

A Decent Environment For All: Climate Justice Assessment of European Regional Adaptation Plans

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DISCLAIMER

This document describes a work undertaken during the research internship at Basque Centre for Climate Change (BC3) in collaboration with Regions4 Sustainable Development. The internship was part of a programme of study at the School of Governance of Utrecht University and the Faculty of Social Sciences of Masaryk University. Therefore, all views and opinions expressed remain the author's sole responsibility and do not represent those of the faculties, neither BC3 nor Regions4.

Abstract

This thesis examines the link between climate justice and adaptation planning in seven European regions. While climate adaptation is advancing, it is evident that vulnerable groups are more exposed to climate change effects. In order to protect those with less adaptive capacities, fairness and justice considerations must be included in adaptation planning. To assess how advanced European regions are in incorporating climate justice principles within their adaptation plans, the Adaptation Justice Index, complemented by semi-structured interviews, was applied. By employing these methods, it was discovered that while procedural and distributional justice are advancedly incorporated in adaptation planning, the recognitional and restorative dimensions are still theoretical concepts that ought to be developed.

Keywords: adaptation planning, European regions, distributional justice, recognitional justice, procedural justice, restorative justice, Adaptation Justice Index

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Introduction

"We need to be prepared; this is the climate crisis." (Giuffrida, 2023)

Even though politicians have been negotiating agreements on how to cut down global greenhouse gas emissions for almost a decade due to the extent of climate change, the negotiations will undoubtedly be a challenge for the next decades (Knieling, 2016). In parallel, global warming and its effects are already felt by people, infrastructures and land worldwide (Pörtner et al., 2022). Adaptability will remain critical despite the possibility of reaching the most optimistic climate scenarios with declining GHG emissions. Due to the continuity of climate change, it is not a question of if but to what extent people will be exposed to climate change impacts.

While climate mitigation is usually in the competence of national or international entities, climate adaptation is in the majority under the jurisdiction of cities and regions. As experts argue, cities and regions are crucial levels for adaptation planning and implementation, uniquely situated to understand local contexts, raise local awareness, respond to citizens, and work to build an inclusive space (IPCC, 2014).

Climate change represents a phenomenon with diverse, catastrophic effects, primarily due to the highly unequal distributions of the impacts (Davis & Todd, 2017; J. Pettit, 2004; Schlosberg & Collins, 2014). Therefore, successful climate adaptation must acknowledge the inherent wickedness of climate change (Termeer et al., 2013) because it is not only a technical matter but also a complex social interaction process that requires rethinking the whole governance approach.

Even though Adger (2006) and others argued that explicit consideration of justice and present-day equity issues must be included in the debate concerning climate adaptation policies almost twenty years ago, they are still lacking from many adaptation debates and policies even in 2023. While climate adaptation currently advances in Europe and beyond, experts argue that the planning phase is significantly biased towards the technocratic approaches lacking social and human rights data and assessment, resulting in overlooking the questions of equity and justice (Araos et al., 2021; Meerow & Newell, 2019). As pointed out, little is known about how justice considerations are connected to adaptation strategies and planning (Juhola et al., 2022; Mohtat & Khirfan, 2021).

Thus this study explores the link between adaptation planning and climate justice on the level of regions. Adaptation planning in seven European regions¹ will be analysed from the perspective of four dimensions of climate justice: recognitional, distributional, procedural, and restorative. The following research question will be answered: How advanced are *Basque Country, Catalonia, Flanders, Navarra, Lombardia, Scotland and Wales* in integrating climate justice principles within their adaptation plans? The study's structure is as follows: first, an introductory chapter explains the topic, details research objectives and related questions and provides social and academic relevance. The following chapter describes the role of regional governments within the adaptation governance and provides an overview of the adaptation legal framework. The Methodology, Results and Discussion chapter come after. The whole study is concluded in the final chapter.

¹ For the purpose of the study, the term region/regional is used for any subnational government representing the first immediate level of government below the national and above the local. This level involves governments such as states, provinces, regions, domains, territories, lander, cantons, autonomous communities, oblasts, etc. depending on the country.

1. Linking Climate Justice and Adaptation Planning

"Fairness is essential to reaching any meaningful solution to the problem of climate change during this century. Justice must play a central role in addressing climate change impacts." (Adger, 2006, p.11)

1.1 Problem Definition, Social Relevance

Climate has been increasingly recognised worldwide as a significant factor influencing people's vulnerability (Liverman, 1990; Smith et al., 1996). The debates on who suffers what often focus on the effects of climate change at the state or global level (Thomas et al., 2019). However, the local communities are exposed to diverse climate change impacts yet have little power to influence international efforts to mitigate greenhouse gas emissions. The research on climate change impacts shows that exposure to the effects of climate change and people's vulnerability varies across space and social groups: poor people can live in productive biophysical environments and be vulnerable; wealthy people can live in fragile physical environments and live relatively well (Liverman, 1990). Acknowledging the unequal impact distribution supports the understanding that climate change significantly impacts vulnerable social groups in many regions economically and politically (Davis & Todd, 2017; J. Pettit, 2004; Schlosberg & Collins, 2014).

In order to reach the international and European climate objectives by employing climate mitigation and adaptation, an in-depth transformation will be essential. Such a profound transformative approach will massively impact agriculture, food security, consumer behaviour, energy, transport, construction industry, and other sectors (many of them are the competence of the regional governments). The European Green Deal (EGD) example illustrates the governance challenge that such transformation represents. EGD recognises that transition must be just and inclusive, putting people first and paying attention to potential trade-offs between economic, environmental, and social objectives. To support a just transition, the European Pillar of Social Rights should guide the process (McCauley & Pettigrew, 2022).

However, despite these proclamations, the EU's green policies have been intensively criticised for externalising the environmental impacts, placing naive belief in technology, and the potential to increase regional inequality and exacerbate pre-existing social tensions (Khadim &

van Eijken, 2022). Many scholars argue that as the adaptation progresses worldwide, particularly the adaptation plans do not pay enough attention to questions of justice and equity as the unequal participation of different groups has been proved together with a disproportionate distribution of climate change burden (Yang et al., 2021). Scholars argue that the planning phase is significantly biased towards the technocratic approaches lacking social and human rights data and assessment, resulting in negligence of equity and justice principles (Araos et al., 2021; Meerow & Newell, 2019). Thus, an urgent need to examine how climate justice is considered in the adaptation plans and different phases of the planning (within different levels of governance) remains as pointed out; little is known about how justice considerations are connected to adaptation strategies and planning (Juhola et al., 2022; Mohtat & Khirfan, 2021).

1.2 Research Objectives and Questions

Acknowledging that climate justice consideration in adaptation planning is massively underresearched, the study aims to discover an advancement of European regions in integrating climate justice principles within their adaptation planning. To research it two research sub-objectives are identified. Firstly, to assess how the regional adaptation plans incorporate climate justice principles through four dimensions - recognitional, distributional, procedural, and restorative. Secondly, to discover the governance background of adaptation planning, learn about challenges/barriers, opportunities, and needs to include climate justice principles into adaptation planning (for summary, see Tab. 1).

The study aims to draw a broader picture of the current linkage between climate justice considerations and regional adaptation planning. Therefore, the chosen regions vary in population, size, and geographical locations facing different climate risks and, lastly, having different generations of adaptation plans in place.

Acknowledging the presented research gap, this thesis aims to contribute to the scientific debate connecting climate change adaptation and justice considerations. Secondly, it aims to support regional governmental policymakers in identifying the gaps and opportunities within their adaptation plans in the context of climate justice.

Tab. 1: Research Sub-Objectives and Corresponding Questions

<i>SUB-OBJECTIVE</i>	<i>RESEARCH QUESTIONS</i>
To assess the regional adaptation plans from a climate justice perspective.	How are climate justice principles integrated within Basque Country, Catalonia, Flanders, Navarra, Lombardia, Scotland and Wales's adaptation plans?
To investigate the governance background of regional adaptation planning	What are regional governments' challenges/barriers, opportunities, and needs to incorporate climate justice principles within their adaptation plans?

1.3 Academic Relevance

The current state of progress in climate adaptation is reflected in contemporary adaptation research, where adaptation planning is researched more profoundly than the implementation itself because of insufficient evidence of results. While early adaptation research focused on developing typologies of adaptation tools to describe adaptation efforts (Gagnon-Lebrun & Agrawala, 2007; Lesnikowski et al., 2011), more recent studies examine the political and institutional factors shaping the choice of adaptation measures (Berrang-Ford et al., 2019; Biesbroek et al., 2015). As interest in adaptation policies increased, research instruments were developed to track whether they effectively reduce vulnerability and build resilience (Ford et al., 2015; Magnan & Ribera, 2016).

The challenges of assessing adaptation outcomes are well acknowledged in the literature, compromising on a definition, identifying a meaningful unit of analysis for comparison over time, the context specificity, or the problems of reporting the adaptation results (Araos et al., 2021; Berrang-Ford et al., 2019; Dupuis & Biesbroek, 2013). Lesnikowski et al. (2016) pointed out that the first generation of adaptation plans usually focuses on developing knowledge, while the second and third generations start introducing new concepts of adaptation planning and monitor the adaptation progress. Therefore, the assessment of justice dimensions within the implementation of adaptation is hampered in some cases by the general lack of empirical evidence of adaptation development.

By developing *ex-ante* approaches, several experts have tried to assess how adaptation strategies account for different topics. For instance, Olazabal et al. (2019) evaluated the

credibility of climate adaptation plans at the local level of governance, Heikkinen et al. (2019) explored the degrees of transformative changes suggested in climate policy, and Lesnikowski et al. (2016) examined the general advances in national adaptation policies. Such analyses are not, of course, a substitute for *ex-post* empirical reviews. However, using policy documents as data allows one to examine what is and is not included in the official adaptation planning. Even though, naturally, not all policies contained in the plans will be implemented as stated in the strategic documents, they still create a crucial basis for actions and guidance, for instance, for those with access to adaptation planning. As Juhola et al. (2022) highlighted, if different dimensions of justice are considered in plans and strategies, taking them into account in implementation is more probable than if they are already absent in the planning phase. While adaptation planning in municipalities is researched relatively frequently (Araos et al., 2016; Guyadeen et al., 2019; Olazabal & De Gopegui, 2021; Shi et al., 2015), the regional level is often neglected in the adaptation research.

2. Regions in Climate Adaptation Governance

"Sub-national governments are increasingly important actors as policy decisions become more decentralised in increasingly fragmented global climate governance networks."

(Biermann et al., 2009)

2.1 Role of Regions

As the adaptation literature suggests coordinating efforts through all levels of governance supports comprehensive climate adaptation, creating a space for synergies and avoiding maladaptation by ensuring that other processes do not constrain the actions of diverse actors at different levels of governance (Adger, 2006; Clar, 2019; Næss et al., 2005; Urwin & Jordan, 2008). Due to its complexity, climate change governance has been evolving into a polycentric structure that spans from global to national and sub-national levels, depending on the informal and formal networks, relying on national, subnational, international, or non-state actors to be able to formulate and implement climate actions (Di Gregorio et al., 2019). The complex governance system shows the nature of climate change - the impacts are felt and need to be solved at multiple levels of governance (Gupta, 2007).

While the national governments, together with the supranational bodies (such as European Commission), raise awareness and provide general frameworks and guidance, the sub-state entities are identified more as key actors able to come up with detailed planning and implementation as often the environment and more particularly the climate adaptation policies are their exclusive competence. The regional governments have increased adaptive capacities as they can utilise local communities' knowledge shaped by traditions, beliefs, and values (Handl, 2012). Furthermore, the regions can involve local actors in the planning and strategy development processes to ensure effective climate adaptation measures. Such participation increases transparency, trust and a real chance to implement local adaptation actions.

Furthermore, the substate level of governance has an excellent position to mediate between national and local actors, close enough to the municipal level to develop more tailored solutions (Bauer et al., 2012; Galarraga et al., 2011). Although the national level still plays a central role in environmental governance, the importance of the other levels of governance in national decision-making is growing. Many countries worldwide have made progress in devolving responsibilities related to climate adaptation and strengthening resilience to lower levels of

governance, such as regional ones. Simultaneously, regional and local actors' engagement in transnational networks, either interregional or globally, is rising and blurs the lines between domestic and international environmental politics, also in climate adaptation (Bulkeley, 2011; Bulkeley et al., 2014).

Overall, Europe could be considered an example of coordination across the multiple levels of governance playing a pivotal role in designing broader policies. Many European states are members of the European Union, addressing climate change adaptation intensively. Under the current EU framework, every member state must have and implement a national adaptation strategy and national adaptation plan. Many municipalities are progressing in the creation of adaptation strategies, too (Reckien et al., 2018). Notably, the more decentralised states are active in adaptation planning and implementation on the regional level. Their adoption of climate adaptation legislation and processes typically mirrors the decentralisation process within the country (Di Gregorio et al., 2019).

Transnational collaboration has become essential for adopting specific climate change goals. For instance, the current EU climate change framework has shifted towards more self-organising networks beyond national and sometimes European borders (Giest & Howlett, 2013). Furthermore, as the literature points out, the regional governments are not only observers in international climate governance but also actors with influence, as the United Nations Framework Convention on Climate Change (UNFCCC) has recognised them, and they constitute the second largest delegation of committees next to the federal representatives (Nelson et al., 2015).

2.2 Case Selection

Aiming to generate insight and an in-depth understanding of the topic, the purposive sampling method (Etikan et al., 2016), allowing the involvement of participants or texts on the basis that they will be able to provide information-rich data for analysis, was chosen for the study. Due to the selection of the regions, it will not be possible to draw general conclusions with a high level of validity; however, this is not the study's primary goal. Considering the study's objective, it was crucial to choose regions where the adaptation plans are accessible and, more importantly, those regions where the researcher will have a chance to informally reach policymakers from the regional environmental departments to have higher chances to conduct the interviews. Thus, the author took the opportunity to collaborate with Regions4 Sustainable Development, a

worldwide platform connecting regional governments interested in sharing practices in climate adaptation, which decided to support the study as being interested in the climate justice linkage to regional adaptation planning. Hence the European members of the Regions4 Sustainable Development were chosen: Basque Country, Catalonia, Flanders, Navarra, Lombardy, Scotland and Wales; for selected regions and corresponding adaptation plans, see Tab. 2.

The regions fulfil the following criteria:

- 1) European regions
- 2) Competence within the adaptation decision-making
- 3) Adaptation strategy/plan in place publicly accessible
- 4) Members of Regions4 Sustainable Development

Tab. 2: Selected Regions and Corresponding Adaptation Plans

REGION	DOCUMENTS	PUBLICATION YEAR
Basque Country	Plan de Transición Energética y Cambio Climático 2021-2024	2021
Catalonia	Marc estrategic de referencia d'adaptació al canvi climatic per a l'horitzó 2030	2021
Flanders	Vlaams klimaatadaptatieplan 2030	2022
Navarra	Hoja De Ruta Del Cambio Climático De Navarra 2017-2030-2050	2017
Lombardy	Documento Di Azione Regionale Per L'adattamento Al Cambiamento Climatico In Lombardia	2016
Scotland	Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024	2019
Wales	Prosperity for All: Climate Conscious Wales	2019

3. Climate Adaptation Legal Framework

Although regional adaptation plans are developed within a particular national and regional context, a broader legal framework under which the plan was developed and implemented is mentioned in every document from selected regions. Thus, the following table (Tab. 3) provides an overview of significant international, national and regional agreements, laws and strategies mentioned in the adaptation plans. From the climate change commitments, it can be learned that examined states are the signatories; however, not all regional plans mention all commitments. The vital international and European Union adaptation documents are briefly described below.

Tab. 3: Overview of Legal Framework

REGIONS / COMMITMENTS	INTERNATIONAL	EUROPEAN UNION	NATIONAL	REGIONAL
Basque Country	<ul style="list-style-type: none"> ○ Agenda 2030: Sustainable Development Goals ○ Paris Agreement 	<ul style="list-style-type: none"> ○ Climate Change Policy Framework 2021-2030 ○ European Climate Law ○ European Climate Change Adaptation Strategy 2021 ○ Covenant of Mayors for Climate and Energy Initiative 	<ul style="list-style-type: none"> ○ National Plan for Adaptation to Climate Change 2021-2030 ○ Climate Change and Energy Transition Law ○ National Strategy Against Poverty 2021-2023 ○ Platform for Adaptation to Climate Change 	<ul style="list-style-type: none"> ○ Klima: 2050 Climate Change Strategy of the Basque Country ○ Law 4/2019 on Energy Sustainability of Basque Country
Catalonia	<ul style="list-style-type: none"> ○ United Nations Framework Convention on Climate Change ○ Agenda 2030: Sustainable Development Goals ○ Paris Agreement 	<ul style="list-style-type: none"> ○ ClimateADAPT ○ European Green Deal ○ Investment Plan for the European Green Pact ○ Just Transition Facility ○ Regulation (EU) 2021/2019 	<ul style="list-style-type: none"> ○ National Plan on Adaptation to Climate Change 2021-2030 ○ Integrated National Energy and Climate Plan 2021-2030 	<ul style="list-style-type: none"> ○ Global Indicator of Adaptation to the Impacts of Climate Change ○ Law 16/2017 on Regulatory Framework for Adaptation

	<ul style="list-style-type: none"> ○ Sendai Framework for Disaster Risk Reduction 2015-2030 	<ul style="list-style-type: none"> ○ European Climate Adaptation Strategy 2021 	<ul style="list-style-type: none"> ○ Law 7/2021 on Climate Change and Energy Transition 	<ul style="list-style-type: none"> ○ Two Governmental Decrees to promote the acceleration of renewable energies ○ National Plan for Implementation of the 2030 Agenda in Catalonia
Flanders		<ul style="list-style-type: none"> ○ European Green Deal ○ European Climate Law ○ European Climate Adaptation Strategy 2021 ○ ClimateADAPT ○ Covenant of Mayors for Climate and Energy Initiative 		<ul style="list-style-type: none"> ○ Flemish and Local Energy and Climate Pact
Lombardy	<ul style="list-style-type: none"> ○ Agenda 2030: Sustainable Development Goals ○ Paris Agreement ○ Kyoto Protocol 	<ul style="list-style-type: none"> ○ EU Adaptation Strategy 2013 	<ul style="list-style-type: none"> ○ The National Strategy for Climate Change Adaptation 2015 	<ul style="list-style-type: none"> ○ Lombardy Regional Strategy

Navarra	<ul style="list-style-type: none"> ○ Agenda 2030: Sustainable Development Goals ○ Paris Agreement ○ Kyoto Protocol 	<ul style="list-style-type: none"> ○ Climate and Energy Package with a 2020 Horizon ○ EU Adaptation Strategy 2013 ○ Roadmap to 2050 	<ul style="list-style-type: none"> ○ National Plan for Adaptation to Climate Change ○ Climate Change Law 	<ul style="list-style-type: none"> ○ Roadmap for Climate Change in Navarra 2016
Scotland	<ul style="list-style-type: none"> ○ Agenda 2030: Sustainable Development Goals ○ Paris Agreement 	<ul style="list-style-type: none"> ○ EU Adaptation Strategy 2013 	<ul style="list-style-type: none"> ○ UK Climate Change Act 2008 	<ul style="list-style-type: none"> ○ Climate Change (Scotland) Act 2009 ○ Scotland's National Performance Framework
Wales			<ul style="list-style-type: none"> ○ UK Climate Change Act 2008 	<ul style="list-style-type: none"> ○ Environment Act (Wales) 2016 ○ The Well-being of Future Generations (Wales) Act 2015

3.1 International Framework

Kyoto Protocol, an agreement to implement climate change mitigation programs and committed themselves to introducing adaptation measures (Handl, 2012), was accepted in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro.

The Conference of Parties in Cancun (COP16) in 2010 defined a methodology for developing national climate change adaptation plans, including impacts, vulnerability, and risk assessment (Groen et al., 2012).

The Conference of Parties in 2015 (COP21) ended up with the adoption of the first legally binding global agreement concerning climate change - the **Paris Agreement**, setting a goal of *"holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels"* (UNFCCC, 2015). The Agreement also declared that adaptation to climate change is a global challenge that needs to be addressed at all levels of governance (UNFCCC, 2015).

Within the same year, the 17 **Sustainable Development Goals** (SDGs) were approved under the framework of the United Nations. The particular targets were set for 15 years - Agenda 2030. Seventeen SDGs were specified in 169 targets and their performance indicators (Hák et al., 2016). The Sendai Framework for Disaster Risk Reduction 2015-2030 was the first significant agreement within the 2030 Agenda introducing specific action to reduce the risk and losses caused by natural disasters (Kelman, 2015). From a financial perspective, the Adaptation Fund of the UNFCCC was established to compensate for losses and damages caused by climate change.

3.2 European Union Framework

ClimateADAPT was launched in 2012 to promote sharing knowledge across EU member states on adaptation plans, strategies, and good practices. Hundreds of publications, tools and maps have been published since that (European Commission, 2022).

European Strategy for Adaptation to Climate Change was introduced in 2013, setting the critical climate change impacts and instruments to adapt the socioeconomic sectors and natural systems.

Furthermore, the **European Green Deal** was adopted on 11 December 2019, aiming to transform the EU into a sustainable economy and a just and prosperous society. The Investment Plan for the European Green Pact was introduced in 2020 to support achieving the goals. The Plan has been complemented by Just Transition Facility, providing financial support to communities dependent on the fossil fuel value chain and mitigating the socioeconomic impacts of transition (Sikora, 2021).

Regulation (EU) 2021/1119 enabled the introduction of **European Climate Law**, setting a binding objective of achieving climate neutrality by 2050 to comply with the Paris Agreement (Heras, 2021).

In 2021, the European Commission approved a new **EU Climate Change Adaptation Strategy** replacing the one from 2013. The strategy set several objectives such as 1) *Smarter adaptation* (emphasis on risk data quality and enhancement of ClimateAdapt), 2) *Faster adaptation* (the effects of climate change are already being intensively felt), 3) *More systematic* (focus on macro-fiscal policy, nature-based solutions, and local actions) and lastly 4) *Intensive international cooperation and action for climate resilience* (European Commission, 2022).

The new EU adaptation strategy directly aims to contribute to achieving climate objectives and integrate adaptation policies and measures into the different EU policies. Member States are obliged to develop and implement adaptation strategies and plans that include comprehensive risk management frameworks based on climate and vulnerability assessments, and they are obliged to monitor and evaluate progress. In this context, the European Commission adopted the new European Industrial Strategy, the Circular Economy Action Plan, the Farm to Fork Strategy and the European Biodiversity Strategy 2030, which aims to protect nature and reverse ecosystem degradation (Hermoso et al., 2022; Moschitz et al., 2021). With the legislative package Fit For 55, the EU is deploying the European Green Pact to achieve a 55% reduction in greenhouse gas emissions by 2030 (Schlacke et al., 2022).

4. Foundations of Climate Justice

"No less than a decent environment for all: no more than a fair share of the Earth's resources." (Agents for Environmental Justice, 2003)

This chapter presents the fundamentals of concepts that inspired and guided this research. Many authors contend that climate justice is predominantly based on environmental justice, where the critical complement is represented by John Rawls's distributive justice (Schlosberg & Collins, 2014; Edwards, 2020). Thus the critical ideas of environmental justice are sketched out, and then an employed definition of climate justice is presented.

4.1 Roots of Climate Justice I: Environmental justice

The environmental justice movement and, consequently, the scholarship emerged in the United States when community groups in the 1980s started to fight against the siting of polluting factories and waste sites in predominantly black neighbourhoods and indigenous people's reservations. The protestors highlighted the disproportionate distribution of adverse environmental impacts to the most vulnerable societal groups. When the environmental justice movement reached the European continent, the focus shifted towards social inequality, particularly the reality of massive disparities between environmental conditions experienced by the richest and poorest groups (Stephens & Willis, 2017).

4.1.1 Defining Environmental Justice

The understanding of environmental justice can differ across scales varying from justice for people, communities, or non-human environments; in general, it can be defined as a set of rights that should be desired, sought after or demanded.

The United States Environmental Protection Agency (USEPA) defines environmental justice as *"the fair treatment and meaningful involvement of all people regardless of race, colour, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their*

environment and health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected" (US Environmental Protection Agency, 2022).

While USEPA provides an extensive definition, a leading environmental justice NGO in the UK in the 2000s - the Friends of the Earth Scotland described it more simplistically: *"no less than a decent environment for all: no more than a fair share of the Earth's resources."* (Agents for Environmental Justice, 2003)

Research has repeatedly shown that marginalised, poor and minority communities are more likely to face higher levels of air pollution and contamination, pay more for clean water or have less access to clean green space (Boone et al., 2009; Konisky, 2009; Newell, 2005; Pastor et al., 2005; Raddatz & Mennis, 2013). Therefore, environmental justice seeks to identify the scale and drivers of the environmental burdens to overcome any phenomena that expose marginalised groups or communities to unequal and unfair environmental distribution.

4.1.2 Three Questions for Environmental Justice Theory

In analysing the core of environmental justice, it is essential to acknowledge that there are two main components: procedural and substantive (Bass, 1998). The procedural dimension demands the opportunity for all people, regardless of race, national origin, income, ethnicity, or educational level, to be meaningfully involved in environmental decision-making. However, the critical role of procedural justice lies within the contribution to the substantive part. In a situation where everyone can participate in the environmental decision-making process, everyone also has the chance to defend their own and everyone else substantive environmental rights. Nonetheless, it is much more challenging to perpetrate a substantive injustice through a just procedure than through an unjust system (Bell, 2004).

Bell (2004) suggests asking three simple questions to comprehend the substantive part:

- Who are the recipients of environmental justice?
- What is distributed?
- What is the distribution principle?

Regarding the recipients, historically, the US environmental justice movement has concentrated only on citizens of their state. However, over time, the focus has expanded to the whole community, including citizens of other states and future generations (Bell, 2002, 2004).

Secondly, there is a matter of what is distributed. The US environmental justice movement focused on "traditional" environmental hazards such as toxins or pollution. However, while economic justice has always been about distributing goods, environmental justice has been almost always about bads. More significantly, the distribution of environmental bads is, in most cases, unfair as some social groups, such as ethnic minorities or low-income groups, are more likely to be exposed to environmental risks (Agyeman et al., 2012).

More recent concepts have extended their focus beyond the traditional perception of bads, including goods such as clean air or experiencing quality environments (Agyeman, 2002). The last-mentioned concept is present in the current debates explaining environmental justice as a new way to view resource access, shifting the attention to fuel and food poverty (Jenkins et al., 2020).

Focusing on the third question, the conception of substantive environmental justice should be answered. Bell (2004) suggests three distribution principles: 1) equality, 2) equality + guaranteed standard, and 3) a guaranteed minimum with possible variation above that minimum according to personal choices and options.

Historically, the first conceptions of environmental justice stressed unequal pollution distribution as the burden of environmental risks is highly disproportionated. Later it was replaced by the notion that no one should be forced to suffer from the negative impacts (Heiman, 1996). Recently, the distribution of bad was replaced by the idea of zero pollution. The guaranteed standards came later, shifting the focus from bads distribution to essential goods such as access to clean water.

Within the more developed concept of equal rights, Agyeman (2002) argues that access to the countryside should be an environmental right securing a quality environment for everyone. Although, the right to live in a quality environment does not imply that everywhere has to be the same but that every area meets specific minimum standards. Under this principle of distribution, a certain minimum standard should be secured, but the space for variation beyond the standard is there. The same distribution principle can be applied to eliminating fuel and food poverty so everyone has sufficient heat and food resources.

4.2 Roots of Climate Justice II: Rawls's Contribution

The elements of climate change, such as the distribution of adverse effects, are accentuated by traditional political philosophy focusing on boundaries, national states, and harm (Gray, 2009; Rawls, 2008). Despite the criticism that Rawls's general statist approach is ill-equipped to deal with the question, many authors are persuaded that there are resources within his theory to tackle the problem of justice climate (Bell, 2004; Manning, 1981; Thero, 1995).

Although there are more sources from Rawls's work related to environmental justice (Huseby, 2013; Schlosberg, 2007), the *Difference principle* concept is often considered the primary link addressing the distribution question in environmental justice.

Difference Principle:

"(a) Each person has the same infeasible claim to a fully adequate scheme of equal basic liberties, which scheme is compatible with the same scheme of liberties for all; and

(b) Social and economic inequalities are to satisfy two conditions: first, they are to be attached to offices and positions open to all under conditions of fair equality of opportunity; and second, they are to be to the most significant benefit of the least-advantaged members of society (the difference principle)." (Rawls, 2001)

Initially, the role of the principle has been to regulate the "basic structure" of society. According to Rawls, society should aim for a "basic structure"—a set of political, economic, and social institutions that consistently fulfil the two principles of justice, so there is no better alternative arrangement (Rawls, 2001).

How do Rawls's principles contribute to the environmental justice distribution dimension? According to the difference principle, inequalities are allowed only if they benefit the least advantaged members of society (Rawls, 2001). According to Rawls, we cannot sustain social and economic equality because labour specialisation is inevitable, and citizens should not be expected to bear equal rewards for unequal contributions to the overall level of society's resources. Nevertheless, unequal division can only reflect the equality of citizens if it is to everyone's advantage.

To the question of what should be distributed, Rawls answers - primary goods. From the start, he has made clear that the theory of justice as he developed it is, in this sense, incomplete. Rawls explains that the theory can be successfully extended to future generations, international

and health care, but not the problem related to animals and nature. So, the theory cannot be applied to provide ecological justice. However, it can provide ideas for environmental justice—justice among humans concerning the distribution of environmental goods and bads. Additionally, the extension covering future generations might be reasonably expected to include intergenerational environmental justice (Bell, 2004).

However, recognising environmental goods does not explain how they should be weighed against other primary goods. Rawls argues that the difference principle concerns only the position of the least advanced group. Bell illustrates the decision process under the scrutiny of different principles with the example of the policy packages. Both policies would improve the position of the least advantaged group. However, it seems plausible that there will be some circumstances in which package A will do more to maintain or restore the essential capacities of more members of the least advantaged group than B. For instance, if existing levels of air pollution are high enough to make severe respiratory illnesses common, a significant reduction in air pollution can be achieved at a relatively modest cost, and a slight increase in personal income will not radically alter the opportunity range of most members of the least advantaged group, we might legitimately choose A over B. This kind of choice informs our judgment about the priorities of the representative individual.

Moreover, environmental protection seems likely to be much more effective and efficient than remedial medical treatment as a response to many environment-related illnesses. In conclusion, Rawls' liberalism not only allows essential environmental goods to be regarded as primary goods but also requires that we adopt a policy package that provides basic environmental goods as part of the social minimum for the least advantaged group. Rawls' theory of justice indeed includes a conception of environmental justice (Bell, 2002, 2004)

The emphasis on basic environmental goods points us toward the second conception—equal rights to basic environmental goods. The Rawlsian liberal position seems more plausible than the standard conceptions of environmental justice (Bell, 2004). If some people are fortunate enough to live in areas with levels of pollution that are lower than is required by the guaranteed standards, why should there be any objections? There is no more reason to complain about environmental inequalities than we do about income or wealth inequalities as long as those inequalities benefit the least advantaged group. The genuine concern is that existing pollution levels in some poor communities do not meet reasonable environmental standards and have a significant adverse effect on the health of people in those communities.

Recalling the third conception, accepting a principle of distribution that refers to a guaranteed standard rather than equality seems more consistent with the Rawlsian approach. Insofar as experiencing "quality environments" is connected to physical and mental health, building it into the index of primary goods may be appropriate. For example, a policy package that subsidises access to the countryside for inner city families or devotes resources to creating safe "green" spaces in urban areas may contribute more to the physical and mental health of (many members of) the least advantaged group than devoting the same resources to medical care.

In sum, it has been argued that Rawls' difference principle can be extended in ways that he suggests addressing the issues raised by environmental justice advocates. Rawlsian justice can and does have an environmental dimension. Although distributive justice is often a dominant framework for analysis, environmental justice also includes notions of procedural justice and justice as recognition depending on the particular theoretical concept or context.

Over the decades, environmental justice has become a broad concept in which the diverse justice dimensions, despite the dominance of the distributive dimension, have become used to evaluate policies, processes or decision-making outcomes. Considering the importance and scope of environmental justice, its scholarship has proved to be a touchstone, and it is evident that the other concepts, such as energy or climate justice, are built upon environmental justice and its dimensions in their respective domains.

4.3 The Contemporary Conceptualisation of Climate Justice

For more than three decades, climate justice has been used to account for how climate change impacts those with the least responsibility for causing it, who are often at the same excluded from decision-making processes. Due to the new equity and human rights issues around compensation and responsibility raised by continuous climate change (Newell et al., 2020), there is considerable and continuously growing scholarship literature on various dimensions of climate justice.

With new developments worldwide, such as threats to democracy, the COVID-19 pandemic, geopolitical reconfigurations, economic recession, or energy crisis, space for pursuing climate justice is facing new strains. Furthermore, more emphasis has been placed on loss and damage

issues, the importance of just transition or the justice implications of new approaches like nature-based solutions (Leach et al., 2021).

There has also been a move in academia toward decolonising the existing scholarship produced by scholars from the majority world. Such process, among others, highlighted the need to move away from the universal philosophy of justice rooted in Northern traditions towards more diverse climate justice, including those grounded in praxis recognising and valuing multiple cultures and practises across the globe (Sultana, 2020).

For this study, the definition of climate justice in adaptation planning presented by Juhola et al. (2022) is applied. This thesis, therefore, operates with the definition of just climate change adaptation as adaptation planning and implementation, which 1) recognises past and current disadvantages in society, 2) identifies the potential unequal way in which climate impacts and the cost and benefits of adaptation measures are distributed, 3) is based on inclusive processes throughout planning, implementation, monitoring, and evaluation, and 4) restores past inequalities through adaptation.

The Adaptation Justice Index (AJI) indicators are included in the following subchapter to demonstrate their origin in adaptation literature.

4.3.1 Recognitional Justice

The core idea of recognitional justice is the (non) recognition of the plurality among societal actors and their differing adaptation needs and abilities (Hughes & Hoffmann, 2020). Fraser (2000) explains that social, political or cultural discrimination usually relates to the differences characterising indigenous, subaltern and other marginalised groups (Chu & Cannon, 2021). Recognitional justice highlights the urgent need to protect equal rights, especially given the uneven capacity to exercise and defend them.

Recognitional justice normalises different identities within the community and recognises that the identities can be shaped by historical inequalities that affect individual vulnerability and the capacity to participate in decision-making (Meerow et al., 2019).

As Juhola emphasises, vulnerability is contextual. Therefore, it is vital to acknowledge the plurality among the adaptation needs across society to minimise the adaptation cost (Juhola et al., 2022). As Fitzgibbons and Mitchel (2021) argue, despite expert knowledge, the empowerment of communities is essential for their capability to adapt. Moreover, a bottom-up approach can help to address the power imbalance among various stakeholders (Shaw, 2016).

Thus, the first indicator (1.1.) examines if the adaptation strategy recognised different adaptation needs of groups within society.

The relation between the impact of climate change and vulnerability can also be influenced by (pre-existing) societal structures (Schlosberg, 2007), resulting in differences in adaptive capabilities and access to resources or information across society. Therefore, the second indicator (1.2) examines to what extent adaptation strategies recognise the societal structure influences disadvantaged communities to adapt.

The third indicator (1.3) assesses if the adaptation plan reflects the protection of fundamental rights representing a relatively recent intrinsic link between the environment and the realisation of a range of human rights, including the right to life, health, food, water, adequate housing, collective right to self-determination or procedural rights regarding the participation in decision making regarding the environmental risks or the access to information. Office of the High Commissioner for Human Rights also highlights the linkages between climate change harms and threats to international peace and security or uneven distribution of impacts. (OHCHR, 2009; Peel & Osofsky, 2018). The Paris Agreement also includes significant provisions linking human rights and climate change adaptation. *"Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity"* (UNFCCC, 2015).

4.3.2 Distributional Justice

Distributional justice deals with allocating costs, benefits, goods and bads across society spatially and temporally (McCauley et al., 2013; Sovacool et al., 2019). As mentioned in the previous chapter, the distributional dimension of environmental justice revolves around three questions: what is distributed, who are the recipients, and according to what principle it is distributed (Bell, 2004).

Increasing attention has gained justice considerations in terms of the policy interventions as it has been proven repeatedly that the poorest and most marginalised groups are likely to be hit harder by climate shocks and have the least capacity to adapt and recover (Eriksen et al., 2007; Newell, 2005; Sperling, 2003). Furthermore, as Paprocki & Huq (2018) pointed out, policy interventions are under prioritisation scrutiny, often competing with various political demands.

Juhola et al. (2022) identified five indicators to assess how the adaptation strategy considers the distributive dimension of climate justice. First, there are two indicators for risk and vulnerability assessment. Latter is sometimes included in the former, having a critical place in adaptation planning at all levels of government (Miller & Bowen, 2013).

Generally, the climate risk assessment (2.1) includes climate change-related hazards such as drought, flooding, landslide or heatwaves. The cost of risk impacts is sometimes calculated in more advanced risk assessments. In the majority, the results are presented spatially (Adger et al., 2018).

Secondly, there is a conduction vulnerability assessment (2.2). When issuing the International Panel on Climate Change (IPCC) First Assessments Report in 1990, climate change vulnerability primarily referred to the exposure to physical impacts on particular sectors, regions or countries (IPCC, 1992). Little attention was paid to the social drivers of climate change vulnerability or the uneven risk distribution. Thirty years later, much has been changed, thanks to many social science investigations, methodological approaches, empirical findings and new theories generated in a way that significantly changed how we think about climate change vulnerability now (Thomas et al., 2019).

Thomas et al. (2019) define climate change vulnerability as a function of exposure, sensitivity, and adaptive capacity, conceptualising vulnerability from four perspectives.

Firstly, social processes of marginalisation play a critical role in creating patterns of uneven access to resources. In parallel, climate change exacerbates existing inequalities across social differences such as class, ethnicity, gender or race (Leichenko & Silva, 2014; Shepherd & KC, 2015).

Secondly, it is a governance structure and power division that drives who receives the benefits of government and who may be disenfranchised by them; thus, sharing expert knowledge with local organisations might increase mutual trust and stakeholder engagement (Bidwell et al., 2013; Phadke et al., 2016).

Thirdly, a role culture frames how individuals perceive and explain the environments and how they experience the exposure. As mentioned, the vulnerability is context-specific; therefore, recognising local adaptation practises helps the communities prevent the next hazard from becoming a disaster (Crate & Nuttall, 2016).

Lastly, Thomas et al. (2019) mention the multidimensional nature of knowledge and climate risk information. They advocate for including diverse knowledge types, improving mitigation and adaptation planning and decreasing the population's vulnerability (McNeeley et al., 2017).

The third indicator (2.3) examines if the adaptation strategy set up a process to assess the distribution of the benefit, as recent studies show uneven adaptation benefits distribution (Ponce Oliva et al., 2021). In addition, it has been argued that the difference in who coordinates actions for adaptation can lead to different levels of benefits received (Nthambi et al., 2021).

The fourth indicator (2.4) examines the uneven distribution of costs based on studies focusing on the willingness of various groups to pay for the adaptation (Rolfe et al., 2021). Hence, the cost of implementing different adaptation actions is tied to the extent and kind of adaptation measure, and therefore, it is suggested that the fourth indicator should examine whether the strategy identifies the unequal distribution of costs (Juhola et al., 2022).

Lastly, the fifth indicator (2.5) focuses on maladaptation, as adaptation and resilience policies may not be fair or have outcomes which might lead to maladaptation (Schipper, 2020). Therefore, the last distributional justice indicator examines if the strategy identifies the risk of the distribution of negative impacts of adaptation measures.

4.3.3 Procedural Justice

Procedural justice is based on the idea of decision-making related to impacts and responses to climate change that should be accountable, fair and transparent, including access to information and meaningful participation in the processes together with the existence of legal procedures allowing redress (Newell et al., 2020; Sovacool & Dworkin, 2014). In other words, the debates are centred around several dilemmas. Whose interests are considered in adaptation planning and decision, and how? Who can participate in adaptation planning, and how? How much influence have different parties had on the plans, and what basis (Paavola & Adger, 2002; Wenta et al., 2019)?

Procedural justice also focuses on the (lack of) legitimacy of the government responsible for preparing and implementing the strategy or plan. Legitimacy is tied to how the plan is developed – the consultation process's character and stakeholders' participation (Paavola & Adger, 2002).

Adaptation Justice Index suggests five attributes for procedural justice. The first attribute concerns actors involved in the adaptation strategy's preparation phase. Most adaptation strategies are prepared by the public sector or consulting companies hired by the public sector

(Juhola et al., 2022). During the drafting phase, there are possibilities for including various stakeholders such as NGOs, citizens, and businesses. There are two options for including stakeholders; the first is via invitation, which means that those who prepare the strategy or plan decide who will be the participants. It is often the case of expert participation. The second option is through open participation, where anyone can participate; the latter is also sometimes called citizen participation. Both of them might be used during the drafting process. Procedural justice requires open participation to ensure the chance to meaningfully participate in decision-making, especially regarding the inclusion of vulnerable groups (Anguelovski et al., 2016; Innes & Booher, 2004; O'Brien & Selboe, 2015). Although, open participation does not necessarily mean that vulnerable groups have a real chance to be included. Therefore the first indicator (3.1) examines if the strategy details who participated in the preparation phases.

Secondly, the scholars underline that participation in the preparation phase should be meaningful, meaning that the participants impact the outcome (Anguelovski et al., 2016; IPCC, 2022; van den Berg & Keenan, 2019). Regarding procedural justice, the participation should be collaborative and continuous (IPCC, 2022)), as if the participation stays at the level of occasional informing or consulting, it is unlikely that the process will be genuinely fair, as climate justice requires. Therefore, the second indicator (3.2) examines in what stages the participation was included in the planning process.

Third, to ensure just adaptation, stakeholders' participation should also be allowed in other phases than preparation. Therefore, the third indicator (3.3) examines the division of the responsibility presence and, consequently, the justification for the division. The first step is allocating the responsibilities to realise the adaptation measures. After this necessary step, (Bulkeley et al., 2014) suggest also considering the plurality of the actors and their capabilities to allocate responsibilities more efficiently.

Fourth, as van den Berg & Keenan (2019) argue, different groups will probably need to participate in the implementation stage without being responsible for the adaptation actions. Therefore they argue that collaborative and continuous participation processes should be guaranteed. Therefore the fourth indicator (3.4) examines how the strategy approach participation in the implementation phase and whether is a structured plan for such inclusion.

The last indicator of the procedural justice dimension examines if the strategy plans to evaluate and update the strategy (3.5.). As Jurgilevich et al. (2017) argue, the adaptation needs and the

population's vulnerability are changing over time, and therefore, adaptation measures must be re-evaluated periodically.

4.3.4 Restorative Justice

Restorative justice is suggested as an alternative and non-judicial approach to dealing with the aftermath of adverse climate impacts. Climate litigation can pursue several types of justice, such as compensatory or corrective; however, restorative justice can better address society's interconnectedness, ignorance of victim needs and procedural inadequacy (Robinson & Carlson, 2021). Restorative justice is widely known as a process where all the parties with a stake in a particular offence come together to resolve how to deal with the aftermath of the offence (Gavrielides, 2007). According to Ashworth (2017), it responds to various meanings, cultural processes and theories. McCauley & Heffron (2018) argue that restorative justice shifts the attention from the offender and their crime to including victims and their vulnerabilities, so the victims play an active role in the process. In parallel, the offenders take responsibility for their wrong actions (Uprimny & Saffon, 2006). While the Restorative Justice Consortium suggested restorative principles such as empowerment, respect, healing, engagement, inclusiveness or personal accountability (Restorative Justice Consortium, 2005), other scholars propose replacing them with more normative values (Ashworth, 2017; Van Ness et al., 2022). Notably, a *peaceful social life* to maintain the well-being of the communities is supported by an emphasis on protecting their needs. *Respect* to ensure that the victims are respected and the wrongs are addressed. *Solidarity* to expand the community's support and interconnectedness and *active responsibility* focusing on accountability, repairing harms and restoring relationships (Ashworth, 2017; Van Ness et al., 2022). The normative values set restorative justice as a bottom-up approach to restoring a community (Braithwaite, 2000).

Many countries have started recognising the right to enjoy healthy environments as a constitutional or statutory right (Bruch, 2019). Together with the argument that climate change violates basic human rights, including the right to be free of harm (Schlosberg & Collins, 2014), McCauley & Heffron (2018) suggest restorative justice should be applied to redress negative climate impacts on the environment, communities and individuals, including past, present and future loss and damage. However, the global climate regime insufficiently supports climate justice (Khan et al., 2020; McCauley & Heffron, 2018), and therefore, the climate justice consideration is delegated to the non-binding part of the 2015 Paris Agreement. As Robinson & Carlson (2021) conclude, restorative justice, which emphasises protecting the most vulnerable from further harm, can support filling this gap in climate governance.

Adaptation Justice Index (Juhola al., 2022) suggests three indicators for the restorative dimension of climate justice.

Firstly, there must be a recognition of an impact or injustice (Robinson & Carlson, 2021). Huggel et al. (2013) argue that the question of attribution is often linked to the discussion of whether a particular event can be directly linked to climate change. Even though this discussion is missing from the adaptation documents, it might be more relevant in the future. Therefore, the first indicator (4.1) examines if the strategy acknowledges the need to compensate for diverging effects of climate change that are relevant to the particular plan.

The second indicator (4.2) examines if the strategy put in place the compensation instruments to deal with maladaptation. International Panel on Climate Change define maladaptation as *"any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli; an adaptation that does not succeed in reducing vulnerability but increases it instead"* (IPCC, 2018). Adaptation Justice Index considers maladaptation as a result of implementation (indicator 2.5) and, therefore, should be possible to develop adaptation measures that can address these in a restorative way.

Thirdly, according to Robinson & Carlson (2021), restorative justice suggests that there should be measures to compensate for unequal resource distribution. Thus, the third indicator (4.3) examines if the plan has a redistribution measure to compensate for the unequal distribution of resources for adaptation.

5. Methodology

"Do not follow where the path may lead. Go instead where there is no path and leave a trail."

(Emerson, 2000)

5.1. Research Design

The research has been tackled with quantitative and qualitative approaches to achieve the desired outcome. Moreover, including both approaches represents the main strength of the whole research and enables a more in-depth picture of the climate justice consideration within regional adaptation planning.

The research reaching the first objective engages a quantitative analysis of climate justice considerations within the Basque Country, Catalonia, Flanders, Navarra, Lombardy, Scotland and Wales's adaptation plans. To identify to what extent the climate justice aspects are integrated within these plans, the Adaptation Justice Index (AJI) was applied (Juhola et al., 2022). The choice of this method can be explained by the fact that the index evaluates, thanks to metrics and indicators, the progress in achieving justice in the context of climate adaptation and providing a framework for comparison (Chu & Cannon, 2021).

The second part of the research, comprehending the second objective, has been tackled qualitatively. Attention was paid to the regional policymakers responsible for designing and implementing the regional adaptation plans and investigating possibilities to integrate climate justice principles into their adaptation planning processes. Subsequently, semi-structured interviews were carried out. The interviews were conducted with regional policymakers and experts directly involved in climate adaptation development or implementation. Tab. 4 shows research objectives and questions with their respective research methods.

Tab. 4: Research Objectives, Questions and Corresponding Methods

RESEARCH OBJECTIVES	RESEARCH QUESTIONS	RESEARCH METHODS	
1. To examine the regional adaptation plans from a climate justice perspective.	How are the climate justice dimensions integrated within the Basque Country, Catalonia, Flanders, Navarra, Lombardy, Scotland, and Wales's regional adaptation plans?	Adaptation Justice Index Content Analysis	Quantitative
2. To investigate the context, challenges, and opportunities that regional governments face to incorporate climate justice considerations within their adaptation planning.	What are regional governments' challenges/barriers, opportunities, and needs to integrate the climate justice consideration within their adaptation plans?	Semi-structured interviews Thematic Analysis	Qualitative

5.2 Adaptation Justice Index

The Adaptation Justice Index was developed to operationalise four different justice dimensions to comprehensively view how adaptation plans are just from a climate justice perspective. According to Juhola et al. (2022), the index should be sensitive enough to analyse and compare climate adaptation plans in different societal contexts and governance levels, as demonstrated with examples of four countries and cities (Juhola et al., 2022). Adaptation planning is still a relatively new area of climate governance which is less institutionalised and often lacks capacities and resources (Anguelovski & Carmin, 2011). Therefore, the index can potentially produce valuable feedback for developing *ex-ante* approaches to examining climate justice in the planning phase, especially given that in this study, it is applied to different governance levels. The process of developing and applying the index for this study is detailed below.

5.3 Indicators

Firstly, Juhola et al. (2022) identified different adaptation and justice-related attributes of the four justice dimensions using purposive sampling² to search for literature including the terms "climate adaptation", "climate change adaptation" and justice and different categories of justice. Only peer-reviewed scholarly literature was included, excluding the grey literature. Only articles providing definitions or examples for one or more categories were incorporated (Juhola et al., 2022). The index and indicators (Tab. 5) were developed as defined by OECD³ and commonly used (Mayer, 2008; OECD, 2008).

Tab. 5: Adaptation Justice Index Indicators (Juhola et al., 2022)

1. Recognitional justice	
1.1. The strategy acknowledges that adaptation needs are different across groups in society.	(0) No
	(1) The strategy states that adaptation needs are different.
	(2) The strategy takes into account different adaptation needs based on expert review.
	(3) The strategy is built on different groups identifying their adaptation needs.
1.2. The strategy acknowledges the impact of existing societal structures on vulnerable groups in adapting to the impacts of climate change.	(0) No
	(1) The existence of structures is mentioned in a general manner.
	(2) There are measures to decrease the impact of structures.
	(3) There is a structured plan to assess the impact of societal structures on vulnerability.
1.3. The strategy acknowledges adaptation as a way to secure basic rights.	(0) No
	(1) Adaptation as a way to secure basic rights is mentioned.
	(2) The strategy describes how adaptation can secure basic rights in general.
	(3) The strategy has measures to secure basic rights.
2. Distributional justice	

² Purposive sampling reflects a group of sampling techniques that rely on the judgement of the researcher when it comes to selecting the units (e.g. people, cases, pieces of data) that are to be studied (Sharma, 2017). Purposive sampling was used to develop indicators for each justice dimension (Juhola et al., 2022).

³ An indicator is understood as a parameter or a value derived from a parameter providing information about and/or describes the state of a phenomenon, a significance extending beyond that directly associated with a parameter value. As an index is considered a set of aggregated or weighted indicators or parameters (OECD, 2008).

2.1. A risk mapping/assessment is conducted.	(0) No
	(1) Yes, risk assessment is mentioned, but results are not used.
	(2) Yes, risk assessment is conducted, and measures are identified for some risks.
	(3) Risk assessment is conducted, and measures are identified for all risks.
2.2. Vulnerability assessment is conducted, and there is a process for identifying vulnerable groups.	(0) No
	(1) Vulnerable groups are identified.
	(2) There is a vulnerability assessment that will be updated.
	(3) Vulnerability assessment is connected to adaptation planning and monitoring.
2.3. There is a process that assesses the distribution of benefits from adaptation.	(0) No
	(1) The strategy identifies the distribution of benefits of adaptation measures in general.
	(2) Distribution of benefits is assessed as part of the strategy process.
	(3) Distribution of benefits is monitored continuously.
2.4. There is a process that assesses how costs of adaptation are divided.	(0) No
	(1) The strategy identifies the distribution of costs of adaptation measures in general.
	(2) Distribution of costs is assessed as part of the strategy process.
	(3) Distribution of costs is monitored continuously.
2.5. The strategy identifies the possibility of the distribution of negative impacts, i.e., maladaptation, of adaptation measures.	(0) No
	(1) The strategy identifies (at least implicitly) the distribution of negative impacts of adaptation measures in general.
	(2) Distribution of negative impacts of some adaptation measures is identified.
	(3) Distribution of negative impacts of all adaptation measures is identified.
3. Procedural justice	
3.1. Adaptation plan details who participates in the strategy process.	(0) No participation outside the public sector
	(1) Participation through an invitation for experts, private sector
	(2) Participation of experts and citizens through an open invitation
	(3) Participation and measures to enable participation of vulnerable groups
	(0) No participation

3.2. The adaptation strategy has involved participation during different process phases.	(1) The strategy process has involved information provision (about adaptation at least once during the process before the final output publication).
	(2) The strategy process has involved consultation.
	(3) The participation in the strategy process has been collaborative and continuous.
3.3. The strategy allocates responsibilities related to adaptation.	(0) No
	(1) Responsibilities are mentioned.
	(2) Responsibilities for some adaptation measures are allocated.
3.4. The adaptation strategy has a structured plan for participation in the implementation.	(3) Responsibilities for all adaptation measures are allocated.
	(0) No participation in the implementation plan
	(1) The implementation plan involves informing different stakeholders.
3.5. The adaptation strategy has a plan for updating and evaluating the strategy.	(2) The implementation plan involves stakeholder consultation.
	(3) The implementation plan involves stakeholder participation in collaborative and continuous manner.
	(0) No
4. Restorative justice	(1) The strategy involves a plan for updating, but evaluation is not described.
	(2) The strategy involves a plan for updating and describes how progress will be evaluated.
	(3) The strategy involves an update and evaluation plan that includes stakeholder participation.
4.1. The strategy acknowledges the need to compensate for the diverging impacts of climate change.	(0) No
	(1) The strategy acknowledges the need to compensate.
	(2) The strategy has compensation measures for some impacts of climate change.
4.2. The strategy has compensation measures to deal with maladaptation.	(3) The strategy has compensation measures for all relevant impacts of climate change.
	(0) No mention of the need to compensate
	(1) The need to compensate is mentioned.
	(2) There are compensation measures for some maladaptations.
	(3) There are measures to compensate for all groups.
	(0) No mention of unequal distribution

4.3. The unequal distribution of resources for adaptation is compensated by redistribution.	(1) The need for reallocation of resources for adaptation is acknowledged (at least partially).
	(2) There are measures for the reallocation of adaptation resources.
	(3) There are measures for the reallocation of adaptation resources to develop adaptive capacity.

5.3.1 Content Analysis

Following Juhola et al. (2022) steps, the content analysis to assess which attributes of four justice dimensions are integrated within the adaptation planning documents of seven regions was used for the study.

The content analysis could be defined as extracting desired information from a body of material so the material's specific characteristics are systematically and objectively identified, and it allows consequent reproduction of unbiased results by other researchers. A vital characteristic of content analysis is that the method is based on specific criteria that should be explicitly present in advance (C. P. Smith, 2000). As scholars agree crucial aspect of content analysis is replicability (Krippendorff, 2018; Lacy et al., 2015).

However, the most distinctive characteristic that differentiates content analysis from other more qualitative approaches is the attempt to meet the standards of the scientific method having functions such as description, prediction, explanation or control (Neuendorf, 2017).

5.3.2 Ordinal scale scoring method

AJI applies the ordinal scale scoring method to compare how well justice is integrated into the documents. The obtained scores reflect how comprehensively and ambitiously the different justice dimensions are considered in the policy documents. An ordinal scale from 0 to 3 allows subsequent studies to identify changes to the studied variables (Juhola et al., 2022). For each indicator, an individual scoring scheme was developed to reflect the level of inclusion of justice in the adaptation documents. The scores of the individual indicators are summed up for all four dimensions and equally weighted. The index value does reflect the value for the particular dimension, not the overall scores. The scoring results are visualised in a bar chart to compare the scores between the justice dimensions. Each dimension has a different number of indicators, so the results are presented in percentages.

5.4 Semi-structured interviews

To address the second research objective, the most common qualitative method of data collection (Briggs, 1986) – semi-structured interviews were chosen. Interviewing is defined as a professional conversation to get the participants to talk about their experiences and perspectives and to capture their language and concepts concerning a topic that has been determined (Rubin and Rubin, 1995). Especially given that the adaptation is a contextual phenomenon, it is a perfect fit for the second research objective. The method was also chosen for its flexibility and practicality as the researcher has a list of questions, but there is scope for the participants to raise issues that the researcher has not anticipated (Clarke & Braun, 2013). This type of interviewing was also identified as the most appropriate, given the purposive selection of the cases (Clarke & Braun, 2013).

5.4.1 Recruitment of the respondents

The employee of Regions4 Sustainable Development approached the Environmental departments and offices of designated regions with a request to participate in the study. Consequently, three interviews were conducted between 16 and 30th May 2023 with policy officers from Catalonia, Flanders and Wales. All the interviews were held online; an author led the interview with Flanders and Wales in English, and the BC3 supervisor led the interview with Catalonia in Spanish. Informed consent, for detail see Annex, was distributed among the respondents, who signed it so the interviews could be recorded.

5.4.2 Data collection

Following the methodology of semi-structured interviews, the interview guide (Annex) based on the four climate justice dimensions was designed and used during all three interviews.

All respondents (Tab. 6) were familiarised with the aim of the study and the employed definition of climate justice in adaptation planning before the interview via email and at the beginning of the interview. The interviews took roughly one hour.

Tab. 6: Respondents

Interviewee	Region /Institution
Respondent 1 and Respondent 2	Flanders – Flemish Government Department of Environmental and Spatial Development
Respondent 3 and Respondent 4	Wales - Climate Change Division of the Welsh Government
Respondent 5	Catalonia – Technical body of the Government of Catalonia

In addition to the recording, the researcher leading the interview made notes regarding highlights mentioned by the respondents, but the transcripts represent the primary data source. The recordings were transcribed with the help of transcribe feature of Microsoft 365; Deep Translator software was used to translate the Spanish transcript.

The respondents got the opportunity to supplement their answers through a follow-up email when their transcript was sent to them. Only Wales responded to this option, and therefore their addition was analysed too, which, however, specified some details such as the title of documents than changing the answers drastically.

5.4.3 Thematic Analysis

There are many methods of qualitative data analysis: Thematic Analysis, Interpretative Phenomenological Analysis, Grounded Theory or Pattern- Based Discourse Analysis (Biggerstaff & Thompson, 2008; Braun & Clarke, 2012; McCarthy et al., 2019; Oktay, 2012). While some of them are easier to learn, others need to be used by more experienced researchers. Thus, the most widely used qualitative data analysis method was chosen- thematic analysis. Defined as a method identifying themes and patterns across a dataset concerning research questions, thematic Analysis (Tab. 7) represents a flexible method as it "only" provides a method for data analysis, not prescribe data collection methods theoretical positions (Clarke &

Braun, 2013). Thus, it can be used for almost any research question, and themes can be identified in a bottom-up or top-down approach. Both approaches are often combined (Lancia, 2012; Maguire & Delahunt, 2017).

Tab. 7: Strengths and Weaknesses of TA (Clarke & Braun, 2013)

Strengths	Weaknesses
<p>Flexibility</p> <p>No need for extensive previous experience with the method.</p> <p>The results of TA can be more accessible to a broader audience than other, more complicated methods.</p>	<p>Sometimes perceived as lacking substance as it is not a theoretically driven analytical method.</p> <p>Limited interpretive powers- it can easily end up as a description of the respondent's concerns.</p> <p>Lack of concrete methodological guidance.</p>

Acknowledging the second research question and considering the number of interviews, a simple coding protocol was developed. Themes that could be labelled as a challenge/barrier, opportunity or need were clustered together for each dimension of climate justice and presented for each region individually.

5.5 Six Features of the Scientific Method

Neuendorf (2017) presents the six crucial features of the scientific method. For the purpose of this study, they are discussed within both research methods to evaluate how they were considered.

1) Objectivity-Intersubjectivity

Although the primary goal of the scientific investigation is to explain or describe the phenomenon and avoid the investigator's biases (Neuendorf, 2017), complete objectivity is impossible to reach. Babbie (2020) argues that there is no such thing as true objectivity but rather social agreement on what we consider facts in research.

To secure the maximum possible intersubjectivity in applying AJI, every plan was reviewed by two researchers. Excerpts demonstrating why they decided to give the particular indicator concrete value were provided. For illustration, the excerpt for indicator 1.1. scoring value three

is: *"The Scottish Government believes that communities are best placed to make decisions and take action themselves, shaped by their local geographies and demographics"*, p. 32. (Annex)

Before the interview, the author educated herself on the ethics of conducting an interview (how to avoid unbiased questions), and the interview structure, including the questions, was discussed with the supervisor.

2) An A Priori Design

Although in the case of content analysis, an a priori design is considered part of the requirement of objectivity-intersubjectivity, Neuendorf (2017) listed it alone to provide emphasis. He argues that too often, a so-called content analysis report describes a project in which variables were chosen and measured after all the material was reviewed; however, such an inductive approach violates, in this case, the scientific principles (Neuendorf, 2017).

Therefore, all decisions, in this case, particularly indicators' measurement and coding rules, were made before the final examination process began. The coding form was thus constructed in advance and distributed among the coders to ensure that everybody followed the same instruction.

Even though, in a semi-structured interview method, the researcher can be more flexible while asking the questions, following the methodology, a general structure of the interview was set up a priori and used during all three interviews to ensure consistency.

3) Reliability

Reliability could be defined as the extent to which the procedures yield the same results on repeated trials (Carmines & Zeller, 1979), called intercoder reliability when human coders are used in content analysis. Reliability is considered paramount in content analysis; thus, without reaching acceptable levels of reliability, the measures can be quickly meaningless (Carmines & Zeller, 1979; Neuendorf, 2017; Stemler, 2000).

In order to ensure an adequate level of reliability, every plan was coded twice. Apart from the author, three other researchers were involved in the coding process, and they independently coded the adaptation plans. The author of the thesis coded all of them, and the other three researchers divided the plans among themselves according to language skills and time capacities (Tab. 8). In the case of Spanish regions, the researchers coded the plans in the original language. The rest of the adaptation plans were translated through the DeepTranslator software.

The results of each coding process were then matched and discussed to reach the final scoring results if needed. For coding examples, please see Annex.

Tab. 8: Coding Division

Coder/Region	Basque Country	Catalonia	Navarra	Flanders	Lombardy	Wales	Scotland
Author	English (translated)	English (translated)	English (translated)	English (translated)	English (translated)	English (original)	English (original)
Researcher 1	Spanish (original)	Catalan (original)					
Researcher 2			Spanish (original)				
Researcher 3				English (translated)	English (translated)	English (original)	English (original)

To ensure the reliability of the semi-structured interviews, the interview protocol was set up. However, due to the flexibility within the asked questions, the reliability is lower than if, for instance, the structured interview method was used.

4) Validity

Validity refers to the extent to which an empirical measure adequately reflects what was agreed as the real meaning of a concept (Babbie, 2020). It is crucial to mention that the AJI examine how the justice dimensions are considered, meaning explicitly mentioned in the adaptation plans. It does not reflect the actual adaptation process but only those considerations written in the plan.

In order to ensure the validity of the semi-structured interview, the research objectives and research questions were accurately formulated. Despite the lack of pretesting, there were several rounds of reformulations of the questions to ensure that they were formulated comprehensively and could support answering the research question.

5) Generalisability

The generalizability of findings is the extent to which they may be applied to other cases (Kyngäs et al., 2020). Since climate adaptation, including the planning process, is a very contextual phenomenon, reaching generalisability might be slightly tricky, especially given the purposive sampling method meaning that the regions are not representative enough. Although,

despite this fact, some general conclusion can be drawn, especially in some particular dimensions where the region's scores firmly reached similar identical scores.

6) Replicability

The ability to replicate a study is a safeguard against overgeneralising the findings (Neuendorf, 2017). Reproduction involves repeating a study with different cases or in other contexts, checking to see if similar results are obtained each time.

By following the methodology of Juhola et al. (2022), the study proves that the study is replicable. To ensure the replication of this study, even without the previous knowledge of the original study, the methodology is described in detail, and all the necessary documents, including the interview guide, are attached in Annex.

6. Results

6.1 Index Results

In the following chapter, the findings of AJI are presented (Figure 1). Substantial differences in recognitional and procedural justice could be observed at first sight. In parallel, all examined regions except Flanders still obtained the highest scores within procedural dimensions - Scotland and Catalonia reached more than 90% out of the maximum. Except for the extremely high scores in recognition justice obtained by Scotland, the rest of the regions gained an average of 25% out of the maximum. Distributional justice obtained rather a low score, but it was similar in all regions. Only Catalonia scored in restorative justice.

The scores of each region (for detailed scoring, see Annex) are presented below in alphabetical order, reflecting the first research subquestion: *How are the climate justice dimensions integrated within the Basque Country, Catalonia, Flanders, Navarra, Lombardy, Scotland, Wales's regional adaptation plans?*

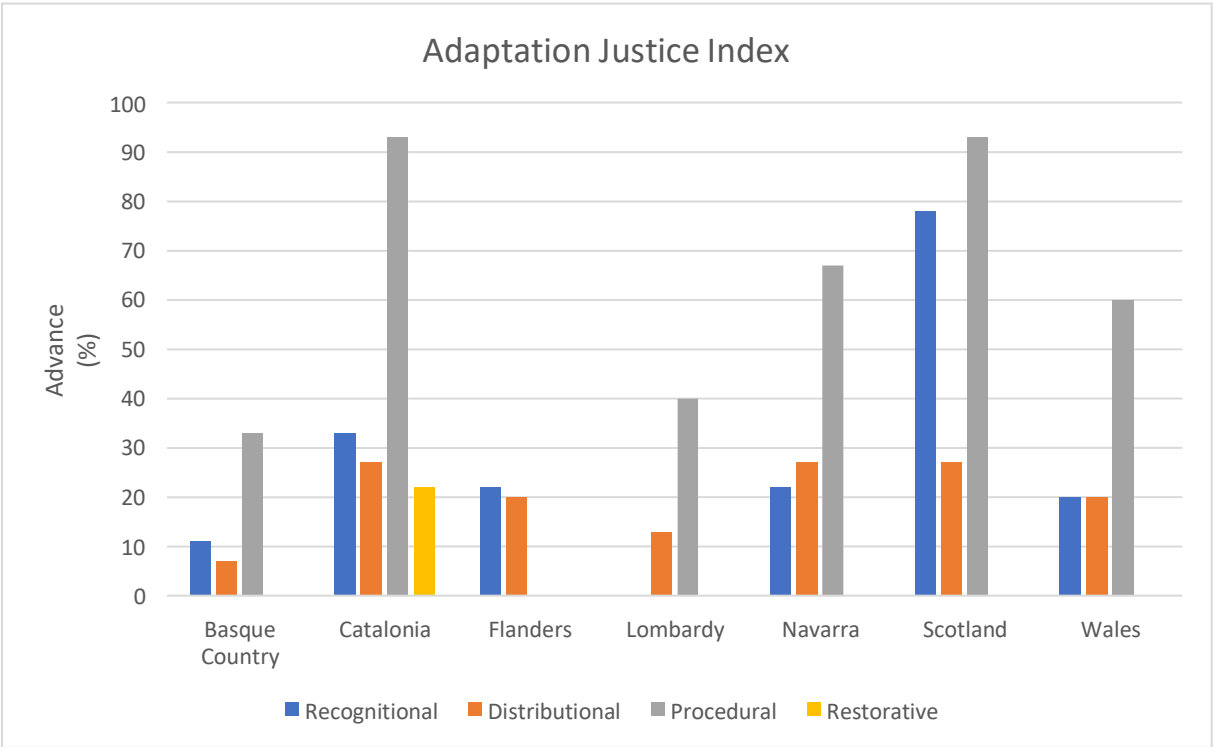


Figure 1 Regional Scores in AJI following the Content Analysis

6.1.1 The Basque Country

The overall adaptation justice index score for the Basque Country was 7 points out of 48 (15 %). Regarding individual dimensional scores, recognitional justice obtained 1/9 (11%) points for recognising different regional adaptation needs. Regarding distributional justice, only 1 point was assigned out of a maximum of 15 (7 %) for general acknowledgement that adaptation policies can have negative impacts. Regarding procedural justice, 5 points out of 15 (33 %) were obtained for including the intention to update the strategy, allocation of responsibilities and informing stakeholders at the implementation phase. Regarding restorative justice, the Basque Country obtained 0/9 points.

6.1.2 Catalonia

Catalonia's overall adaptation justice index score was 23 points out of 48 (48 %). Regarding the individual dimensional scores, Catalonia obtained the highest scores in procedural justice, notably 14/15 (93 %), thanks to the continuous collaboration with stakeholders. Recognitional justice received 3/9 points (33 %) due to acknowledging diverse adaptation needs across the region. Regarding distributional justice, Catalonia got assigned 4/15 points (27 %) for conducting risk assessment and identifying vulnerable groups in a general manner. Contrary to other regions, Catalonia obtained two points out of nine (22 %) from restorative justice thanks to the law securing the minimum amount of drinkable water and energy for Catalan households.

6.1.3 Flanders

Flanders' overall adaptation justice index score was 5 points out of 48 (10 %). Regarding the individual scores for each dimension, recognitional justice obtained 2/9 (22 %) for recognising differences in adaptation needs in a general manner. Regarding distributional justice, Flanders gained 3/15 points, 20 %, for identifying climate change risks in the adaptation plan. As the only region, Flanders obtained 0 points from procedural justice since no public was involved in the planning phase. Restorative justice gained 0/9 points, too, following the pattern set by other regions in this particular dimension.

6.1.4 Navarra

Navarra's overall AJI score was 16 points out of 48 (33 %). Regarding the individual scores for each dimension, recognitional justice obtained 2 points out of 9 (22 %) thanks to acknowledging the necessity to adopt policies protecting the most vulnerable groups from higher exposure to the effects of climate change. The conduction of risk and sectoral vulnerability assessment gained Navarra 4 points out of 15 (27 %) from distributional justice. The procedural dimension obtained 10 points out of 15 (67 %) due to including citizens through open consultation within

the preparation phase, collaborating with stakeholders in the implementation stage, allocating responsibilities and planning to update the strategy. Following the findings of the rest of the regions, restorative justice obtained 0 points.

6.1.5 Lombardy

The overall AJI score of Lombardy was 8 points out of 48 (16 %). Regarding the individual dimensional scoring, recognitional and restorative justice obtained both 0 points. Thanks to conducting risk assessment and presenting actions at least for some identified risks, 2 points out of 15 (13 %) received distribution justice. Regarding procedural justice, Lombardy obtained six points out of 15 (40 %) due to allocating all responsibilities and conducting formal consultation.

6.1.6 Scotland

Scotland's overall adaptation justice index score was 25 points out of 48 (52 %). Regarding the individual scores for each dimension, mainly thanks to the measures involving vulnerable groups in decision-making processes, the highest score was obtained within procedural justice - 14/15 (93 %). Such involvement was also possible since the vulnerable Scottish groups are recognised, reflected in the scores for the recognitional dimension - 7/9 (78 %). The Scottish adaptation needs were not identified only by experts but also by communities which are, to their local knowledge, crucial actors for adaptation decision-making. Thus Scotland, even among other regions, scored the highest scores at this dimension. Despite the complex UK Risk Assessment Report providing insights to address climate change risks, Scotland obtained only 4/15 (27 %) points of the distributional dimension. Similarly to other regions, the lowest scores were gained within restorative justice - 0/9.

6.1.7 Wales

Wales's overall adaptation justice index score was 15 points out of 48 (31 %). Regarding the individual scores for each dimension, following the general pattern, the highest score obtained procedural justice with 9/15 (60 %) thanks to allocating all responsibilities for the implementation phase and including the stakeholders in the monitoring and evaluation processes. Mentioning vulnerable groups generally gained Wales 3/15 (20 %) within recognitional justice. Even though the Welsh adaptation plan is also based on UK Risk Assessment, only the main risks are addressed in the plan, and together with low scores from other indicators, Wales obtained a score of 3/15 (20 %) of distributional justice. The lowest scores were gained within restorative justice - 0/9, similar to other regions.

6.2 Semi-structured interviews

The results of the semi-structured interviews conducted with policy officers from Flanders, Wales and Catalonia are presented in the following chapter. The findings reflect the research subquestion: *What are regional governments' barriers/challenges, opportunities, and needs to integrate climate justice considerations within their adaptation plans?* The summary of findings and governance overview are provided at the chapter's end (Tab. 9).

6.2.1 Flanders

Beginning the interview with a discussion concerning the actors involved in the preparation of the plan, R1 mentions that the current plan was prepared only by the governmental bodies, particularly by the *Task Force*, which includes policymakers from different policy areas of the Flemish government - environment, agriculture, healthcare, infrastructure and mobility or interior affairs. Regarding barriers to public participation, R1 emphasises the political unwillingness and unsupportive attitude toward any societal involvement in the planning phase.

Despite the relatively successful involvement of local governments and local organisations, at least in implementation, in addition to the political barrier, R2 also points to the problem of the need for more knowledge of how to involve vulnerable groups in the preparation and implementation phase, where she sees lots of opportunities for improvement. R1 further explains that their non-inclusion is the major problem as the Flemish studies clearly show that, especially in the cities, vulnerable people are most affected by the severe effects of climate change. *"When your daily thinking is about surviving, getting your children to school, and giving them food, I understand you are not thinking about adapting to climate change. So it is a big struggle how can we include them and give them the attention they need, especially in terms of effects of climate change."* Lastly, R2 adds that lack of organisation also represents a type of barrier as, for them, as a government body is more challenging to include individuals than organised groups.

Reaching the topic of recognition, R1 explains that the social aspect of climate adaptation was lacking their attention for a long time. Also, due to the recently published socioeconomic impact study on the Belgium level, they are currently developing vulnerability assessments on the regional level. R1 identifies as a primary barrier to including social aspects such as recognition

of vulnerable groups, the lack of social science perspective resulting from a long history of rather a technical approach to adaptation.

Regarding identifying the adaptation needs, it seems that the Flemish Environmental Agency has a central role, mainly thanks to the administrating a publicly accessible climate portal providing even particular risks and needs for each municipality individually. R1 emphasises the agency's critical role as it represents the leading data provider crucial for developing adaptation policies. Besides the agency, the local governments are involved in developing the climate portal; however, to what extent was not specified.

Regarding distribution-related topics, R1 highlights that the main challenge is the modelling of cascading effects of climate change. While they are data-rich simultaneously, predicting what will happen and how one development will impact the other is still very challenging. *"It is not always easy to know how it is going to change in time; maybe we are still a bit naive in some impacts, and maybe it can be much worse than expected."* (R1)

"We are trying to develop indicators that can measure the outcome of adaptation. I would also like to include the impact on socially vulnerable groups, but it is a work in progress. We do not have it yet, but we are working on it," replies R1 to whether they have tools to measure the actual adaptation progress and thus assess the impacts of distributional adaptation policies. Currently, the Flemish municipalities also participate in developing such instruments and are further supported to monitor their adaptation actions and their impact. R1 further detailed that in the previous plan, they measured only the plan's progress (if the steps were completed), not if they increased the adaptation capacity. Despite active Flemish collaboration with European Environmental Agency and other EU member states, any additional knowledge on creating these monitoring tools would be appreciated, explains R1 later on.

Regarding the last dimension, restorative justice, particularly the historical legacy of so-called grey solutions, building dykes as protection against flooding, was discussed during the interview. *"The Sigma plan addressing flooding was developed in the 1970s, but it mainly meant buildings higher and bigger dykes."* R1 continues and explains that despite the implementation of different measures against flooding, they still face consequences of the previous practices, such as flooding downstream, especially in areas where there are currently built houses from the period when they were protected by dykes, which are no longer there and the current measures are not sufficient enough to cover the houses standing in the flooded area.

In recent years, the Flemish approach shifted to nature-based solutions, the rivers have been restored, and space was given to rivers. To cope with the maladaptation in this particular case, R1 explains that there is some compensation for citizens impacted by these effects through insurance and disaster funding; however, the financial payments are allocated only in case of extreme weather events, and it can not be used to for instance relocation in general. R1 further explains that the government is trying to use windows of opportunity, for example, when the houses in the flooded area are being sold to buy them and restore the land. *"There are things that can be done"*, R1 concludes the whole situation.

Concluding the discussion, R2 mentions that nature-based solutions or just simple actions to make some place greener can create adverse side effects, especially for vulnerable groups. She provides an example of gentrification in Antwerp, where a new park was built. As a result, the entire neighborhood became more expensive, particularly housing-wise.

6.2.2 Wales

Discussing the actors involved in preparing the Welsh adaptation plan, R3 describes that the Welsh plan was approached rather intragovernmental as different bodies within the national government were involved in the preparation. Individual police teams carried out the broader stakeholder engagement, and there was official public consultation before the publication. However, as R3 resumes in terms of public involvement, there is still room for improvement. *"The Welsh government is currently developing a strategy for public engagement and action on climate change and is very much focused on individual members of the public... that is going to be our main future route for engaging individuals...our national plans tend to be focused in driving action in the public sector."*

Examining the barrier to including citizens in the preparation of adaptation plans, both respondents agree that the character of the risks makes it challenging to involve citizens. *"It is difficult for individuals to protect themselves from many of the impacts of climate change; they will be pretty reliant on public bodies and service providers... that is a challenge for us is to get the right messages out without acknowledging these limitations."* (R3) Secondly, R3 explains that, particularly in the coal tips safety, they have to be very careful how they approach and involve the public since it represents such a sensitive area for the Welsh community. *"It could be easy to make people feel hopeless to take action or even anxious about the potential danger."*

Furthermore, R4 explains how crucial it is to converse with communities about the future purpose of the tips and what they want to see in them—however, the question of how to do it

remains challenging. Concluding the discussion about public involvement, R3 expresses concern about ensuring that communicating decarbonisation and adaptation actions does not lead to mixed messages and consequently to maladaptation.

Regarding recognitional justice, the Welsh approach to identifying vulnerable groups and adaptation needs was discussed. As R3 describes, the Integrated Impact Assessment ensuring that the adaptation policy will not have disproportionate impacts on people with protective characteristics or who are already disadvantaged is currently being developed. Furthermore, R3 resumes that the vulnerable people can be, in Welsh cases, sometimes very different from the traditionally vulnerable groups (elderly, children, people with disabilities); for illustration, people in rural areas with private water supplies are potentially at higher impact from droughts. However, that does not mean they are low-income households.

Continuing the discussion with the identification of climate change risk, R4 explains that despite the significant role of the Climate Change Committee in climate risk assessments, they do their own in some areas, such as flood management or health. As R3 adds, they are still looking for a way to deal with the aftermath of publicly sharing some information. *"It is very tricky to share that critical information and not somehow create, to some extent, difficulties for people. It is a sort of thing like house prices...and then there is a whole insurance side o things - some people cannot insure their houses as they appear currently in a flooding area."* As respondents explain, the economic analysis providing data to help find a complex solution to this phenomenon is being developed.

Being the most significant current risk in Wales, our conversation turned to coal mining several times during the conversation. With R4, we discuss the challenges they face while assessing the impact of the coal mining-related risk. *"One of the key things for us is the age of these infrastructures."* As R4 explains, getting hold of historical documents to assess drainage capacity and the consequent distribution of risks is complicated. *"Sometimes, because the coal mining tradition goes centuries back and the records do not exist, the divers must go to the mines to gather the data."* Impacts of climate change on coal tips is another challenging area where they collaborated with Met Office and Hadley Centre.

Discussing distributional justice, the Welsh government, like most countries, struggles with mechanisms to measure the actual outcomes. The next Welsh adaptation plan should be based on a system-based approach, which aligns with the last CCC's updated approach to assessing progress. An improved monitoring system will be the heart of the new plan. R3

complements: *"We will focus on outcomes rather than completed actions. However, it is not easy because, as you know, it is almost like you are trying to measure the absence of risk."*

Approaching the end of the interview with restorative justice and particularly with the question of their approach to maladaptation in Wales, both respondents agree to recognise it as a significant problem, which is still waiting to be addressed. R3 explains that, especially in terms of funding, they need to understand better the gaps and opportunities for further support.

Concluding the interview with the effects of the coal mining industry decline, it can be easily observed that the impact on the communities is enormous - health issues, coal tips, mine shafts left behind being regularly flooded, loss of the primary source of income, and property prices. *"These communities are still some of the most deprived areas in the UK because of what was left behind there."* (R4). How to deal with the whole legacy, skills gap, and particularly the cost and funding of the restoration of those mining legacy infrastructures represent the biggest challenge for the Welsh government. As R3 resumes, they need collaborative research between the UK and Welsh governments, so they recently suggested setting up a task force to understand the research required. Lastly, as R4 express, it is all about pulling resources, so the discussion of who should be financially responsible for tackling the coal mining legacy is ongoing too.

6.2.3 Catalonia

Starting the interview with a procedural dimension of climate justice, R5 highlights that despite the COVID-19 circumstances, almost two hundred citizens or stakeholders participated in the plan's preparation, and seven hundred suggestions were received from the public during the preparation phase.

Furthermore, as R5 explains, there is currently a process of establishing a citizen's assembly - Social Table on Climate Change, where citizens will be called to collaborate with the government. The Social Table was approved in 2022 as a consultative, participation and advisory body attached to the Department of Climate Action, Food and Rural Agenda to have a formal role in various phases of adaptation planning. As R5 adds, the assembly should represent the Catalan society's different social, economic and environmental entities. *"The diversity of the Catalan society was the main reason why it took us over a year to put it all together and create a truly representative body of Catalan society. In Catalonia, people are used to organising themselves because of everything - music, sports or social justice...everybody wants to advocate for their interests."* (R5)

Approaching the recognitional justice, R5 provides several comments regarding the Catalan approach towards climate adaptation, particularly about vulnerability. A vast amount of data and experience has been gathered thanks to the ten years of office existence resulting in a profound and advanced knowledge of the vulnerabilities impacts. Additionally, The Catalan Climate Change Law adopted in 2017 shaped how the current strategy was developed and what the public policy departments must consider within their policymaking - social vulnerability became a cross-cutting issue for the first time as there are currently seventeen policy areas where the vulnerability has to be considered and analysed. The second critical development is that the climate law should ensure that the government and city councils should suggest in their territories minimal access to water and energy, meaning a minimum number of units of water and energy for social comfort in the houses that will be secured for a free expense.

Continuing with the topic of vulnerable groups, R5 describes that the difference between the inland and coastal parts of the region is crucial for understanding Catalan vulnerability. The inland part faces a deficiency in essential services such as elderly centres, infrastructure or housing, resulting in people leaving the rural areas and moving to cities where over 80% of Catalans live. Consequently, abandoned land and agriculture increase the risks of drought or fires while food production crucial for supplying the cities on the coast decreases. In conclusion, everything and everybody is then more vulnerable to climate change.

Regarding identifying vulnerability in Catalonia, R5 mentions Atlas of Rural World (*El Atlas del Mundo Rural*), a mapping tool covering various social vulnerabilities such as socioeconomic status, unemployment, age, labour sources, and transport infrastructure. The Atlas is updated every five years. As R5 explains, regions' vulnerability primarily depends on how successful the efforts to keep the people in the territories are; however, the lack of affordable housing for young people makes it extremely difficult.

Regarding distributional justice, R5 explains the current policy supporting small municipalities, which are financially and knowledge-wise disadvantaged in developing adaptation planning and policies. *"Half of the budget goes to municipalities with less than 1000 inhabitants, and the projects subsidize 100% of the total cost. We got more than six hundred applications, 78% from those who have less than 1000 inhabitants. It indicates a huge window of opportunity to support the small municipalities to adapt to climate change effects in policies such as efficiency in water use or prevention against forest fires."*

R5 explains that the Catalan attitude towards resilience is to become as self-sufficient as possible. " *We are trying to be self-sufficient in three things: water, food, and energy; the more territory is autonomous in the production of food, energy, and water, the better adapt it will be to the impacts of climate change.*" (R5)

R5 concludes the interview by explaining that their main concern is how to distribute adaptation costs so they do not increase social inequalities already happening in the territory. Adaptation costs must be covered by those who have incremented vulnerability to climate change in the territory.

Tab. 9: Summary of Findings from Semi-structured Interviews and Overview of Adaptation Documents

<p>Flanders</p> <p><u>Flemish Climate Adaptation Plan 2030</u>, currently in place, represents the second generation of the adaptation plan and was published in 2022. The first was published in 2013: <u>Flemish Climate Policy Plan 2013-2020</u>. The current adaptation plan complements the <u>Flemish Energy and Climate Plan 2021-2030</u>. Climate adaptation is an exclusive competence of the Belgium regions; thus, the adaptation plans are developed and published by regional ministries of environment.</p> <p>Main barriers and challenges: political unwillingness to involve the public, lack of social-economic data, policies to approach and include vulnerable groups, model uncertainties, and side effects of adaptation policies.</p> <p>Great opportunities: inclusion of vulnerability assessments and inclusion of civil actors.</p> <p>Needs: indicators to measure actual adaptation progress.</p>
<p>Wales</p> <p><u>Prosperity for all: A Climate conscious Wales</u> currently in a place represents the second generation of the adaptation plan. The first one was published in 2010: <u>Climate Change Strategy for Wales Adaptation Delivery Plan</u>. Due to the devolution in the United Kingdom, climate adaptation is an exclusive competence of the nations; thus, the adaptation plans are issued by Welsh Minister for Environment, Energy and Rural Affairs. A sectoral adaptation plan complements the adaptation plan: <u>Historic Environment and Climate Change in Wales: Sector Adaptation Plan</u>. Last year a new strategy complementing an adaptation plan was introduced: <u>Climate Change Welsh Government Engagement Approach 2022-26</u>.</p> <p>Main barriers and challenges: risks communication towards the public, the scope of risks.</p> <p>Great opportunities: involvement of vulnerable groups and individuals.</p>

Needs: indicators to measure actual adaptation progress, solve the financial responsibility among different levels of governance, and further collaborative research.

Catalonia

The Government of the Generalitat de Catalunya has approved the new Catalan Strategy for Adaptation to Climate Change 2021-2030, whose objective is to improve adaptation to climate change in Catalonia and reduce vulnerability by establishing 76 operational objectives that are deployed in 312 adaptation measures in January 2023. The current strategy represents the second generation of adaptation planning. Catalan Strategy for Adaptation to Climate Change 2013-2020 (ESCACC20), published in 2012, was the first strategic document on climate change adaptation policies in Catalonia prior to the approval of the European Strategy for Climate Change Adaptation (2013). In 2014, Catalan Office for Climate Change published the Global Indicator of Adaptation of Climate Change Impacts in Catalonia. For the first time, a global indicator of adaptation was established that allowed the follow the evolution of the adaptive capacity of Catalonia to the impacts of climate change.

Main barriers and challenges: territorial differences between continental and coastal areas, how to balance continental with coastal areas regarding vulnerability to climate change?

Great opportunities: a specific law is in place to tackle inequalities and reach equity concerning minimal access to water and energy in all the territory

Needs: approaching the distribution of adaptation costs so they do not increase social inequalities already happening in the territory.

7. Discussion

"The objective is to put in motion a fundamental transformation in the way we use and produce energy, how we plan our cities, how we manage land and how we prepare for changing climate and cooperate to minimise its disruptive effect. Transformation takes strategy. You need to know destination if you are serious about reaching it."

(Thorgeirsson, 2015)

7.1 Climate Justice in Adaptation Planning

7.1.1 Recognition of Diversity

The impacts of climate change are locally specific and depend on each territory's physical, biological, ecological, economic, and social characteristics. A similar expression could be found in six plans, as all regions involved except Lombardy recognise the plurality of adaptation impacts. Catalonia goes even further and systematically maps the adaptation needs across the territory, enabling the government to target concrete policies better. Reaching the highest scores within the recognitional dimension, Scotland is the only region that gives communities a part in identifying adaptation needs. *"We want to empower people to make informed decisions about how best to adapt to climate change while considering their local knowledge."* Four regions acknowledge structural inequalities regarding climate adaptation; only Scotland proposes a plan to tackle them.

So, how successful are the European regional governments in providing vulnerable groups with enough recognition to protect against climate change impacts? Similarly to Juhola et al. (2022), overall poor accomplishment in recognitional justice should not be surprising. However, it is problematic since recognising diversity builds the core foundation for other justice dimensions (Fraser, 2000).

Although regions obtained a score of 1 for acknowledging different climate effects on society, it does not necessarily mean that diverse groups with varying needs and capacities are being recognised, so those who might be marginalised within society have a voice and chance to be heard. Thus, given the overall poor AJI scores and considering the concerns expressed in the interviews, there is considerable room for improvement.

One of the challenges regarding the recognitional principles mentioned during the interviews was how to approach vulnerable groups because they need to be identified first to be recognised

and empowered. While some regions work with the more traditional definition of vulnerable groups according to age, health conditions or socioeconomic status, others consider vulnerable groups regarding the risks to which they are exposed, such as people in rural areas with private water sources. The latter approach is usually more straightforward than the former because such data are easily accessible; however, diagnosing who is exposed to the risk of energy poverty due to their socioeconomic status is more complicated. As R1 expressed, reaching the vulnerable groups, especially in cities, is problematic as they, in the majority, live in unsatisfactory conditions and struggle to meet their ends, so they are more concerned about attending to daily needs than, for instance, attending a workshop in city hall.

The direct link between socioeconomic status and desire to participate in public matters cannot be drawn as, for instance, Cattino (2020) showed people in Medellin living in poor conditions are trying to be very active in adaptation planning since they are more used to organising and advocating for their interests. So what influences how much people want to be involved if there are possibilities to do so?

One of the aspects playing a role is the culture of advocating for interests; as explained by R5, the habit of organising themselves is firmly rooted in Catalan people. Thus, it is more feasible for the government to recognise and involve the groups than reach out to individuals. R2 also confirms that organisations are more feasible to involve.

Different aspects can explain Scotland's vulnerable groups, where many of them live in remote areas, where a strong sense of community has endured because of the character of living in such an environment. They might feel more responsibility for their preparedness and ability to protect their lives and property. If you rent a flat in a city apartment building, a sense of community identity and responsibility might be missing.

Furthermore, European countries are not that experienced with other types of recognition, such as political and cultural, which is a crucial topic in the US, Africa or South America. However, given what was expressed during the interviews, recognition has been gaining the attention of the regions, so an improvement in the next generation of plans might be expected.

Future research could investigate the main drivers of the group's willingness to be interested in public issues related to climate adaptation. A perfect object of the study could be the current situation in Wales, where the government is developing a framework for the involvement of the public in the debate regarding the future of coal tips. The coal tips are a concern for the whole society, posing a risk for various groups, and thus it could be observed to what extent

socioeconomic status, being part of a minority, age or education level, plays a part in willingness to be involved in such public matters.

What influences shape the barriers/challenges, opportunities and needs in considering recognitional justice in adaptation planning?

- Governmental willingness and experience with societal perspective and consideration within adaptation
- Level of organisation within society and the desire to do so
- The character of the vulnerability

Policy recommendations:

- Develop and incorporate a plan for decreasing the structural inequalities related to climate change.
- Support the community life and gatherings concerning climate change to create a friendly environment for creating organised groups of active citizens.
- Create a database of organisations involved in adaptation planning so the citizens can join them.
- Support informal education to empower people to identify their adaptation needs and support the exchange of ideas among communities and individuals.⁴

7.1.2 Measuring the Absence of Climate Risk

Accurate data are the drivers of adaptation planning, and thus without risk assessment, it could quickly become meaningless policy; therefore, it should not be surprising that all examined regions conducted some kind of risk assessment. However, only Catalonia and Scotland address all risks identified. The fact that only a few risks were selected for further analysis might be explained by acknowledging that some risks may be more urgent or also due to resource reasons. However, from a long-term perspective, it could potentially lead to overlooking hidden impacts (Adger et al., 2018).

⁴ Experts would still identify the risks, however, risk identification does not directly lead to the identification of adaptation needs - the knowledge of how to prepare for a blackout is something that each household should recognise because, in the end, at least partially, they will have to do it themselves.

Even though R5 highlighted considerable differences in climate change effects for the inland and coastal part of Catalonia, interestingly, no plan explicitly reflects that some parts of the regions or sectors will require more adaptation funding than others, even though the different effects within the territory were recognised.

Only five regions, at least in general, mention vulnerable groups; surprisingly, Navarra, given the low scores in other dimensions, conducted as only region the vulnerability assessment that will be updated. While the vulnerability related to particular risks is integrated within risk assessment, the vulnerability assessment in the index refers to the assessment of people's adaptive capacities related to age, health, nationality, socioeconomic status etc. The absence of the vulnerability assessment is related to the previous recognition discussion – the social aspect of vulnerability is still a developing concept for many regional governments, who are just starting work with societal topics within the adaptation planning.

However, what is worth discussing is the zero scoring in indicators 2.3, 2.4 and 2.5, which are related to measuring the actual progress adaptation and the distributive impacts of adaptation policies, also highlighted as the major and, in parallel, very current challenge of adaptation planning. During the interviews, R1 and R3 pointed out that they are developing such measures. Catalonia already has the indicator (developed the first version in 2014), but none are mentioned in the plans. As R3 explained, following Welsh adaptation plans should be based on a system-based approach, focusing on outcomes and not completed actions. Measuring the adaptation progress is thus a current and relevant topic; however, as confirmed by all respondents, it has complex challenges (Ford et al., 2015; Magnan & Chalastani, 2019). As R3 accurately pointed out, it is almost like measuring the absence of risk.

Furthermore, many results of the adaptation policies will be seen only in decades and therefore are hard to evaluate now. There are different methodological approaches how to measure the progress of adaptation. The main ones are outcome-based and policy-based (Ford et al., 2013).

Outcome evaluation approaches measure adaptation effectiveness concerning avoided climate change impacts. Although it is often treated as a gold standard in the general monitoring and evaluation literature, in an adaptation context, reflecting the difficulty of attributing reduced impact specifically to adaptation has not been used that often (Ford et al., 2013). Moreover, because the success might not be evident in decades, the success is very tricky to estimate. On the contrary, the policy-based approach measures adaptation progress through the presence of crucial governance factors, the process through which adaptations are developed and

implemented, analysing of policies and programmatic approaches and examination measures of changing vulnerability (Ford et al., 2013). By simple observation, it can be seen that both approaches have their positives and negatives as they focus on different aspects of adaptation planning.

Future research could focus on the experience of regions and different entities with an adaptation tracking indicator in place so the gaps and opportunities for further indicator development can be identified. In addition, examining how the (lack) vulnerability assessments influence the adaptation progress would be interesting to investigate too.

What influences shape the barriers/challenges, opportunities and needs in considering distributional justice in adaptation planning?

- Practical employment of vulnerability concept within the adaptation planning
- Knowledge and resources for measuring the progress of adaptation
- Awareness regarding the distributional impacts of adaptation policies

Policy recommendations:

- Conduct a vulnerability assessment and use the data to decrease the climate change effects on vulnerable groups.
- Conduct an assessment of vulnerable sectors and use the data to decrease the effects of climate change effects on them.
- Actively collaborate with other regions and other actors to share practices regarding the development of tracking indicators.
- Create/use an indicator combining outcome and policy-based approach to cover both aspects of adaptation.

7.1.3 The Right to Meaningfully Participate in Decision-making

Procedural justice obtained the highest scores among the other dimension of climate justice. That can be explained by extensive experts and a closed and open invitation, particularly during the plan's preparation. In addition, all regions allocate responsibilities for adaptation measures, which has been identified as the bottleneck of adaptation planning (Dupuis & Biesbroek, 2013). The options for how regions have engaged the public and stakeholders vary greatly. While some regions developed the plan only within government and did not involve the public - Flanders and the Basque Country, some invited experts or the private sector - Lombardia, Wales. The most advanced in terms of procedural justice, Catalonia, Navarra and Scotland, approached the

public in multiple ways, such as physical workshops or creating online platforms. Moreover, in Scotland and Catalonia, the stakeholders are also involved in the evaluation and monitoring phase.

Even though procedural justice obtained the highest score, there is still space for improvement, particularly in regions that did not allow the citizens to participate. Furthermore, in most cases, the stakeholders were involved only in the preparation phase, but they could also be included in the implementation, monitoring or evaluation.

Worthy of a brief comment is the political barrier which was expressed by R1 and R2, without dispute it is clear that the adaptation developers are limited by the political environment as every adaptation plan has to be approved by the government, sometimes even by parliament or as in case of Catalonia, the citizen's assembly. Consequently, even if the environmental office wanted to employ the climate justice principles within the adaptation planning, without governmental support is nearly impossible.

Probably the most exciting development in regards to procedural justice can be found in Catalonia – the citizen's assembly (*Mesa social del cambio climático*), which was officially approved in 2022, putting together citizens deputies covering different social, economic and environmental groups of the Catalan society. As R5 highlighted, the organisation within society is very high, and therefore, it took over a year to find those representatives who would sufficiently cover society's diversity. The obvious questions could be: is it possible to transplant such instruments to other societies, to different levels of governance? The crucial aspect is that the *Mesa society* has strong support from the Catalan government and the society. Thus, it can potentially be a genuinely effective way to involve vulnerable groups and citizens in general in the processes with a voice that can not be omitted. While it will be a significant improvement for some regions to do an open consultation, probably for Navarra or Scotland, this could be genuinely a next step.

Future research could focus on discovering cases of good practices where the governmental unit included stakeholders in the preparation phase and in evaluating and monitoring the adaptation stages. Furthermore, a deeper understanding of *Mesa Social* will be worth analysing in the first years in place. Lastly, the perspective of the stakeholders and citizens and their perception of how their contributions are taken seriously would be worthy of examination.

What influences shape the barriers/challenges, opportunities and needs in considering procedural justice in adaptation planning?

- Political support to involve stakeholders and citizens
- The level of involvement of stakeholders within different stages – usually, they must reach full engagement in the preparation phase to be included in other stages.
- Culture of civic engagement in a particular region

Policy recommendations:

- Advocate for climate justice principles in adaptation planning to change the governmental approach.
- Be creative with approaching and involving vulnerable groups – neighbourhood workshops, online webinars and platforms, and informative campaigns.
- Again support engaging communication and education of citizens.
- Involve stakeholders in the evaluation and monitoring phase.
- Better communicate how the public and stakeholders' contributions were incorporated into the plans to show that their opinions matter.

7.1.4 Did someone say maladaptation?

Given the very recent development of theoretical discussion about restorative justice in adaptation planning (Robinson & Carlson, 2021), it was not unexpected that the scores would differ significantly from the findings of Juhola et al. (2022), in which only less than half cases scored some points. In this study, only Catalonia scored in the recognitional dimension thanks to imposing a law which should secure minimum drinking water and energy for households.

Despite the lack of mention that maladaptation or its outcomes should be acknowledged and addressed in adaptation plans, all respondents agreed that how to deal with maladaptation concerns them even though it is not an established concept within their work yet. Particularly in the case of Wales, the whole aftermath of the shutting down of the coal mining industry and the effects of climate change on coal tips safety is worth closer observation and should be an object of future research.

Thus, future research should focus on the regions and other entities currently setting up policies to deal with maladaptation and, in detail, examine the process, mainly what actors and how they are included in the preparation and implementation phase. Furthermore, the overview of which governments explicitly work with the concept of maladaptation to see the advance in acknowledging that it is a problem needing to address would be highly beneficial. Lastly, as mentioned during the interview, the concept of Loss and Damage, which is closely linked to

maladaptation, also deserves further examination, for instance, how the governments employ it within their adaptation planning.

What influences shape the barriers/challenges, opportunities and needs in considering restorative justice in adaptation planning?

- Knowledge and experience with the concept
- (Financial) Resources to create policies to deal with it
- The extent of the risks

Policy recommendations:

- Conduct an assessment covering the distributional impacts of every adaptation policy to investigate potential negative impacts of adaptation policies and set up a policy to minimise them.
- In cases of known maladaptation, involve affected actors in looking for a solution.
- Communicate with stakeholders about the risk of maladaptation.

7.2 Limitations and Further Research

Being tackled by both the quantitative and qualitative approaches, there are limitations related to the research methods used.

Firstly, there are apparent limitations to AJI and its application. First, as Juhola et al. (2022) pointed out, just the information about what stakeholders were included in decision-making alone does not show how the power in the processes was divided (Klenk et al., 2017; Latulippe and Klenk, Caniglia et al., 2020, 2021). AJI is not an exception, as quantitative assessments often omit these issues. Juhola suggests complementing the quantitative assessment with qualitative methods, which was done in this study by conducting semi-structured interviews to draw a more complex picture of actual adaptation planning.

The impossibility of conducting interviews with policy officers from all selected regions represents a limitation, as there is less potential to generalise the findings. Furthermore, the interviews were coded only by the study's author, so the results' subjectivity is higher than in the AJI case. However, the coding of interviews by the second person was out of the scope of the study.

The second limit is related to the sample, which is still relatively small and biased towards Global North, particularly South-West Europe, so it is impossible to make more general conclusions about justice in (European) regional adaptation planning. To do so, Global South Regions would have to be included; for European generalisation, Northern and Eastern European regions should be included. Despite the limits, some patterns can be observed from the findings.

Looking to the future, the author strongly recommends always complementing the selected cases with qualitative approaches to ensure a complete picture can be drawn.

Furthermore, the index needs to be updated. Since its development, the theoretical understanding of each dimension and the adaptation plans have advanced considerably. For instance, the distributional dimension should be supplemented by more indicators to assess the stakeholders' involvement in measuring the adaptation progress. Furthermore, for example, the restorative dimension should be complemented by the concept of Loss and Damage, which refers to the destructive impacts of climate change that cannot be avoided because the limits of mitigation or adaptation actions were reached. Thus the measures are unaffordable, not physically or technically possible, socially difficult or simply not sufficient to prevent some harm to humans, the environment or property (Byrnes & Surminski, 2019).

Lastly, the research focused only on the main adaptation plans. However, many sectoral plans could also be worth reviewing from a justice perspective. Even though many ideas for further research have already been mentioned, the author strongly recommends continuing to discover the linkage of climate justice, particularly the concrete implication of such principles within specific processes and policies. Case studies of regions dealing with particular difficulties could be beneficial for identifying gaps and opportunities to integrate climate justice principles within adaptation planning.

8. Conclusion

"It is power, in other words, that needs to be confronted and transformed." (Newell et al., 2020)

Adaptation to climate change is a multilevel governance challenge setting special responsibility within regions and cities. These represent the main actors who develop concrete adaptation plans and implement the policies to increase the adaptive capacities of people, infrastructures and land. However, due to the unequal distribution of climate change effects and considerable differences in adaptive capacities, there is a significant variance in human vulnerability towards climate change risks. Thus, scholars and experts argue that justice and fairness considerations must be included in the climate adaptation debate and, most importantly, the policies. However, as claimed, adaptation planning is biased toward technocratic approaches lacking social perspective and data.

Thus to support the social-oriented adaptation research, this thesis connected climate justice and adaptation planning, discovering how the climate justice principles are integrated within the European regional adaptation planning, particularly in seven regions: The Basque Country, Catalonia, Flanders, Navarra, Lombardy, Scotland and Wales.

The study was tackled by both quantitative and qualitative approaches to draw a broader picture of regional adaptation planning in Europe. The Adaptation Justice Index was used to answer the first research subquestion asking how are climate justice principles integrated within the regional adaptation plans. The second part completed the research using qualitative data from semi-structured interviews to support addressing the second subquestion regarding regional governments' challenges/barriers, opportunities and needs to incorporate climate justice principles within their adaptation plans.

The findings showed clear advancement of regions in integrating procedural justice principles, where the involvement of stakeholders and the public within the preparation and other phases, together with evaluation and monitoring tools, gained the highest score for Catalonia and Scotland.

On average, regions scored around 30% from distributional justice due to the conduction of risk assessment; however, the vulnerability assessment was absent in most of the plans, and the vulnerable groups were mentioned only generally. Despite the lack of tracking indicators to measure the actual progress of adaptation within the plans, thanks to the interviews, it was

discovered that Catalonia has a tracking indicator in place, and other regions are currently developing them as the measuring of the adaptation progress is a critical topic of the current adaptation debate not only in Europe.

Recognitional justice and restorative justice still need to be developed, conceptually and practically. While all regions except Lombardy incorporated the recognition of different climate impacts and, adaptation needs in society within their plans, restorative justice has been chiefly left with zero points except Catalonia. However, as confirmed during the interviews, restorative justice, particularly maladaptation, is gaining more and more attention, and improvement in its considerations can be expected. Contrary to restorative justice, recognitional justice is more difficult to conceptualise for regions and the practical implications, such as approaching vulnerable groups and their empowerment. The semi-structured interviews showed how important it was to complement quantitative research with qualitative data. As confirmed, the Adaptation Justice Index has limitations, and the lack of explicit mention does not mean the policy is not in place - as demonstrated by Catalonia's tracking indicator.

The interview with Flanders's policy officers confirmed the adaptation planning's biases towards technical approaches, as respondents identified the political aspect and long tradition of technical approach as the main barriers to employing the social perspective within adaptation planning.

While Flanders and Wales recognised how to approach and involve vulnerable groups and individuals as a major challenge, this problem seems missing in Catalonia. On the contrary, the Catalan high organisation within society, the long tradition of civic participation and support from the government resulted in the formal approval of *Mesa Social del cambio climático* - a citizens' assembly representing various vulnerable groups from the whole society.

All three regions confirmed that the tracking indicators and their updating are the current hot topic of the adaptation discussions. While Catalonia has one in place, others are in the process of developing them.

In chapter Discussion, among others, the author identifies the potential steps how to increase the integration of climate justice principles integration: creating a strategy to decrease the social inequalities related to climate change, incorporating vulnerability assessment into adaptation planning, continuously collaborating with other actors to develop and use the adaptation tracking indicator or more soft recommendation such as target communication or supporting community life.

Recommendations for further research were given within particular climate justice dimensions, such as investigating the drivers of public willingness to participate in adaptation planning or case studies from regions that already have an adaptation indicator in place to provide their experience to the broader academic audience. Particularly, coal tips safety in Wales was recommended for more detailed observation as there are many opportunities to research climate justice considerations from different angles.

To conclude, climate justice in adaptation planning is a complex developing concept. While regions are aware of the importance of including some of them (procedural, distributive dimensions) to increase the adaptive capacities within their territories, other - recognitional and restorative ones are less known theoretically and even fewer are considered within the plans. However, mainly the restorative dimension seems to gain more attention recently.

Despite the relatively low scores and many challenges identified, if the regional governments aim to protect their citizens from the impacts of climate change sooner or later, regions will be left with nothing than the urgent need to include climate justice considerations within their adaptation planning to be able to secure a life in the decent environment for all their citizens no matter on their age, education, culture or socioeconomic status.

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