human activities, particularly the combustion of fossil fuels (Burkett, 2020). The Intergovernmental Panel on Climate Change (IPCC) Synthesis Report (SYR) released in 2023, highlights a rise in global temperature ranging from 0.8°C to 1.3°C, with a best estimate of 1.07°C between 1850 and 2019 (Dahlman & Lindsey, 2024). This shift has had profound and far-reaching consequences for both natural ecosystems and human societies, particularly those with limited adaptive capacity. The IPCC Synthesis Report (2023) underscores that, in the context of this new anthropogenic environmental reality, approximately 3.3 billion to 3.6 billion people globally reside in areas highly vulnerable to climate change.

Moreover, the IPCC Synthesis Report (2023) notes that regions and countries with a low Human Development Index (HDI) are particularly susceptible to climate hazards. The report states that from 2010 to 2020, human mortality resulting from droughts, floods, and storms was 15 times higher in vulnerable regions with low HDI scores, highlighting the disproportionate burden of climate change on communities with less resilience. Additionally, Burroughs (2005), as cited in Verma (2019), notes that climate change has both a direct and inverse relationship with development, emphasizing the adverse effects on human development caused by extreme weather events, such as the flooding observed in Málaga in November 2024. Consequently, the available evidence suggests that climate change threatens the capacity of nations to maintain a balanced and sustainable approach to social, environmental, economic, and cultural development (Schneider et al., 2002, as cited in Verma, 2019). This poses a particular threat to the future of vulnerable populations, including persons with disabilities. Carlos et al. (2008) highlight that climate change is associated not only with alterations in average temperatures but also with an increased intensity and frequency of natural climatic events, such as cyclones, floods, tornadoes, heatwaves, and droughts.

Bhattacharya (2019) explains that climate change is caused by variations in solar radiation received by the Earth's surface, volcanic eruptions, tectonic plate movements, and, more recently, anthropogenic activities, all of which contribute to the emission of greenhouse gases worldwide. Regarding the definition of climate change, Verma (2019, p. 436), in the chapter *Developing Adaptive Capability of Agricultural Societies in the Context of Climate Change*, cites the Intergovernmental Panel on Climate Change (IPCC, 2007a, b, p. 30), which defines it as "a change in the mean and/or the variability in the properties of the climate that persists for an extended period, typically decades or longer." This definition encompasses both anthropogenic and natural causes of climate change. Verma (2019) also refers to the United Nations Framework Convention on Climate Change (UNFCCC), which offers a definition with a stronger emphasis on human-induced contributions to climatic changes. The Convention defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (IPCC, 2007a, b, as cited in Verma, 2019, p. 436).

Climate change, societal inequalities and human rights

da Cunha et al. (2024) highlight that climate change intensifies pre-existing societal inequalities and vulnerabilities. Moreover, the authors emphasize the importance of aligning environmental policies with the basic social needs and fundamental human rights of vulnerable communities, such as people with disabilities. Due to this urgency, the IPCC (2023) Synthesis Report underscores the importance of developing inclusive and equitable adaptation, mitigation, and risk prevention strategies to reduce social vulnerability in the new environmental context of the Anthropocene.

Prado and Ayala (2020), as cited in da Cunha et al. (2024), mention that a sustainable and equitable environment is directly associated with fundamental human rights, as set out in the Universal Declaration of Human Rights (1948). Moreover, the Convention on the Rights of Persons with Disabilities (CRPD, 2006) links disability to climate change through Article 11, which requires signatory parties to ensure the protection of persons with disabilities in humanitarian emergencies, such as climate change and disaster risk scenarios. The United Nations Convention on the Rights of Persons with Disabilities (CRPD, 2006) has played a significant role in shaping a theoretical human rights–based approach to disability, establishing a direct link between the rights and specific needs of individuals with intersecting disability identities and fundamental human rights.

Thus, grounded in human rights principles and in light of the growing environmental challenges marked by the increasing frequency and intensity of extreme weather events, it is both necessary and urgent for nations to ensure the inclusion of persons with disabilities—recognizing their diverse and intersectional identities—within national adaptation plans and disaster risk reduction strategies, as well as to monitor this inclusion effectively. However, the literature review shows that most global states are failing to fulfill fundamental human rights and ensure an equitable and sustainable environmental future by excluding people with disabilities in many states that have ratified the Paris Agreement. The absence of inclusion of persons with disabilities in climate policies is directly related to the idea coined by Nixon (2011), where the exclusion and non-representation of persons with disabilities in climate policies can be categorized as a form of slow violence. The negative results may not be immediate, but rather cumulative, silent, and exponential, increasing the level of marginalization of persons with disabilities and preventing their equitable participation and contribution to society.

Jodoin et al. (2025), in a systematic review of climate policies from the 195 countries that ratified the Paris Agreement, demonstrated that only 41 countries refer to individuals with disabilities in their nationally determined contributions (NDCs). Moreover, the same study highlights that only 75 states include people with disabilities in their national adaptation policies. Furthermore, the lack of inclusion of persons with disabilities in national adaptation plans poses a major threat to sustainable development and exacerbates societal inequalities. Salkeld (2016), as cited in Jodoin et al. (2025, p. 1), argues that "climate policies that are based upon a universal conception of able-bodiedness only reinforce the inequities encountered by people with disabilities in society." Jodoin et al. (2025) also mention that emerging economies of the global South tend to include people with disabilities more effectively in their national adaptation policies, whereas countries of the global North have shown inadequate efforts in including people with disabilities. According to the Spanish Committee of People with Disabilities (CERMI, 2023), Spain has performed poorly in terms of the inclusion of people with disabilities in its national adaptation policies and NDCs, scoring 2 out of 13 in an inclusive climate policy index created and published in the *Disability Rights in Climate Policy: Progress Report* (2023) by scholars at McGill University, the Disability-Inclusive Climate Action Research Program (DICARP), and the International Alliance for Disability (IDA).

The low score of 2 out of 13 on the inclusive climate policy index, as reported in the *Disability Rights in Climate Policy: Progress Report* (2023), is largely due to the Spanish National Climate Adaptation Plan (2021-2030) failing to contextualize people with disabilities in concrete adaptive and mitigation measures. The Spanish National Adaptation Plan also failed to address the intersecting identities of persons with disabilities, which can influence and heighten their degree of vulnerability to climate change (Pledl, 2021).

The barriers that prevent people with disabilities from being included in national climate policies are closely related to forms of ableism. Ableism is characterized by multidimensional discrimination, marginalization, and exclusion of persons with disabilities from full and equal participation in society. This can occur through practices, institutions, and social relations that establish an idealized, 'perfect' body as the norm, pressuring people with disabilities to conform, often through medical treatment or other forms of adjustment (Campbell, 2001; Chouinard, 1997, as cited in Campbell, 2009).

Furthermore, the exclusion of intersecting identities of disability from climate governance constitutes institutional eco-ableism (Morán & Garrido, 2019), as it fails to consider the specific needs of these heterogeneous populations in national climate policies. As a result, people with disabilities are often forced to adapt to climate governance frameworks designed for those considered 'normal' according to ableist standards, thereby exacerbating their vulnerability in the context of climate change.

Eco-ableism and Environmental Justice

Although individuals with disabilities comprise approximately 15% of the global population and represent one of the most marginalized social groups (Kosanic et al., 2022), the climate change adaptation and disaster risk reduction sectors have often failed to include them in the development and implementation of related policies and programs (Smith & Simard, 2017, as cited in Gomes et al., 2022).

To ensure a more equitable and sustainable future and advance the environmental justice agenda, it is essential for countries, such as Spain, to fulfill their international human rights obligations by integrating people with disabilities into their National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs). This requires proposing concrete strategies to address eco-ableism. Furthermore, scholars and academia are also encouraged to research

the lived experiences and perceptions of people with disabilities in the current environmental context.

Smith, Simard et al. (2017), Bennett (2020), and Jodoin et al. (2020), as cited in Gomes et al. (2022), identify a significant gap in research concerning the disproportionate impacts of climate change on people with disabilities within a human rights framework. As Jodoin et al. (2020, pp. 3–4) observe, "none of the articles, monographs, edited books, or special issues that have been published on human rights and climate change tackles how the rights of persons with disabilities might be affected by climate change." Gomes et al. (2024) address this gap through one of the few studies exploring the intersection of disability and climate change from a human rights perspective. Their qualitative exploratory research, titled *(In)visibilities About the Vulnerabilities of People with Visual Impairments to Disasters and Climate Change: A Case Study in Cuiabá*, assesses the inclusion of people with visual impairments in Brazil's national adaptation planning.

The evolving environmental context of the Anthropocene demands particular attention to the inclusion of people with disabilities in risk reduction plans for extreme climate events. National climate policies must be inclusive and consider intersectional dimensions of disability. Including people with disabilities in environmental justice movements is not only necessary but a fundamental human rights issue. Failure to do so perpetuates a form of discrimination known as **eco-ableism**. According to Nogueira et al. (2025), eco-ableism occurs when the specific needs of people with disabilities are ignored in environmental policymaking and activism. This often results from the limited understanding non-disabled activists have of the unique challenges faced by persons with disability, leading to well-intended but harmful solutions.

An illustrative case of eco-ableism is found in Malibu, California, where plastic straws were banned as part of an environmental campaign to reduce ocean pollution. As da Cunha et al. (2024) explain, citing Pledl (2021), the ban failed to consider the essential role plastic straws play in the daily lives of many persons with disability. The lack of consultation with the disability community led to significant accessibility barriers. Pledl (2021) further argues that the environmental justice movement often overlooks the voices and needs of people with disabilities.

Similarly, Johnson et al. (2011) emphasize that gender perspectives remain underrepresented within environmental justice discourses. They advocate for integrating feminist disability studies into these movements to amplify the voices of women and girls with disabilities and to promote more inclusive strategies. This integration provides deeper insight into how intersecting identities, such as gender and disability, shape vulnerability and resilience in the face of climate change.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) affirms that climate change, biodiversity loss, and environmental degradation disproportionately affect marginalized groups, including persons with disabilities, women, the elderly, and Indigenous populations, particularly those facing multiple forms of disadvantage (Kosanic et al., 2022). Johnson et al. (2011) add that women and children are particularly vulnerable to extreme weather events, such as floods, reinforcing the need for inclusive and intersectional approaches in climate risk prevention strategies.

As noted by Smith and Simard (2017), and echoed by Jodoin et al. (2020, as cited in Gomes et al., 2022:1), “The intersection of experiencing an impairment and multiple discrimination as a result of gender identity, age, race, ethnicity, sexual orientation, and so on can lead to additional

exposure to risk." This underscores the need for climate governance frameworks to account for intersectionality when developing adaptive responses.

According to the U.S. Environmental Protection Agency (2016), people with disabilities face higher rates of mortality, injury, and illness during extreme weather events such as hurricanes and tornadoes. These outcomes are often linked to barriers in evacuation and emergency response systems. During Hurricane Katrina in 2005, of the 1,392 deaths recorded, nearly half were individuals over 75 years old—despite this group representing only 6% of the population. An additional 10% of fatalities occurred in nursing homes, where many residents had pre-existing conditions or disabilities. This stark disparity highlights the critical importance of ensuring that emergency and climate policies are inclusive of the needs of persons with disabilities.

Floodings and Persons with Vision Impairment

The United Nations International Strategy for Disaster Reduction (UNISDR) (2013, 2014, as cited in Focke-Bakker & van Gelder, 2025) states that floods account for 57% of all extreme weather events globally, and therefore represent a major risk for persons with disabilities. Focke-Bakker and van Gelder (2025) emphasize that the number of individuals with vision impairment has increased exponentially in recent years.

They also note that one of the consequences of climate change is the increasing intensity and frequency of torrential rainfall in certain regions, which elevates the risk of flooding within the current Anthropocene environmental context. This exposes various populations—including persons with vision impairments—to heightened vulnerability, risk, and exposure to extreme weather events in the coming years. It is estimated that, in 2022, 1 billion persons had low vision, and this number is growing at a fast rate, highlighting the urgent need for better representation of the disability community within climate governance frameworks (Cheng et

al., 2024). According to WHO Key Facts (2019, as cited in Focke-Bakker & van Gelder, 2025), vision impairment is more prevalent among individuals over 50 years of age, drawing attention to the importance of disaster risk reduction (DRR) plans that consider the intersectional identities of individuals, including age, gender, ethnicity, and other social dimensions.

One of the key aspects of DRR strategies is the development of inclusive evacuation plans that address and protect the specific needs of people with disabilities in flood scenarios. Creating such inclusive strategies is not only highly urgent but also a matter of human rights. These plans are essential to preventing social barriers from exacerbating the vulnerability, risk, and exposure to climate change experienced by the disability community. This form of hidden violence—which gradually denies persons with vision impairment the possibility of a sustainable and secure future—should be considered a violation of human rights principles (Nixon, 2011; Cheng et al., 2024; Kosanic et al., 2022).

Scholars have noted that, during floods, evacuation plans are often communicated visually, making it difficult for individuals with vision impairment to receive and act on this information, thereby impeding their ability to evacuate safely. Another significant finding by Cheng et al. (2024) is that, in emergency situations, persons with vision impairment are often instructed to move to locations they have never been to before. Even if the individual is aware of the address, additional barriers—such as unfamiliarity with the route and lack of accessible guidance—make it difficult for them to reach safety.

In the context of extreme weather events such as floods, persons with vision impairment may experience challenges perceiving the onset of the event, which may heighten their sense of danger (Focke-Bakker & van Gelder, 2025). This contributes to a **disproportionate psycho-emotional impact** of floods on persons with disabilities. Furthermore, they are more likely to be physically injured in such events due to their reduced ability to detect obstacles and hazards.

Cheng et al. (2024) also mention that the noise generated by rainfall can hinder orientation for persons with vision impairment, adding to their vulnerability. Another point raised is that, during evacuation, persons with vision impairment are often left behind by their peers or coworkers (Cheng et al., 2024).

Authors such as Good (2016), Good et al. (2016), Kharade et al. (2017), Park et al. (2019), and Sherman-Morris et al. (2020, as cited in Gomes et al., 2022) note a significant gap in scientific research concerning the perceptions and lived experiences of people with vision impairment in flood events. Bell et al. (2019, as cited in Gomes et al., 2022) further highlight the importance of conducting research in diverse geographic contexts to better understand how people with vision impairments interact with their physical environments.

According to Smith, Jolly et al. (2012), Smith, Simard et al. (2017), Gutnik and Roth (2018, as cited in Gomes et al. 2022), and Nixon (2011), four main obstacles hinder the inclusion of persons with disabilties DRR efforts. Applied specifically to persons with vision impairments, these barriers are:

1. Lack of available data, which renders the specific needs of persons with vision impairments invisible to policymakers;
2. Lack of public awareness and accessible information about vision impairment and disability;
3. Various forms of discrimination, including eco-ableism and slow violence;
4. Systemic exclusion of persons with vision impairments from all levels of DRR planning and the absence of equitable and accessible emergency preparedness measures.

These representational and institutional barriers can be directly linked to eco-ableism and forms of hidden violence. As such, they amplify discrimination and social exclusion, gradually and

exponentially increasing the vulnerability, exposure, and risk faced by persons with disabilities in the context of climate change (da Cunha Ferst et al., 2024; Nixon, 2011). Therefore, given the existing gap in the literature, this research also seeks to serve as a call to action for scholars to engage more actively with the disability community.

Strengthening the relationship between academia and disability communities fosters the development of more equitable national policies, raises public and academic awareness, and promotes the inclusion of persons with disabilities in environmental justice movements. This, in turn, combats the slow violence that occurs when people with disabilities are systematically excluded from climate governance frameworks and agendas. In this sense, understanding the perceptions and environmental interactions of persons with disabilities becomes an essential step in the design of inclusive climate adaptation and DRR strategies (Kosanic, 2022). Moreover, scholars emphasize that exploring the dimensions of vulnerability, perception, and experience among people with vision impairments in extreme weather events is not only an academic responsibility—it also holds transformative potential for social and environmental justice (Abbott & Porter, 2013; Smith, Simard et al., 2017; Gutnik & Roth, 2018, as cited in Gomes et al., 2022)

Methodology

This research presents an exploratory qualitative analysis aimed at understanding the perceptions of a group of persons with vision impairment regarding the floods caused by Storm DANA, which impacted the city of Málaga between November 12 and 15, 2024. The group consists of seven participants employed at a non-profit organization that provides a variety of social services to people with vision impairment in Málaga.

The research is grounded in both the social model and the human rights model of disability. This holistic theoretical framework emphasizes the role of social structures and agency in constructing a wide range of multidimensional barriers that systematically exclude people with impairments from accessing the fundamental human rights enshrined in the Universal Declaration of Human Rights (UDHR) and the Convention on the Rights of Persons with Disabilities (CRPD, 2006).

Within the evolving environmental landscape—marked by increasing climate anomalies and extreme weather events primarily driven by greenhouse gas emissions—the international human rights framework has progressively recognized the imperative of adopting inclusive strategies to protect the rights and well-being of persons with disabilities. Article 11 of the United Nations Convention on the Rights of Persons with Disabilities (CRPD, 2006) affirms:

"States Parties shall, in accordance with their obligations under international law, including international humanitarian law and international human rights law, take all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including armed conflicts, humanitarian emergencies, and natural disasters."

This research project, grounded in international legal commitments to disability rights, also aims to contribute to the framework established by the Third United Nations World Conference on Disaster Risk Reduction (2015–2030), held in Sendai. The UN Conference outlined a disaster risk reduction framework emphasizing the need for inclusive, preventive strategies that incorporate marginalized communities, including people with disabilities. The framework developed in Sendai identifies three key steps to achieve the meaningful inclusion of persons with disabilities in disaster risk reduction (DRR):

1. **Collecting data** to identify emerging patterns affecting persons with disabilities,

2. **Ensuring active involvement and empowerment** of persons with disabilities in research processes,
3. **Incorporating diverse forms of knowledge**—scientific, Indigenous, and local perspectives from communities with disabilities—into risk management practices (Kosanic et al., 2022).

Thus, the research project will address point A mentioned above, specifically regarding the collection of data on trends within the population with vision impairment. Moreover, the project aims to contribute to the development of disaster risk reduction (DRR) policies by documenting local perspectives shared by interviewees regarding floods, as well as by gathering their recommendations for reducing the vulnerability of people with visual impairments in the face of such events.

Data Collection

Data were collected through semi-structured interviews comprising 14 questions. These questions were designed to explore participants' perceptions of living with a vision impairment in Málaga, their experiences during flood events and red alert days, the main challenges they faced, and their suggestions for enhancing the accessibility of Málaga's urban environment. Additionally, the interviews gathered recommendations from persons with disabilities on how to develop more inclusive and equitable disaster risk reduction (DRR) plans.

In accordance with ethical research practices and respect for participant integrity, individuals were invited to take part in this study voluntarily and retained the right to withdraw at any stage. Prior to the interviews, they were thoroughly informed about the research objectives and the overall design proposed by the researcher.

The interviews were conducted primarily via video calls, with one participant interviewed through a conventional phone call. To safeguard and respect participants' privacy—and in accordance with the *European Code of Conduct for Research Integrity* (2023)—direct identifiers, such as names and specific workplaces, have been kept confidential. Only general information, such as gender and approximate age, is presented to provide relevant context while maintaining anonymity. Refer to the Appendix for a detailed demographic profile of the participants.

Data Analysis

Following data collection, all interview recordings were transcribed using the software application *Transcribe*. The transcription process involved multiple rounds of review to assess and ensure accuracy and completeness. The transcripts were subsequently translated from Spanish into English using online translation platforms such as DeepL and Google Translate. To maintain the integrity of the original responses, further quality checks were carried out to verify the accuracy of the translations.

The data will be analyzed using thematic analysis, as outlined by Braun and Clarke (2006), following a deductive analytical approach. Codes will be generated and grouped into five predefined themes, based on how effectively they contribute to a coherent narrative that addresses the research questions. Finally, the findings will be contextualized within the existing literature and used to produce a comprehensive report and set of conclusions.

Positionality statement

From the perspective of the intentionality of consciousness — as stated by Husserl, 1959 (as cited in Santos, 2006) in the context of knowledge creation — and considering the notion that every citizen is a political agent, in the Greek sense of the word *politikós,*, meaning citizenship

and thus the bearer of their own political lenses, it becomes necessary to reflect on the positionality of the author within the research project. This reflection aims to clarify potential biases or limitations that may influence the development and outcomes of the study.

The author is a 28-year-old male researcher from Brazil, with a linguistic background primarily in Portuguese, English, Spanish and Italian. This linguistic framework may present certain limitations in terms of scope. The author previously lived and studied geography and territorial planning at the University of Malaga for a year, which allowed to gain a deeper understanding of the research location and develop closer ties with the residents of Malaga.

Although not in Malaga during the floods that occurred last November, the author sought to better understand the event by consulting professors from the geography department at the University of Malaga. This allowed to gather their perspectives on the flood's impact and disaster preparedness efforts. Engaging with Malaga residents and researchers has enabled to become more involved and contextualized in the research project. Furthermore, the absence of a vision impairment on the part of the researcher may limit the scope of understanding regarding the perceptions and lived experiences of the participants within the research project.

Themes and Codes

The thematic analysis identified five overarching themes, each supported by specific codes derived from participants' responses:

1. **Living in Málaga with vision impairment**

- Accessibility of public transportation
- Availability of social support
- Active interaction with Málaga city council
- Impacts of mass tourism
- Presence of architectural barriers

2. **Perceptions and experiences during the floods**

- Effectiveness of early warning system

- Disruption to guide dog mobility
- Dependence on family support for mobility
- Obligation to work despite Warnings
- Sensory Disorientation During Heavy Rain

3. Accessibility of official notices and emergency information

- Acessible early alerts for persons with vision impairment
- Effectiveness of local government's emergency response

4. Suggestions for reducing vulnerability in extreme weather events

- Suspension of work activities during extreme weather alerts
- Preventative actions and preparadness
- Individual self-protection and awareness strategies

5. Recommendations for improving accessibility infrastructure and emergency planning in Málaga

- Greater empathy and sensitivity in emergency services
- Availability of accessible transportation during emergencies
- Promotion of social awareness and disability education
- Elimination of environmental and architectural barriers
- Regular and preventive maintenance of urban infrastructure

Results

Theme 1 – Living in Málaga with vision impairment

Participants described Málaga as a **partially accessible city** for individuals with vision impairment. While they acknowledged several positive aspects of urban life**,** particularly regarding **mobility** and the **availability of social support within their local neighborhoods**, they also emphasized the **persistence of structural barriers** that continue to hinder their full inclusion in the city. These strucutural osbstacles align with the social model of disability, which frames disability not as an individual impairment but as a result of societal and environmental barriers that restrict equitable participation and inclusion (Berghs et al., 2021; Gladman, 2008; Gomes et al., 2022).

Around half of the participants highlighted accessible features in Málaga's **public transportation system**, particularly the **metro and bus networks**. For example, Participant D noted: *"Well, for me, it is a city that I find comfortable because the routes that I do, the truth is that they are very adapted."*

One participant emphasized that the **design of the Málaga metro** incorporated accessibility requirements for persons with vision impairment **from the early planning stages through to construction**. As Participant B stated: *"The metro is probably one of the most accessible metros—I would say the most accessible in Spain."*

Participants also highlighted the **presence of audible traffic lights** in many areas of the city, recognizing this as a positive feature. However, they noted that such traffic lights are **not yet available in all urban areas** of Málaga. Despite these gaps, participants emphasized that there is **generally good communication between the Málaga City Council and people with disabilities**. Participant D shared a personal example:

- *It is true that the City Council of Málaga has good communication with people with disabilities. For example, I have requested traffic lights in my neighborhood that were not audible, and they have adapted them*. (D, male, early 40s)

However, some participants pointed out that **accessibility remains inconsistent**, with **several bus stops lacking essential features** such as **audio announcements** for route information.
Despite the **positive accessibility features** of the city, **four out of the seven participants** identified areas in Málaga that still require significant improvement to better accommodate persons with vision impairment. Participant B emphasized this point by stating:

- *Living in Málaga, in general, I will not say that it is easy.* (B, male, mid-40s)

Among the main **architectural and environmental barriers**, participants identified **parked e-scooters**, **frequent accidents involving moving scooters and persons with vision impairment**, **narrow sidewalks**, and the **inattentiveness of pedestrians absorbed in their mobile phones**. Additionally, they highlighted the **physical and spatial constraints** brought on by **mass tourism**, particularly in Málaga's historical center, where the **high influx of tourists** creates further navigational challenges. These findings underscore the concept of **multidimensional ableism**, which manifests not only in physical infrastructure but also through **social behaviors and institutional practices** (Campbell, 2001; Chouinard, 1997, as cited in Campbell, 2009).

One of the participants emphasized that the **growth in tourism** in recent years has significantly increased the **number of people circulating** throughout Málaga. According to the participant, this rising **urban density** has made it increasingly difficult for individuals with vision impairment to **navigate and enjoy daily life** in the city:

- *Well, it is a city that has more and more people, we have a lot of tourism, there are areas that are more visited with more concentration of people, so there it is increasingly difficult to move because for mobility it is true that we need no architectural barrier, steps, sidewalks and so on.* (E, female, late 40s)

An example of the **social practice of ableism** is reflected in the everyday behavior of residents and tourists who navigate urban spaces **without consideration for the lived experiences of people with disabilities**. Even when not overtly hostile, such indifference forces people with disabilities to conform to dominant societal norms of mobility and spatial use. This process creates **socially constructed barriers** that reflect implicit exclusion (DellaFina et al., 2017), constituting a form of **slow, hidden violence** (Nixon, 2011) against the disability community.

Furthermore, participants highlighted that the **historic center of Málaga** presents a particularly low level of accessibility due to the **preservation status of its buildings**, which restricts the modification or installation of accessibility features. The area also serves as the **epicenter of mass tourism**, contributing to dense pedestrian traffic that poses additional mobility challenges for persons with vision impairment. Participant E illustrated this point:

- *There are areas that are very well, with wide sidewalks and without obstacles and with curbs and tiles that are well delimited, and there are other areas that are not, especially the older areas that are narrower streets and have a street lamp, a tree, a traffic sign, a traffic light—many elements—so it is difficult to move around, especially if there are many people*. (E, female, late 40s)

In addition to the **social practices of ableism** observed in densely populated areas of Málaga, **institutional ableism** can also be seen in the design of **narrow sidewalks** and urban spaces by city planners who fail to consider the specific mobility needs of people with disabilities. This oversight implicitly reinforces the marginalization of individuals with disabilities within urban environments. As urban spaces are typically designed with an assumption of **abled bodies**, people with disabilities are forced to adapt to environments not tailored to their needs. This dynamic makes the emergence of **socially constructed access barriers** glaringly apparent, highlighting how urban design can perpetuate exclusion.

Furthermore, the **human rights model of disability** becomes increasingly significant in this context. It is not enough to merely identify these barriers; they represent **restrictions on fundamental human rights**—such as the right to mobility, access, and participation in society. The removal of these barriers is therefore not just a matter of accessibility but a matter of ensuring that **basic human rights** are upheld for all members of society, regardless of their physical capabilities.

Theme 2 - Perception and experiences during the floods

According to the participants, their perception of the flood events was initially shaped by the **advance warnings** issued by *La Junta de Andalucía*, the governing body of the autonomous community of Andalusia. Many interviewees emphasized that these warnings were crucial in preventing a potentially catastrophic outcome. Several participants noted that if such warnings had not been issued, the consequences could have mirrored the severe flooding that occurred two weeks earlier in Valencia, which resulted in significant **loss of life and property**.

As Participant B highlighted:

- *It is true that there were many warnings. More than other times, I tell you too, because we were coming from the disaster we were coming from. If what happened in Valencia had not happened, surely the level of warnings would have been lower.* (Participant B, male, mid-40s)

Thus, it is evident that the tension generated by the climate disaster in Valencia prompted increased preparedness by the autonomous government of the Andalusian region. However, despite the **red alert** status for participants and residents of Málaga, some residents were still required to **report to their workplaces** on the critical day of the flood. Participant **G** recounted the perception and experience during the day of the flooding, and ultimately had to go to work due to directives issued by the higher authorities of the institute where the participant is employed.

- *We were on pre-warning, and then we went out to the street with caution, because I came here to work* (G, female, early 40s)

- *It was about half past seven in the morning, and when I arrived here, the person in charge here, said that we had better go back home, and I was going back by bus* (G, female, early 40s).
- *A sister of mine already called me, she was not working that day, and she called me to tell me that she was picking me up, and then she picked me up in her car, and I think it was a good idea* (G, female, early 40s).

In addition to the **perception of insecurity,** participants also mentioned that the regular bus stop—used daily for commuting—was in critical condition due to the heavy rainfall that occurred during that week. The participant G stated: *"Well, especially the insecurity, wasn't it? About what could happen. And it's true that when I got home and saw the news, the bus stop that had been flooded was mine—the one here on Avenida Andalucía, the one I would have had to take to return home. So, in that respect, I must say, it really struck me."*

These findings align with the recommendations for **inclusive climate policy** proposed by the Spanish Committee for People with Disabilities in 2024, which emphasize the need for specific and equitable evacuation services for people with disabilities during extreme weather events (CERMI, 2024).

Participants also highlighted the **inadequacy of the city's drainage system in certain areas**, which was unable to manage the large volume of rainfall during the November floods. Participant C, described the situation as follows: *"Well, it was a very rainy day; there was an impressive amount of water. The streets were completely flooded, and in the neighborhood where I live, the water rose over the sidewalks and entered buildings. Some garages were flooded."*

Furthermore, **participants reported a sense of insecurity during the floods**. Participant B described the situation by stating: *"It is true that day was a bit chaotic because it was difficult to decide what to do. There was a special sensitivity, and being on red alert, well, there was also that concern and that fear."*

These findings underscore the urgent need for more cohesive and actionable climate policies that include a comprehensive set of recommendations and measures specifically designed to safeguard and inform people with disabilities in climate-related risk situations. **The disconnect between existing climate policies and disability considerations contributes to a heightened state of unpreparedness**, thereby increasing the vulnerability, risk, and exposure of people with disabilities within the current environmental context.

The torrential rains that occurred in Málaga, Spain, in November also created **mobility challenges** for participants who rely on **guide dogs**. The accumulation of mud and debris in urban areas following the flooding significantly hindered movement. Participant A remarked: *"Well, when I had to take the dog out—I am blind and I have a guide dog—it was difficult to do so because there was a lot of mud, right? On the street around my house, and a lot of branches, so it was a bit dangerous."*

The difficulty experienced by the participant underscores the importance of inclusive disaster risk reduction strategies that explicitly consider the role of guide dogs. Cheng et al. (2024) noted that evacuation plans during extreme weather events often fail to account for guide dogs, thereby excluding an essential aspect of mobility for people with visual impairments. Similarly, the Spanish Committee on Disability (CERMI, 2024) emphasized the need for inclusive climate policies that incorporate guide dogs and other specialized emergency services, acknowledging the intersectional identities and specific needs of people with disabilities.

Moreover, participant E also reported heightened insecurity and particular mobility challenges experienced by people with vision impairments during periods of torrential rain and flooding:

- *The flood, as I told you, if it catches you in the street, it's true that you have to be more careful. For those of us who cannot see, we can't distinguish puddles, and the sound of the rain—it creates a noise that disorients you a bit. You have to know your route well, you walk more slowly, and it's true that people carry umbrellas. Umbrellas are at head height, and you feel unsure about how to move, with the fear of falling, slipping, or being hit by an umbrella. The truth is, for those of us who are blind, rain makes moving through the streets not only cumbersome, but also unsafe.* (Participant E, female, late 40s)

These results align with the findings of Cheng et al. (2024), who identified a higher level of psycho-emotional impact from flooding on the disability community. Individuals with visual impairments are particularly vulnerable, as they face greater challenges in detecting obstacles and are more susceptible to sensory disorientation caused by torrential rain. Such conditions create significant barriers to orientation and safe evacuation, increasing the likelihood of injury during extreme weather events.

Additionally, some participants reported being able to take leave from work and remain at home as a form of self-protection. Participant D explained that a previously scheduled work trip for a conference in another city was canceled due to the red alert. This allowed for the adoption of self-protective measures, such as staying indoors. The participant stated:

- *Maybe I'm not the person who can give you more experience or more insight, because when the alarm went off—which was on a Wednesday night—I was preparing to travel to Madrid for a course on Thursday. But they cancelled the course and told us to attend*

from home, online. The course lasted two days, and during those days—Thursday and Friday, which were the most intense days of the storm—I stayed home, without leaving, while attending the course remotely. (Participant D, male, early 40s)

Furthermore, participant F also reported choosing to remain at home as a self-protection measure. The participant stated:

- *When we received the Red Alert notice the night before, I was waiting to see what the company would decide—whether we had to go to work the next day or not. Since we did not receive any official communication, I made the decision—given that we were, as I said, under a Red Alert—and I had no legal obligation to report to work. So I went in, took my computer, and returned home. From there, I worked remotely, because I felt unsafe being in the office as the heavy rain began.* (Participant F, female, early 40s)

Although some participants were able to adopt **self-protective measures** such as staying at home following the storm warning issued by the State Meteorological Agency—which forecasted torrential rain between November 12 and 15 (La Opinión de Málaga, 2024)—others were required to report to their workplaces. In particular, participants who lived closer to their place of employment were asked to carry out their duties in person, despite the official alerts and hazardous weather conditions affecting Málaga.

This situation can be analyzed within the broader context of the weather alerts issued by the Civil Protection Service. On November 12th, a red alert was declared, remaining in effect until 7:00 a.m. on the 13th. This period coincided with the heaviest rainfall, which led to flooding in several areas of the city (El Español, 2024). However, at 7:00 a.m. on November 13th, the Civil Protection Agency downgraded the red alert to an orange alert. This change may have led

the management of the non-profit organization where the participants work to underestimate the severity of the situation and, consequently, to request that some employees report to the workplace—despite the ongoing flood risk.

Later that same morning, at 10:00 a.m., the red alert was reactivated, prompting the organization to instruct workers to return home. This sudden shift underscores how a **lack of clarity and consistency in emergency warnings can heighten the exposure, risk, and vulnerability of persons with vision impairment during extreme weather events.**

Theme 3 - Acessibility of oficial notices and emergency information

All participants in the sample considered the emergency warnings to be **accessible** and understandable. They acknowledged that the government of the Autonomous Community of Andalusia acted preventively by issuing alerts starting on November 12th, warning of storms expected to continue through November 15th. Participants reported direct experiences and perceptions related to the red alert issued by the regional government on November 12th, which forecasted torrential rain for the following day. One participant described the moment the alert was received:

- *Yes, yes, the night before, the cell phone alarms went off. Yes, the alarm went off at home—on all the cell phones we have—and well, we didn't know at first, but we said, okay, this must be the rain alarm, of course* (Participant G, female, early 40s)

Moreover, participant C commented on the accessibility of the early warning system for individuals with visual impairments, stating: *"I saw it well. I saw the warning through the telephone system quite clearly—the text was accessible. The AEMET warning was issued the day before, with sufficient time. The alarm was perfectly audible, and the text was fully*

readable. It was entirely accessible, so there is no need for lights or colorful visuals; it's enough for a person to simply know the type of alert."

Additionally, participants noted that, along with the audible emergency alert, a written message was also provided. Although the message itself was not delivered in audio format, it could be accessed through external screen-reading applications, making it functionally accessible for persons with visual impairments. Participant D explained:

- *Well, the information advised us to be cautious, to avoid leaving our homes unless it was absolutely necessary—and rightly so.* (Participant D, male, early 40s)

According to the participants, the **preventive measures** implemented by the government of the Autonomous Community of Andalusia were crucial in preventing loss of life. Participant B emphasized the importance of effective alert systems, stating:

- *What I do think it is important is that there is a good level of alert, that there is sufficient warning and so on. And I tell you, in this case it was done well and very prudently, but I think that everything was also very overdetermined, everything was very conditioned to what happened in Valencia. If what happened in Valencia had not happened, surely the response would have been different. Less efficient. But all the city councils at a political level were very sensitive not to make any more mistakes like what happened in Valencia. And that is why I do believe that there was a lot of zeal and prudence in everything that was done at the time of alerting and attending to possible claims*.

Theme 4 - Suggestions for reducing vulnerability in extreme weather events

Among the participants, approximately half identified the **cancellation of work activities** as essential for reducing the vulnerability of individuals with visual impairments during adverse

weather events. Participant A noted: ¨*Well, maybe they are such big alerts, we didn't even have the office, but well, we didn't think they were going to be that big either*¨

Similarly, Participant D expressed a similar view, stating:

- *In the company where we work, I believe that work on Thursday should have been suspended for the entire workforce starting on Wednesday*. (Participant D, male, mid-40s)

This feedback reinforces the need for disaster risk reduction plans that are designed through the lens of the human rights model of disability (Jodain, 2025). Such plans should recognize the intersectional identities of people with disabilities, including their active roles in society as workers. Climate policies should intensively include risk reduction strategies that do not overlook the fundamental rights and needs of people with disabilities, such as the ability to engage in employment. From the perspective of the human rights model of disability, disaster risk reduction plans must account for the fact that people with disabilities have work routines and may be unexpectedly required to go to work during extreme weather events or be caught in situations where such events occur during their shifts. Therefore, instructions provided by responsible government institutions to the disability community should be clear and comprehensive, offering a range of specific emergency services that can be activated in disaster-risk situations.

Theme 5 - Recommendations for improving accessibility infrastructure and emergency planning in Málaga

Participants highlighted the **need for more humane emergency services**, emphasizing the importance of **empathy** when interacting with the disability community. They reported that current services often lack compassion and are overly rigid. Participant D shared a experience:

"*It felt very rough, very unsentimental. You don't find any... Well, there's no reassurance, like 'don't worry, we'll help you,' nothing. They just ask for your details—name, phone number, email—very serious, very professional. I didn't like it."*

Participant D further expressed the need for greater sensitivity within Málaga's emergency services, stating:

- *A little more humanity, that is, the person who calls usually has a serious problem. In other words, a little empathy—that would be the word—empathy. Just a little more empathy.* (Participant D, male, mid-40s)

These findings align with the broader need to address ableism through a multidimensional framework, which includes challenging ableism in social relationships and institutions that treat individuals as homogenous, without considering their unique intersectional experiences. In the context of climate change and the heightened vulnerability of people with disabilities, framing individuals with disabilities in a generic way by emergency services can create a social barrier, contributing to what can be termed as "eco-ableism." In the absence of inclusive and equitable disaster risk reduction policies, individuals with disabilities are forced to adapt to plans primarily designed for able-bodied individuals, reinforcing an eco-ableism framework in disaster risk management.

Participants emphasized the importance of **prevention** and the development of **transportation services** for persons in situations of vulnerability during emergency situations as key elements for improving infrastructure and emergency planning in Málaga. Participant A highlighted the need for such services, stating:¨ *Yes, I told you about prevention. Prevention, also to have a transportation service for vulnerable people in emergency situations¨*

Additionally, participants stressed the necessity of **raising social awareness** and informing citizens about the diverse experiences and perspectives of persons with disabilities. Participant D noted*:¨What I would ask is that a little more consideration be given to the fact that there are people who need to walk on the sidewalk or go down the street a little slower than the rest of society, because nowadays everyone is in such a hurry. ¨* participant follows on concluding: *¨I believe that citizens should be educated a little more. ¨*

These accounts reflect persistent obstacles that hinder the inclusion of persons with disabilities in disaster risk reduction (DRR) plans, such as the general lack of societal awareness regarding the diverse identities and lived experiences of persons with disabilities. Addressing this exclusion requires a holistic approach to socially constructed eco-ableism. This should occur at both the horizontal level—through systematically increasing public awareness of the diverse personal experiences of people with disabilities—and at the vertical level—through the development of inclusive climate policies that fully and comprehensively incorporate disability perspectives within DRR frameworks.

Participants also highlighted the impact of **excessive tourism** in Málaga's historic city center, noting that the increased pedestrian flow can create **physical and environmental barriers** for persons with vision impairments, especially during adverse weather events. As a preventive measure, Participant E suggested: *¨They should avoid disembarking in Malaga when there are warnings of this type, because the flow of people is very large,.¨*

Additionally, Participant E emphasized the importance of maintaining urban infrastructure as a key strategy for flood prevention:

- *Well, we need to take better care of the rivers, the watersheds, the swamps, and the countryside. Floods often occur because streams, riverbeds, and reservoir floodgates*

aren't cleaned. Floods can be prevented. Wind is very complicated. You can't control wind, nor can you control torrential rain. The infrastructure needs to be maintained more—if it's not, then the drains, sewers, swamps, and dams won't work properly.

(E, female, late 40s)

These findings underscore the critical importance of including people with disabilities in disaster risk reduction (DRR) sectors. Their contributions and unique lived experiences offer essential insights that must not be excluded from national climate policies. Furthermore, participants emphasized the need to remove physical and environmental barriers in Málaga's historic city center during extreme weather events. In particular, they suggested that, during periods of adverse weather, tourists arriving by cruise ship should be temporarily restricted from disembarking. This measure could help reduce pedestrian congestion and architectural barriers, thereby improving mobility and safety for people with disabilities in risk situations.

Discusion

This research project has provided concrete examples of *eco-ableism* in its multidimensional expressions. Institutional eco-ableism was particularly evident in national climate policies, which often systemically exclude the integration of people with disabilities. Among the 195 signatories to the Paris Agreement, only 75 reference people with disabilities in their climate policies (Jodain et al., 2025). Even when such references exist, they are typically vague, non-systematic, and fail to address the intersectional dimensions that shape the lived experiences of persons with disabilities.

Spain's national climate policy reflects this global trend of exclusion. The most recent and comprehensive policy framework—*Plan Nacional de Adaptación al Cambio Climático 2021–*

2030—includes only one reference to disability. This mention lacks concrete proposals for risk reduction in the context of climate-related disasters and reinforces the medical model of disability by using outdated, non-inclusive terminology. Specifically, the plan refers to "disabled people," a term that reduces individuals to their impairment rather than acknowledging their full human identity. This stands in direct contrast to the principles of the United Nations Convention on the Rights of Persons with Disabilities (CRPD), which has promoted the human rights model of disability since its adoption in 2006. Furthermore, the UN's *Disability Inclusion Strategy* (2019) underscores the importance of using inclusive language as a tool for challenging systemic ableism.

The literature review conducted for this study reveals a persistent gap in scholarship that meaningfully explores the effects of climate change on people with disabilities through a human rights and intersectional lens (Gome et al., 2022; Jodain et al., 2020). There is a pressing need for greater awareness among researchers, academia, and policymakers regarding the right of persons with disabilities to a sustainable and equitable future. Reinforcing the human rights model of disability in the context of climate change is therefore crucial. Moreover, the literature indicates that women and children with disabilities are disproportionately affected by adverse climate events, further emphasizing the need for national climate policies to adopt intersectional and equity-focused frameworks.

Challenging ableism—particularly as it manifests in environmental and climate-related contexts—requires a transformative and multidimensional approach that fosters social change across personal, practical, and political domains (Seddon et al., 2020). At the **personal level**, this involves recognizing the systemic social barriers as the root cause of disability. At the **practical level**, it demands the restructuring of institutional practices, social norms, and physical infrastructures to dismantle those barriers and ensure accessibility and inclusion.

Finally, at the **political level**, it is essential for national climate strategies and disaster risk reduction (DRR) frameworks to explicitly incorporate disability considerations. This includes the development of inclusive policies that acknowledge and address the heightened vulnerability, risk, and exposure experienced by people with disabilities. Only through such multidimensional inclusion can people with disabilities fully participate in and benefit from climate adaptation and resilience planning.

Conclusion

This research project consisted of exploratory qualitative research aimed at understanding the perceptions and lived experiences of residents with vision impairment in Málaga, Spain, during the floods that affected the city between November 12 and 15, 2024. Semi-structured interviews were conducted with seven participants, all of whom are employed by a non-profit organization that provides specialized social services for individuals with visual impairments in Málaga.

Adopting a human rights-based approach to disability and grounded in the social model, the study foregrounded how societal structures and practices perpetuate discrimination and exclusion. The findings reveal the presence of both ableism and *eco-ableism*—forms of systemic discrimination that hinder the inclusion of persons with disabilities in national climate policy and disaster risk reduction (DRR) efforts. Institutional eco-ableism, in particular, can be understood as a form of *slow violence*: a persistent, often invisible form of harm that operates through systemic neglect and exclusion rather than through immediate or spectacular catastrophe.

The study also identified how everyday practices contribute to ableist environments, negatively affecting the quality of life of people with vision impairment. Participants cited the misuse of electric scooters—both parked improperly and operated at high speeds—as serious hazards,

often causing accidents. These issues reflect the broader lack of public awareness and social sensitivity toward the diverse experiences of persons with disabilities.

Despite these challenges, the study also documented meaningful local progress. Participants recognized efforts by the Málaga City Council, such as the installation of audible traffic signals following community advocacy and the design of the accessible Málaga Metro system. These initiatives represent important advances in combating institutional ableism. However, they also underscore the persistent subtlety of structural exclusion, which continues to shape public space and policy implementation.

Participants highlighted persistent architectural barriers throughout the city, particularly in high-traffic areas like the historic city center. These barriers—ranging from narrow sidewalks and obstructed walkways to inaccessible heritage infrastructure—pose significant mobility risks. During extreme weather events, these challenges are compounded, especially in crowded tourist zones, further increasing the vulnerability of individuals with vision impairment during potential emergency evacuations.

The findings call for an urgent shift in both infrastructure and public education to address the social dimensions of ableism. Beyond physical modifications, a broader cultural transformation is needed—one that fosters understanding, empathy, and systemic inclusion.

In terms of emergency preparedness, participants expressed the need for more accessible and reliable alert systems. The confusion surrounding the flood alert issued on November 13—initially lifted in the early morning and then reinstated just hours later—underscores the necessity of clear and consistent communication. Disaster preparedness plans must provide tailored instructions for individuals with visual impairments and ensure these are disseminated through accessible channels. Moreover, such plans must be sensitive to intersecting factors—

such as age, gender, and socioeconomic status—which can amplify vulnerability. Failing to account for these complexities perpetuates *eco-ableism*, increasing the exposure and risk faced by disabled populations during environmental crises.

This issue is increasingly urgent in the context of escalating climate change. As extreme weather events become more frequent, the long-term exclusion of disabled communities from climate adaptation efforts intensifies. Like slow violence, eco-ableism accrues over time, compounding systemic inequities and exacerbating the effects of climate vulnerability for marginalized groups, especially persons with vision impairment. Ignoring this reality not only perpetuates social injustice but also undermines the resilience and inclusivity of climate governance in the Anthropocene.

Participants also reported strong feelings of fear and insecurity during the floods, highlighting how mobility was further complicated by environmental conditions—such as puddles, mud, and poor visibility—along with barriers created by others (e.g., pedestrians with umbrellas inadvertently causing accidents). Many participants emphasized that the cancellation of work activities is crucial during climate emergencies to reduce exposure risks. Additionally, one participant stressed the importance of environmental management—specifically the maintenance of rivers, watersheds, and urban drainage systems—as a key preventative measure against flooding

This study has limitations. The small sample size (n=7), with participants aged between their late 20s and early 60s and employed at the same institution, may limit the generalizability of findings and introduce interpersonal bias. Furthermore, the research did not include the experiences of children, older adults over 65, or individuals with non-binary gender identities. Including these perspectives in future research will be vital for developing more inclusive and equitable climate policies. Moreover, due to the linguistic and academic background of the

researcher, the literature review was limited to sources in English, Portuguese, and Spanish. Expanding future research to include other linguistic and cultural contexts may yield additional insights and foster a more global understanding of disability and climate resilience.

In conclusion, this study reaffirms the urgent need for inclusive climate governance and disaster risk reduction frameworks that recognize and integrate the diverse lived experiences of people with disabilities. Addressing both institutional and everyday forms of ableism—particularly eco-ableism—requires multidimensional strategies rooted in equity, accessibility, and human rights.

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APPENDIX – Demographic profile of participants

Table 1.
Demographic Profile and Residency of Participants

Participant	Age	Gender	Location	Occupation
A	Late 20s	Female	Málaga, Spain	Employed
B	Mid 40s	Male	Málaga, Spain	Employed
C	Early 60s	Male	Málaga, Spain	Retired
D	Early 40s	Male	Málaga, Spain	Employed
E	Late 40s	Female	Málaga, Spain	Employed
F	Early 40s	Female	Málaga, Spain	Employed
G	Early 40s	Female	Málaga, Spain	Employed