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Title: *Governing Justice: Analysing Urban Heat Adaptation and Climate Equity in The Hague*

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Summary

This thesis examines how urban heat adaptation governance in The Hague (2020–2025) shapes climate-justice outcomes by analysing how institutional structures, participation practices, and equity mechanisms condition implementation. The central research question is: *How has governance of urban heat adaptation in The Hague between 2020 and 2025 shaped climate-justice outcomes across distributional, procedural, and recognitional dimensions?*

Using a qualitative case-study design, the research combines ten semi-structured interviews with municipal staff and civil-society actors; analysis of twelve core adaptation and participation documents; targeted spatial analysis of distance to designated cool spaces and green cover; and thematic coding in ATLAS.TI. Evidence is triangulated to judge where arrangements and instruments advance or hinder justice, with attention to decision rights, budgeting, and siting choices. The empirical focus is the municipal scale, with neighbourhood variation foregrounded in analysis and interpretation.

Findings indicate that heat is acknowledged in strategy, yet implementation remains fragmented and weakly tied to equity. Distributionally, funding instruments that hinge on resident initiative and co-financing advantage higher-capacity neighbourhoods; high-exposure areas are structurally under-prioritised for greening and cooling. Procedurally, participation typically occurs late with limited mandate and diffuse accountability, producing consultation rather than shared decision-making. Recognitionally, references to “vulnerable groups” lack an operational framework able to address intersecting needs, including language barriers, migration background, and trust. Mechanistically, portfolio logics and the allocation of decision rights concentrate accountability in strategic units while assigning operational responsibility to development services, without mandatory equity screens at programme and siting decisions. In practice, feasibility and asset-lifecycle timing outweigh exposure and capacity need, constraining justice-oriented prioritisation.

The study concludes that adaptation without embedded justice mechanisms risks reproducing inequality. Three shifts are recommended: integrate vulnerability criteria into budgeting and spatial prioritisation, with minimum service standards for cooling access; institutionalise inclusive, neighbourhood-scale participation with clear decision rights, minimum accessibility requirements, and feedback obligations; and adopt justice-oriented evaluation tools with disaggregated indicators and public reporting. Overall, the thesis argues for a transition from technical adaptation to transformative governance, in which justice is designed in at the start and iteratively evaluated across planning, siting, delivery, and learning.

Keywords: Urban Heat Island (UHI), Climate Justice, Adaptation Governance, Spatial Inequality, Public Participation

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Table of Contents

Summary	1
Acknowledgements	2
Table of Contents	3
List of Figures	5
List of Tables	6
Abbreviations	7
1. Introduction	9
1.1 Problem Statement	10
1.2 Research Question and Objectives	11
2. Literature Review	12
2.1 Adaptation Governance in Urban Contexts	12
2.2 Urban Heat Islands and Adaptation Strategies	13
2.3 Climate Justice and Adaptation	13
2.3.1 Distributional Justice	14
2.3.2 Procedural Justice	14
2.3.3 Recognitional Justice	15
2.4 Evaluating the Role of Justice in Adaptation Governance	15
2.5 Conceptual Framework: Justice-Informed Adaptation Governance	18
3. Research Design and Methodological Justification	20
3.1 Case Study Strategy	20
3.2 Semi-Structured Interviews	20
3.2.1 Sampling and Access	20
3.2.2 Interview Process and Topics	21
3.3 Secondary Sources Document Review	21
3.4 Spatial Analysis	22
3.5 Data Analysis Procedure	23
3.6 Operationalisation: Variables and Indicators	23
3.7 Study Limitations	27
4. Empirical Findings and Analysis	29
4.1 Adaptation Governance in The Hague	29
4.1.1 Institutional Fragmentation and Departmental Organisation	29
4.1.2 Technocratic Approaches and Reactive Adaptation	30
4.1.3 Inconsistent Input Mechanisms	33
4.1.4 Limited Institutional Learning	33
4.2 Distributional Justice in Urban Heat Adaptation	35
4.2.2 Inequitable Distribution of Green Spaces and Cooling Infrastructure	39
4.2.3 Inadequacies of Targeted Adaptation Interventions	41
4.2.4 Governance Gaps and Opportunities for Equity	41
4.3 Procedural Justice in Urban Heat Adaptation	43

4.3.1 Defining and Implementing Participation in The Hague	43
4.3.2 Inequality and Exclusion in Participatory Practices	44
4.3.3 Systematic Weaknesses and Lack of Institutional Learning	45
4.3.4 Implications for Climate Adaptation Justice	46
4.4 Recognitional Justice in Urban Heat Adaptation	47
4.4.1 From Rhetorical “Vulnerability” to Operational Categories	47
4.4.2 Spatial Inequality and Governance Responsiveness	47
4.4.3 Case evidence: Cromvlietplein and Wijkpark Transvaal	48
4.4.4 Recognitional Justice in The Hague	48
5. Conclusions & Discussion	49
5.1 Synthesis of Key Findings and Justice Implications	49
5.1.1 Distributional Justice	49
5.1.2 Procedural Justice	50
5.1.3 Recognitional Justice	50
5.2 Theoretical Implications	50
5.3 Methodological Reflection and Limitations	52
5.4 Recommendations for Future Research	52
6. Policy Recommendations	54
1. Embed Vulnerability in Adaptation	54
2. Institutionalise Inclusive and Sustainable Participatory Structures	54
3. Develop Justice-Oriented Evaluation Tools and Indicators	54
Bibliography	56
Appendices	69
Appendix A – Interview Guides	69
Appendix B – Interview Guides - Dutch Translation	74
Appendix C – Documents used for Analysis	80
Appendix D – ATLAS.TI Analysis	82
Appendix E – Authorship Attestation	85

List of Figures

Figure	Title	Section
Figure 1	Conceptual framework	§2.5
Figure 2	Organisational Chart of the Municipality of The Hague	§4
Figure 3	Governance structure, Policy, and Respondent placement regarding Adaptation governance in The Hague	§4.1
Figure 4	Administrative districts of The Hague	§4.1.4
Figure 5	Urban Heat Island effect in The Hague in 2017	§4.2.1
Figure 6	Percentage of residents with a migration background in 2024	§4.2.1
Figure 7	Disposable household income in 2021	§4.2.1
Figure 8	Percentage of residents aged 65 and over in 2024	§4.2.1
Figure 9	Distance to cooling infrastructure in central The Hague in 2023	§4.2.2
Figure 10	Green surface coverage in The Hague in 2021	§4.2.2
Figure 11	Socio-economic status in 2023	§4.3.2
Figure 12	ATLAS.TI code-document Sankey	Appendix D
Figure 13	ATLAS.TI code-document Analysis	Appendix D

List of Tables

Table	Title	Section
Table 1	Categorization of policy tools for local land use planning across the stages of the adaptation policy cycle.	§2.4
Table 2	Document Selection for Analysis	§3.3
Table 3	Operationalisation of variables and indicators	§3.6
Table 4	UHI Adaptation Governance Network & Decision Rights (RACI)	§4.1.2
Table 5	Anonymized overview of interview participants and thematic focus	Appendix A
Table 6	Documents Used in Analysis with Sources	Appendix C
Table 7	ATLAS.TI Codebook	Appendix D

Abbreviations

Abbreviation	Full Term
UHI	Urban Heat Island
GIS	Geographic Information Systems
R1-R10	Anonymized Respondent Codes (e.g., Interview Participants)
LDE	LDE Thesis Lab Climate Justice in The Hague
NbS	Nature-based solutions
CRS	Coordinate Reference System
DPRA	Deltaplan Ruimtelijke Adaptatie
MPS	Minimum Participation Standard
IGVP	Integraal Gemeentelijk Rioleringsplan 2021-2025
EU	European Union
NGO	Non-Governmental Organisation
BSD	Bestuursdienst (Executive Office / Strategy)
DSO	Dienst Stedelijke Ontwikkeling (Urban Development)
DSB	Dienst Stadsbeheer (City Operations)

SZW	Dienst Sociale Zaken en Werkgelegenheid
DBV	Dienst Bedrijfsvoering
DCW	Dienst Onderwijs, Cultuur en Welzijn
KPI(s)	Key Performance Indicator(s)
ROI	Return on Investment
UNFCCC	United Nations Framework Convention on Climate Change
CBS	Centraal Bureau voor de Statistiek
ATLAS.TI	Qualitative analysis software

1. Introduction

Heatwaves are among the fastest-intensifying climate risks, with disproportionate impacts in cities where the Urban Heat Island (UHI) effect elevates ambient temperatures and aggravates health, livability, and equity concerns (EEA, 2022; IPCC, 2022; Hsu et al., 2021). Yet adaptation measures are not evenly distributed. Studies repeatedly show that greener, wealthier districts capture a larger share of cooling infrastructure, while low-income and migrant communities face higher exposure and lower adaptive capacity (Reckien et al., 2018; Kim et al., 2021). In practice, the realization of adaptation hinges less on technical measures than on governance, the mandates, instruments, participation rules, and budgeting routines through which cities decide who benefits, where, and on what terms (Bulkeley & Betsill, 2005; van der Heijden, 2019).

Across Europe, multilevel adaptation architectures are challenged with fragmented responsibilities and diverging priorities between EU objectives, national regulations, and municipal capacities (Jordan & Huitema, 2014; Kern, 2018). Financing logics and project delivery routines often privilege feasibility and return on investment, with the unintended effect of reproducing spatial inequalities unless equity is made explicit in allocation rules (Anguelovski et al., 2018; Bisaro & Hinkel, 2018; Schlosberg & Collins, 2014; Shi et al., 2016). Participation, meanwhile, is frequently expert-led and late in the policy cycle, limiting the ability of structurally marginalized groups to influence siting, scope, or standards (Uittenbroek et al., 2019; Trell & van Geet, 2019).

This thesis examines these governance dynamics through the case of The Hague, a mid-sized Dutch city where UHI exposure intersects with pronounced socio-spatial inequality. Projections indicate a substantial rise in warm and tropical days by 2050 (>300%), while The Hague has been identified as one of the most socio-economically segregated urban areas in the Netherlands (Gemeente Den Haag, 2021; Platform STAD, 2022). The city's departmental structure and reliance on a range of adaptation strategies and demand-led subsidies create a fertile context to study how institutional design shapes distributional (who benefits where), procedural (who decides and when), and recognitional (whose needs are acknowledged and operationalized) dimensions of climate justice.

Empirically, the study focuses on 2020–2025, a period in which The Hague's adaptation agenda matured through strategy updates, neighbourhood projects, and subsidy instruments. This temporal boundary facilitates analysis of measures that have moved from planning to early implementation, and of the routines, scheduling, co-financing, procurement, and participation that channel adaptation on the ground. The contribution is twofold: (1) to diagnose the justice effects of UHI adaptation in a European mid-sized city, and (2) to specify the mechanisms by which governance arrangements translate justice language into practice.

1.1 Problem Statement

The UHI effect is increasingly recognized as a climate-justice issue because heat exposure and adaptive capacity are unevenly distributed across urban populations (Heaviside et al., 2017; Hsu et al., 2021). While measures such as shading, tree planting, cooling infrastructure, reflective surfaces, and water access are widely promoted, their benefits often fail to reach the residents most at risk (Nuruzzaman, 2015; Kim et al., 2021). The literature identifies three recurrent governance constraints:

- Fragmented mandates and portfolio logics: in multilevel systems, responsibilities for health, public space, housing, and climate adaptation are split across departments and tiers. Public space developments are sequenced by infrastructure life cycles and co-financing opportunities rather than by exposure and capacity, creating systematic distributional skews (Jordan & Huitema, 2014; Bisaro & Hinkel, 2018; Kern, 2018).
- Late and low-mandate participation: participation that begins after key technical choices are set tends to be consultative, not co-productive, and favours organised, politically engaged, time-rich constituencies, thereby reproducing unequal voice (Arnstein, 1969; Uittenbroek et al., 2019; Trell & van Geet, 2019).
- Recognition without institutional hooks. Policy texts name “vulnerable groups,” yet rarely encode recognition into eligibility thresholds, prioritisation rules, or facilitation standards (such as translation, accessibility, and trusted intermediaries). Without such regulations, recognition remains discursive rather than directive (Schlosberg & Collins, 2014; Sultana, 2022).

Despite a substantial body of justice-oriented research in flood and coastal adaptation, the intersection of UHI governance and climate justice, especially in mid-sized European cities, remains comparatively under-specified (Shi et al., 2016; Pietta & Tononi, 2021; Hamstead, 2023; Liu et al., 2023). Two gaps motivate this study. First, most analyses describe inequities but stop short of tracing the administrative mechanisms that produce them (e.g., how subsidy design, procurement timing, or indicator choices drive allocation). Second, recognitional justice is often treated as an add-on ethics rather than a binding logic that must be embedded in budgets, participation mandates, and measurement (Sultana, 2022; Schlosberg & Collins, 2014).

The Hague offers a pertinent case for addressing these gaps. The city combines high projected heat stress with marked heterogeneity in income, language, tenure, and age structures across districts such as *Transvaalkwartier* and *Schildersbuurt*. The adaptation portfolio blends city-wide strategies with place-based projects and demand-led subsidies, a mix likely to generate capacity-selection effects unless addressed by equity rules. At the same time, its

departmental organisation and reliance on co-financed delivery complicate cross-unit coordination and early, empowered participation. These features sharpen the central research concern: not whether The Hague has adaptation ambitions, it does, but how its institutional architecture and instruments shape justice outcomes.

1.2 Research Question and Objectives

Main Research Question:

How has urban heat adaptation governance in The Hague between 2020 and 2025 shaped climate justice outcomes across distributional, procedural, and recognitional dimensions?

Sub-questions

- What governance structures and coordination mechanisms guide UHI adaptation in The Hague between 2020 and 2025?
- How are distributional dimensions of climate justice reflected in the planning and implementation of UHI adaptation?
- How are procedural dimensions of climate justice reflected in participatory structures and decision-making processes?
- How are recognitional justice concerns addressed in the identification, framing, and inclusion of vulnerable groups?

Research Objectives

This research examines the impact of governance arrangements for urban heat adaptation in The Hague on achieving climate justice. The study analyses the distributional, procedural, and recognitional justice dimensions within The Hague's recent climate adaptation agenda (2020–2025) and aims to:

- Assess how adaptation strategies are governed across municipal departments and programmes.
- Evaluate whether current adaptation efforts reflect justice-oriented planning, participation, and recognition policy approaches.
- Identify key institutional, spatial, and participatory barriers to equitable adaptation.
- Examine how recognitional justice concerns are addressed in the identification, framing, and inclusion of vulnerable groups.

2. Literature Review

2.1 Adaptation Governance in Urban Contexts

Adaptation governance comprises the methods, processes, and networks through which societies organise responses to climate impacts such as heat, sea-level rise, and flooding (Adger et al., 2005; van der Heijden, 2019). In cities, this involves neighbourhood associations, municipal departments, regional authorities, national ministries, and multinational bodies whose interactions steer both the direction and distribution of adaptation (Gonzales-Iwanciw et al., 2019; Trell & Geet, 2019). Effective governance, therefore, depends on coherent policies, coordinated resources, and sensitivity to local socio-ecological contexts (Hooghe & Marks, 2003; Jordan & Huitema, 2014). Because climate risks cross administrative borders, integrated institutions are needed to align environmental legislation, spatial planning, infrastructure resilience, and population vulnerability (Betsill & Bulkeley, 2006). At the same time, multilevel systems often face jurisdictional fragmentation, overlapping mandates, and divergent agendas (Adger et al., 2005; Jordan & Huitema, 2014; Hooghe & Marks, 2003). These structural frictions set ambitious targets to municipalities while constraining delivery through limited budgets and administrative capacity (Aylett, 2015; Kern, 2018; Reckien et al., 2018; Bulkeley et al., 2014; Ferreira et al., 2021).

In this perspective, governance encompasses not only formal arrangements and policy texts but also informal norms, interdepartmental relations, and the capacity for adaptive response (Bulkeley et al., 2014; van der Heijden, 2019). Reflexivity, learning from implementation and iterating, has emerged as core criterion of effectiveness (Juhola et al., 2022). Yet many strategies remain locked into efficiency- or feasibility-first frames that sideline social learning and inclusive decision-making (Sultana, 2022). For cities, the vertical distribution of responsibilities generates continual tension between local needs, ecological goals, and political constraints (Bulkeley & Betsill, 2005; Trell & Geet, 2019). Metropolitan governments may possess autonomy to design plans but cannot specify and implement them equitably at the neighbourhood scale (Bulkeley & Betsill, 2005; Gonzales-Iwanciw et al., 2019). Moreover, project-based delivery frequently omits long-term accountability and justice-oriented evaluation (Hughes & Hoffmann, 2020; Shi et al., 2016).

Urban heat adaptation intensifies these challenges. While most cities now reference heat in climate policy, responsibilities are commonly siloed (e.g., public space, urban greening) with weak horizontal coordination. Siting decisions for trees, shade, or cooling infrastructure made within single departments can reinforce inequalities when not cross-checked against citywide need (Anguelovski et al., 2018; Ferreira et al., 2021). Accordingly, adaptation governance should be read as an interlocking set of coordination structures, participatory mechanisms, and financial instruments that determine how strategies are designed,

implemented, and evaluated. When heat-mitigation investments are guided primarily by technical and routine planning, socio-cultural knowledge and lived experience are easily excluded. These arrangements are not neutral: they decide whose knowledge counts, which groups are prioritised, and how justice is operationalised in practice.

2.2 Urban Heat Islands and Adaptation Strategies

Urban Heat Islands (UHI) arise where heat-retaining materials, limited vegetation, and dense form elevate urban temperatures above surrounding rural areas (Hsu et al., 2021; Nuruzzaman, 2015). Urban design choices, impervious surfaces, and dense construction amplify this by suppressing natural cooling (Heaviside et al., 2017; Pappalardo et al., 2023). Adaptation responses range from technological measures (reflective roofs, heat-resistant pavements, cooling infrastructure) to nature-based solutions (urban greening, afforestation, water-sensitive design) (Piechnik, 2021; Diezmartinez & Gianotti, 2022; Ferreira et al., 2021). Green infrastructure is valued for durable co-benefits, thermal relief plus ecosystem services, but effectiveness hinges on governance capacity: cross-departmental coordination, stable finance, and targeting to local vulnerabilities (Depietri & McPhearson, 2017; OECD, 2024; Okoyomon, 2021; Tompkins & Eakin, 2012).

In practice, implementation is uneven: affluent areas more often gain parks, trees, and climate-responsive zoning, while low-income districts secure a smaller share of investment (Nicoletti et al., 2022; Reckien et al., 2018; Anguelovski et al., 2018). These disparities reflect governance patterns that prioritise technical feasibility over equity and rely on limited or symbolic participation (Uittenbroek et al., 2019; Shi et al., 2016). Infrastructural differences reinforce them, more public space in advantaged areas; dense, space-constrained in low-income neighbourhoods, unless planning explicitly counters these constraints (Kim et al., 2021; Liu et al., 2023). Siting decisions often follow maintenance cycles or land availability rather than exposure or capacity.

Accordingly, UHI adaptation is inherently a governance issue: design, targeting, and investment rules decide who benefits and who remains vulnerable. Strategies must be judged not only by temperature reduction but also by distributional, procedural, and recognitional contributions to justice (Schlosberg & Collins, 2014; Juhola et al., 2022). Technical and NbS measures are necessary, but their impacts depend on how inclusive, accountable, and just the underlying governance processes are. The following section elaborates on these justice dimensions.

2.3 Climate Justice and Adaptation

Climate justice concerns the fair distribution of climate risks and benefits and the recognition of diverse experiences, needs, and capacities in governance (Schlosberg & Collins, 2014; Amado, 2022; McLean, 2024). It rejects the view of

adaptation as neutral, emphasising how historical inequalities, power relations, and institutions shape vulnerability and resilience. This study uses three interlinked dimensions, distributional, procedural, and recognitional justice, to assess adaptation governance (Shi et al., 2016; Hamstead, 2023; Newell et al., 2021).

2.3.1 Distributional Justice

Distributional justice examines who gains from adaptation (e.g., greening, shading, cool spaces) and who bears residual burdens (e.g., heat exposure, displacement) across groups and places (Khan et al., 2020). In UHI governance, injustice materialises when investments cluster in already advantaged areas with private cooling or abundant public space, while more exposed, lower-capacity neighbourhoods receive less, deepening vulnerability (Anguelovski et al., 2018; Reckien et al., 2018; McIntyre et al., 2023). These spatial patterns are not incidental: they track institutional logics in planning and finance, particularly ROI-oriented criteria, co-financing dependencies, and asset-renewal schedules, that privilege feasibility over need (Diezmartinez & Gianotti, 2022; Hsu et al., 2021; Khan et al., 2020).

Analytically, distribution can be assessed by aligning exposure metrics (e.g., land-surface temperature, canopy deficit, heat-health risk) with capacity indicators (e.g., income, status, language, age) to test whether allocations favour exposure and capacity or deliverability. Typical equity diagnostics include: per-capita greening spend in high-need areas; share of residents within 300m of a designated cool space; shade/water points per 1,000 residents; and before/after changes in canopy or albedo by neighbourhood decile (Shi et al., 2016; Kim et al., 2021). Where distributional justice is institutionalised, budgets are directed by need thresholds; where it is not, portfolios mirror planning convenience and property-value gradients (Anguelovski et al., 2018; Reckien et al., 2018).

2.3.2 Procedural Justice

Procedural justice concerns who participates, when, with what mandate, and how input changes outcomes (Piggot-McKellar et al., 2019). Urban adaptation processes frequently remain expert-led and consultative, mobilising organised, time-rich constituencies while under-engaging low-income and migrant groups due to barriers of language, digital access, care responsibilities, and meeting times (Uittenbroek et al., 2019; Trell & Geet, 2019; Mees & Driessen, 2018; Foster & Iaione, 2016). On Arnstein's (1969) ladder, such formats hover around tokenism: voice without decision rights rarely shifts scope or standards.

Procedure implies 1) early engagement at agenda-setting/formulation, 2) clear decision rights (e.g., co-decision on location selection within budgets), 3) inclusion infrastructure (professional translation, accessibility), and 4) accountability (public "reasons" reports for non-adoption of proposals) (Reed, 2008; Uittenbroek et al., 2019; Mees & Driessen, 2018). Commons-based and

co-governance models operationalise these conditions by establishing frameworks that co-design interventions and co-monitor outcomes (Foster & Iaione, 2016). Indicators include: timing of participation relative to key decisions; demographic reach; proportion of resident proposals adopted; and documented changes to plans attributable to community input (Piggot-McKellar et al., 2019; Uittenbroek et al., 2019).

2.3.3 Recognitional Justice

Recognitional justice requires acknowledging intersecting identities and structural disadvantages, and embedding that recognition in institutional practice (Sultana, 2022; Schlosberg, 2012; Turnhout et al., 2020). In UHI policy, failures occur when technocratic proxies (e.g., a single vulnerability index) substitute for the lived experience of heat, exclusion, housing precarity, or constrained access to public space. Recognition advances when knowledge is co-produced with marginalised groups, improving both legitimacy and effectiveness (Ziervogel et al., 2021). At a systems level, decisions across governance tiers shape residents' activity space, the feasible set of daily practices, so addressing power relations is a prerequisite for transformative adaptation (Pelling et al., 2015).

Recognition can be institutionalised through disaggregated data (by status, language, age), eligibility thresholds that trigger priority status, and facilitation standards (translation, trusted intermediaries, on-site outreach) tied to funding and procurement. Monitoring should track who is reached, who is missed, and whose knowledge is incorporated, not only temperature reductions (Ziervogel et al., 2021; Sultana, 2022). Where recognitional justice remains discursive, instruments tend to outsource inclusion to intermediaries without redistributing power; where it is integrated, it redirects budgets and decision rights toward those most affected (Turnhout et al., 2020; Schlosberg, 2012).

2.4 Evaluating the Role of Justice in Adaptation Governance

Justice is increasingly acknowledged as a constitutive principle of governance; nevertheless, its role in adaptation remains contested, unevenly operationalized, and frequently subordinated to logics of efficiency, technical feasibility, and cost-effectiveness (Schlosberg & Collins, 2014; McLean, 2024; Juhola et al., 2022). The literature consistently identifies a gap between normative commitments to justice and their practical realization in policies and programmes (Piggot-McKellar et al., 2019; Amado, 2022; Diezmartínez & Gianotti, 2022). Adaptation governance is constituted by heterogeneous actors, rules, and resources; within this system, justice appears explicitly (e.g., participation, language) and implicitly through institutional routines that may reproduce inequality (Anguelovski et al., 2018; Jordan & Huitema, 2014). As a result, adaptation often recognizes vulnerability without addressing the systems that produce and sustain it (Reckien et al., 2018;

Turnhout et al., 2020). Calls for transformative adaptation highlight the need to reorganise institutional incentives, redistribute decision-making power, and align adaptation with broader justice and sustainability goals (Newell et al., 2021; Fedele et al., 2019; Hughes & Hoffmann, 2020). In practice, this entails integrating justice into planning strategies, adopting justice-based evaluation tools, and prioritizing historically excluded voices. For UHI governance, this implies moving beyond isolated greening toward cross-departmental strategies that target structural inequities in heat exposure and adaptive capacity.

To make justice analytically tractable, this study nests distributional, procedural, and recognitional justice within the adaptation policy cycle, agenda setting, policy formulation, implementation, and evaluation (Dühr, 2023; see Table 1). At each stage, justice can be designed in or designed out:

- Agenda setting: what is problematized, and whose risk is seen as salient, reflects underlying values and power relations (Shi et al., 2016). Justice enters through the inclusion of vulnerable groups in priority-setting and the use of vulnerability evidence (exposure × capacity) as a gateway to place an issue on the agenda. When agenda setting is expert-centric or politically opportunistic, recognitional justice is weak, and distributional targeting later in the cycle is compromised.
- Policy formulation: justice depends on who participates, when, and with what mandate, and on whether plural knowledges are considered legitimate (Sultana, 2022). Instruments chosen at this stage. standards, subsidies, procurement rules, encode distributional logics (who can access resources) and procedural rules (who can shape design). Without early-phase co-design or minimum participation standards, participation drifts toward consultation and tokenism (Uittenbroek et al., 2019; Few et al., 2007).
- Implementation: the allocation of budgets, the sequencing of works, and the managerial control translate intent into practice. Here, justice is advanced when budgetary decision-criteria (e.g., vulnerability thresholds), collective-access instruments, and shared departmental KPIs direct delivery toward high-need places. In their absence, institutional inertia and siloed routines dominate, producing feasibility-driven rather than need-driven portfolios.
- Evaluation: monitoring regimes typically privilege technical outputs (surface temperature reduction, unit costs) over justice outcomes (who benefited, who influenced, who was recognized) (Juhola et al., 2022; McLean, 2024). Without indicators for distributional, procedural, and recognitional effects, and without feedback loops that revise standards and budgets accordingly, inequities are reproduced across cycles.

Within this cycle, the three dimensions of justice are interdependent rather than additive. Distributional analysis often receives most attention through risk

mapping and investment tracking; yet, absent procedural fairness and recognition of social difference, distributional efforts can reinforce exclusion (Hamstead, 2023; Schlosberg, 2012).

Policy stage	Substantive planning instruments (examples)	Procedural planning instruments (examples)
Agenda setting (problem recognition / policy needs)	• Use of existing analyses of spatial trends to clarify the policy problem / inform policy priorities	• Reviews on the organization and effectiveness of the planning system • "Information disclosure" instruments (e.g. environmental audits)
Policy formulation (Proposal of a solution / policy goals and plan-making)	• Framing concepts (e.g. "transit-oriented development") or spatial metaphors (e.g. "green belts") • Visionary instruments identifying normative goals for desirable future spatial development (e.g. compact cities)	• Stakeholder consultations • Strategic environmental assessment of draft plan
Decision-making (Choice of a solution / adoption of plan)	• Land use regulations • Environmental and building regulations • Policy guidance (e.g. case studies; checklists; design criteria) from supra-local government	• Requirements for consultation and public participation • Environmental Impact Assessment of development proposals
Policy implementation (putting the solution into effect / arrangements for plan implementation and development assessments)	• Zoning regulations/ instruments aimed at managing urban growth and determining types of land uses • Financial instruments (e.g. grants; incentives; subsidies) • Taxes and charges (e.g. stamp duty; fees for the submission of a development application) • Regulatory instruments to manage development, e.g. compulsory land acquisition / value capture	• Access to information (incl. laws, plans, guidance, development applications submitted, etc.) to support policy implementation • Development assessment bodies • Data collection and release (e.g. on completed developments)
Policy evaluation (monitoring of results / performance of strategy or conformance of plan outcomes to initial intentions)	• Presentation of policy evaluation outcomes with recommendations • Development permit compliance checks	• Indicator systems and monitoring arrangements • Ex-post evaluation rules • Periodic review procedures for the assessment of plans • Reporting on plan implementation and development outcomes • Territorial Impact Assessment (TIA)

Table 1: Categorization of substantive and procedural policy tools for local land use planning across the stages of the adaptation policy cycle. (Dühr, 2023)

Procedural justice frequently remains consultative rather than deliberative or co-productive, with timing and venue set by municipal actors and decision rights concentrated among technical experts (Uittenbroek et al., 2019; Mees & Driessen, 2018). As Reed (2008) and Foster & Iaione (2016) argue, just participation requires structural support, institutional reflexivity, and redistribution of authority,

conditions that are seldom met in local adaptation processes. Recognitional justice, the least institutionalized dimension, confronts epistemic and social inequalities and demands that differences by race, gender, class, and migration status shape both problem definition and instrument design (Sultana, 2022; Turnhout et al., 2020). Empirical studies show that recognition is rarely embedded in formal frameworks and is often relegated to non-state initiatives or project-based efforts (Broto & Bulkeley, 2013; Hartmann & Spit, 2014).

The limited integration of justice into formal structures confirms broader critiques of technocratic and siloed governance. Institutional ambiguity and unclear responsibility allocation hinder coordinated, justice-oriented adaptation (Trell & Geet, 2019), while an exclusive focus on “capacity” without power analysis risks reproducing inequality under the banner of effective governance (Newell & Cousins, 2014). The tension between incremental and transformative adaptation is therefore not merely strategic but normative (Pelling et al., 2015; Fedele et al., 2019): justice is both an end and a route, requiring challenges to prevailing assumptions about efficiency, neutrality, and expertise (Hughes & Hoffmann, 2020; Ziervogel et al., 2021).

2.5 Conceptual Framework: Justice-Informed Adaptation Governance

This framework operationalises the link between adaptation governance and climate justice. Governance is treated as the combination of institutions, actors, organisational mandates, coordination mechanisms, instruments (standards, subsidies, procurement), participation arrangements, and reflexive learning, through which adaptation is designed and delivered. These arrangements determine who benefits, who decides, and whose needs and knowledge are recognised in practice. Figure 1 depicts the core logic. Adaptation governance sets the enabling or constraining conditions for three interrelated justice dimensions:

- Distributional justice: the spatial and social allocation of benefits (e.g., trees, shade, cool spaces) and burdens (e.g., heat exposure).
- Procedural justice: the timing, mandate, inclusiveness, and transparency of participation, and whether public input can change siting, scope, and standards.
- Recognitional justice: the extent to which governance acknowledges intersecting disadvantages (e.g., income, status, language, age) and codifies that recognition in rules, facilitation standards, and eligibility criteria.

The framework includes feedback loops: measured justice outcomes inform subsequent mandates, budgets, instruments, and participation standards. Justice is therefore not only an output but also a driver of institutional learning and portfolio re-prioritisation. This lens emphasises that adaptation is non-linear and

political, rather than a purely technocratic sequence. Applied to The Hague (2020–2025), the framework assesses where justice is designed in or out across the policy cycle by examining municipal strategies, budget directives, sequencing rules, and participation requirements, and tracing how these shape distributional, procedural, and recognitional outcomes in UHI adaptation.

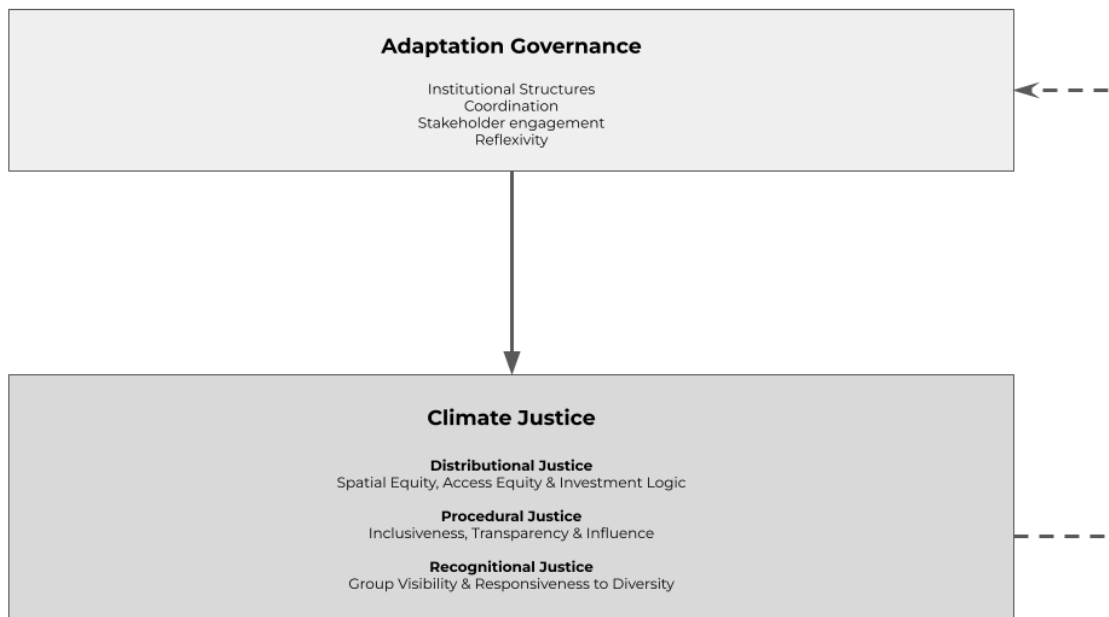


Figure 1. Conceptual framework illustrating the relationship between Adaptation Governance and Climate Justice.

3. Research Design and Methodological Justification

This chapter provides the methodological structure within this thesis. It outlines the research strategy, data collection techniques, analytical procedures, operationalisation of concepts, and the rationale for methodological triangulation. It also addresses limitations and strategies for reducing potential bias.

3.1 Case Study Strategy

This study employs a qualitative single-case design to examine how governance arrangements for UHI adaptation in The Hague shape climate-justice outcomes. A single case enables close analysis of context-dependent, embedded practices and mechanism tracing across institutional layers (Creswell, 2013; Yin, 2018; Merriam & Tisdell, 2015; Flyvbjerg, 2006). The Hague is an analytically relevant site: it combines demographic diversity, pronounced socio-economic segregation, and heightened UHI vulnerability (Gemeente Den Haag, n.d.-a; 2019; 2021), and it has explicitly committed to addressing vulnerability and equity in local adaptation policy (Gemeente Den Haag, n.d.-a; 2021).

A deductive frame guided the initial codebook and indicator selection across Adaptation Governance and the distributional, procedural, and recognitional justice dimensions. Inductive sub-codes were added to capture emergent patterns not anticipated by the framework. Triangulation across three data streams enhanced credibility and analytical depth: 1) semi-structured expert and community interviews; 2) policy, governance, and evaluation documents; and 3) publicly available spatial data. This mixed evidence base allows cross-checking of mandates, budgets, and program rules against reported practices and spatial patterns of exposure and access, aligning with best practice for theory-building case research (Creswell, 2013; Yin, 2018; Merriam & Tisdell, 2015).

3.2 Semi-Structured Interviews

3.2.1 Sampling and Access

Interviewees were purposively selected for their direct involvement in adaptation governance or social vulnerability in The Hague. Initial access was facilitated by the LDE Thesis Lab, which introduced a municipal key contact; from there, snowball sampling (via respondent referrals and document leads) expanded the pool. Appendix A lists respondents and thematic relevance. Municipal participants spanned:

- *Dienst Stedelijke Ontwikkeling (DSO)* – responsible for infrastructure and adaptation measures; included the only civil servant explicitly responsible for heat stress planning,

- *Dienst Sociale Zaken en Werkgelegenheidsprojecten (SZW)* – responsible for poverty mitigation, work, and social well-being.
- *Dienst Stadsbeheer (DSB)* – responsible for city maintenance.
- *Dienst Bedrijfsvoering (DBV)* – responsible for internal governance and operations.
- *Bestuursdienst (BSD)* – responsible for strategy and coordination.
- *Dienst Onderwijs, Cultuur en Welzijn (DCW)* – responsible for education, culture & social welfare.

These departments reflect the institutional layout of The Hague's adaptation governance, with varying degrees of responsibility for either adaptation strategies or the vulnerabilities targeted by municipal interventions. Two resident representatives were also interviewed to assess public participation dynamics and procedural equity.

3.2.2 Interview Process and Topics

Interviews followed a semi-structured protocol to ensure comparability while allowing depth on role-specific expertise. The guide (Appendix A) organised questions under five themes: 1) institutional roles and interdepartmental collaboration; 2) planning and implementation of UHI measures; 3) targeting and inclusion of vulnerable groups; 4) participation mechanisms and decision rights; and 5) recognitional practices. All sessions were audio-recorded, transcribed, and anonymised. Ethics followed Erasmus University guidelines, including informed consent, confidentiality, and secure data handling.

3.3 Secondary Sources Document Review

To triangulate interview and spatial evidence, 12 policy/strategy and evaluation documents were selected through systematic desk research and then validated with municipal officials for relevance and timing (2020–2025). The documents comprise political visions, budget plans, legal instruments, strategy frameworks, and monitoring reports (Table 2), providing a structured view of mandates, instruments, and accountability routines that constitute The Hague's adaptation governance architecture.

No.	Title	Year
1	<i>Ambities en eisen klimaatadaptatie bij ruimtelijke ontwikkelingen in Den Haag</i>	n.d.-a
2	<i>Segregatiemonitor</i>	n.d.-b
3	<i>Haags Hitteplan</i>	2022-a

4	<i>Coalitieakkoord Den Haag 2022–2026: Voor een stad die tegen een stootje kan</i>	2022-a
5	<i>Het Haags Klimaatakkoord</i>	2024
6	<i>Uitvoeringsplan Klimaatbestendig Den Haag</i>	2012
7	<i>Programmabegroting 2023–2026</i>	2022-c
8	<i>Resilient The Hague: Strategie voor een veerkrachtige stad</i>	2019
9	<i>Subsidieregeling klimaatadaptatie Den Haag 2023–2025</i>	2023
10	<i>Wegwijzer Den Haag Klimaatbestendig</i>	2021
11	<i>Bewonersparticipatie in Den Haag: Tussen ambitie en praktijk</i>	2025
12	<i>Integraal Gemeentelijk Rioleringsplan 2021-2025</i>	2020

Table 2: Document Selection for Analysis

3.4 Spatial Analysis

Spatial analysis was conducted using existing GIS layers from the *Klimaat-effectatlas* (n.d.), an authoritative Dutch database for climate impact visualization. While the maps were not independently generated, they were selected on the The Hague municipal level, adapted, translated, and filtered to suit the objectives of this research. Relevant layers included:

- Urban Heat Island Effect in The Hague (2017)
- Residents aged 65+ (2024)
- Residents with a migration background (2024)
- Disposable household income per neighbourhood (2021)
- Green surface coverage (2021)
- Distance to cooling centers (2023)
- Social vulnerability to urban heat index (2023)
- Socioeconomic status indicators (2023)

Maps are original compilations created for this study using publicly available administrative boundaries and statistical indicators, combined with municipal project layers where available. Where a figure is adapted, the caption specifies the source. All layers were projected to a common CRS, clipped to the municipal extent, and joined at the neighbourhood or district level. Figure 4 provides a reference map for spatial comparisons across case study topics. While spatial data was primarily illustrative, it served two roles: first, identifying discrepancies

between policy and intervention coverage; second, highlighting areas of concentrated vulnerability and infrastructure characteristics.

3.5 Data Analysis Procedure

Three evidence streams, semi-structured interviews (n=10), policy-strategy or evaluation documents (n=12), and spatial maps (n=7), were analysed through a triangulation matrix. First, interview codes were summarized into themes. Second, each theme was cross-checked against documentary evidence (mandates, budgets, programme rules) and spatial patterns (exposure/cooling access). Third, convergences were logged (≥ 2 streams align), divergences (streams disagree), and gaps (single-source claims). Claims were rated strong (interview + document + spatial), moderate (interview + one other), or tentative (single source). Divergences prompted a review of transcripts/docs to evaluate scope conditions (time, scale, policy phase). This procedure underpins the mechanism-focused analysis in §4.1–§4.4.

3.6 Operationalisation: Variables and Indicators

Variable	Definition	Dimensions	Indicators	Sub-indicators	Type of data	Source of data
Adaptation Governance	Structures, processes, and interactions between institutions and actors at multiple levels that enable or constrain the planning, coordination, implementation, and revision of urban heat adaptation strategies. It includes how policies are flexible, participatory, and how reflexivity is integrated across sectors and scales. (Bulkeley & Betsill, 2005; Gonzales-Iwanciw	Institutional structures	Existence of formal UHI adaptation strategies and institutional mandates	Dedicated UHI sections in policy documents; assigned mandates	Qualitative and quantitative	Municipal policy documents, planning reports.

	et al., 2019; Juhola et al., 2022; van der Heijden, 2019)					
		Coordination	Inter-agency and inter-scalar coordination mechanisms	Presence of cross-sector platforms, documented collaboration	Qualitative	Interviews, organisational charts, Minutes
		Stakeholder engagement(in governance)	Stakeholder involvement structures	Continuity and diversity in participation over time	Qualitative	Stakeholder engagement reports; meeting attendance
		Reflexivity	Evidence of institutional learning or plan revision	Revisions to plans based on evaluation or public input	Mixed (qualitative + document analysis + interviews)	Municipal adaptation plans, organisational charts, meeting minutes, interview transcripts, policy evaluations
Distributional Justice	The fair distribution of adaptation benefits and burdens across socio-spatial groups, considering exposure, sensitivity, and adaptive capacity. This includes both material investments (e.g., infrastructure) and spatial accessibility (Schlosberg & Collins, 2014; Shi et al., 2016; Juhola et al., 2022; Diezmartinez &	Spatial equity	Budget and infrastructure allocation by vulnerability	Per capita investment in heat-vulnerable areas	Qualitative and quantitative	GIS maps, satellite imagery, municipal investments

	Gianotti, 2022; Reckien et al., 2018; Bisaro & Hinkel, 2018; Hsu et al., 2021)					
		Access equity	Accessibility of cooling services	Distance to nearest cooling facility; walkability and shade in low-income zones	Qualitative	GIS layers; cooling infrastructure databases
		Investment logic	Equity criteria used in prioritisation: Spatial alignment of adaptation projects with high-risk zones	Explicit equity/vulnerability criteria in budget documents	Mixed	Budget reports, interview data
Procedural Justice	Fairness, inclusivity, and transparency in decision-making processes surrounding UHI adaptation, focusing on the presence, accessibility, and effectiveness of participation by marginalized and vulnerable communities (Arnstein, 1969; Uittenbroek et al., 2019; Reed, 2008; Juhola et al., 2022; Foster & Iaione, 2016; Mees & Driessen, 2018; Reed, 2008).	Inclusiveness	Representation and participation of marginalized groups	Number and diversity of represented groups; continuity of their involvement	Qualitative	Interviews, participant lists, engagement reports

		Transparency	Transparency of planning procedures	Availability of planning materials in multiple formats; clear publication of decision timelines	Qualitative	City council websites; open data portals
		Influence	Actual influence of community input on final decisions	Traceable incorporation of feedback into strategies; citations or evidence of input use	Qualitative	Planning documents; final adaptation plans
Recognitional Justice	The extent to which UHI adaptation acknowledges and incorporates diverse identities, cultural values, knowledge systems, and lived experiences of historically marginalized communities. Including power-sensitive recognition and responsiveness to intersectional vulnerabilities (Sultana, 2022; Turnhout et al., 2020; McLean, 2024; Schlosberg & Collins, 2014; Ziervogel et al., 2021; Pelling et al., 2015; Owen, 2021)	Group visibility	Visibility and framing of marginalized groups in official communications and plans	Inclusive imagery and language; non-technical summaries; presence in narratives and visual materials	Qualitative	Communication strategies; city websites; visuals

		Responsiveness to diversity	Consideration of intersectional identity in vulnerability mapping and planning materials	Disaggregated data use; references to gender, race, age, or class; equity assessments	Qualitative	Policy maps; interviews with planners
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Table 3: Operationalization of variables and indicators

3.7 Study Limitations

Despite being designed to capture the complexity of adaptation governance in The Hague, the study’s interview base is small (n = 10): eight municipal officials and two resident representatives. Each informant held a central role; the city’s heat-stress portfolio is assigned to a single official, and coverage spans both policy formation and operational delivery. However, the sample is skewed toward municipal perspectives and participation-active residents. Efforts to extend interviews to civil-society organisations and additional marginalised community members were only partially successful; several invitations were declined or went unanswered amid scheduling constraints during a period of high interview demand. This underrepresentation introduces risks of selection bias, elite framing, and potential understatement of intra-neighbourhood heterogeneity. Accordingly, findings are interpreted with caution: evidence claims emphasise areas where accounts converge, and domains with limited testimony are treated as indicative rather than exhaustive.

Second, the documents capture institutional intent more than delivered practice. Strategies, plans, and programme texts are performative documents; they signal direction but do not guarantee implementation fidelity. To counter this, the analysis cross-checked claims against interview testimony and neighbourhood patterns, using the *Rekenkamer* (2025) review as a city-wide evaluative reference. Even so, informal workarounds and mid-course adjustments can remain invisible, and interpretive bias is possible despite codebook transparency and iterative comparison across sources.

Third, spatial analysis relies on publicly available *Klimaat-effectatlas* layers (2017–2024) aligned to municipal neighbourhoods; no primary GIS collection was undertaken. Findings are therefore sensitive to scale effects (averages masking micro-hotspots), temporal misalignment between datasets and interventions, and indicator choice. The resulting maps should be read as diagnostic signals of distributional skew rather than definitive measurements of inequity.

Fourth, the analytical strategy combined a deductive coding frame (distributional, procedural, recognitional justice; governance mechanisms) with inductive subcodes. This hybrid improved sensitivity but largely refrained from

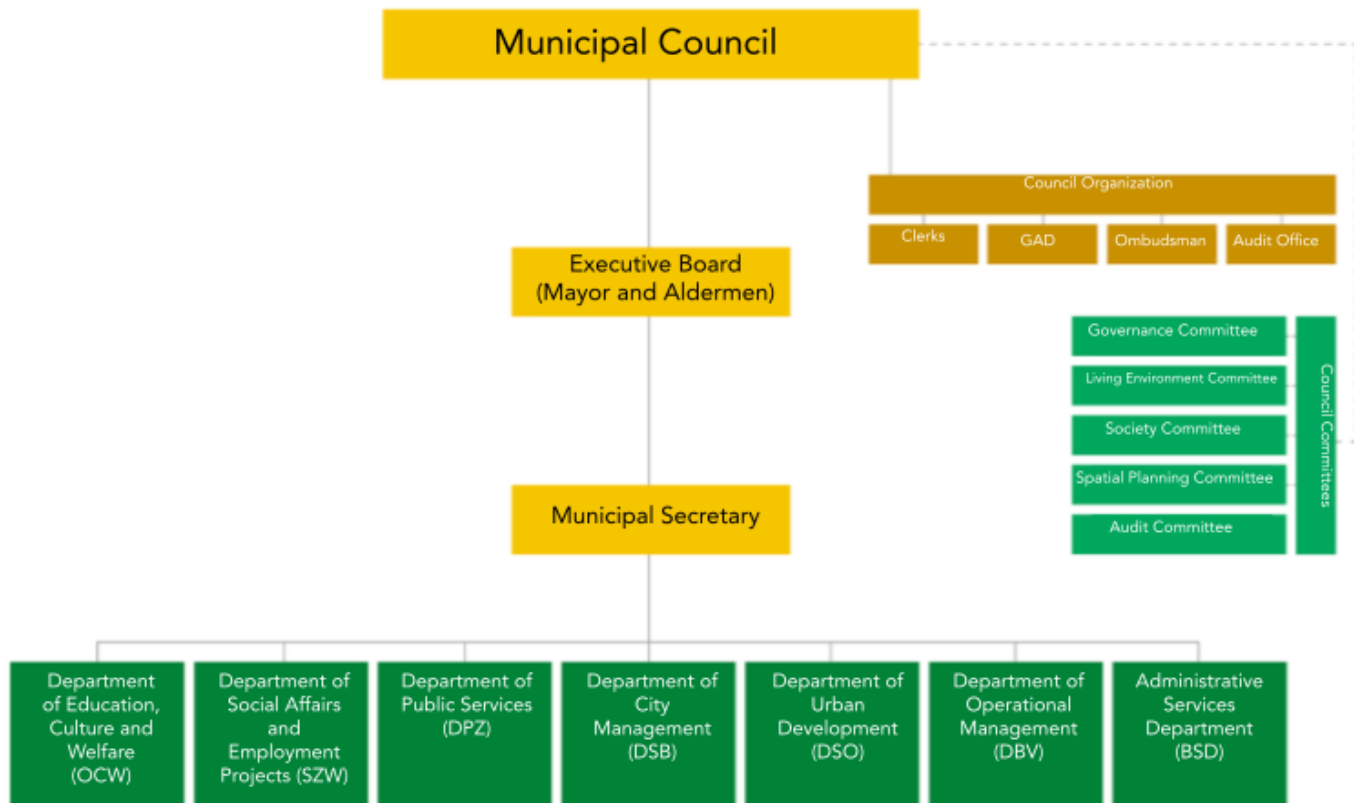
reframing the initial structure, leaving open the possibility that categories outside the chosen framework received less attention. Reliance on self-reported practices also introduces recall and social desirability biases that triangulation can only partially address.

Fifth, the researcher's positionality, participation in the LDE Thesis Lab, and close engagement with municipal actors may have shaped access and emphasis. Reflexive measures included logging coding decisions, supervisor cross-checks, and explicit attention to interview power asymmetries; informed consent was obtained, and no incentives were offered. Nonetheless, positional dynamics can influence transparency and narrative weight on both official and resident sides.

Finally, the study is designed for analytic, not statistical, generalisation (Yin, 2018). The mechanisms identified are transferable to similarly structured mid-sized European cities but remain contingent on The Hague's socio-ecological and institutional context; conclusions are indicative rather than predictive.

Overall, these limitations represent typical trade-offs of in-depth case research. They do not invalidate the results, but they warrant cautious inference, with the most substantial confidence placed where interview, document, and spatial evidence converge and where future, finer-grained budgetary and micro-climate data can extend or contest the patterns reported here.

4. Empirical Findings and Analysis



Organizational Chart of the Municipality of The Hague



Figure 2. Organisational Chart of the Municipality of The Hague (Gemeente Den Haag, 2025)

4.1 Adaptation Governance in The Hague

4.1.1 Institutional Fragmentation and Departmental Organisation

Urban heat adaptation in The Hague is governed by a departmentalised municipal structure (Figure 2) in which policy design and delivery are dispersed across specialised service units (e.g., infrastructure, social welfare, public health). This institutional fragmentation facilitates domain-specific expertise but weakens horizontal coordination, which is fundamental for climate adaptation (Anguelovski et al., 2018; Ferreira et al., 2021). Because heat risk cuts across spatial planning, public health, and social policy, effective responses depend on integrative arrangements, shared mandates, interdepartmental budgeting and coordination, that are only weakly institutionalised in the current architecture. The result is dispersed responsibility, ambiguous accountability, and limited alignment

of objectives and instruments across departments, which together constrain the coherence and distributive reach of adaptation strategies.

While a designated adaptation team exists, its placement limits leverage; heat-stress responsibilities sit with DSO (technical/infrastructural focus), while strategic oversight bodies such as BSD are only peripherally involved (R3 – Civil Servant, Adaptation). Formal structures, such as *Coalitieakkoord Den Haag 2022–2026* and *Wegwijzer Den Haag Klimaatbestendig*, thus coexist with fragmented practice, signalling a mismatch between institutional roles and adaptation goals. Specifically, mechanisms linking fragmentation to justice outcomes include project gatekeeping, where each service optimizes for its mandate, resulting in cross-cutting criteria, vulnerability targeting, and inclusive participation arriving late or not at all. Equity becomes a discretionary add-on rather than a design constraint. In practice, priority setting tends to shift towards the units responsible for development and maintenance works (typically DSO/DSB), thereby reducing the space for integrating justice and resident influence. As one official put it, there is “*no support from management; we have to initiate collaboration ourselves... silos are efficient for specific tasks but problematic for integrated approaches*” (R3 – Civil Servant, Adaptation). The underlying barrier is the absence of administrative incentives and procedural requirements for cross-departmental work. Consequently, adaptation delivery tends to follow feasibility and asset cycles, not exposure × capacity, with predictable implications for equity.

4.1.2 Technocratic Approaches and Reactive Adaptation

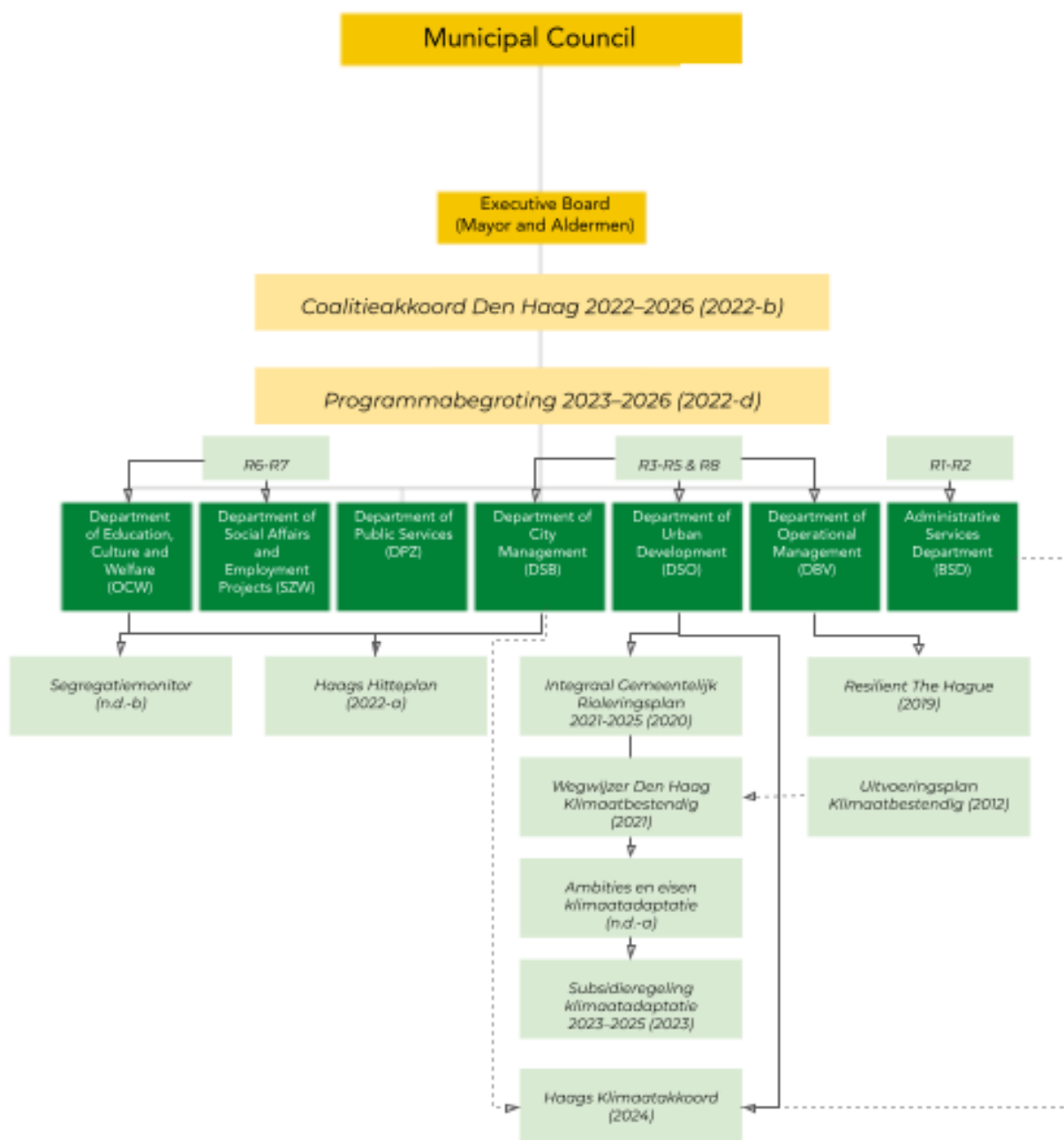
Figure 3 depicts a policy stack in which political intent (Coalition Agreement; Programme Budget) cascades into a family of sectoral instruments administered mainly by DSO and DSB (e.g., the IGVP, implementation guides, subsidy schemes). Within this architecture, heat adaptation is not an autonomous strategic line with mandates; it is embedded inside infrastructure-led programmes. The *Integraal Gemeentelijk Rioleringsplan* (IGVP) 2021–2025 sequences works by asset lifecycles (drainage, sewers, public-space renewals). Interview evidence (R3) confirms that infrastructural timing, not socio-spatial vulnerability, determines the when and where of adaptation. Social dimensions of heat (exposure, sensitivity, ability to participate) enter late, if at all.

Table 4 translates this into decision rights. BSD is accountable (A) across all phases of the policy cycle; DSO holds operational responsibility (R) throughout; and DSB is responsible for delivery (and monitoring), with BSD/DSO accountable at the delivery gate. District & Area Managers, NGOs, and residents are predominantly consulted or informed; they do not carry R or A at any gate. Two structural consequences follow.

First, the upstream concentration of control. At Gate 2 (Programme & Budget) and Gate 3 (Siting), BSD’s accountability and DSO’s responsibility lock in allocations and locations before any binding equity test occurs. Once money and

sites are set, downstream engagement cannot re-prioritise resources; participation is structurally confined to design detail rather than agenda-setting or reallocation.

Second, downstream participation without decision rights. Because intermediary actors and residents lack R/A in the cycle, inclusion remains discretionary, dependent on project teams' capacity and willingness rather than on rule-bound minima (e.g., accessibility requirements, feedback obligations, or veto/trigger rights).



This configuration yields three justice effects. First, distributional skew projects “ride along” with IGVP and other asset programmes, so interventions cluster where assets are due, not where high exposure and low adaptive capacity coincide (e.g., *Transvaalkwartier* and *Schildersbuurt*). The portfolio thus privileges deliverability over need. Second, procedural thinning. Decisions are taken earlier than participation is invited; community input cannot shape programme priorities, siting, or budgets. Risk-averse procurement at Gate 4 further narrows options, reinforcing incremental upgrades over targeted, higher-impact measures. Third, recognitional under-specification. Although “vulnerable groups” appear in strategy texts, no operational criteria require their needs to be tested at Gate 2/3. Recognition remains rhetorical; without thresholds (e.g., language access, trust, tenancy status, income/health proxies) tied to budgeting and siting, recognition does not travel into design standards or selection rules.

Table 4. UHI Adaptation Governance Network & Decision Rights (RACI). Each cell shows the prevailing decision right for that actor at that phase.

Together, Figure 3 and Table 4 evidence a technocratic, reactive mode of adaptation. Portfolio logics and lifecycle planning path-dependence steer where adaptation happens; the RACI arrangement concentrates accountability upstream and assigns responsibility to technical units, thereby designing justice out of the cycle. In this system, equity can only be added after feasibility decisions have been made, and learning remains weakly institutionalised because results do not reset KPIs or budget criteria. There are no mandatory equity screens at Gate 2/3, minimum participation standards with decision rights, and a strong learning loop that updates targets and siting rules. Consequently, the policy mix visible in Figure 3 will continue to channel adaptation toward deliverability within existing asset programmes, rather than toward justice by design.

4.1.3 Inconsistent Input Mechanisms

Participatory practice mirrors the broader fragmentation: strong rhetoric, irregular enactment (Rekenkamer Den Haag, 2025). Community representatives highlight trust, language, and continuity barriers—“*not everyone speaks Dutch or English... it takes time before trust is built*” (R9, Schilderswijk). Two design gaps explain the weak influence: (1) most trajectories lack a written participation plan specifying roles and decision rights ex-ante; (2) “tailored participation” operates as open-ended discretion rather than minimum standards on who is invited, when, and with what mandate. The result is neighbourhood-by-neighbourhood variation in practice, with better-resourced communities organising earlier and securing more favourable terms (Rekenkamer Den Haag, 2025).

Knowledge tools are likewise under-operationalised: GIS resources (e.g., Klimaatkansenkaart) are referenced but rarely drive neighbourhood-level choices, “*we use the map, but nothing exists yet at the neighbourhood level*” (R3, Civil Servant, Adaptation). This points to weak knowledge governance, where evidence is not systematically translated into setting priorities or facilitation requirements for hard-to-reach groups.

4.1.4 Limited Institutional Learning

Finally, the structural designs of adaptation governance in The Hague demarcate the internal limitations in institutional learning processes. Adaptation is rarely subjected to thorough evaluation or incorporated into subsequent planning processes. In adaptive governance terms, this constitutes a failure in institutional learning, defined by the inability to intermittently reexamine lessons from past experiments or incorporate them into future versions (Jordan & Huitema, 2014; Juhola et al., 2022). Existing practices reflect an incomplete learning process: projects rarely measure up to justice criteria (beneficiaries of decisions, participation, or recognition), and lessons learned in such assessments are not applied as the basis for these criteria in subsequent cycles.

In conclusion, *what governance structures and coordination mechanisms guide UHI adaptation in The Hague between 2020 and 2025?* A dispersed institutional setup, weak interdepartmental coordination, ambiguous procedural guidance, poor incorporation of technical instruments and information, and inefficient institutional learning processes characterize adaptation governance in The Hague. Taken together, these institutional failures result in inadequate adaptive responses to urban heat. To address these circumstances, essential reforms are warranted, including building better-defined mandates, better coordination arrangements, institutionalized forms of participation, and means to build in adaptive learning. Lacking these kinds of innovations, adaptation governance in The Hague will reinforce inequalities rather than create an equitable and functional response to challenges from urban heat.

4.2 Distributional Justice in Urban Heat Adaptation

Distributional justice refers to how burdens and benefits of urban heat adaptation are spatially and socially allocated across different neighbourhoods and social groups. In The Hague, this concept explicitly addresses the equity of spatially situated adaptation measures such as cooling infrastructure, green spaces, and financial support mechanisms.

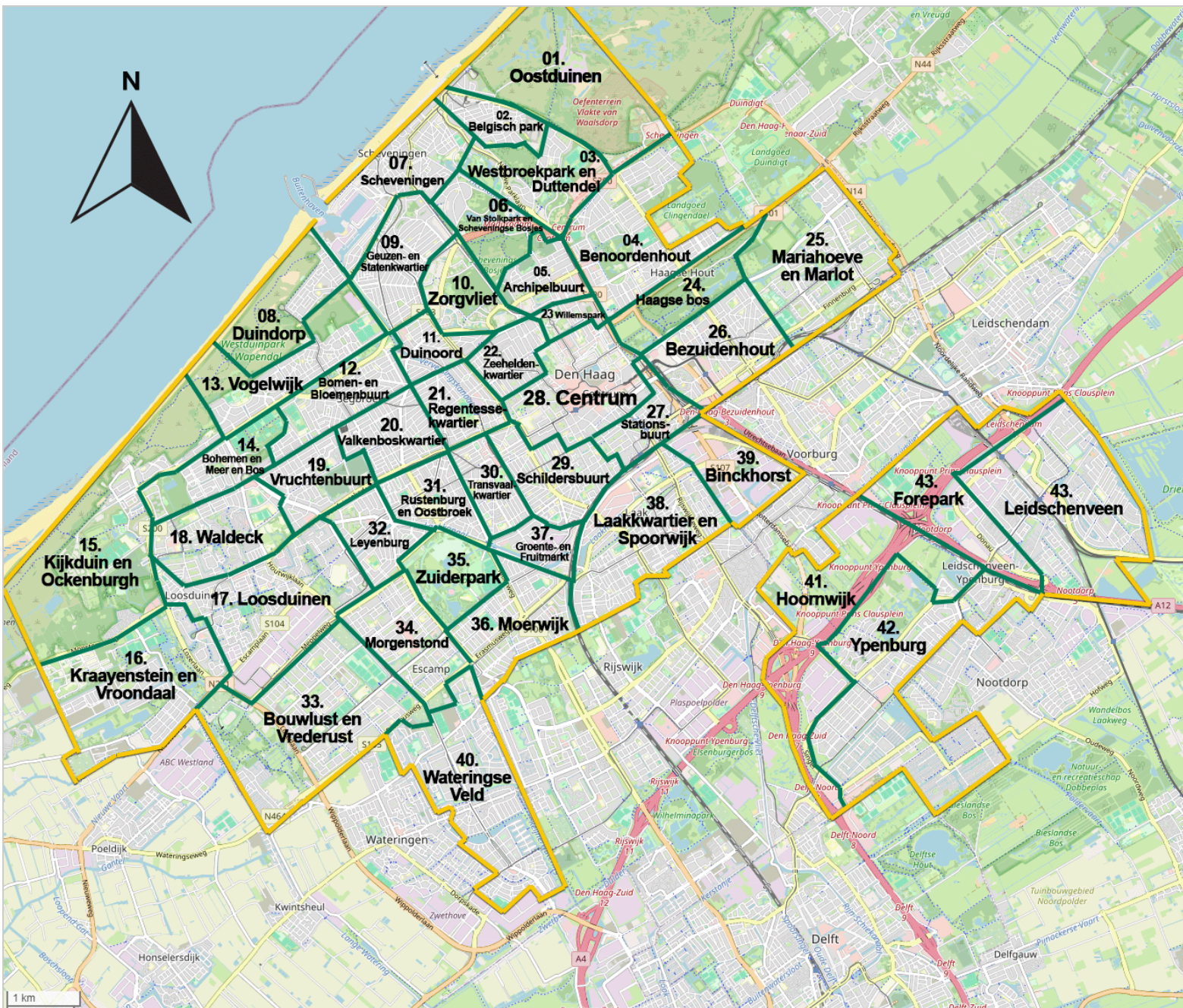


Figure 4. An overview map of The Hague's official districts for spatial analysis reference in urban heat adaptation (Wikipedia contributors, n.d.).

4.2.1 Spatial Patterns of Exposure and Vulnerability

The spatial distribution of urban heat exposure in The Hague is marked by substantial inequalities linked to socioeconomic vulnerabilities. Districts such as *Laakkwartier en Spoorwijk* (38), *Transvaalkwartier* (30), *Schildersbuurt* (29), and parts of *Moerwijk* (36) (Figure 4) suffer disproportionately from high urban heat intensity, as evidenced by their limited green spaces and socio-economic characteristics (see Figures 5-10).

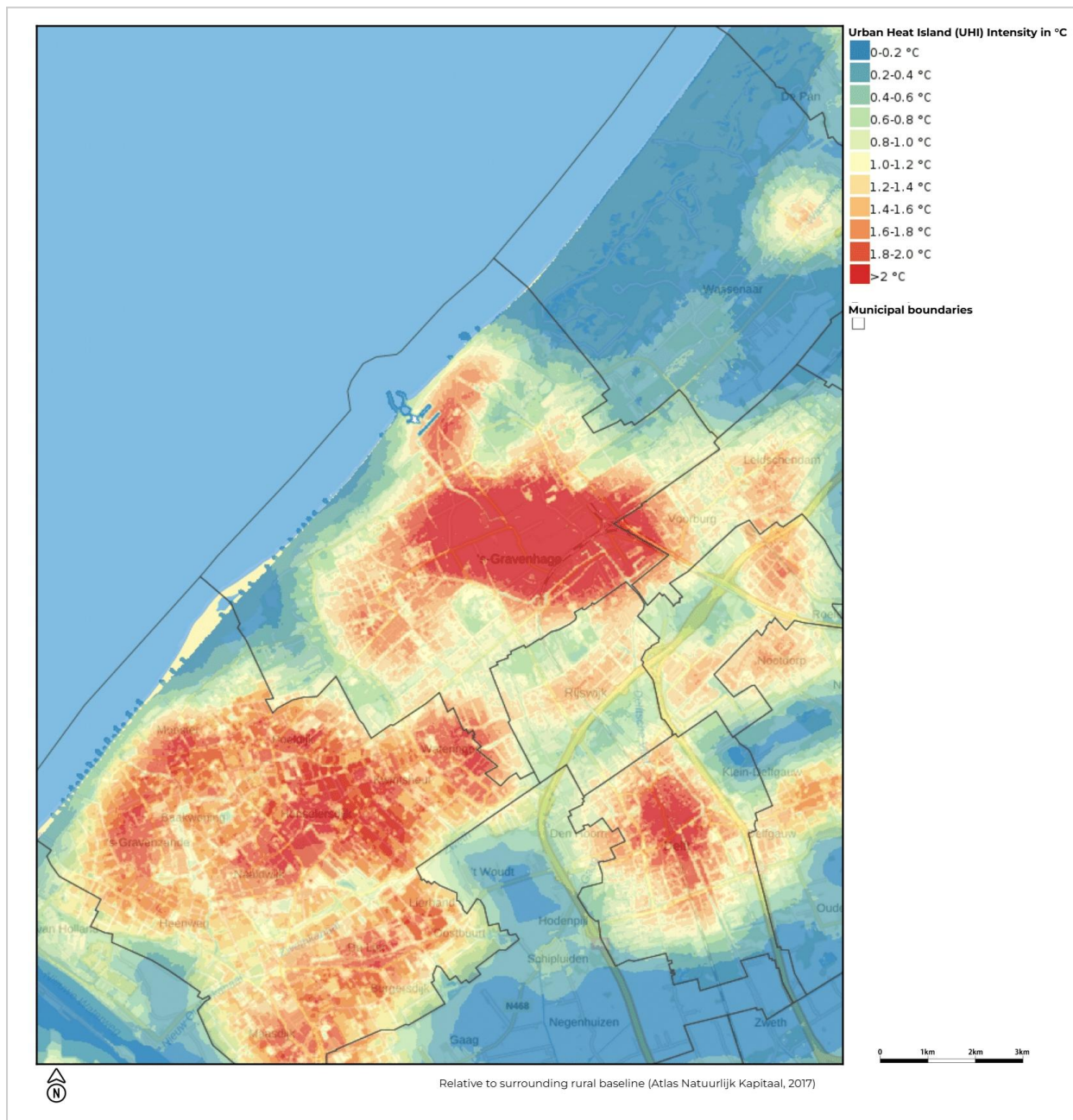


Figure 5. Urban Heat Island Effect in The Hague in 2017
(Klimaat-effectatlas, n.d.) [Map; modified by author].

These conditions exacerbate the vulnerability of residents, many of whom have lower incomes and migration backgrounds, limiting their adaptive capacities. For instance, *Transvaalkwartier* (30) and *Schildersbuurt* (29) have populations comprising over 90% individuals with migration backgrounds (Figure 6), significantly lower disposable household incomes compared to the city's other districts (Figure 7); however, these areas do not show higher elderly (65+) concentrations (Figure 8). Still, the intersection of these factors compounds vulnerability, illustrating an apparent distributional injustice: those most exposed to heat stress are least equipped to respond effectively.

These patterns meet the “strong evidence” threshold: spatial layers (UHI intensity, green cover, income, migration background) converge with interview testimony and municipal recognition of high-risk districts outlined in the *Wegwijzer Den Haag Klimaatbestendig* (Gemeente Den Haag, 2021). The vulnerability profile is thus not incidental but structured; high exposure combines with low adaptive capacity and weaker proximity to cooling.

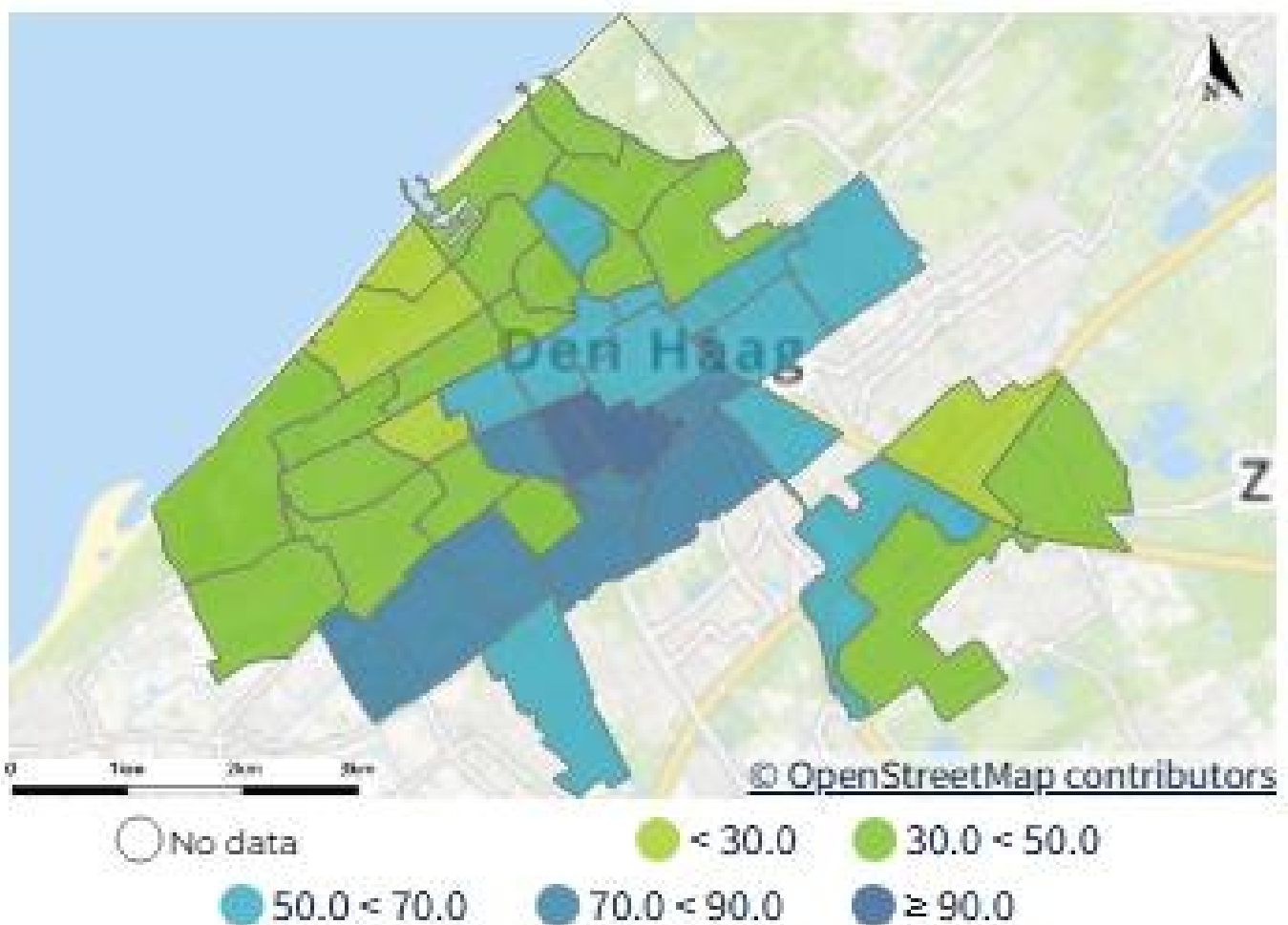


Figure 6. Percentage of residents with a migration background in 2024 (Gemeente Den Haag, n.d.-b) [Map; modified by author].

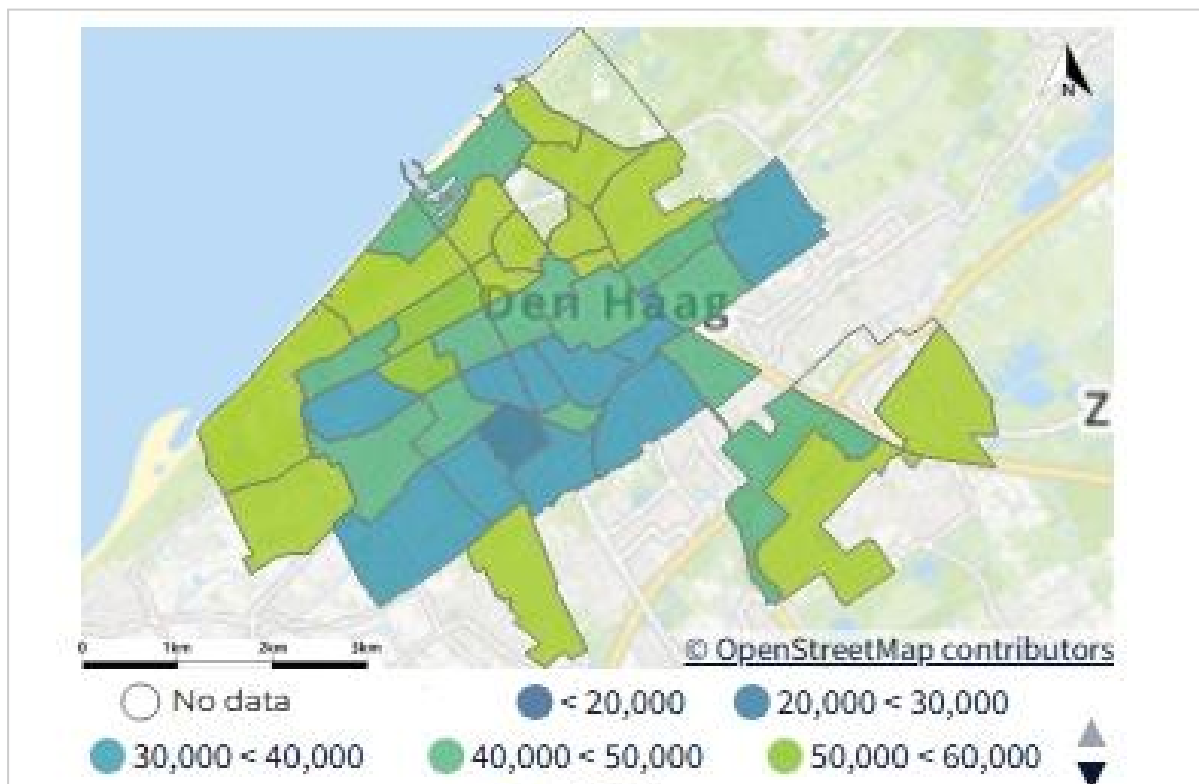


Figure 7. Disposable Household Income in 2021
(Gemeente Den Haag, n.d.-b) [Map; modified by author]

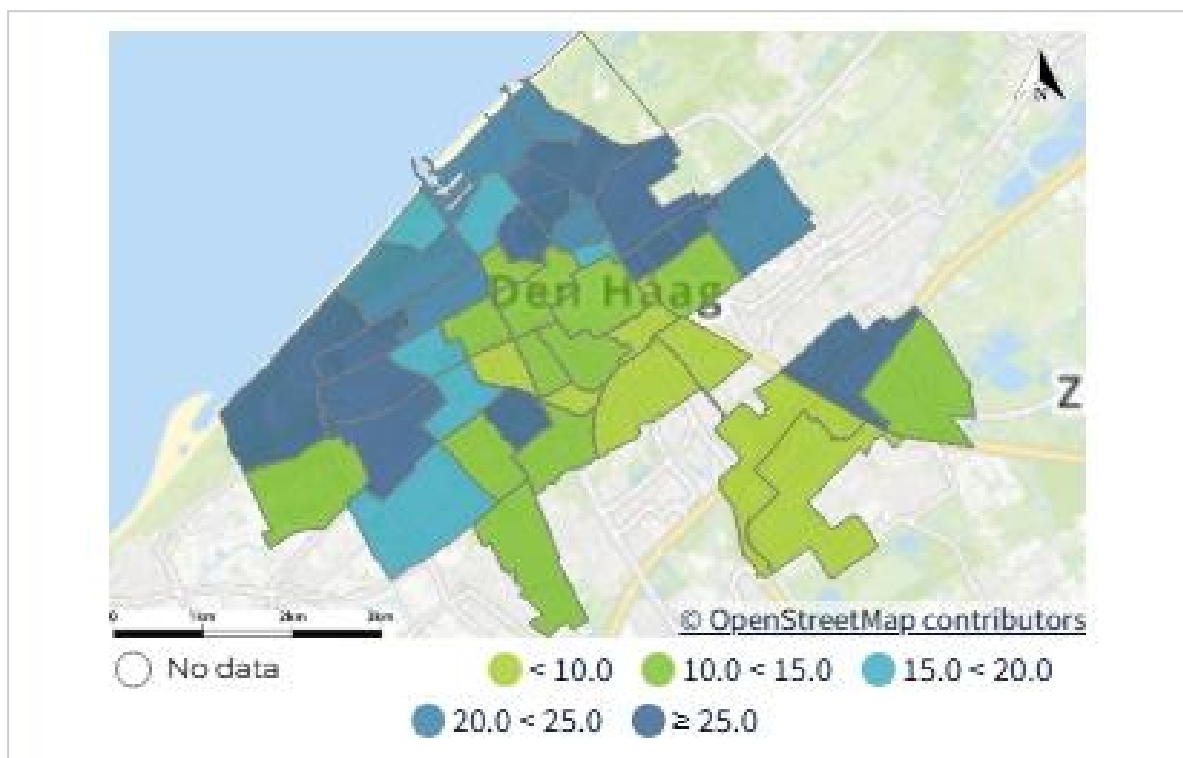


Figure 8. Percentage of residents aged 65 and over in 2024
(Gemeente Den Haag, n.d.-b) [Map; modified by author].

4.2.2 Inequitable Distribution of Green Spaces and Cooling Infrastructure

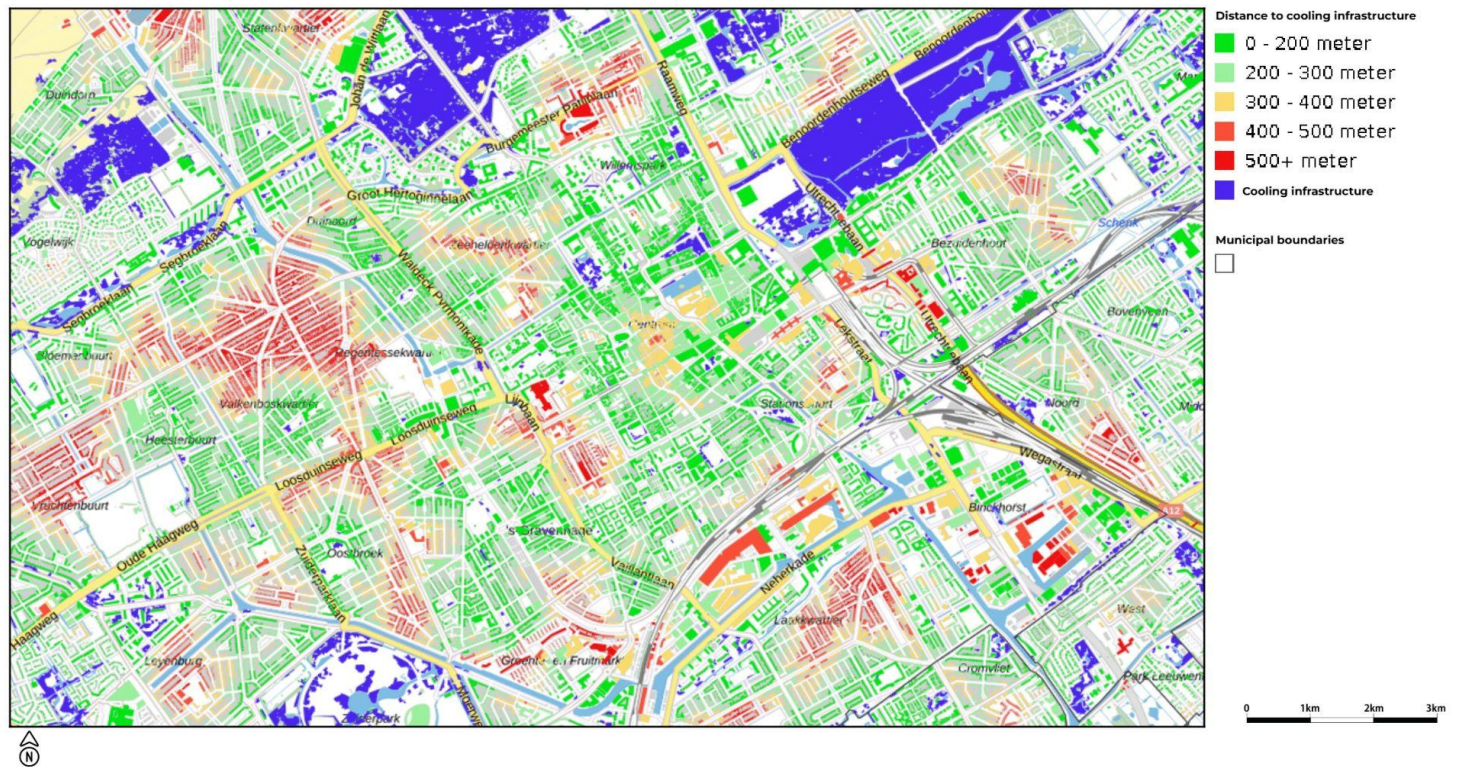


Figure 9. Distance to cooling infrastructure in central The Hague in 2023 (Klimaat-effectatlas, n.d.) [Map; modified by author].

Spatial analysis presents continued inequities in the distribution of green spaces and public cooling infrastructure within neighbourhoods. More affluent residential areas, such as *Bezuidenhout* (26), *Benoordenhout* (04), *Archipelbuurt* (05), and parts of *Vogelwijk* (13), exhibit higher green surface cover and a better balance in terms of cooling resource provision (Figures 9-10). By contrast, *Laakkwartier en Spoorwijk* (38), *Transvaalkwartier* (30), and *Schildersbuurt* (29) suffer from insufficient green space and limited provision for cooling resources. These populations are then frequently forced to walk longer distances, around 300–500 meters, to reach sufficient cooling sites during hot periods (Figures 9–10).

Here, distance is an inhibitor to optimal access, as opposed to being an independent spatial variable. In cases where access to private or semi-private heat-relieving resources is limited, an additional distance between 300 and 500 meters is an important inhibiting factor during heat extremes, especially among households with vulnerabilities related to mobility, health, or time limitations. Therefore, it results in an ongoing diminishment in benefits accrued from public heat-relieving infrastructure, especially in areas characterized by enhanced susceptibility, hence worsening inequities in adaptive capacity.

4.2.3 Inadequacies of Targeted Adaptation Interventions

Despite city strategies outlined in documents like the *Coalitieakkoord 2022–2026*, actual implementation falls short of serving disadvantaged neighbourhoods adequately. Investment logic, as outlined in the *Programmabegroting 2023-2026*, allocates funds without adhering to distributive equity principles, thereby perpetuating existing spatial inequities. Similarly, in the *Subsidieregeling Klimaatadaptatie*, though offering subsidies aimed at disadvantaged households (such as through the *Ooievaarspas*), setting limitations on collective requests effectively excludes highly populated, low-income neighbourhoods, mostly made up of rental housing (R7 – Senior Policy Advisor, Anti-poverty strategy). A civil servant pointed out this hurdle by saying, “Some people apply for the subsidy, but the request doesn't match the intention, or the process is too complex” (R4 – Policy Advisor, Sustainability & Participation).

The structural shortcomings revealed show an intrinsic mismatch between ends (policy goals) and means (actual outcomes registered). Therefore, far from functioning proactively, locally, the process has operated highly reactively in response to opportunities created from other maintenance or infrastructure plans rather than from systematic evaluation of vulnerabilities or concerns with equity. Two features drive unequal take-up: homeowner-centric, individual applications and administrative burden with digital default, which deters low-resource applicants. Together, these create a capacity selection effect, steering funds to higher-capacity areas despite higher exposure elsewhere.

4.2.4 Governance Gaps and Opportunities for Equity

The central constraint on distributional justice in The Hague's adaptation portfolio is not the absolute level of funding, but the absence of binding equity criteria in budgeting and siting. Without required vulnerability integration at the point of project selection, delivery tends to gravitate toward locations where co-financing is available and local organisational capacity is already present. This mechanism systematically privileges “feasible” projects over “necessary” ones, producing a portfolio that reflects administrative opportunity rather than spatial need. The lack of explicit neighbourhood-level prioritisation, measurable equity benchmarks, and assigned departmental accountability allows these biases to persist across budget cycles.

The contrast between *Cromvlietplein* in the *Laakkwartier en Spoorwijk* (38) (Klimaatadaptatie Nederland, n.d.) and *Wijkpark* in the *Transvaalkwartier* (30) (Gemeente Den Haag, 2024-b) illustrates this portfolio logic. *Cromvlietplein* functions as a coalition-driven case with significant external finance (≈€800,000 of ≈€3 million), and strong stakeholder coordination enabled an integrated design including the Urban Waterbuffer and complementary public-space upgrades (Klimaatadaptatie Nederland, n.d.). The project demonstrates what is achievable when capital intensity is matched with institutional alignment and community

partners can engage early and sustain momentum. Yet that very success reveals a governance limitation: it depends on contingent factors, EU funds, and a wide range of organized local actors. Without external funding, this project would not have succeeded, creating a significant reliance on EU subsidies.

Wijkpark Transvaal sits in a similar high-exposure, low-capacity context. Despite apparent vulnerability and a redevelopment proposal that gestures toward greener, more climate-adaptive design (additional trees, shade, water points, softened paths), the initiative remains primarily instrumental to an external works schedule (compensation for *WarmtelinQ*-related disruption) rather than anchored in an equity-first prioritisation framework (Gemeente Den Haag, 2024-b). Participation has informed specific amenities, but the decisive choices, when and where to intervene, how much to invest, and to what standard, are driven by infrastructural timing rather than by a binding requirement to close exposure–capacity gaps. The likely result is incremental relief without structural redistribution of cooling benefits toward the most heat-burdened residents. Read side-by-side, these cases constitute a governance counterfactual. Where external funds and early coalitions exist, integrated cooling/greening is feasible and delivered at quality. Otherwise, where funding is limited and technical planning dictates, justice is underprioritized.

In conclusion, *how are distributional dimensions of climate justice reflected in the planning and implementation of UHI adaptation?* At present, they are acknowledged but weakly institutionalized. Individual projects may embody equitable design when contingent enablers align (*Cromvlietplein*). Still, in the absence of binding equity criteria, explicit prioritisation, and assigned accountability, citywide allocation patterns remain misaligned with need. Achieving distributional climate justice, therefore, requires governance reform, embedding vulnerability thresholds in budgeting and siting, retooling instruments for collective access, and holding departments jointly accountable for closing spatial adaptation gaps.

4.3 Procedural Justice in Urban Heat Adaptation

Procedural justice concerns whether decision-making is fair, transparent, and genuinely inclusive, specifically, whose voices shape choices and with what effect. Despite its prominence in the material (1,076 coded references across interviews and documents), the analysis shows significant shortcomings: participation is widely invoked but seldom coupled to clear decision rights, budget authority, or timing that would allow affected communities to influence urban heat adaptation in more than a consultative way.

4.3.1 Defining and Implementing Participation in The Hague

Following *Rekenkamer Den Haag* (2025), participation includes instances where citizens, neighbourhood partners, and (social) entrepreneurs initiate or are invited to contribute, deliberate, or co-decide on policy. Two design variables explain the persistent gap between collaborative rhetoric and limited resident influence: 1) timing (when engagement begins) and 2) mandate (what decision rights it carries). In most reviewed trajectories, draft plans preceded outreach, and only two of seven cases had a concrete participation framework. Late-stage engagement confines input to design refinements; undefined mandates render incorporation discretionary. As one advisor noted: “*We do involve residents, but often only after the plans are largely written*” (R4, Policy Advisor—Sustainability & Participation). In Arnstein’s terms, this positions practice within tokenism, i.e., voice without power (Arnstein, 1969; Uittenbroek et al., 2019; Few et al., 2007).

Rekenkamer also documents inconsistency across processes. Although strategies (e.g., *Haags Klimaataakkoord*) proclaim co-governance, most cases do not advance beyond consultation. Even where a formal framework existed, roles, decision rights, and expected outcomes were indeterminate, generating procedural opacity and mistrust (*Rekenkamer Den Haag*, 2025). The doctrine of “tailored participation,” in the absence of minimum standards for timing, mandate, and inclusivity, legitimates vagueness and concentrates administrative discretion among civil servants and experts. Effectiveness varies by neighbourhood capacity: organised areas benefit; communities facing language, trust, or time constraints engage less.

These patterns suggest that justice is often overlooked at the formulation stage (late, low-mandate engagement) and at the implementation stage (expert-centred decisions are difficult to reopen). Under such conditions, procedural justice is symbolic, not structural: residents are heard but lack levers to shape siting, scope, and allocation. Remedy requires early-phase engagement with clear decision rights, plus minimum participation standards that constrain discretion and create accountability for incorporating input, preconditions for redistributing influence rather than reproducing spatial inequities.

4.3.2 Inequality and Exclusion in Participatory Practices

The neighbourhood cases illustrate procedural consequences visible in higher-capacity areas such as *the Statenkwartier* (09), municipal support clustered in the form of grants, technical expertise, and dedicated workspaces. By contrast, districts with higher exposure and lower socio-economic resources, such as *Schildersbuurt* (29) (Figure 11), exhibited markedly weaker participatory influence. Community interviews attribute this divergence to deficits in trust, language accessibility, and continuity of engagement: *“Not everyone speaks Dutch or English; many have negative experiences with institutions. When you approach on behalf of the municipality, it takes considerable time before trust is built”* (R9, Community Representative, Schilderswijk). The pattern is consistent with a capacity-selection effect: when participation is invited after core siting and budgeting decisions, and when mandates are undefined, influence gravitated to communities already able to organise, attend, and sustain interaction with the municipality.

Rekenkamer Den Haag (2025) documents the institutional mechanisms that reproduce this gradient. First, communication strategies were frequently indeterminate about roles, decision rights, and the expected weight of input, producing procedural opacity and predictable mistrust among participants. Second, the municipality’s doctrine of “tailored participation,” in the absence of minimum standards for timing, mandate, and inclusivity, authorized broad administrative discretion without guaranteeing access for hard-to-reach groups. Third, outreach formats and channels were applied inconsistently across neighbourhoods, with limited provision for translation, trusted intermediaries, or time-and-care constraints. Together, these design choices amplify pre-existing social differences: organised, higher-capacity communities receive more facilitation, while those facing linguistic, financial, or temporal barriers engage less, even where risk is higher.

Situated within the adaptation policy cycle, the inequities arise at two junctures. During formulation, engagement occurs too late and without binding mandates, constraining residents to comment on design refinements rather than co-determining scope or siting. During implementation, facilitation resources are allocated discretionarily and tend to follow existing organisation rather than need, entrenching unequal influence across neighbourhoods. Absent evaluation metrics that track who participated, when, and with what effect (e.g., percentage of resident proposals adopted; demographic reach of activities), these disparities remain unobserved and thus uncorrected in subsequent cycles.

Participation functions as a differentially accessible infrastructure: it is most usable where capacity already exists and least where heat risk and social vulnerability coincide. Without early-phase engagement that carries explicit decision rights, minimum participation standards (including timing, mandate, and inclusivity), and targeted facilitation for hard-to-reach groups, participation cannot reliably redistribute influence to those most affected. In procedural terms,

the result is symbolic inclusion; in spatial terms, it is the reproduction of inequity within adaptation delivery.

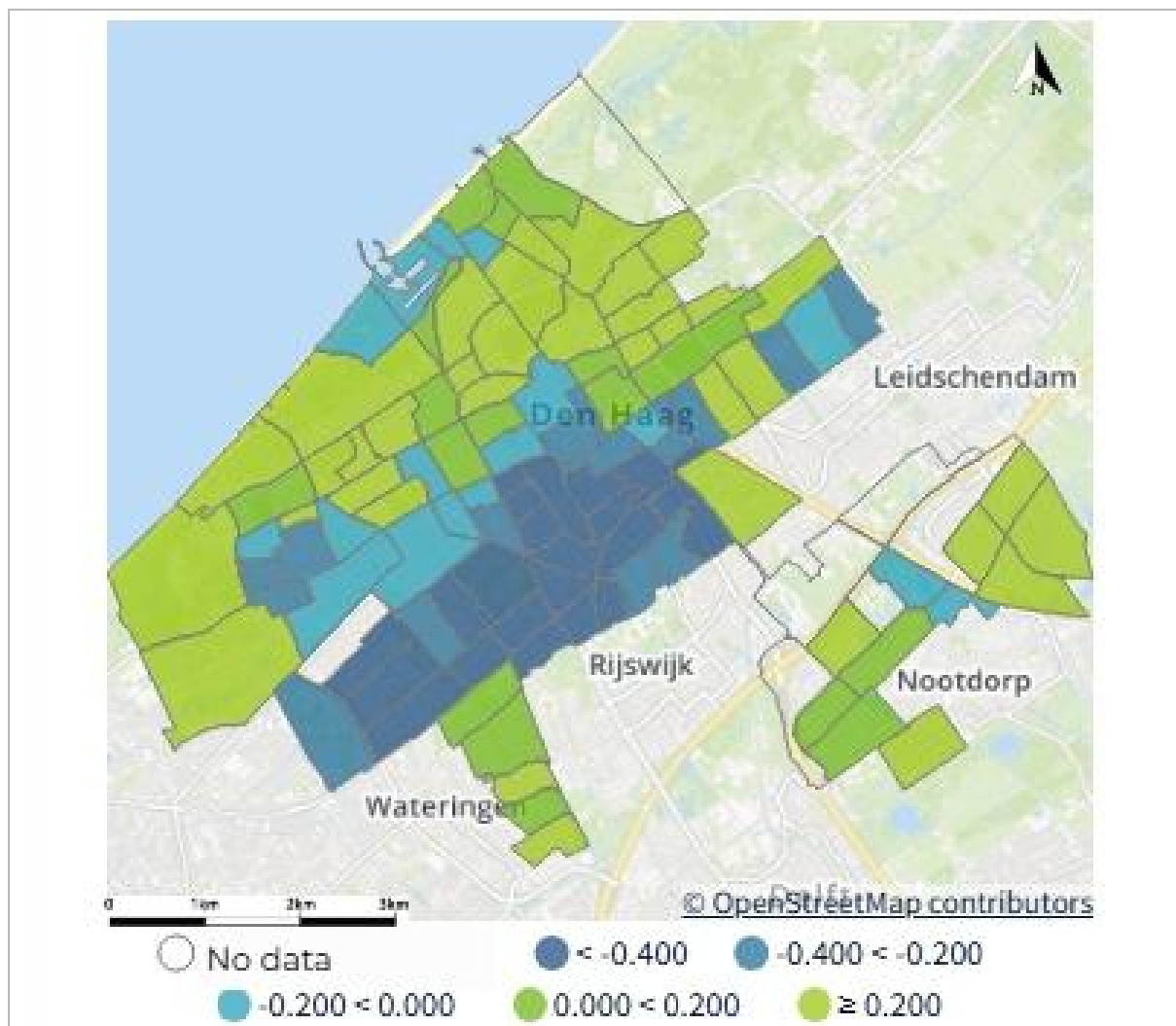


Figure 11. Socio-economic status in 2023 (Gemeente Den Haag, n.d.-b) [Map; modified by author].

4.3.3 Systematic Weaknesses and Lack of Institutional Learning

Procedural justice depends not only on when and with what mandate participation occurs (formulation), but also on whether learning and accountability (evaluation) convert resident input into durable organisational change. In The Hague, institutional learning is weak: participation experiences are not systematically recorded, compared, or fed back into standards and budgets. As the *Rekenkamer* notes, the municipality lacks a consistent account of what was heard, what changed, and why, undermining accountability and adaptive improvement (Rekenkamer Den Haag, 2025).

Two evaluation indicators are pivotal yet missing: 1) a public lessons register

linking each trajectory to concrete design/siting changes attributable to resident input; and 2) a compact KPI set enabling cross-project comparison (e.g., timing within the policy cycle, reach of hard-to-reach groups, share of proposals adopted and reasons for non-adoption, budget/scope shifts). In their absence, staff turnover erodes tacit knowledge, and communities face limited accountability, depressing trust and future engagement.

Recent experiments (e.g., randomly selected citizen assemblies) signal intent to broaden participation. Still, the *Rekenkamer* finds weak integration into routine governance, unclear mandates, no incorporation rules, and limited reporting, risking symbolic inclusion. Situated in the cycle, participation is designed out at formulation (late, low-mandate) and left unevaluated at the end. Closing the gap requires minimum participation standards with decision rights and an evaluation/disclosure protocol that conditions future budgeting and siting, enabling participation to redistribute influence rather than reproduce inequity.

4.3.4 Implications for Climate Adaptation Justice

How are procedural dimensions of climate justice reflected in participatory structures and decision-making? In The Hague, they are acknowledged but weakly institutionalised. Effective adaptation requires early, mandate-bearing engagement that can shape siting, scope, and allocation. Instead, participation is typically initiated late and with indeterminate decision rights, producing consultation without co-decision. The consequence, especially in high-vulnerability districts, is reduced legitimacy, lower uptake of measures, and attenuated use and stewardship of cooling assets. Situated within the adaptation policy cycle, the observed gaps arise at:

- Formulation: engagement occurs after draft plans exist and without clear mandates; input influences design details, not strategic choices.
- Implementation: Facilitation resources (translation, trusted intermediaries, scheduling, technical support) are allocated discretionarily, following existing organisational structures rather than need, which amplifies inequalities in influence.
- Evaluation: lessons and effects are not systematically recorded (no public lessons register; no KPIs on timing, reach, or adoption), so deficits persist across cycles.

To convert participation from symbolic to structural, justice must be designed in at each stage: adopt minimum participation standards at formulation (early-phase co-design with explicit decision rights and inclusion requirements); target implementation support to hard-to-reach groups (translation, trusted liaisons, lightweight application channels); and require evaluation disclosures (public lessons register; KPIs on timing, demographic reach, and adoption rates) that condition subsequent budgeting and siting.

4.4 Recognitional Justice in Urban Heat Adaptation

Recognitional justice concerns whether governance arrangements adequately acknowledge diverse identities, lived experiences, and context-specific needs, and whether that recognition is rendered actionable in problem framing, prioritisation, and delivery. In The Hague, recognition is widely signalled across policy texts, yet translation into binding categories, instruments, and decision rules remains partial. The result is a recognitional “implementation gap”: vulnerability is named, but not consistently operationalised to steer budget, siting, or programme access.

4.4.1 From Rhetorical “Vulnerability” to Operational Categories

Municipal strategies explicitly acknowledge that heat risks concentrate where housing quality is poor, health status is weaker, and local green is scarce; they call for “extra attention” in precisely such districts in the *Coalitieakkoord Den Haag 2022–2026*. Yet the same documents also concede that clear criteria for climate-resilient planning and a joint approach across initiatives are still lacking, leaving recognition largely implicit rather than directive. Interview evidence underscores this implicit–explicit gap. Policy Advisor Sustainability (R8) described the tension between implicit recognition and the need to “*make things explicit*,” noting how language choices shape whether concerns are taken up in policy. Similarly, poverty policy is data-rich at the aggregate level (e.g., the city knows where low-income households concentrate) but constrained in using that knowledge to target support, which blunts proactive recognition and follow-through. Recognition functions here as discourse (naming groups and places) but lacks institutional “hooks” (codified categories and thresholds) that would make recognition operative at the point of budgeting, siting, and scheme design.

4.4.2 Spatial Inequality and Governance Responsiveness

Municipal guidance acknowledges that the impact of climate change is uneven. Yet, the implementation logic continues to rely heavily on co-benefit coupling and risk dialogues rather than an explicit, needs-based prioritisation scheme for heat in the *Ambities en eisen klimaatadaptatie bij ruimtelijke ontwikkelingen in Den Haag*. As a result, the link between recognition and responsiveness remains discretionary, as it is mediated by the location of other development and the strength of existing civic capacity. This pattern is consistent with the *Wegwijzer Den Haag Klimaatbestendig* emphasis on updating stress tests and reporting project progress, while leaving equity-oriented KPIs unspecified. Monitoring that things are happening does not equal monitoring for whom and with what distributional effect, a symptom of recognitional under-institutionalisation.

4.4.3 Case evidence: *Cromvlietplein* and *Wijkpark Transvaal*

Cromvlietplein showcases integrated design with clear co-benefits (cooling, water reuse, amenity, biodiversity), and benefited from European funds (~€800k of a ~€3m budget), illustrating what becomes possible when external financing and local coalitions align. The *Wegwijzer Den Haag Klimaatbestendig* itself presents *Cromvliet* as a flagship example of green–blue, socially co-beneficial adaptation. The strength of this case, however, also reveals a governance dependence on project-specific opportunity and external funds rather than a city-wide, criteria-driven equity screen.

By contrast, the *Wijkpark Transvaal* process relied primarily on written submissions during a defined consultation window (late May–early July 2024). In a dense, multilingual, lower-income area, such channels risk under-representing precisely those groups most exposed to heat, producing a recognitional “channel mismatch”: modalities that appear neutral but fail to meet linguistic and digital realities. R7 – Senior Policy Advisor, Anti-poverty strategy suggested the city has aggregate socio-economic intelligence. Yet, legal and organisational barriers limit the proactive conversion of that knowledge into targeted outreach or automatic eligibility. An intersectional approach would require both (i) codifying the variables and thresholds, and (ii) mandating their use in prioritisation and siting.

4.4.4 Recognitional Justice in The Hague

How are recognitional justice concerns addressed in the identification, framing, and inclusion of vulnerable groups? Placed within the policy cycle, recognition gaps emerge at every stage: at agenda setting, vulnerability is named but not normed; at formulation, equity screens and minimum facilitation standards are absent; during implementation, delivery is opportunity-led and channel choices mismatch local realities; at evaluation, activity is counted rather than who benefited or influenced. Without codified recognitional criteria and corresponding monitoring, heat adaptation will continue to follow projects and partners rather than the greatest need. In The Hague, recognition is acknowledged and partly operationalised, but not yet a binding logic. Implementation remains opportunity-led: contingent on household/landlord capacity and intermediaries. Oversight reveals inconsistent participation, illustrating a channel–context mismatch. In summary, recognition is present but under-institutionalised; without intersectional ex-ante screens, minimum facilitation standards, and equity KPIs, inclusion remains contingent rather than guaranteed.

5. Conclusions & Discussion

How has urban heat adaptation governance in The Hague between 2020 and 2025 shaped climate justice outcomes across distributional, procedural, and recognitional dimensions? Justice outcomes in The Hague's UHI adaptation are determined less by awareness than by governance arrangements, portfolio logics, fragmented mandates, and risk-averse procurement, which steer implementation toward deliverability over need. Where formal cross-departmental mandates and shared KPIs exist, equity improves; where they are absent, inequities persist despite strategic rhetoric. Without ex-ante equity screens that bind recognition and participation to budgeting and siting, justice is routinely designed out of the policy cycle (Jordan & Huitema, 2014; Schlosberg & Collins, 2014; Shi et al., 2016). In terms of the framework, arrangements (institutions, coordination, stakeholder engagement, reflexivity) activate mechanisms (feasibility preference, administrative gatekeeping, weak institutional learning) that yield the observed distributional, procedural, and recognitional outcomes. Unless equity screens and iterative learning are made mandatory inputs to programme and siting, justice will remain incidental rather than designed.

5.1 Synthesis of Key Findings and Justice Implications

The evidence triangulated from interviews, policy documents, and spatial analysis shows a durable gap between intent and implementation across the three justice dimensions.

5.1.1 Distributional Justice

Distributional shortfalls are not accidental: they are encoded in instruments and scheduling. Subsidy designs that presuppose digital literacy, time, and (often) property ownership create a capacity-selection effect favouring organised, higher-income areas; project siting then follows technical windows (e.g., public-space renewal) and co-financing rather than exposure $\times$ capacity (need). This reproduces the pattern documented by Reckien et al. (2018) and Anguelovski et al. (2018) in which greener, better-resourced districts capture adaptation gains, while renter-majority and migrant-dense areas remain underserved. In The Hague, spatial layers on UHI, age, income, and distance to cool spaces show exactly this decoupling between mapped risk and investment intensity (Chapter 4.2), aligning with Kim et al. (2021) and Hsu et al. (2021) on how infrastructural constraints and planning routines skew benefits unless equity is hard-wired into allocation. Finally, the reliance on co-financing mirrors Bisaro & Hinkel's (2018) critique that ROI-oriented finance can systemically undercut equity targeting.

Absent an equity indicator that governs what is funded where, distribution tracks feasibility rather than justice, the design failure Shi et al. (2016) warn of when justice is not institutionalized in instruments.

5.1.2 Procedural Justice

The *Rekenkamer's* review indicates that participation is typically initiated after drafts are finalized and rarely involves decision-making rights, limiting residents to commenting on pre-selected options; only two of seven cases had a participation framework. This places practice on Arnstein's (1969) tokenism and reflects the Dutch experience that "tailored" participation without minimum standards produces discretion rather than inclusion (Uittenbroek et al., 2019). Empirically, influence tracks capacity, organised, Dutch-speaking, time-rich neighbourhoods secure adjustments; multilingual, low-income districts do not, matching Trell & van Geet (2019) and Few et al. (2007) on mandate clarity and early co-design as necessary conditions for redistributing influence.

Within the adaptation policy cycle, justice is designed out at formulation (too late; no mandate) and at implementation (contractor-led delivery with weak accountability), so participation cannot reallocate siting, scope, or standards to those most affected. This is the mechanism by which expert-centric processes reproduce inequities noted across adaptation governance cases (Uittenbroek et al., 2019; Mees & Driessen, 2018).

5.1.3 Recognitional Justice

Strategy texts name vulnerable groups, but recognition is not coupled to rules that force changed allocation or facilitation: no codified thresholds, limited translation requirements, and no priority lanes in budgeting. This is the pattern Schlosberg & Collins (2014) describe, recognition as discourse without institutional traction, and the ethical deficit Sultana (2022) highlights when historical disadvantage is not operationalised in governance. Reliance on intermediaries (e.g., NGOs) to "bridge" diversity exemplifies Turnhout et al.'s (2020) "politics of co-production," where participation is invited, but power remains with administrative routines. Walker et al. (2024) and Juhola et al. (2022) further argue that justice must appear in measurement and evaluation, not just in narrative; The Hague's monitoring remains project-counting rather than who benefited and who influenced, confirming the recognitional gap. Where shared mandates and KPIs exist, practices tilt more equitably; where absent, opportunity-led delivery prevails. Justice, therefore, appears optional, not obligatory, which is consistent with comparative work on multilevel fragmentation and equity drift (Jordan & Huitema, 2014; Kern, 2018).

5.2 Theoretical Implications

This study advances adaptation-governance scholarship by specifying how multilevel and sectoral fragmentation, coupled with instrument design, generate patterned distributional, procedural, and recognitional injustices. In line with cautions that multilevel governance neither guarantees effectiveness nor fairness

(Jordan & Huitema, 2014; Hooghe & Marks, 2003), the case identifies four precise “drop-out points” in the policy cycle where justice is designed out:

- Agenda setting: vulnerability is named but not defined, no binding thresholds that trigger priority or ring-fenced budgets, confirming that recognition without allocative rules lacks distributive traction (Schlosberg & Collins, 2014; Shi et al., 2016).
- Formulation: participation is invited late and without mandate, so siting, scope, and standards remain expert-fixed; this reproduces tokenism and capacity-biased influence (Arnstein, 1969; Uittenbroek et al., 2019).
- Implementation: portfolio sequencing follows feasibility and co-financing (e.g., works aligned to existing renewals) rather than exposure×capacity, echoing EU patterns where delivery convenience trumps equity (Reckien et al., 2018; Bisaro & Hinkel, 2018).
- Evaluation: monitoring counts projects, not beneficiaries, sidelining outcome equity and thereby normalising inequitable allocations (Walker et al., 2024; Shi et al., 2016).

The Hague exemplifies risks of justice-washing: policy texts invoke fairness, yet practices do not operationalise decision rights or access. Empirically, the *Wijkpark Transvaal* consultation, short windows, written submissions in a multilingual, low-income area, illustrates participatory fatigue and “tailored” but disempowered inclusion (Piggott-McKellar et al., 2019; Anguelovski et al., 2018). Influence tracks existing civic and linguistic capacity, not exposure. More fundamentally, the city relies on intermediaries (e.g., NGOs) to bridge diversity instead of hard-coding recognition into rules. This is “outsourced recognition”, co-production that leaves power with administrative routines (Turnhout et al., 2020), precisely the ethical deficit Sultana (2022) warns against when historical disadvantage is acknowledged but not given institutional hooks (thresholds, facilitation standards, budget rules). Treating recognition as foundational, not auxiliary, aligns with recent justice scholarship (Sultana, 2022; McLean, 2024): unless recognition triggers eligibility criteria, language, and priority lanes in budgeting, it remains discursive rather than directive.

Finally, the findings nuance debates on experimentation versus transformation. Flagship successes arise when alignment and external funds converge, yet without portfolio-level equity rules, they do not add up to city-wide justice. This corroborates transformative adaptation theory: durable equity requires re-wiring incentives and decision rights, equity decisions in budgeting, early co-decision mandates, recognitional standards in procurement, rather than isolated projects (Pelling et al., 2015; Fedele et al., 2019; Newell et al., 2021). In short, justice does not emerge from adaptation; it must be constituted through mandates, metrics, and funding.

5.3 Methodological Reflection and Limitations

The single-case design was chosen to maximise mechanism clarity through in-depth, context-sensitive analysis, but it necessarily constrains external validity: findings warrant analytic, not statistical, generalisation. Within the evidence base, interview coverage is municipal-heavy, which strengthens insights into formal roles, instruments, and routines but narrows the aperture on lived experience. Consequently, recognitional claims are treated as context-contingent and are advanced most confidently where three-way convergence occurs, i.e., when municipal testimony aligns with documentary provisions and spatial patterns.

The document base is also performative: strategies and plans articulate intention rather than delivered practice. Although cross-checks against interviews and neighbourhood patterns reduce this gap, documents cannot fully adjudicate implementation fidelity. Likewise, the spatial layers used are diagnostic rather than definitive. They are subject to scale effects and ecological inference risks (e.g., neighbourhood averages masking micro-hotspots), temporal misalignment across datasets and interventions, and variable choice (e.g., land-surface vs. air temperature proxies). These characteristics temper claims about the magnitude of distributional skew and the durability of observed patterns over time.

Additional design constraints limit the analysis. First, the temporal scope (Mar–Jun 2025) curtailed observation of implementation drift and lagged effects of new instruments; mitigation relied on triangulating contemporaneous interviews with policy cycles and privileging process regularities over single events. Second, stakeholder coverage underrepresents residents from multiple high-exposure districts; recognitional findings are framed as context-bound propositions, negative cases were sought, and multi-source convergence was required for stronger claims. Third, budget granularity was insufficient for neighbourhood per-capita ratios; distributional inferences therefore use proxies (project siting, subsidy design, sequencing rules) and are presented as pattern evidence, not precise fiscal accounting. Despite these limits, the combination of triangulation, transparent coding, and mechanism-focused inference provides a credible, situated explanation of how governance design produces distributional, procedural, and recognitional outcomes, consistent with best practice for theory-building case studies in urban governance.

5.4 Recommendations for Future Research

To advance more just and effective climate adaptation, future research should consider the following:

1. Institutional Learning Over Time: Longitudinal studies could evaluate whether symbolic policy commitments evolve into structural reforms, tracking how justice is integrated or diluted over multiple planning cycles (Juhola et al., 2022).

2. Comparative City Studies: Cross-case comparisons of mid-sized Dutch or European cities could determine whether The Hague's governance challenges are systemic or context-specific, enhancing policy transferability (Trell & van Geet, 2019).
3. Participatory Action Research: Collaborating with heat-vulnerable communities as co-researchers can integrate lived experiences more deeply into governance design, addressing procedural and recognitional deficits (Sultana, 2022; Foster & Iaione, 2016).
4. Quantitative Justice Indicators: Future work should complement qualitative analysis with concrete metrics (e.g., per capita greening investment, park access within 300m, cooling infrastructure per vulnerable household) to enhance transparency and accountability (Kim et al., 2021; Amado, 2022).

Collectively, these research directions can deepen our understanding of climate justice implementation and support the development of governance models that are not only adaptive but also structurally inclusive and equitable.

6. Policy Recommendations

This chapter presents three action-oriented recommendations based on the study's analytical framework and empirical findings.

1. Embed Vulnerability in Adaptation

Current instruments are predominantly demand-led and co-financed, creating a capacity-selection bias that advantages owner-occupied, resource-rich neighbourhoods and systematically underserves low-income areas. To correct this, the municipality should codify a city-wide equity indicator for all heat-relevant spending: an exposure×capacity index (e.g., UHI intensity, % renters, median income, linguistic diversity, age structure, distance to cool spaces) that triggers priority status and ring-fenced envelopes within the budget cycle. By tying mapped vulnerability to allocation decisions, and auditing spend against those thresholds, the city would operationalise distributional justice in line with adaptation-justice scholarship advocating ex-ante equity criteria for investment decisions (Amado, 2022; Shi et al., 2016).

2. Institutionalise Inclusive and Sustainable Participatory Structures

Corrective design needs to change the mandate, not just the format. Replace ad-hoc consultations with a Minimum Participation Standard (MPS) that 1) locates engagement at agenda-setting and formulation, 2) guarantees co-decision on scope, and 3) requires a written “reasons” report for any non-adoption of resident proposals (addressing Few et al.’s “illusion of inclusion”). Pair the MPS with standing neighbourhood climate panels in high-risk areas as continuing participation. Panels should embed recognitional safeguards, professional translation, culturally trusted intermediaries, and rotating representation, so that presence becomes power, not performance. This aligns with commons-based, co-governance approaches (Foster & Iaione) and with participation scholarship that links procedural justice to clear mandates, inclusion infrastructure, and accountability (Reed, 2008; Turnhout et al., 2020).

3. Develop Justice-Oriented Evaluation Tools and Indicators

Recognitional justice remains the least institutionalized element: policy texts invoke “vulnerable groups” but omit operational criteria for linguistic, cultural, and intersecting disadvantage. To move from rhetoric to rule, adopt an indicator embedded in the budget and approval cycle. The indicator applies a compact indicator set, e.g., % migration background, median income, % 65+, mean summer surface temperature, and distance to designated cool spaces. It assigns priority status to projects exceeding a threshold. Pair this with audited, disaggregated monitoring and resident perception qualitative feedback each cycle, with public

reporting. This design operationalizes recognitional justice as a binding allocation and facilitation rule, enabling iterative learning and accountability consistent with justice scholarship that centres lived difference and institutional hooks for inclusion (Sultana, 2022; Ziervogel et al., 2021; Schlosberg & Collins, 2014).

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Appendices

Appendix A – Interview Guides

This appendix presents the semi-structured interview guides used for each of the ten key informant interviews. Each guide is structured to the thematic expertise and institutional role of the respondent and aligned with the conceptual framework of this thesis.

Interviewee Code	Role / Department	Thematic Relevance
R1	Director – (international) cooperation	Governance
R2	Civil Servant - International cooperation	Governance
R3	Civil Servant - Adaptation heat stress interventions	Local adaptation coordination
R4	Policy Advisor - Sustainability & Participation	Recognitional and distributional justice
R5	Policy Advisor -Participation expert	Community engagement processes
R6	Senior Policy Advisor - Anti-poverty strategy	Vulnerability and equity assessment

R7	Senior Policy Advisor - Anti-poverty strategy	Vulnerability and equity assessment
R8	Policy Advisor Sustainability	Climate Agreement participation
R9	Community Representative	Procedural Justice
R10	Community Representative	Procedural Justice

Table 5: Anonymized overview of interview participants and thematic focus

Interview Introduction (used for all interviews)

“Thank you for taking the time to speak with me today. This interview is part of my master's thesis research on adaptation governance and climate justice in The Hague. The goal is to understand how urban heat adaptation strategies are governed and how they address or overlook justice concerns, such as fairness, inclusion, and vulnerability.”

“Before we begin, I want to remind you that this interview is voluntary and will be anonymized in the final report. You can skip any question or stop the interview at any time. Do I have your consent to proceed and take notes?”

Introductory Questions (all interviewees)

1. Can you briefly describe your role and how it connects to climate adaptation or resilience work?
2. How long have you worked on adaptation or related issues within The Hague?
3. What would you say is the biggest challenge the city faces in adapting to urban heat?

Interview Guide: R1 & R2 – Governance (International Cooperation & Multilevel Policy)

1. How do international frameworks (e.g., EU Green Deal, UNFCCC) influence The Hague's adaptation strategies?

2. Can you share a concrete example where international collaboration shaped a local UHI or adaptation decision?
3. How are international adaptation commitments translated into city-level policies?
4. What challenges arise in aligning international ambitions with local implementation capacity?
5. What mechanisms exist to coordinate across governance levels in adaptation planning?
6. To what extent are international norms on equity or justice reflected in local planning?
7. How are funding mechanisms shaped by international programs?
8. What kinds of knowledge exchanges influence your work on UHI or adaptation?
9. How does your team monitor or assess the success of international collaborations?
10. What lessons have been learned from international cooperation in The Hague's local adaptation work?

Interview Guide: R3 – Local Adaptation Coordination

1. How is UHI adaptation coordinated across municipal departments?
2. What formal or informal structures support interdepartmental collaboration?
3. How is data on UHI and social vulnerability shared across departments?
4. What tools (e.g., heat maps, planning dashboards) are used in decision-making?
5. What are key challenges in maintaining policy coherence across departments?
6. How is the success of cross-departmental coordination assessed?
7. How do political cycles or administrative changes affect continuity in adaptation planning?
8. Are any specific departments more influential in shaping adaptation priorities?
9. How are conflicts or trade-offs between departments resolved?
10. What recommendations would you suggest to improve cross-departmental governance on UHI?

Interview Guide: R4 – Recognitional & Distributional Justice

1. How are vulnerable groups (e.g., elderly, low-income, migrants) identified in adaptation planning?
2. What steps are taken to ensure their specific needs are reflected in policy decisions?
3. How is socio-economic and demographic data used to inform resource allocation?

4. Can you provide an example where recognition justice influenced a planning outcome?
5. How are trade-offs between cost and equity negotiated?
6. What indicators or tools are used to monitor equity outcomes over time?
7. How do you assess whether adaptation resources are equitably distributed?
8. Are there specific outreach strategies used for harder-to-reach communities?
9. What feedback mechanisms exist for vulnerable groups to express concerns?
10. How is equity defined internally, and how is that translated into practice?

Interview Guide: R5 – Community Engagement Processes

1. What public engagement approaches are used in UHI adaptation planning?
2. How are stakeholders identified and engaged?
3. Can you describe an example where community feedback influenced a project?
4. How do you evaluate the inclusivity and effectiveness of public participation?
5. What challenges exist in engaging underrepresented communities?
6. How are digital tools used to support ongoing participation?
7. What are the main goals of your engagement strategies?
8. How are decisions about who participates and how participation occurs made?
9. Are there examples of symbolic participation vs. meaningful inclusion?
10. What reforms or innovations have been proposed to improve engagement?

Interview Guide: R6 – Technical Adaptation Measures

1. What technical measures are prioritized to address UHI in The Hague?
2. How are these measures selected and justified?
3. To what extent do social vulnerability indicators influence technical decisions?
4. How are implementation and maintenance responsibilities allocated?
5. How are new innovations assessed before being deployed?
6. Are any technical interventions designed with resident input?
7. How do you evaluate the effectiveness of UHI adaptation technologies?
8. What are the most common barriers to implementing technical measures?
9. How do you ensure long-term sustainability of technical solutions?
10. How is adaptive capacity integrated into urban infrastructure planning?

Interview Guide: R7 – Vulnerability & Equity Assessment

1. How is vulnerability assessed in relation to heat exposure?
2. What data and indicators are considered most important?
3. How are vulnerability assessments linked to funding or action planning?
4. Are there challenges in collecting or using vulnerability data?
5. How are residents involved in validating or responding to assessment findings?
6. What institutions or departments lead vulnerability analysis?
7. How are spatial vulnerabilities visualized or mapped?
8. Do vulnerability assessments feed into monitoring and evaluation systems?
9. Are there standardized thresholds or benchmarks for identifying at-risk populations?
10. How is vulnerability reduction tracked over time?

Interview Guide: R8 – Sustainability & The Hague Climate Agreement

1. Which stakeholders were involved in the development of the Climate Agreement, and how did the process unfold leading up to signing and implementation?
2. What do you see as the key success factors and challenges in engaging stakeholders in such climate agreements at the local level?
3. What are the main goals of the Hague Climate Pact regarding sustainability and climate adaptation?
4. How are these goals translated into concrete actions or measures in the city?
5. How are progress and impacts of the Climate Pact monitored and evaluated?
6. To what extent is urban heat (heat stress) explicitly addressed in the Climate Agreement or broader sustainability strategy of The Hague?
7. Are vulnerable groups—such as older adults, low-income households, or people with limited mobility—included in the prioritisation of adaptation measures?
8. How is coordination managed between departments (e.g., urban planning, social affairs, public health) in relation to climate goals?
9. How is climate justice, particularly the unequal impacts of climate change, reflected in local sustainability policy?
10. What is your vision for the role of local governments in future climate adaptation efforts, and where should The Hague focus most urgently in the coming years?

Interview Guide: R9–R11 – Participants in Participatory Processes

1. How were you approached or invited to participate in adaptation-related planning?
2. What was the purpose of the meeting or event you joined?

3. How would you describe your level of influence in shaping the final outcome?
4. Were your concerns or suggestions reflected in the resulting plans or decisions?
5. What was your experience of the accessibility or inclusiveness of the process?
6. What would have helped make your participation more meaningful?
7. Were follow-up updates or feedback loops in place after the engagement?
8. Do you feel your perspective was taken seriously?
9. Would you participate again in a similar process? Why or why not?
10. What recommendations would you give to improve future participation processes?

Closing Questions (all interviewees)

1. Is there anything we haven't discussed that you think is crucial for understanding how adaptation is governed in The Hague?
2. Do you have any reports, data, or contacts that you believe could support this research?

Thank you very much for your time and insights today. Your contribution is incredibly valuable for my research and will help deepen the understanding of how adaptation is governed and how justice is (or isn't) addressed in urban planning processes in The Hague.

If you're interested, I'd be happy to share a summary of the findings once the thesis is complete. And if you think of anything else after this conversation, feel free to reach out to me by email."

Thanks again, and I really appreciate your help.

Appendix B – Interview Guides - Dutch Translation

Hartelijk dank dat u de tijd neemt om met mij in gesprek te gaan vandaag. Dit interview maakt deel uit van mijn masterthesis over de governance van klimaatadaptatie en klimaatrechtvaardigheid in Den Haag. Het doel is om te begrijpen hoe stedelijke hitte-adaptatiestrategieën worden bestuurd, en in hoeverre rechtvaardigheid, inclusie en kwetsbaarheid hierin worden meegenomen of juist over het hoofd gezien.

Voordat we beginnen, wil ik u eraan herinneren dat dit interview volledig vrijwillig is en dat uw antwoorden geanonimiseerd worden in het

eindrapport. U kunt op elk moment vragen overslaan of het interview beëindigen. Mag ik uw toestemming om verder te gaan en aantekeningen en een opname te maken?

Introductievragen (voor alle geïnterviewden)

1. Kunt u kort uw functie beschrijven en hoe die verband houdt met klimaatadaptatie of veerkrachtbeleid?
2. Hoe lang werkt u al aan klimaatadaptatie of aanverwante thema's in Den Haag?
3. Wat zou u zeggen is momenteel de grootste uitdaging voor Den Haag in het omgaan met stedelijke hitte?

Interviewgids: R1 & R2 – Governance (Internationale Samenwerking & Beleidsniveaus)

1. Hoe beïnvloeden internationale beleidskaders (zoals de EU Green Deal of het UNFCCC) de adaptatiestrategieën van Den Haag?
2. Kunt u een concreet voorbeeld geven waarin internationale samenwerking een lokaal besluit over UHI of klimaatadaptatie heeft beïnvloed?
3. Hoe worden internationale klimaatverplichtingen vertaald naar stedelijk beleid?
4. Welke uitdagingen ontstaan bij het afstemmen van internationale ambities op lokale uitvoeringscapaciteit?
5. Welke mechanismen bestaan er om de coördinatie tussen bestuursniveaus in adaptatieplanning te organiseren?
6. In hoeverre worden internationale normen over rechtvaardigheid en gelijkheid weerspiegeld in lokaal beleid?
7. Hoe worden financieringsmechanismen beïnvloed door internationale programma's?
8. Welke vormen van kennisuitwisseling beïnvloeden uw werk op het gebied van UHI of adaptatie?
9. Hoe monitort of evalueert uw team het succes van internationale samenwerkingen?
10. Welke lessen zijn geleerd uit internationale samenwerking binnen de lokale adaptatiepraktijk van Den Haag?

Interviewgids: R3 – Lokale Adaptatiecoördinatie

1. Hoe wordt de aanpak van UHI binnen de gemeente Den Haag gecoördineerd?
2. Welke formele of informele structuren ondersteunen de samenwerking tussen afdelingen?

3. Hoe wordt informatie over UHI en sociale kwetsbaarheid gedeeld tussen gemeentelijke afdelingen?
4. Welke instrumenten (zoals hittekaarten of planningsdashboards) worden gebruikt voor besluitvorming?
5. Wat zijn belangrijke uitdagingen bij het behouden van beleidscoherentie tussen afdelingen?
6. Hoe wordt het succes van interdepartementale samenwerking geëvalueerd?
7. In hoeverre beïnvloeden politieke cycli of bestuurlijke wisselingen de continuïteit van adaptatieplanning?
8. Zijn er specifieke afdelingen die een dominante rol spelen in het bepalen van adaptatieprioriteiten?
9. Hoe worden conflicten of afwegingen tussen afdelingen opgelost?
10. Welke aanbevelingen zou u doen om de samenwerking rond UHI tussen afdelingen te verbeteren?

Interviewgids: R4 – Recognitional & Distributional Justice

1. Hoe worden kwetsbare groepen (zoals ouderen, mensen met lage inkomens of migranten) geïdentificeerd binnen het adaptatiebeleid?
2. Welke stappen worden genomen om hun specifieke behoeften mee te nemen in beleidskeuzes?
3. Hoe wordt sociaaleconomische en demografische data gebruikt bij de toewijzing van middelen?
4. Kunt u een voorbeeld geven waarin recognitional justice een directe invloed had op een beleidsbesluit?
5. Hoe worden afwegingen gemaakt tussen kosten en rechtvaardigheid?
6. Welke indicatoren of tools worden gebruikt om uitkomsten op het gebied van rechtvaardigheid te monitoren?
7. Hoe beoordeelt u of middelen eerlijk zijn verdeeld?
8. Worden er specifieke benaderingsstrategieën toegepast om moeilijk bereikbare groepen te betrekken?
9. Welke terugkoppelmechanismen bestaan er voor kwetsbare groepen om hun zorgen te uiten?
10. Hoe wordt binnen uw organisatie het begrip rechtvaardigheid gedefinieerd en omgezet in praktijk?

Interviewgids: R5 – Participatieprocessen en Burgerbetrokkenheid

1. Welke vormen van publieke betrokkenheid worden gebruikt bij UHI-adaptatieplanning?
2. Hoe worden stakeholders geïdentificeerd en betrokken?

3. Kunt u een voorbeeld geven waarin feedback vanuit de gemeenschap een project beïnvloedde?
4. Hoe evalueert u de inclusiviteit en effectiviteit van participatie?
5. Welke uitdagingen zijn er bij het bereiken van ondervertegenwoordigde groepen?
6. Hoe worden digitale middelen ingezet om participatie te ondersteunen?
7. Wat zijn de belangrijkste doelen van uw participatiestrategie?
8. Hoe wordt bepaald wie deelneemt en op welke manier?
9. Zijn er voorbeelden van symbolische versus betekenisvolle participatie?
10. Welke hervormingen of innovaties zijn voorgesteld om participatie te verbeteren?

Interviewgids: R6 – Technische Adaptatiemaatregelen

1. Welke technische maatregelen krijgen prioriteit bij het aanpakken van UHI in Den Haag?
2. Hoe worden deze maatregelen geselecteerd en verantwoord?
3. In hoeverre spelen indicatoren van sociale kwetsbaarheid een rol in technische keuzes?
4. Hoe worden verantwoordelijkheden voor uitvoering en onderhoud verdeeld?
5. Hoe worden nieuwe innovaties beoordeeld voordat ze worden geïmplementeerd?
6. Worden technische oplossingen mede-ontworpen met bewoners?
7. Hoe evalueert u de effectiviteit van UHI-adaptatietechnologieën?
8. Wat zijn de meest voorkomende barrières bij de uitvoering van technische maatregelen?
9. Hoe wordt de langetermijnbestendigheid van technische oplossingen gegarandeerd?
10. Hoe wordt adaptief vermogen geïntegreerd in stedelijke infrastructuurplanning?

Interviewgids: R7 – Kwetsbaarheids- en Rechtvaardigheidsanalyse

1. Hoe wordt kwetsbaarheid ten aanzien van hittestress beoordeeld?
2. Welke data en indicatoren worden als het meest belangrijk beschouwd?
3. Hoe worden kwetsbaarheidsanalyses gekoppeld aan financiering of actieplanning?
4. Welke uitdagingen doen zich voor bij het verzamelen of gebruiken van kwetsbaarheidsdata?
5. Hoe worden bewoners betrokken bij het toetsen of interpreteren van deze analyses?
6. Welke afdelingen of instanties leiden de analyse van kwetsbaarheid?

7. Hoe worden ruimtelijke kwetsbaarheden gevisualiseerd of in kaart gebracht?
Worden kwetsbaarheidsbeoordelingen gebruikt voor monitoring en evaluatie?
8. Bestaan er drempelwaarden of criteria voor het identificeren van risicogroepen?
9. Hoe wordt vermindering van kwetsbaarheid door de tijd heen gevolgd?

Interviewgids: R8 – Duurzaamheid & Haags Klimaatakkoord

1. Welke stakeholders waren betrokken bij de totstandkoming van het Klimaatakkoord en hoe is het proces richting ondertekening en implementatie verlopen?
2. Wat ziet u als de belangrijkste succesfactoren en uitdagingen bij het betrekken van stakeholders bij lokale klimaatafspraken?
3. Wat zijn de belangrijkste doelstellingen van het Haags Klimaatpact op het gebied van duurzaamheid en klimaatadaptatie?
4. Hoe worden deze doelstellingen vertaald naar concrete acties of maatregelen in de stad?
5. Hoe worden voortgang en impact van het Klimaatakkoord gemonitord en geëvalueerd?
6. In hoeverre wordt hittestress expliciet benoemd of aangepakt in het Klimaatakkoord of het bredere duurzaamheidsbeleid van Den Haag?
7. Worden kwetsbare groepen – zoals ouderen, mensen met lage inkomens of mensen met beperkte mobiliteit – meegenomen in de prioritering van adaptatiemaatregelen?
Hoe wordt samenwerking tussen gemeentelijke afdelingen (zoals ruimtelijke ordening, sociaal domein, en volksgezondheid) georganiseerd ten aanzien van klimaatdoelstellingen?
8. Hoe wordt klimaatrechtvaardigheid, en in het bijzonder de ongelijke impact van klimaatverandering, weerspiegeld in lokaal beleid?
9. Wat is uw visie op de rol van lokale overheden in toekomstige klimaatadaptatie? En waarop zou Den Haag zich de komende jaren het meest moeten richten?

Interviewgids: R9–R11 – Deelnemers aan Participatietrajecten

1. Hoe bent u benaderd of uitgenodigd om deel te nemen aan klimaatadaptatie-gerelateerd beleid of planning?
2. Wat was het doel van de bijeenkomst of het proces waaraan u deelnam?
3. Hoe zou u uw invloed op de uitkomst van het proces beschrijven?
4. Zijn uw opmerkingen of voorstellen verwerkt in de uiteindelijke plannen of besluiten?

5. Hoe heeft u de toegankelijkheid en inclusiviteit van het proces ervaren?
6. Wat zou hebben geholpen om uw deelname betekenisvoller te maken?
7. Was er sprake van terugkoppeling of opvolging na uw deelname?
8. Had u het gevoel dat uw perspectief serieus werd genomen?
9. Zou u opnieuw deelnemen aan een vergelijkbaar traject? Waarom wel of niet?
10. Welke aanbevelingen zou u doen om participatieprocessen in de toekomst te verbeteren?

Slotvragen (voor alle geïnterviewden)

1. Is er iets dat we nog niet hebben besproken, maar dat volgens u essentieel is om te begrijpen hoe klimaatadaptatie in Den Haag wordt bestuurd?
2. Heeft u rapporten, datasets of contactpersonen die u zou aanraden in het kader van dit onderzoek?

Afsluitende opmerking

“Heel erg bedankt voor uw tijd en inzichten vandaag. Uw bijdrage is van grote waarde voor mijn onderzoek en zal helpen om beter te begrijpen hoe klimaatadaptatie wordt vormgegeven en hoe rechtvaardigheid daarin (wel of niet) wordt meegenomen in stedelijk beleid in Den Haag.”

“Als u geïnteresseerd bent, stuur ik u graag een samenvatting van de bevindingen zodra de thesis is afgerond. Mocht u later nog iets willen toevoegen, dan kunt u mij altijd per e-mail bereiken.”

“Nogmaals dank, ik waardeer uw hulp enorm.”

Appendix C – Documents used for Analysis

No.	Title	Year	Source
1	Ambities en eisen klimaatadaptatie bij ruimtelijke ontwikkelingen in Den Haag	n.d.-a	Gemeente Den Haag. (n.d.-a). <i>Ambities en eisen klimaatadaptatie bij ruimtelijke ontwikkelingen in Den Haag</i> . Klimaatmonitor. https://media.klimaatmonitor.net/klimaatatlas/denhaag/Ambities_en_eisen_klimaatadaptatie_Den_Haag.pdf
2	Segregatiemonitor	n.d.-b	Gemeente Den Haag. (n.d.-b). Segregatiemonitor. Den Haag in Cijfers. https://denhaag.incijfers.nl/mosaic/en-us/segregatiemonitor/1--inleiding-segregatiemonitor
3	Haags Hitteplan	2022-a	Gemeente Den Haag. (2022-a). Bijlage bij motie Haags Hitteplan – RIS311683. Vereniging van Nederlandse Gemeenten (VNG). https://vng.nl/sites/default/files/2022-03/RIS311683_Bijlage.pdf
4	Coalitieakkoord Den Haag 2022–2026: Voor een stad die tegen een stootje kan	2022-a	Gemeente Den Haag. (2022-a). Coalitieakkoord Den Haag 2022–2026: Voor een stad die tegen een stootje kan. https://www.denhaag.nl/coalitieakkoord-2022-2026
5	Het Haags Klimaatakkoord	2024	Gemeente Den Haag. (2024-a). Het Haags Klimaatakkoord. Duurzame Stad Den Haag. https://duurzamestad.denhaag.nl/wp-content/uploads/2024/04/Het-Haags-Klimaatakkoord.pdf
6	Uitvoeringsplan Klimaatbestendig Den Haag	2012	Gemeente Den Haag. (2012). Uitvoeringsplan Klimaatbestendig Den Haag. https://denhaag.raadsinformatie.nl/document/3359209/1/RIS252427_bijlage%20Uitvoeringsplan%20Klimaatbestendig%20Den%20Haag#page=12.38
7	Programmabegroting 2023–2026	2022-c	Gemeente Den Haag. (2022-c). Programmabegroting 2023–2026. https://financien.denhaag.nl

8	Resilient The Hague: Strategie voor een veerkrachtige stad	2019	Gemeente Den Haag. (2019). Resilient The Hague: Strategie voor een veerkrachtige stad. https://resilientthehague.nl/site/assets/files/1167/resilient_the_hague_strategy_a5_final.pdf
9	Subsidieregeling klimaatadaptatie Den Haag 2023–2025	2023	Gemeente Den Haag. (2023). Subsidieregeling klimaatadaptatie Den Haag 2023–2025 (RIS314952). Overheid.nl. https://lokaleregelgeving.overheid.nl/CVDR694433/2
10	Wegwijzer Den Haag Klimaatbestendig	2021	Gemeente Den Haag. (2021). Wegwijzer Den Haag Klimaatbestendig. https://denhaag.raadsinformatie.nl/modules/13/Overige%20bestuurlijke%20stukken/670166
11	Bewonersparticipatie in Den Haag: Tussen ambitie en praktijk	2025	Rekenkamer Den Haag. (31/03/2025). Bewonersparticipatie in Den Haag: Tussen ambitie en praktijk. https://www.rekenkamerdenhaag.nl/onderzoeken/rapport-bewonersparticipatie/#post-5493-_Toc193963102
12	Integraal Gemeentelijk Rioleringsplan 2021-2025	2020	Gemeente Den Haag. (2020). Integraal Gemeentelijk Rioleringsplan. https://denhaag.raadsinformatie.nl/document/9987379/1?connection_type=16&connection_id=624172

Table 6: Documents Used in Analysis with sources

Appendix D – ATLAS.TI Analysis

Code Category	Subcodes	Occurrence (Grounded)	RQ Relevance
Adaptation Governance	Governance influence, Adaptation Policy, Inter-agency coordination, Policy continuity, Municipal Initiatives, Policy implementation, Vulnerability	1609	RQ1
Distributional Justice	Vulnerable area prioritisation, Access Equity, Spatial Equity, Subsidy accessibility, Cooling infrastructure equity, Tangible benefits for residents	662	RQ2
Procedural Justice	Stakeholder participation, Inclusiveness (marginalized groups), Influence (extent of contribution), Transparency (access to info), Political approval, Political opposition	1076	RQ2
Recognitional Justice	Responsiveness to diversity, Group visibility in plans (e.g., cultural/linguistic references), Representation, Recognition of lived experience, Inclusion of marginalized voices	523	RQ2
Resource Allocation	EU co-financing, Prioritisation mechanisms, Investment logic across districts, Budget toward adaptation	720	RQ3

Table 7. ATLAS.TI Codebook

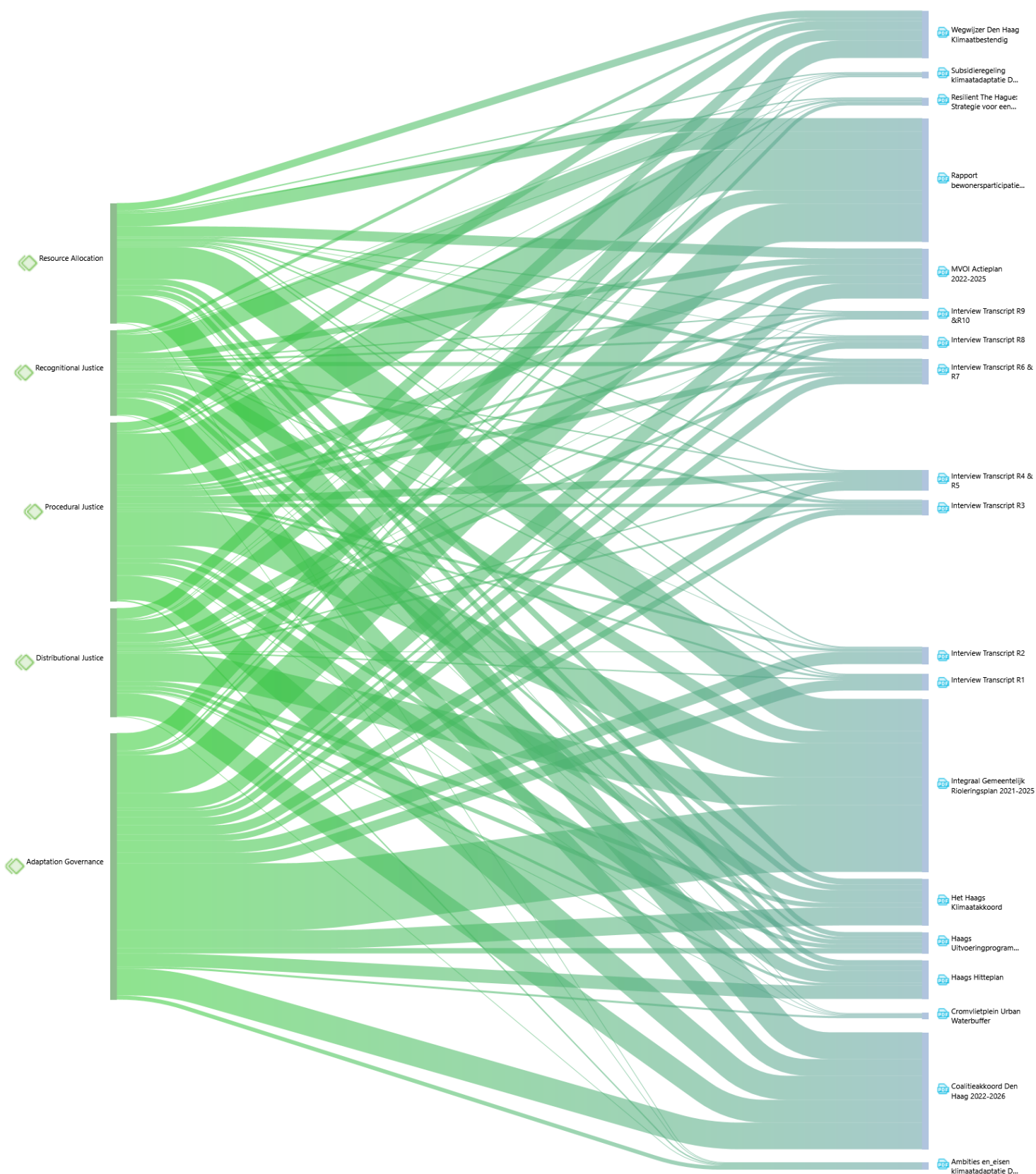


Figure 12. ATLAS.TI Code-Document Sankey

	1. MNOI Act... 101	2. Hsng Ut... 39	3. Codebook... 220	4. Subinter... 10	5. Conflict... 14	7. Resident T... 22	8. Hst Hsng... 121	9. Ambic... 27	10. Hsng Ht... 99	12. Interview... 48	13. Interview... 61	14. Interview... 76	15. Interview... 49	16. Interview... 74	17. Interview... 72	18. Wngpr... 122	19. Integral... 424	20. Interview... 26	22. Report... 310	Totals
Adaptation Governance	169 101	88 33	161 52	8 2	11 5	21 11	108 79	25 17	79 29	40 12	48 4	57 7	38 4	71 12	66 8	106 68	402 200	16 3	231 136	1609 707
Adaptation Governance: Adaptation Policy	707 555	51 7	52	2	5	11	79	17	29	12	4	7	4	12	8	68	200	3	136	707
Adaptation Governance: Governance influence	709 46	25	109	3	7	12	68	2	35	2	2	1	3	12	14	55	209	10	94	709
Adaptation Governance: Inter-agency coordinat...	178 364									10	9	8	11	12	23	31	72		23	178
Adaptation Governance: Municipal initiatives	484 44	25	87	6	4	12	36	10	61	7	8	7	3	12	11	31	157	5	126	484
Adaptation Governance: Policy implementation	167 662	3	37			4				1	14	6	6	3	1	26	54	1		167
Adaptation Governance: Vulnerability	192 3	25	136	5	4	6	30	5	18	8	23	10	13	5	7	64	169	3	80	662
Distributional Justice: Access equity (e.g., walkab...	291 50	25	132	5						2	5	6	8	3	3	24	98	3		192
Distributional Justice: Cooling infrastructure equi...	173 98									2	5					18	50	2		77
Distributional Justice: Spatial equity (e.g., green v...	173 98									2	2	1	1	2	3	20	48		51	291
Distributional Justice: Subsidy accessibility	1076 400	4	11		2	5	20	3	18	2	5	2	2		1	5	13			1076
Distributional Justice: Tangible benefits for reside...	441 17	8	107	1	1	1	13	2	4	11	18	35	13	7	8	12	30	7	75	400
Procedural Justice: Inclusion of marginalized g...	48 5	2	17	1	4	8	56	2	35	2	6	9	5	3	1	25	102	10	102	441
Procedural Justice: Influence (extent of contribut...	28 27										3	2	2	5	6	1	4	1	9	28
Procedural Justice: Political approval	797 60	13	43	2	5	10	70	6	66	12	31	34	16	12	10	47	183	9	201	797
Procedural Justice: Stakeholder participation	523 37	17	102	1	5	5	33	2	32	12	24	10	17	6	8	19	73	10	110	523
Procedural Justice: Transparency (access to info)	53 33									5	9	4	6	1	2	2	4	3	17	53
Recognition of Justice: Group visibility in plans (e...	424 28	16	90	1	3	5	23	2	17	9	17	6	10	5	3	17	68	6	93	424
Recognition of Justice: Inclusion of marginalized...	367 88	10	82		2	3	26	2	26	10	18	9	14	4	5	14	51	5	58	367
Recognition of Justice: Recognition of lived experi...	53 3	2	6		2		15		12	4	4	2	2	3	3				34	88
Recognition of Justice: Responsiveness to diversity	720 60	29	161	7	6	7	36	3	31	2	19	8	8	7	10	44	194	7	81	720
Resource Allocation	420 52	25	116	4	1		2		8		2				1	35	168	6		420
Resource Allocation: Budget toward adaptation	468 41	23	132	4	4	6	29	3	15	1	2	2	1	3	4					13
Resource Allocation: EU co-financing	448 42	23	97	7	5	5	30	3	28	1	16	7	8	4	6	18	62	1	81	468
Resource Allocation: Investment logic across dift...	306 798	360	1896	61	79	133	776	103	601	233	458	363	279	287	293	792	2917	132	1991	306
Resource Allocation: Prioritization mechanisms																				12552

Figure 13. ATLAS.TI Code-Document Analysis

Appendix E – Authorship Attestation

I hereby declare that the thesis submitted under the title “*Governing Justice: Analysing Urban Heat Adaptation and Climate Equity in The Hague*” is the result of my own independent academic work. All primary data collection, analysis, interpretation, and argumentation presented in the thesis were carried out by me.

I confirm that:

- No content in the thesis was generated by tools in a way that substitutes original academic work, violates authorship integrity, or bypasses intellectual responsibility.
- Any writing assistance (e.g., for language refinement, spelling, grammar, or structure) was used solely for editing and clarity improvement, in accordance with university guidelines and good academic practice.
- All empirical data (e.g., interview transcripts, spatial analysis, policy coding) were collected, coded, and interpreted by me.
- All sources and literature cited have been appropriately referenced in APA style.

This statement is provided to ensure complete transparency regarding the authorship and academic integrity of this thesis.

Signed,
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