CLIMATE JUSTICE AND COASTAL ADAPTATION: AN EVALUATION OF EQUITY AND VULNERABILITY IN THE NCICD POLICY FOR NORTH JAKARTA

A Thesis

Submitted to the Master's Study Program of Political Science at the Faculty of Social sciences in partial fulfilment of the requirements for the degree of

Master in Public Policy (M.P.P)

by:
HOBY NASANDRATRA ANDRIAMIANDRISOA
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UNIVERSITAS ISLAM INTERNATIONAL INDONESIA
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ABSTRACT

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This thesis examines how the National Capital Integrated Coastal Development policy, or NCICD, addresses climate justice for vulnerable coastal communities in North Jakarta during the period of 2021–2025. The study focuses on Muara Angke and Muara Baru as vulnerable coastal areas where flood risk, land subsidence, informal settlement conditions, and fishing livelihoods overlap. Using qualitative policy document analysis and thematic analysis, this thesis evaluates NCICD through three dimensions of climate justice: distributive justice, procedural justice, and recognitional justice. According to the climate justice that is explained and elaborated during this study, the findings show that distributive justice is partially met. NCICD provides clear flood protection benefits through hard infrastructure such as sea walls, polders, embankments, and drainage systems. However, these benefits are closely connected to urban redevelopment, transport, tourism, and economic growth, while vulnerable communities may face relocation risk, livelihood disruption, and exclusion from upgraded coastal spaces. Procedural justice is weak because participation is often framed as consultation or socialization rather than real community influence. Recognitional justice is partly fulfilled because the policy recognizes flood vulnerability and land subsidence, but gives less attention to poverty, housing insecurity, land tenure, fishing livelihoods, gendered vulnerability, and local knowledge. This thesis argues that NCICD needs to move from technical adaptation toward just adaptation.

Keywords: *NCICD Policy, North Jakarta, Coastal adaptation, Urban governance, Climate Justice, Social Justice.*

ACKNOWLEDGEMENTS

First and foremost, I would like to express my deepest gratitude to God Almighty for His blessings, guidance and strength throughout the process of completing this thesis, entitled " Climate Justice and Coastal Adaptation: An Evaluation of Equity and Vulnerability in the NCICD Policy for North Jakarta". This thesis is submitted as one of the requirements for obtaining a Master's degree in Public Policy Focusing on Climate Change, Faculty of Social Sciences, Universitas Islam International Indonesia.

In conducting this research and preparing this thesis, I have received numerous inputs, assistance, and guidance from various parties, which have been extremely useful and beneficial both directly and indirectly. Therefore, on this good occasion, I would like to wholeheartedly express my deepest and most sincere gratitude to:

1. Philips J. Vermonte Ph.D., as the Dean of the faculty of Social Science, for granting permission and providing valuable suggestions for the research.

2. Sonny Mumbunan, Ph.D., Head of the MPP specializing on Climate Change Program, for his guidance and instructions throughout the research and the completion of this thesis.

3. Muhammad Al Atiqi, Ph.D. as my first advisor, for his guidance, constructive feedback, patience and continuous support throughout the research and the completion of this thesis.

4. Priza Marendraputra, Ph.D., as my second advisor, for his guidance, feedback and encouragement throughout the research and the completion of this thesis.

5. Testriono, Ph.D as the first examiner, for his valuable comments, guidance and sugggestions that contributed to the improvement of this thesis,

6. The Head and staff of Faculty of Social science, for their support and assistance throughout the authors’s academic journey in UIII.

7. Parents, siblings and friends for the prayers, guidance and love that have always been given all this time. The author hopes that this thesis will contribute to the advancement of scientific knowledge.

8. Ratsimandresy Yeriel Fiandrianana, M.Mat., for his patience, care, and unwavering support throughout this journey, and for always being whenever the author needed encouragement and assistance.

TABLE OF CONTENTS

TITLE PAGE i
STATEMENT OF AUTHENTICITY ii
ANTI-PLAGIARISM STATEMENT iii
THESIS ATTESTATION iv
THESIS DEFENSE APPROVAL v
ABSTRACT vi
ACKNOWLEDGEMENTS vii
TABLE OF CONTENTS viii
LIST OF TABLES x
LIST OF FIGURES xi
ABBREVIATION DIRECTORY xii
CHAPTER I 1
INTRODUCTION 1
1.1. Research Background 1
1.2. Research Urgency: Gaps in Climate Justice and Equity Analysis 3
1.3. Novelty and Research Contribution 4
1.4. Main Research Question and Objectives 5

CHAPTER II 7
LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK 7
2.1. Climate Justice Theory 7
2.2. Coastal Adaptation and Urban Flood Governance 9
2.3. Social Vulnerability, Equity, and Coastal Communities 10
2.4. NCICD Policy Debates 11
2.5. Conceptual Framework 12

CHAPTER III 14
METHOD 14
3.1. Research Design 14
3.2. Case Study Selection 15
3.3. Data Sources 17
3.4. Data Collection 18
3.5. Analytical Framework and Data Analysis Method 19

CHAPTER IV 22

DISCUSSION AND ANALYSIS 22
Table 4.1. Assessment Criteria for Evaluating Climate Justice Principles 22
4.1. Distributional Justice: Distribution of Adaptation Benefits and Burdens.. ..... .23
4.2. Procedural Justice: Consultation Mechanisms and Participation Limitations 27
4.3. Recognitional Justice: Recognition of Vulnerable Communities and Livelihood Impacts 31

CHAPTER V 35
CONCLUSION AND POLICY RECOMMENDATIONS 35
5.1. Conclusion 35
5.2. Policy Recommendations 36
5.3. Research Limitations and Future Research 38

REFERENCES 39

LIST OF TABLES

Table 2.1. Analytical Framework for Assessing Climate Adaptation Justice 12
Table 4.1. Assessment Criteria for Evaluating Climate Justice Principles 22
Table 4.2. Assessment of Distributional Justice..... 23
Table 4.3. Assessment of Procedural Justice..... 27
Table 4.4. Assessment of Recognitional Justice..... 31

LIST OF FIGURES

Figure 3.1. Intergovernment Program Components 15
Figure 3.2. Evidence of Muara Baru and Muara Angke Location Vulnerability .. 16
Figure 3.3. Conceptual Framework for Assessing Climate Justice in NCICD Adaptation 21

ABBREVIATION DIRECTORY

NCICD	:*The National Capital Integrated Coastal Development*
IPCC	:*Intergovernmental Panel on Climate Change*
RAN-API	:*Rencana Aksi Nasional Adaptasi Perubahan Iklim or National Action Plan-climate Change Adaptation*
ADB	:*Adaptation development Bank*
Bappenas	:*Badan Perencanaan Pembangunan Nasional*
PUPR	:*Pekerjaan Umum dan Perumahan Rakyat (Ministry of Public Works)*
UNRISD	:*United Nations Research Institute for Social development.*
NGO	:*Non-Governmental Organizations*
WALHI	:*Wahana Lingkungan Hidup Indonesia*
CSOs	:*Civil Society Organizations*

CHAPTER I

INTRODUCTION

1.1. Research Background

The urban flood in Jakarta is currently a crisis that is more untypical and complex than ever, as it is a blend of climate change, land subsidence and rapid urbanisation. The city is among some of the highest-flood risk areas in the world, because the tidal flooding along with river flooding, and sea level rise threaten millions of people living in the city, of which a significant number live in low lying coastal regions in Muara Angke and Muara Baru (Garschagen et al., 2018). These environmental threats have repercussions that are not only visible in the destruction of the physical fabric of coastal communities, but also in the damage to livelihoods, rising vulnerability of these communities and increasing socio-economic hardship. Such impacts are disproportionately felt by marginalised groups along the coast who have contributed little to climate change but have suffered its worst effects (Tagtachian and Balk, 2020). Although there are extensive studies on the vulnerability of flood exposure in Jakarta and the effectiveness of adaptation infrastructure (e.g. Giant Sea Wall), there is a critical need for knowing how adaptation policies have tackled the vulnerabilities of coastal communities in a different manner. Most studies done to date have addressed engineering and hydrological issues rather than the social, political, and economic issues that influence social experienc and response to increasing climate risks (Wannewitz and Garschagen, 2021).

The National Capital Integrated Coastal Development (NCICD)-this acronym will be used throughout the document-is an indicator of the most ambitious investment approach that Indonesia has made to tackle coastal threats, involving both the deployment of hard infrastructure and development approaches. There, however, has been much criticism over the policy's social equity, community inclusion approach (Balqis and Trisnaningtyas., 2024). The NCICD focuses very much on large-scale infrastructure - dykes, great sea wall, sea reclamation etc. - but not so much on understanding or influencing the particular vulnerabilities of the

populations most directly impacted by these actions, or on particular aspects of the populations' legal situation (Garschagen *et al.,* 2018). Despite its apparent technical nature, this infrastructure-dominant framing carries hidden assumptions around what and who is or isn't going to be protected, what counts in terms of knowledge, and what is and is not acceptable in terms of the adaptation pathway that can be implemented—all remarkably political and distributive questions. Communities in coastal north Jakarta are in a very vulnerable position, especially in Muara Angke and Muara Baru; these communities are characterized by poly-exposure to various climate hazards and governance failures, small land ownership, and informal settlements (Surtiari, 2025). What people actually do here and how they experience it may indicate other forms of adaptation that conflict with messages of silent victimization—here people have elaborated coping mechanisms, social networks and local knowledge systems (Prana et. al., 2024; Bhanye, 2025). Yet this 'bottom-up' response is often overlooked in dominant policy discourses and is not considered in formal adaptation planning processes.

More generally, the situation with regard to knowledge about climate adaptation shows a great imbalance. Although significant work has already been done documenting the impacts of shifts in climate, the associated vulnerabilities, and technical solutions on urban coastal systems globally, there is limited empirical research to capture how adaptation policies translate into notions of justice, especially the interconnections among notions of 'distributive', 'procedural', and 'recognitional' justice (Okamoto and Doyon, 2024). In general, research to date on North American cities' plans for climate adaptation indicates that the concepts of recognitional and distributive justice are more prominently featured than procedural justice, and that most of the climate adaptation plans include little incorporation of the goal of achieving a just outcome in terms of meaningful considerations for the plan's implementation (Raub et. al., 2023). The funding, institutional fragmentation and competing development priorities of the Global South can often make it hard to implement adaptation policies, and doing so can end up undermining rather than improving historical imbalances (UNCTAD, 2025). Even in the international policy discourse, the idea of justice is becoming more prevalent when it comes to climate

(coastal) adaptation planning, but it is not consistently applied to the design and implementation of adaptation plans in practice (Okamoto and Doyon, 2024).

1.2. Research Urgency: Gaps in Climate Justice and Equity Analysis

Whilst coastal cities need to adapt to climate change, interventions on climate change adaptation often do not lead to a decrease in the vulnerability but lead to unintended inequalities through processes of exclusion, misallocation of resources, as well as displacement of populations (UNCTAD, 2025). Problems in achieving maladaptive outcomes such as shallow understanding of the local context, inequitable stakeholder participation, retro fitting into existing development planning processes and lack of critical engagement around the concept of "adaptation success" have been documented across a range of geographic and sectoral settings. However, the continued failures indicate there are still a need for technical enhancements, or small modifications in planning procedures. But what is needed is a paradigm shift in adaptation policy, so that to integrate explicit focus on equity and justice in adaptation policy. Several sesearch conducted in coastal environments reveals that adaptive responses that are rooted in dimensions of recognitional justice, procedural justice and distributional justice are more resilient, community-led and context-sensitive to the coast (Okamoto and Doyon, 2024). Those adaptation programs that marginalize the role of vulnerable groups have forgotten about the assemblage of historical inequities that makes communities vulnerable now and will have reduced political acceptability, legitimacy, and implementation, as well as impacts on exposure and vulnerability at the community level.

Climate justice addresses this void by moving the climate adaptation debate from the technical or managerial to a more fundamental focus on climate justice, rights and the responsibilities of structural inequalities (Diezmartínez and Gianotti, 2022; Perkiss, 2024). The three key aspects of climate justice relate to distributive justice (adaptation benefit and adaptation burden), procedural justice (participation in adaptation decision making and meaningfulness of participation) and recognitional justice (acknowledgement and value of the particular vulnerabilities, knowledge and agency of disadvantaged groups in climate change adaptation processes) (Raub et. al., 2021). Such frameworks have been used to examine

adaptation measures implemented in a range of settings but implementation in the Indonesian coastal policy has not been as prevalent. Moreover, much of the scholarship in climate justice is still rooted in North American and European contexts, thus, limiting the extent to which lessons learnt from the Global South, where adaptation pressures are generally greater and means to meet them are more limited theoretically and practically in various aspects of adaptation (Okamoto and Doyon, 2024).

Literatures also indicate that “climate justice” is becoming more relevant in the context of adaptation planning. Furthermore, coastal adaptation needs to be more than infrastructure. It needs intergovernmental equity, involvement, recognition and coordination. But there is still a need to analyze NCICD as part of a combined climate justice framework. Much of the literature on NCICD deals with the aspects of flood control, engineering, land subsidence, sea walls and reclamation. These matters are of significance, but do not comprehensively capture the policy impact on vulnerable coastal communities. There is a limited number of studies that link together distributive justice and procedural justice with recognition justice to examine the extent in which NCICD facilitates justice adaptations.

1.3. Novelty and Research Contribution

This thesis attempts to bridge the gaps by adopting a critical policy analysis using a specific 'climate justice' lens to evaluate the NCICD as both coastal adaptation policy and as a climate justice issue, and to understand the extent to which it promotes distributive, procedural and recognitional justice for North Jakarta's vulnerable coastal communities. The research is focused from 2021 to 2025 on strategic reasons of analysis. Plus, the COVID-19 pandemic has transformed the governance agenda, processes for engaging the public in decision-making, and socio-economic vulnerabilities around the world, essentially marking a turning point to consider to assess adaptation policy equity (World Bank, 2022). The pandemic brought and compounded the inequities already faced by communities in coastal regions in terms of access to resources, decision-making, and differential vulnerability (Mehta et. al., 2022). The post-pandemic era (from late 2020 to date) is therefore a good time to look at the changes in adaptation policies that occurred over the past year, beyond just addressing the climate effect,

but also the social vulnerabilities that became evident during the pandemic. Both in coastal North Jakarta in particular, and in the city of Jakarta as a whole, it is a good opportunity to pose questions about whether or not the roaring chants for constructing NCICD infrastructure projects are accompanied by questions of justice; whether they are likely to result in historical patterns of marginalization among the coastal populations.

The research has novel features in three interrelated ways. First, it brings to Southeast Asian coastal adaptation policy (NCICD) still little studied from a justice perspective, dimensions of scale and impact on millions of inhabitants, the integrated approach of the climate justice literature, which are predominantly interested in distributive, procedural and recognitional aspects of justice. Second, it applies this analysis to the local lived experiences and politics of two adjoining coastal communities (Muara Angke and Muara Baru) rather than attempting to capture the complex mosaic of North Jakarta's coast as an undifferentiated entity, and uncovers how dimensions of justice exist at the community scale where people are truly doing adaptation and governance. Third, this study focuses explicitly on the previously mentioned period to help explore the scope of the policy's approach to adaptation in a period of high socio-economic vulnerability, as well as how governance, participation and resource allocation evolved in light of pandemic-induced inequalities. This temporal perspective also enables an assessment of whether the short-term interventions, like the crisis response interventions, created more equity in the long-term adaptation processes or further enabled the maintenance of power norms and resource gaps.

1.4. Main Research Question and Objectives

The overall research question is: *How is Distributive, Procedural and Recognitional Justice addressed from the perspective of vulnerable coastal communities in North Jakarta in the context of NCICD policy between 2021-2025?* The following three research objectives are used to operationalise this question. First, to assess the distribution of the benefits and burdens of adaptation under NCICD, examining whether adaptation benefits and protective infrastructure investments are distributed equally, and also assess whether vulnerable communities bear disproportionate burdens through displacement or livelihood

disruption, and also analyze whether existing inequalities are reproduced and reduced. Second, to explore whether coastal communities are involved and recognized in NCICD planning and decision-making moving beyond rhetoric of "participation" and whether they are able to have a real say in designing NCICD strategies that impact on their lives, especially those of the people of Muara Angke and Muara Baru. Third, to see if the design of NCICD policy properly considers the vulnerabilities, livelihoods, legal statuses, and knowledge systems of disadvantaged coastal communities, or if NCICD policy design implicitly prioritizes the perspectives and interests of some over others.

The overall objectives were achieved by carrying out the analysis of policy documents and thematic analysis based on the structured literature review method. The articulation of these commitments, whether explicit or implicit, in NCICD policy documents, implementation reports, governance documents and related planning instruments are examined. Local policy stories are then explored on how these commitments have been implemented or not; whether they are implemented as written and if not, then what are the gaps or inconsistencies? The research provides empirically informed knowledge that draws on the practices and lived realities of communities who interact with and/are impacted by NCICD in the context of coastal adaptation governance.

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The literature review will be done to support the conceptual framework of this thesis. The ultimate goal is to grasp the possibility of climate justice as a tool for analysing the National Capital Integrated Coastal Development policy (NCICD) in North Jakarta. The chapter highlights four interrelated concepts: climate justice, coastal adaptation, vulnerability and equity, and debates on the NCICD, as they are relevant for the fact that NCICD is not just an infrastructure project. It is also a policy which impacts people, land, livelihoods, participation and access to protection.

This thesis uses a structured literature review meaning that literature is selected and organized through clear and particular themes and key words rather than through an arbitrary selection process. The aim is not to summarize all studies on climate justice, but to develop a solid conceptual basis for analysing a policy. This was selected to guarantee conceptual rigor, transparency and theoretical validity. The literature reviewed has been organised into four themes: climate justice theory, coastal adaptation and urban flood governance, social vulnerability in coastal adaptation and NCICD policy debates.

2.1.Climate Justice Theory

As explained by Diezmartínez and Gianotti (2022) and Perkiss (2024), climate justice starts from the idea that climate change is not only an environmental problem. It is also a social and political problem. Not everyone is impacted equally by climate risks. There are communities that have contributed little to climate change but have been more impacted due to weaker housing, insecure land rights, or less political voice, or fewer resources. Throughout this document, the Intergovernmental Panel on Climate Change (IPCC) will be referred to by this abbreviation, and will explain that both physical hazards and social vulnerability contribute to climate impacts, and that marginalized communities and systems tend to be more vulnerable to climate impacts.

Justice is essential in climate adaptation because adaptation policies have differential impacts on different groups, some can get protected from it while creating new burdens for others. For instance, a sea wall will decrease the risk from

flooding to business areas, but it will also lead to relocation, livelihood loss or loss of coastal access for poor communities. The judgment of adaptation should not be limited to whether it decreases the physical risk, however. It also has to be evaluated in terms of its equitable risk reduction.

The latter literatures, along with some others that talks about climate justice, commonly explain climate justice through three main dimensions: distributive justice, procedural justice, and recognition justice. These three dimensions are particularly useful in this study because they help transform a broad moral idea into a practical policy analysis framework.

Distributive justice is asking the question: who gets what? In terms of adapting to coastal change, it is important to ask: who gets the flood protection, whose land is protected, who gets the compensation, who gets the relocation, who gets the impact on their livelihood? This is significant to NCICD because this project will provide protection from coastal flooding, however, the benefits of this project may not be equally distributed. If strategic economic areas and future development areas are better protected than bad coastal settlements, then the policy brings a distributive justice concern.

Procedural justice is based on the process of making decisions. It questions if affected communities are part of planning, if information is available, and if participation is meaningful? Inviting people to meetings is not the only kind of participation. It also implies that citizens can influence the decisions that could impact their lives, which is another key aspect for NCICD as large infrastructure projects are typically developed by government agencies, engineers, consultants and investors. The policy design process is weak from a justice perspective when fishers and informal settlers and low-income coastal communities are only included as recipients of policy.

Recognition justice is what is being asked when a vulnerable group is not being recognised. It considers whether policies take account of the identity, needs, rights, knowledge and livelihoods of communities that are marginalised, since many people living along the coast are engaged in informal livelihoods and may reside in settlements that are less than securely legally established. Their vulnerability is not fully realised if they are seen in policy documents primarily as

illegal settlers or as barriers to development. This thesis looks into the extent to which NCICD understands the coastal communities as legitimate residents who have knowledge, history and rights.

These three dimensions can be summarized as the primary structure and framework of this thesis. They enable the study to begin with a broad question of "Is NCICD fair?" to more specific questions of "who benefits?" Who participates? Who is recognized?

2.2.Coastal Adaptation and Urban Flood Governance

Coastal adaptation includes the policies and actions that minimize the risks of sea-level rise, tidal flooding, storm surge, land subsidence and extreme rainfall. Adaptation for coastal cities may include sea wall, drainage, polders, pumps, zoning, early-warning systems, relocation, and ecosystem-based approaches. These are crucial measures, and adaptation is not solely about technical options. Planning at the social level and coordination of the institutions and community participation are also necessary.

Adaptation can turn into maladaptation if it introduces new risks or raises the vulnerability of specific groups, as the IPCC warns. This is significant for coastal infrastructure, as big projects can shield valuable land and generate ecological costs, displacement or long-term social costs. This is the central idea explored in this thesis. NCICD might mitigate flood risk but the question is how? – is it socially just?

The city of Jakarta is indeed a very significant case study into coastal adaptation. The city is vulnerable to compound flooding caused by sea-level rise, land subsidence, river flooding, extreme rain and drainage issues. The World Bank Urgent Flood Mitigation Project in Jakarta offers a glimpse that the flood issue in Jakarta has required a considerable intervention on drainage, dredging and flood infrastructure. However, it is not only about water in the governance of flooding in Jakarta. It's also a matter of land, homes, planning and power.

The management of urban flooding in Jakarta is complex as there are numerous actors, including ministries, the Jakarta provincial government, local agencies, international institutions, consultants, private developers and the local population. This entails problems of co-ordinating. There may be different priorities

amongst the actors. There are some that focus on flood safety. Others are targeted at economic development, reclamation of land, urbanisation or investments. Therefore, multi-level governance and the high degree of integration between the infrastructure governance and social governance in coastal adaptation is required. Hence, NCICD is a more than an engineering project. It is a governance project which determines the allocation of resources, risk and responsibility throughout the city.

2.3.Social Vulnerability, Equity, and Coastal Communities

Social vulnerability explains why some groups are more exposed and affected to impacts from climate risks than others. Vulnerability ia not only about being near a river or sea and in flood-prone areas. Poverty, poor quality housing, lack of access to clean water and sanitation, legal status, livelihood security, health and political voice are also impacts. Households who have a stable income, and formal land rights with access to public services have a better chance of recovering from flooding. A poor household in an informal settlement may experience the same flood as a long-term crisis.

This is highly related to the coastal communities of North Jakarta in coastal areas such as Muara Angke, Muara Baru, Penjaringan and other coastal areas of the city are vulnerable in multiple layers. According to (Tagtachian and Balk 2020), they are more susceptible to the effects of flooding, tidal inundations, but can also benefit from activities along the coast such as fishing, fish processing, port activities and the operation of small business trading activities. Where coastal adaptation measures limit access to the sea, or force people to move away from livelihood sources, the policy can decrease physical vulnerability but increase economic vulnerability.

Equity is thus a key issue in adaptation. Equity is more than treating everyone the same. It involves reacting to varying degrees of need and vulnerability. Communities that are more exposed and less resourced may require greater protection, greater compensation and greater community involvement. If there is a lack of equity, the city could be better equipped to adapt, but at the cost of the city's most vulnerable people.

The relationship between vulnerability and equity is crucial for the conceptual framework. The normative lens is given by climate justice. Vulnerability is the reason some communities must be addressed in a special way. Equity is one way of measuring policy responses fairness. These concepts combined can help to explore if NCICD promotes an inclusive resilience or continues an inequality.

2.4. NCICD Policy Debates

The development of NCICD has been created as a large project of protecting coastal Jakarta. It responds to flooding, land subsidence and sea level rise via sea walls, polders, drainage and land reclamation. NCICD is frequently described in official policy discourse as a solution with a long duration of protection to Jakarta from flooding in the coastal region. Climate adaptation is important for this objective as North Jakarta is undeniably vulnerable to coastal risk.

There was also evidence in the literature and in the civil society that NCICD was controversial. The report *Social Justice at Bay* (Bakker *et. al.,* 2017) argues that NCICD and related projects to reclaim the Jakarta bays are linked to land reclamation and urbanization, and not solely protection from floods. The report also indicates that such projects can have adverse environmental impacts and negatively affect the livelihoods of numerous individuals relying on the area's fishing economy. This is directly relevant to distributive justice as it poses the question who benefits and who is disadvantaged by coastal development.

NCICD also highlights issues related to procedural justice. The planning of large coastal infrastructure projects is usually carried out using expert-led design. Use of technical expertise is required, but can be challenging if affected communities are less influential. When communities are consulted at the end of the process, participation becomes symbolic rather than meaningful.

The concept of recognition justice is also crucial to consider in the NCICD debate. The coastal communities in North Jakarta are not only the at-risk populations. They are also neighborhoods that have livelihoods, knowledge, networks, and past experiences of coping with water. Problems with forced evictions have long been a problem in Jakarta, including inadequate protection for poor residents and the social effects associated with the development and public order policies, according to Human Rights Watch (2006). This report covers period

prior to this study period, but it remains relevant since it demonstrates that eviction, insecure tenure are structural issues in urban governance in Jakarta. This context is important when analysing NCICD as coastal adaptation may not be the same as existing patterns of exclusion.

So, the main debate is not whether or not there is a need for flood protection in Jakarta. Clearly there is a need to adapt to Jakarta. The actual question is about the specific type of adaptation being encouraged, who is involved in defining its elements and what are the impacts on the most vulnerable communities.

2.5.Conceptual Framework

Based on the literature review, this thesis uses climate justice as the main conceptual framework for analyzing NCICD. The framework relates climate risk, social vulnerability, adaptation policy and justice outcome.

The rationale behind the framework is as follows. Sea level rise, land subsidence, and urban development are the conditions in North Jakarta that cause coastal flooding. These risks have different impacts on communities, which are influenced by poverty, informal housing, dependency on livelihoods and inequity of access to services. Introducing NCICD as an adaptation policy to reduce this risk. Adaptation, however, is not necessarily just. It must be evaluated by means of benefits, burdens, and participation and recognition.

Table 2.1. Analytical Framework for Assessing Climate Adaptation Justice

Justice Dimension	**Main Question**	**Indicators for Analysis**
Distributive justice	Who benefits and who bears the burden?	Flood protection, relocation, compensation, livelihood loss, infrastructure priority
Procedural justice	Who participates in decision-making?	Consultation, transparency, access to information, community influence
Recognition justice	Whose needs and identities are acknowledged?	Informal settlers, fishers, low-income households, local knowledge, social vulnerability

This framework will be used in the findings chapter to conduct a comparison of the policy intention and as it is reflected in policy implementation evidence in the

writing. The communication of the goals, priorities and implementation logic of NCICDs in policy documents. Adding the involvement of academic and Non-Governmental Organizations (NGO) and institutional support will be beneficial in breaking down the question of whether or not that meets the lived vulnerability of coastal communities. This thesis not only is about NCICD, but it also focuses on the extent to which the NCICD is a response to accommodation. In this way, this thesis does not only describe NCICD.

CHAPTER III

METHOD

3.1.Research Design

The research design in this study is qualitative; it is used to explore the climate justice issue from the perspective of coastal adaptation policy. In this research, the study will be based on the National Capital Integrated Coastal Development policy (NCICD), as a case study of adaptation plans at a large scale for the coastal area of North Jakarta. The study relies on qualitative policy document analysis to gain insight into how dimensions of justice are portrayed in official policy documents, planning documents, institutional reports and supporting sources in the civil society documents.

The methodology is also case-study based as the study is a geographic study of NCICD—it is a specific policy case, occurring within a specific social and environmental context. Case study approach enables the research to look into depth the policy, particularly vulnerable coastal communities in the area of Muara Angke and Muara Baru. These zones were believed to be important because they are likely to be inundated by seawater during a coastal inundation and have high connectivity with fishing livelihoods and informal settlements/ coastal economic activities.

The study does not include interviews/surveys. Secondary data, particularly policy documents and reports are used for the analysis. This makes the study suitable for document-based policy analysis. The strength of this approach is that it allows a systematic examination of how justice is written, prioritized, or ignored in policy documents. The limitation is that the study cannot fully capture direct lived experiences from residents without fieldwork.

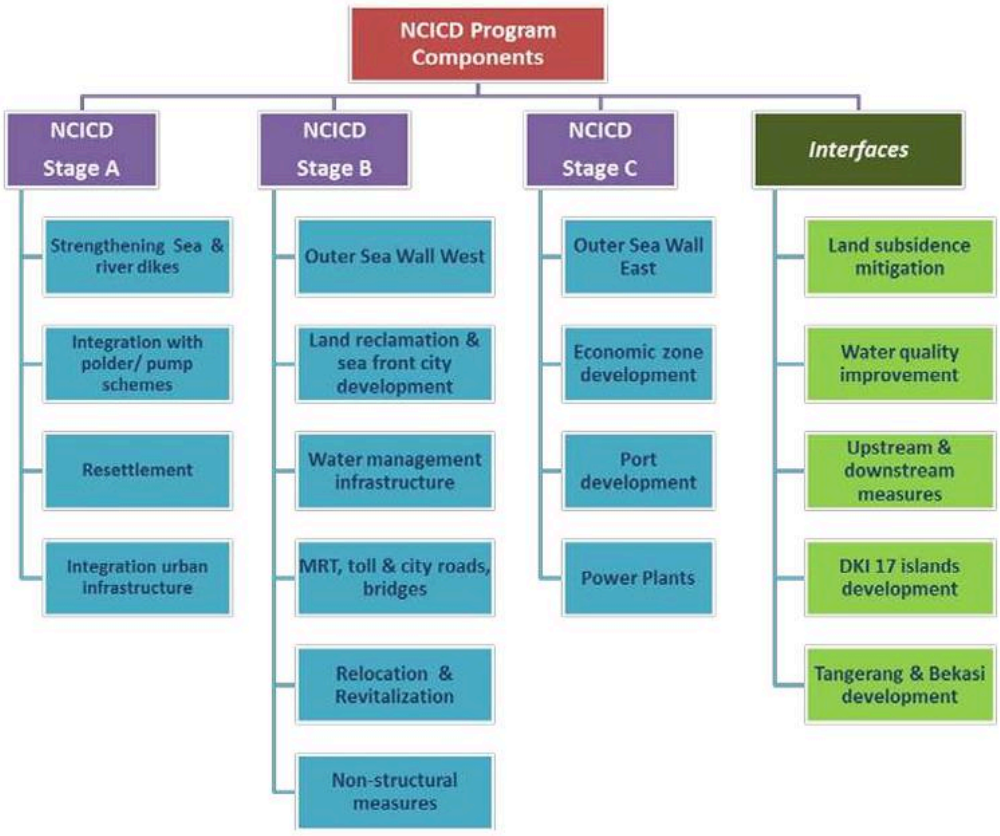


Figure 3.1. Intergovernment Program Components

3.2.Case Study Selection

The choice of North Jakarta for the study area was due to it being one of the most vulnerable coastal areas of Jakarta. Not only is it the victim of tidal flooding but is also under land subsidence, sea-level rise, river flooding, poor drainage, and high population density risks as well. All groups do not have the same risks. It is more dangerous for coastal communities and particularly for fishers, informal dwellers and the poor, who might have limited access to stable housing, public services, and political participation and often rely on a sea-dependent livelihood.

The choice of the NCICD policy is made considering that this policy is one of the most significant coastal adaptation policies in Indonesia. It seeks to minimize the risk of flooding by implementing large scale infrastructure like sea walls, embankments, polder, pump, drainage infrastructure and integrated flood safety planning. Therefore, the policy is a versatile case for study of adaptation to the

climate. NCICD is also much more significant as it is not only an engineering project, however. The issues covered include urban redevelopment, spatial planning, land use near the coast, relocation, fisheries and maritime transport, tourism and participation of the private sector.

Muara Angke and Muara Baru are identified as key vulnerable places to North Jakarta case, particularly in relation to Sea Level Rise and Land Subsidence as clearly seen on the figure below. These regions are well linked with fishing operations, port operations, fish markets, settlements on the coast and low-income communities. They are also highly pertinent given that policies on improving coastal adaptation and redevelopment could impact on the access to housing, fishing grounds/lots, market space, and livelihood infrastructure. These locations therefore offer a crucial vantage point to explore the extent to which NCICD can be understood as advancing justice, not just flood protection, but also social protection. Data indicates that vulnerable communities were put under economic pressures, socio-economic vulnerabilities, and social risk from 2020. By analyzing NCICD documents during the timeframe 2021-2025, the research captures a recent period of adaptation planning, enabling it to analyze the extent to which these social vulnerabilities are being taken into consideration in recent adaptation planning or whether the focus has solely been on building physical infrastructure.



FIGURE 1: JAKARTA BAY
SOURCE: DHI WATER & ENVIRONMENT, 2011. THE GREEN AREA INDICATES THE PROTECTED FOREST AND THE RED THE WILDLIFE RESERVE OF MUARA ANGKE

	LOADING EFFECT AND SETTING	TECTONIC EFFECT	UNKNOWN EFFECT	OVERDRAFT OF GROUND WATER EFFECT
Muara Baru total subsidence 15,0 cm./year	2.5 cm. (16%)	0.0 cm. (0%)	2.5 cm. (16%)	10.0 cm. (68%)
Cengkareng Barat total subsidence 8,7 cm./year	2.0 cm. (23%)	0.0 cm. (0%)	2.0 cm. (23%)	4.7 cm. (54%)
Ancol total subsidence 5,4 cm./year	2.0 cm. (37%)	0.0 cm. (0%)	1.5 cm. (27%)	1.9 cm. (36%)
Jakarta Pusat total subsidence 2,9 cm./year	1.0 cm. (34%)	0.0 cm. (0%)	0.5 cm. (17%)	1.4 cm. (49%)
Kelapa Gading total subsidence 5,9 cm./year	1.5 cm. (25%)	0.0 cm. (0%)	1.0 cm. (17%)	3.4 cm. (58%)
Cibubur total subsidence 1,8 cm./year	1.0 cm. (55%)	0.0 cm. (0%)	0.5 cm. (27%)	0.3 cm. (18%)

TABLE 2: % OF FACTORS CAUSING SUBSIDENCE IN THE JAKARTA AREA*
* AVERAGE EFFECT FROM GROUNDWATER = 47.16%. SOURCE: ANDREAS, 2013 (CITED IN ANDREAS ET AL., 2015, SEE FOOTNOTE 51)

Figure 3.2. Evidence of Muara Baru and Muara Angke Location Vulnerability

3.3.Data Sources

The data used for this study are secondary data. The main data used are the policy, planning documents, government regulations, institutional reports, academic research and civil society reports relating to NCICD, coastal adaptation, flood governance and vulnerable coastal communities in Jakarta.

The data sources are grouped into four categories.

First, the study is based on key NCICD policy and planning documents. These include the NCICD Master Plan, the Ministry of Public Works or Pekerjaan Umum dan Perumahan Rakyat (PUPR) regulations, and document related to the planning and design of the coastal protection in Jakarta Bay. These documents are significant as they reflect the official policy thinking of NCICD.

Second, government and national climate policy documents are used in this study. These include documents related to flood management and coastal development, Jakarta spatial planning documents, policy documents of Bappenas on climate resilience, and the National Action Plan-Climate Change Adaptation or Rencana Aksi Nasional Adaptasi Perubahan Iklim (RAN-API). The sources are valuable because they illustrate the ways in which the Indonesian and Jakarta state conceptualise climate adaptation, vulnerability, equity and development.

Third, institutional reports, including those from the World Bank, Asian Development Bank and United Nations Research Institute for Social development (UNRISD), are also used. These documents provide a linkage to broader concepts like urban resilience, social vulnerability, climate finance, land governance and poverty.

Fourth, the study relies on civil society and NGO reports from WAHLI and other organizations that focus on rights and/or environment. These sources are significant to the extent that they offer critical insights into the eviction, livelihood loss, lack of participation, environmental damage and social justice issues. They contribute to linking official policy language with social reality.

The overall coding process produced three coding tables that summarize the themes: Distributive, Procedural and Recognitional justice. These coding tables were then condensed into a key assessment table, which analyzes the justice dimensions in policy and supporting documents. The main result table uploaded

indicates that the majority of justice dimensions are partially met, with significant gaps in recognition of vulnerable communities as active actors, livelihood security, rights protection and participation.

3.4.Data Collection

Data collection was carried out using document search and document screening. Official government documents were found on government websites, institutional repositories, academic databases, NGO websites and publicly available reports. The search was conducted based on documents dealing with the themes of NCICD, coastal adaptation in Jakarta, flood governance, North Jakarta, Muara Angke, Muara Baru, social vulnerability, fisher communities, relocation, and climate justice.

The document search was conducted based on a set of keywords: NCICD Jakarta, National Capital Integrated Coastal Development, Jakarta coastal adaptation, Jakarta flood governance, North Jakarta flooding, Muara Angke coastal development, Muara Baru fishing communities, climate justice adaptation, Jakarta reclamation, vulnerable coastal communities, fisher livelihood Jakarta, informal settlements flood risk.

The documents were chosen according to the relevance to the research question. The documents selected had to satisfy at least one of the following criteria: contain a direct reference to NCICD; be relevant to coastal adaptation in Jakarta; include a discussion of vulnerable coastal communities; include a reference to flood protection or relocation; or evidence of participation, livelihood, housing, land tenure, or environmental impacts.

The study emphasises the timeframe between 2021 and 2025 as it is focussed on the development and implementation of new policies in the recent years. Older documents are also included when they are foundational to NCICD or otherwise help to provide an understanding of the development of the policy background. For instance, the NCICD Master Plan 2014 is included since it spells out the original structure and logic of the policy. When addressing long-term issues like eviction, reclamation, flood governance and livelihood disruption, earlier institutional/civil society reports are also referred to.

The documents selected were organized into a document database. Each document was recorded according to title, year, institution, type of document, relevance to the research question and the dimension of justice. This helped to clarify the process of data collection and to follow it.

3.5.Analytical Framework and Data Analysis Method

Analysis is anchored on the climate justice framework. This framework emphasizes three aspects: distributive justice, procedural justice, and recognitional justice.

The official documents reflect NCICD's priorities and goals. Assessment of these goals is made through supporting reports from academic, institutional and civil society sources in order to determine if these goals reflect lived vulnerability of coastal communities. The framework also facilitates determining if NCICD is limited to physical vulnerability, or if it also considers social vulnerability like poverty, insecure housing, loss of livelihood, weak land rights and limited participation.

Furthermore, this study uses thematic analysis for examining the selected documents. Thematic analysis is a qualitative approach that involves identifying, gathering and interpreting patterns of meaning in textual data. This aspect is particularly appropriate for this study, because instead of numerical data, policy texts, reports and written evidence are analyzed.

The analysis was carried out in 4 main steps.

The first step was to read carefully the documents and understand what they contained, and their relevance to this study. In this phase, attention was centered to flood protection, coastal development, community involvement, relocation, livelihood, vulnerability, informal settlements, gender, environmental effects, and governance.

Second, relevant excerpts were coded that were relevant to the research. Coding means assigning a brief code to a meaningful section of text. A sentence on protection of sea wall was, for instance, translated as “flood protection infrastructure”. A sentence related to the relocation of the fisher was translated as “livelihood disruption” or “fisher relocation”. Sentence about Consultation' was coded as ‘participation' or ‘top-down communication'.

Third, the codes were categorized according to the three justice themes: Distributive justice, Procedural justice and Recognitional justice. This is deductive as the themes of the main parts were set in the climate justice framework. Some more specific sub-themes also developed from the documents, however, including “economic redevelopment,” “technocratic planning,” “weak accountability,” “fishing livelihood loss,” and “recognition of informal settlements.”

Fourth, the coded findings were interpreted and the analysis was not conducted just to describe the content of the documents. what the documents emphasized, what they ignored, and what gaps appeared between official policy language and supporting evidence. For example, if a policy document referred to flood protection without a clear explanation of the way in which fishers would be protected from losing their source of livelihood, then this was considered to be a distributive justice gap. Indicative of procedural justice gaps was the mention of communities' role but the absence of a mechanism for communities to shape decision-making. If a document recognized slum settlements but did not treat residents as rights-bearing communities, this was interpreted as a recognitional justice gap.

Thematic analysis was therefore applied to shift from raw document excerpts to more general findings. The results were grouped into three major categories: distributive justice, procedural justice, and recognitional justice. Each section judged NCICD's compliance with the justice principles as being fulfilled, partially fulfilled or not fulfilled. The following diagram broadly and briefly shows the steps of how this study is conducted.

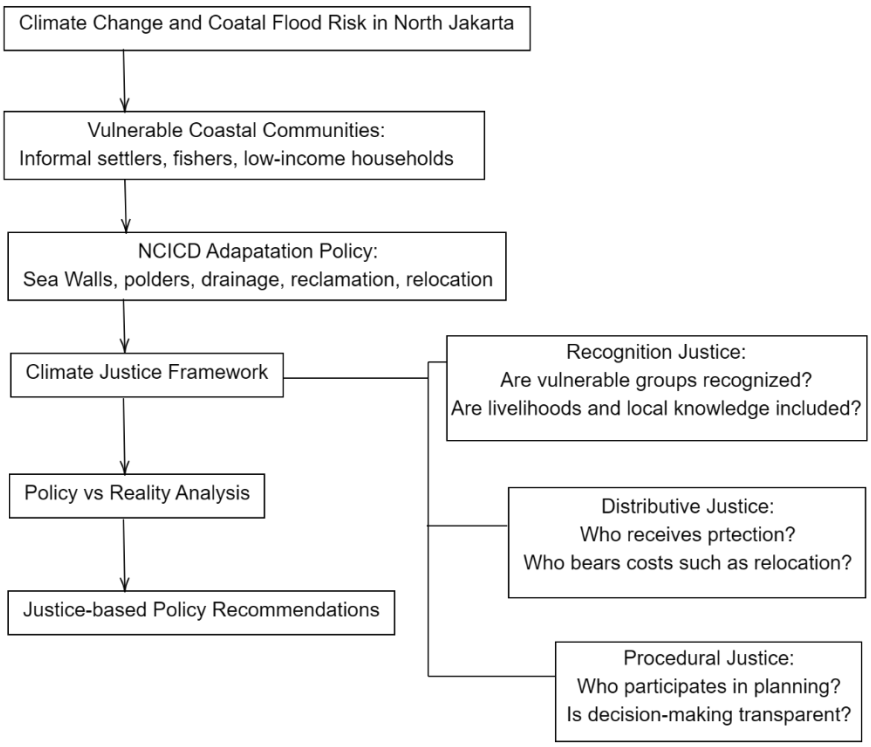


Figure 3.3. Conceptual Framework for Assessing Climate Justice in NCICD Adaptation

CHAPTER IV

DISCUSSION AND ANALYSIS

This study period coincides with the post-COVID era when undeniable new vulnerabilities worsened existing ones which is important for interpreting these findings. Coastal areas in North Jakarta, particularly in Muara Angke and Muara Baru, were already exposed to flooding, precarious livelihoods, insecure housing, and a weak political voice. Low-income households and informal workers faced difficulties keeping a stable income. This is because NCICD should be assessed as a flood protection policy not only after 2021. It should also be assessed as an adaptation policy for the recovery phase. The question is, does the policy react to that increased social vulnerability and does it address the underlying social issues, or does it remain one that just sees adaptation as an infrastructure issue?

The following describes the symbols in the next few subsections of this study. There is no numerical scoring for overall assessment, it is achieved through qualitative synthesis. There is a stronger focus on principles of justice including equitable distribution of benefits, and meaningful involvement and recognition of vulnerable groups.

Table 4.1. Assessment Criteria for Evaluating Climate Justice Principles

Assessment	**Criteria**
✓ Fulfilled	The justice principle is clearly addressed through specific objectives, implementation measures and institutional responsibility.
▲ Partially fulfilled	The principle is mentioned but lacks detailed implementation mechanisms or consistent evidence.
✕ Not fulfilled	The principle is absent, weakly addressed or contradicted by documented implementation evidence.

4.1. Distributional Justice: Distribution of Adaptation Benefits and Burdens

Table 4.2. Assessment of Distributional Justice

Principle	Evidence Summary	Assessment	Rationale
Equitable access to flood protection	NCICD and related documents strongly emphasize sea walls, embankments, polders, drainage, coastal protection, and integrated flood safety planning. These measures aim to reduce flood risk in Jakarta's coastal areas.	▲	Flood protection benefits are clearly present. However, the documents do not fully show whether vulnerable coastal communities receive protection equally compared to strategic economic zones and future development areas.
Fair distribution of adaptation benefits	Policy documents connect coastal protection with waterfront development, regional development, toll roads, public transport, tourism, and integrated urban growth. Muara Angke is also framed as an integrated coastal development area.	▲	Adaptation benefits are mixed with economic and urban development benefits. This creates concern that investors, strategic zones, and higher-income users may benefit more than poor coastal communities.
Distribution of adaptation burdens	Several excerpts show that sea wall construction, coastal development, and reclamation may create direct impacts on coastal communities, including slum areas, fishing communities, and residents near the sea wall route.	×	The social burdens of adaptation appear to fall more heavily on vulnerable coastal communities. This weakens distributive justice because those who are already vulnerable may carry the largest costs.
Protection of fishing livelihoods	The coding shows repeated evidence of fishing grounds disappearing, fish deaths, relocation of fishing communities and ports, income disruption, and changes in production systems.	×	This is one of the clearest distributive justice problems. Fishers may lose access to livelihood resources while the city receives flood protection and development benefits.
Relocation and displacement burden	Some documents mention relocating residents to safer and more appropriate places and limiting relocation caused by sea wall strengthening. However, relocation is still recognized as a possible burden.	▲	Relocation is partly addressed, but the evidence does not fully show strong guarantees for fair compensation, livelihood security, or community choice.

Compensation and social protection	Some documents mention social housing, safer relocation, income improvement, poverty prevention, pro-poor adaptation, and "no one left behind" principles.	▲	Social protection exists in policy language, but it appears weaker than the infrastructure and economic development agenda. The protection is not clearly detailed enough for affected communities.
Spatial equity	Several excerpts show that coastal development is directed toward North Jakarta through waterfront city planning, premium retail, offices, luxury housing, tourism, and transport-oriented redevelopment.	×	Spatial benefits may be concentrated in valuable coastal zones. Poor communities may face displacement or exclusion from upgraded coastal areas.
Economic equity and market access	Some documents mention access to capital, market access, modern fish markets, cold storage, fisheries port development, and commercial integration.	▲	Economic modernization may create opportunities, but not all small fishers and informal workers can access these benefits equally. Without clear inclusion mechanisms, market-oriented development may deepen inequality.
Recognition of hidden or unintended burdens	The coding includes references to unintended negative impacts, socio-ecological disruption, environmental change, eutrophication, fish deaths, and consequences for certain community groups.	▲	The documents recognize that negative impacts may happen. However, recognition alone is not enough if there are no strong mechanisms to prevent or compensate these harms.
Balance between public interest and private development	Several documents refer to private-sector participation, business cooperation, public-private financing, corporate control, premium development, and economic growth.	×	Private and commercial interests appear strongly present. This raises concern that public coastal protection may become connected to private urban development benefits.
Equity in climate finance and resource allocation	Broader reports mention climate finance, poverty prevention, inclusive transition, resource realignment, and local government finance.	▲	Climate finance and inclusive transition ideas exist, especially in national and international reports. However, the link between these principles and NCICD implementation is not very clear.
Overall distributive justice	NCICD provides important flood protection and infrastructure benefits, but the benefits are closely connected to economic development, while social costs affect fishers, informal settlers, and coastal residents.	▲	Distributive justice is partially fulfilled. The policy provides protection, but it does not fully ensure that vulnerable communities receive fair benefits or are protected from unequal burdens.

The results from the distributive justice reveal that the flood protection benefits of NCICD are evident. The policy strongly encourages sea walls, embankments, polders, drainage systems, widening of rivers, and comprehensive planning for flood safety which is significant because North Jakarta is a coastal region that is vulnerable to various risks that include tidal flooding, sea-level rise, poor drainage and land subsidence. From a technical perspective, NCICD responds to a real problem. Additionally, NCICD is defined as an integrated flood control and coastal protection program in the PUPR Decree No. 112/KPTS/M/2022 as an integrated flood control and coastal protection strategy for Jakarta Bay (Kementerian PUPR, 2022).

Distributive justice does however ask a deeper question – who is most clearly protected and who is most clearly a bearer of the social cost? Protection is

not a solely linked concept to vulnerable communities, as seen in the thematic coding. It is also tied to waterfront development, regional growth, toll roads, tourism, public transport, commercial areas and private sector investment. NCICD does not just act as climate adaptation. It is also designed as an urban redevelopment project. The Master Plan will integrate coastal protection with the development of North Jakarta as a future waterfront city, which comprises of strategic economic zones, commercial development, offices, and premium housing. This poses a justice issue, as the primary gains can be concentrated in urban infrastructure, investors and coastal areas of higher value with the greatest losses concentrated in the poorest coastal communities.

This explains why the policy is partially distributive. It serves to protect the city, but it does not clearly indicate how protection is equitable. The greatest benefit is physical flood protection and the social benefit for vulnerable groups is not as strong. Poverty prevention, safer relocation, income improvement and social housing are some of the terms used in some of the documents studied in this study. These are important but seem to be less specific than the infrastructure and development agenda. “Adaptation” is not a just action because it lowers risk, as is common in climate justice theory. It is fair when the benefit and burden of the situation is shared in a way that is protective of those who are vulnerable (Juhola *et al.,* 2022).

Fishing communities seem to be the main group that is bearing the burden. The threat to fishing grounds, the displacement of fishers and fishing ports, fish mortality, shifts in income distribution and disruption of coastal livelihoods are recurrently used in the coding since they are essential daily parameters in Muara Angke and Muara Baru as they are more than just residential areas. They also serve as living spaces. Fishers may be exposed to greater risk of flooding if they lose access to the sea, docks, or fishing grounds, but have less economic security as a result. This is in line with the concern expressed by Transnational Institute, Both ENDS, and SOMO (2017) that development in the coastal areas of Jakarta could undermine local livelihoods and be favourable to large-scale urban and commercial development. This issue along with economic insecurity becomes more important in the post-COVID period. The recovery phase from the perspective of fishers and

informal workers was not started from an equal footing. Numerous people already had irregular earnings, little savings and relied heavily on their daily job.

NCICD's understanding of vulnerability seems to be limited based on the documents. The policy acknowledges physical risk (e.g. flooding, sea-level rise, land subsidence). These threats exist but social vulnerability is less developed. Non-technical approaches to flood protection, such as poverty alleviation, housing security, informal land rights, compensation, and livelihood protection, are not as effective as technical measures. The terms equity, poverty, social resilience and vulnerable communities occur more strongly in broader documents like RAN-API, Bappenas climate resilience policy, the World Bank report and the ADB report. This demonstrates disconnect between national language of climate justice and NCICD planning (Bappenas, 2014; Bappenas, 2021; World Bank, 2023; Asian Development Bank, 2022).

The strategy adopted by NCICD has largely been focused on infrastructure. The policy is dominated by sea walls, dikes, polders, pumps, embankments and drainage. There are soft measures, which include relocation assistance, livelihood protection, compensation, and social measures but they are waeker. Ecosystem-based adaptation (e.g., mangrove restoration or nature-based coastal buffers) were also weak compared to engineering solutions. This means that while hard infrastructure can protect land and buildings, it does not necessarily protect livelihoods, social networks or access to coastal resources by the community. From these results, the protection against flooding is considered primarily as an engineering problem. However, climate justice theory argues that adaptation should also prioritize addressing social vulnerability so infrastructure alone is not sufficient for equitable outcomes of adaptation.

4.2. Procedural Justice: Consultation Mechanisms and Participation Limitations

Table 4.3. Assessment of Procedural Justice

Principle	Evidence Summary	Assessment	Rationale
Inclusiveness and participation	Participation is mentioned in some documents, including "community participation" and "stakeholder involvement." However, in NCICD-specific documents, participation often appears as general language rather than a clear mechanism for affected communities to shape decisions.	▲	Inclusion is present in policy language, but it is not strongly operationalized. Coastal communities are not clearly shown as equal actors in planning.
Meaningful community influence	Several sources show that communities are often positioned as recipients of information. Terms such as socialization, convincing people, and creating one perspective suggest top-down communication more than shared decision-making.	×	Procedural justice requires communities to influence decisions. The evidence suggests limited community power over project design and implementation.
Transparency and access to information	Some documents discuss governance, institutional arrangements, and coordination, but civil society and academic sources point to limited public engagement, legal uncertainty, and weak information access.	×	Transparency is weak because affected people do not appear to have clear access to decision-making processes, planning choices, or accountability mechanisms.
Representation of vulnerable groups	Broader climate policies mention communities, CSOs, gender, and local actors. However, NCICD-specific documents provide limited evidence that fishers, informal settlers, women fishers, and low-income residents are represented in decision-making.	×	Vulnerable groups are discussed more as affected populations than as decision-making actors. This weakens procedural justice.
Multi-level institutional coordination	Many documents emphasize coordination between national and local government, ministries, sectors, and institutions. RAN-API and climate resilience policies also promote policy synchronization and multi-level governance.	▲	Institutional coordination is relatively strong. However, coordination mostly happens between formal institutions, not necessarily with affected communities.

Technocratic planning and expert dominance	NCICD is strongly framed through concepts, pre-design, sea walls, polders, pumps, drainage, spatial planning, technical guidelines, and construction standards.	×	Technical planning is necessary, but it dominates the process. Social participation becomes secondary when adaptation is mainly treated as an engineering issue.
Private-sector and international actor influence	The coding shows private-sector cooperation, international partnerships, Dutch and Korean consultants, climate finance, and public-private arrangements.	▲	Powerful actors are clearly included. However, this may create an imbalance if private and international actors have more influence than coastal communities.
Accountability and rights protection	Some sources call for accountable governance and stronger legal protection. Civil society reports also highlight legal insecurity, weak rights-based governance, and lack of consultation.	×	Accountability remains weak because affected communities have limited power to challenge decisions or claim procedural rights.
Participation in relocation and resettlement decisions	Some sources mention relocation, but the evidence does not clearly show that affected communities have strong influence over relocation planning. Some sources also show dissatisfaction with relocation options.	×	Procedural justice is weak when relocation decisions are made without meaningful participation from the people most affected.
Policy coherence between national climate policy and NCICD practice	National climate policies such as RAN-API and climate resilience policy use stronger language on inclusive adaptation, gender sensitivity, CSO involvement, and local participation. NCICD documents are more technical and institutional.	▲	There is a gap between national participatory principles and NCICD-specific implementation. Inclusive governance exists as a principle, but is weaker in practice.
Civil society contestation and public resistance	NGO and academic sources show opposition, public resistance, concerns about reclamation, fisher exclusion, power imbalance, and conflicts between development and human rights.	×	Civil society evidence suggests that official participation is not enough. Resistance appears because communities and NGOs feel excluded from fair decision-making.
Overall procedural justice	NCICD shows strong institutional coordination, expert planning, and formal governance structures. However, affected coastal communities have limited visible influence in planning, relocation, and implementation.	▲	Procedural justice is partially fulfilled at the institutional level, but weak at the community level. The main gap is between formal coordination and meaningful participation.

Findings from the procedural justice assessment indicate a high level of formal-governance and low level of community influence in NCICD. The planning process includes clearly government institutions, technical experts, international partners, private actors and consultants. The documents address institutional arrangements, financing programmes, spatial planning, technical design and implementation structures. This indicates the organization of NCICD from both the state and technical aspects.

Having institutions is not enough to guarantee procedural justice. It is also related to whether impacted communities are able to participate in decisions that affect their lives. The result table indicates that in some documents, participation is referred to as ‘community participation' and ‘stakeholder involvement', but in other documents that contain NCICD references there is no clear indication of processes to involve affected communities in decision making. The table also illustrates that communities are often seen as recipients of information, for example in the terms socialization, convincing people and creating one perspective. This implies a top-to-bottom communication rather than a participatory decision-making process.

The greatest procedural justice issue is the distinction between consultation and influence. Consultation refers to information or seeking feedback. Influencing refers to the ability to change project design, relocation plans, livelihood support or priorities for project implementation. The coding indicates NCICD is more socialisation than participation. This is important because those who are most impacted by relocation, sea wall building, reclamation, and impacts to their fishing livelihoods require more than information. They require space for decision making.

The participation of the public in the pandemic and afterward was more challenging. Limited participation in formal consultation processes may be due to restrictions, economic pressures, and digital inequality in the poor coastal communities. This means that taking part in work experience should not be considered a routine administrative task from 2020. It should be designed in an active manner, with the participation of local meetings, fisher groups, women groups and local level mechanisms that can access the ears of the people who are generally excluded from formal planning processes.

The language used in national climate policy is more inclusive than in NCICD-specific documents. Community needs and aspirations, gender sensitivity, Civil Society Organizations (CSO), local governments and multi-stakeholder governance are mentioned in RAN-API and Bappenas climate resilience policy (Bappenas, 2014; Bappenas, 2021). This indicates that inclusive adaptation has already been acknowledged in a broader climate policy framework in Indonesia. However, the NCICD documents are more technical and institutional. This provides

a disconnect between national principles for participation and local practice on projects.

The involvement of private and international actors also questions procedural justice. Private sector cooperation, international partnerships, climate finance and involvement of consultants are part generally the main part of NCICD. These actors may be able to offer expertise and funding but they also have the potential to establish a power imbalance. If the private developers and foreign experts are seen more than the informal settlers and the low-income residents, then the balance of decision-making is not achieved. Procedural justice is not simply about formal coordination between powerful institutions, but also about a fair distribution of voice.

The unheard voices are more visible in civil society and academic sources rather than in the main policy document. Weak public engagement, legal uncertainty, public resistance, fisher exclusion, and conflicts between development and human rights are highlighted by WALHI, UNRISD, and other critical sources (WALHI Jakarta, 2024; UNRISD, 2019). This explains the gap between policy and reality based on documented implementation evidence. NCICD is described as organized and coordinated in Official documents. However, critical reports on the other hand indicate that the process can feel top down, technical, and hard to critique for impacted communities and participation remain at the level of consultation rather than collaboration. Procedural justice theory states that there must be a level of participation for communities to be meaningfully involved; that is, a level of influence over the decisions. Thus, the results imply that NCICD partially meets procedural justice as participation is present on the institutional level, but is not fully exhibited on the operational level.

4.3.Recognitional Justice: Recognition of Vulnerable Communities and Livelihood Impacts

Table 4.4. Assessment of Recognitional Justice

Principle	Evidence Summary	Assessment	Rationale
Recognition of climate vulnerability	Many documents recognize that Jakarta faces serious risks from sea-level rise, tidal flooding, land subsidence, heavy rainfall, and coastal flooding. North Jakarta is repeatedly described as highly vulnerable.	✓	Climate and flood vulnerability are clearly recognized. The policy understands that Jakarta's coastal area faces serious environmental risk.
Recognition of land subsidence as a root problem	Several documents identify land subsidence as a major cause of Jakarta's flood vulnerability. The PUPR decree also mentions land subsidence control and clean water provision.	✓	The structural cause of flooding is recognized. Flood risk is not only caused by sea-level rise, but also by groundwater extraction and urban development.
Recognition of marginalized coastal communities	Some documents mention slum settlements, riverside settlements, urban kampungs, poor households, and communities living in flood-prone areas. National climate documents also refer to marginalized communities needing special attention.	▲	Marginalized groups are recognized, but often in general terms. The documents identify vulnerable people, but do not always explain how their rights, needs, and voices will be protected.
Recognition of informal settlements	The NCICD Master Plan identifies families living in slum settlements and recognizes settlements near rivers and coastal areas. UNRISD and ADB sources also discuss informal settlers and urban poor communities.	▲	Informal settlements are visible in the evidence, but their legitimacy remains unclear. They are often treated as vulnerable or at-risk groups, not fully as rights-bearing communities.
Recognition of fishing livelihoods	Several excerpts recognize that many coastal residents work as fishers. The coding also mentions fishing settlements, aquaculture, fishing grounds, fish habitats, fishing communities, and fishers' livelihood rights.	▲	Fishing livelihoods are recognized, but protection is still limited. Fishers are often identified as affected groups, but their long-term livelihood security is not strongly guaranteed.
Recognition of cultural and historical attachment to place	Some evidence recognizes that communities have lived in coastal areas for generations. Other excerpts mention cultural change, fishermen's identity, and socio-cultural values of maritime communities.	▲	Cultural attachment is partly recognized. However, cultural identity and community history are not central in NCICD planning. They appear more strongly in critical or civil society sources.
Recognition of gender and intersectional vulnerability	RAN-API, Bappenas, World Bank, WALHI, and ADB sources mention that climate change affects women and men differently. Some sources also mention children, elderly people, disabled people, migrants, and near-poor households.	▲	Gender and intersectional vulnerability are recognized in broader climate policy, but less clearly in NCICD-specific documents. This creates a gap between national policy language and project-level planning.
Recognition of environmental degradation and ecological risk	Many excerpts discuss pollution accumulation, water quality, waste, sedimentation, erosion, biodiversity loss, marine ecosystem destruction, fish deaths, and ecological degradation in Jakarta Bay.	✓	Environmental risk is strongly recognized. The documents clearly understand that coastal adaptation affects ecosystems, water quality, and marine life.
Recognition of socio-ecological links	The coding shows that environmental degradation is linked to livelihoods, community well-being, fisheries, local survival, and coastal vulnerability. WALHI and other sources strongly connect ecological damage with social harm.	▲	The connection between environment and society is partly recognized. However, technical documents often focus more on ecological management than on how ecological damage affects people's lives.

Recognition of local knowledge and community adaptation	Some sources mention local wisdom, community adaptation to tidal flooding, community resilience, and local coping strategies. UNRISD also notes that informal communities often develop their own adaptation practices.	▲	Local knowledge is recognized in some sources, but it is not central in NCICD policy design. Community knowledge appears as supporting evidence, not as a major planning foundation.
Recognition of human rights and livelihood rights	Civil society and academic sources mention the right to livelihood, adequate living standards, non-discrimination, fishermen's rights, and risks of human rights violations from coastal development and reclamation.	▲	Rights-based recognition exists mainly in civil society and academic sources. It is much weaker in official NCICD documents.
Recognition of maladaptation risk	WALHI, UNRISD, and other critical sources argue that sea walls, reclamation, and coastal megaprojects can become maladaptive if they worsen flooding, displacement, ecological loss, or livelihood insecurity.	▲	Maladaptation risk is recognized mainly outside official policy documents. This shows a gap between official adaptation framing and critical social-environmental evidence.
Recognition of vulnerable groups as active subjects	Some sources describe communities as actors who manage their environment, recover after shocks, use local adaptation practices, and hold socio-cultural values. WALHI also calls for fishers and women fishers to be recognized as subjects of agrarian resource management.	▲	This is partly fulfilled. Some literature recognizes communities as active actors, but NCICD-specific documents still tend to frame them more as affected populations or beneficiaries.
Overall recognitional justice	The documents recognize many forms of vulnerability, including flood risk, land subsidence, poor settlements, fishing livelihoods, ecological degradation, gendered vulnerability, and social resilience. However, recognition is uneven across sources.	▲	Recognitional justice is partially fulfilled. Vulnerability is visible, but recognition does not always become strong legal, social, cultural, or livelihood protection for coastal communities.

Recognitional justice findings reveal the existence of some important vulnerabilities, which are recognised by NCICD and related documents. They are aware of the threats posed by flooding, sea-level rise, subsidence, water pollution, waste, ecological degradation and coastal exposure. Through this study, some of the coded documents also refer to slum settlements, urban kampungs, river-side settlements, fishing communities and those who live in flood prone areas. This does not make people in vulnerable communities invisible in the policy.

But the acknowledgment is not consistent. The official documents from the NCICD have a narrow perception of vulnerability as a physical and environmental issue. Their emphasis is on flooding, water control, land subsidence, drainage and coastal protection which are important, but do not fully capture social vulnerability. Social vulnerability is also represented by poverty, unsafe housing, lack of secure land tenure, dependency on livelihoods, lack of a political voice, gendered vulnerability, and cultural attachment to place. These social dimensions are more evident in the broader sources of climate and development information, including

the World Bank, Asian Development Bank (ADB), and UNRISD, than in other documents that are specific to NCICD.

The question of recognition justice is whether vulnerable populations are understood as being more than only 'populations at risk'. There are specific differences in needs and capacities between fishers, informal settlers, women, children, elderly, disabled persons and poor households. If they are viewed as residents in a risky area, then their livelihoods, local knowledge, social history and rights might be overlooked in a policy. This result table indicates that fishing livelihoods are acknowledged, however, long-term livelihood protection is not well assured. While fishers can be seen as affected communities but not necessarily as rights-holding communities whose livelihood, identity and access to the coast are deserving of protection.

This is the same with informal settlements. There are some documents that acknowledge slum settlements and the urban poor. They identify vulnerable areas and count infected households. But legitimacy does not always come with recognition. Informal residents might be seen as vulnerable, but not as communities with a right to be housed, compensated, participated in and secured for the future. This is a critical justice issue because adaptation can turn into a problem if it views informal communities as a problem to be moved, rather than citizens to be safeguarded.

Weaknesses of ecosystem-based adaptation are also apparent in recognitional justice. A number of documents acknowledge environmental degradation, loss of biodiversity, damage to the marine ecosystems, poor water quality, pollution and sedimentation. The primary policy response is, mainly based and centered on infrastructure. The focus on mangroves, ecosystem restoration and nature-based solutions is less prominent. Why? Coastal ecosystems are the bases of livelihood and food security for many communities. With a weak ecological protection, the social protection will also become weak.

The policy-reality gap is evident across the three dimensions of justice. NCICD is seen as flood protection, and integrated coastal development. The coding shows a more complex picture. The policy is beneficial to the city, but may have uneven benefits. It has statutory governance and limited community voice. It

acknowledges vulnerability, but primarily in physical and technical aspects. In climate justice theory, this translates to NCICD having actual protective value, though its quality of justice will rely on its ability to protect people, livelihoods, rights and ecosystems.

The policy implication is that NCICD should shift from technical adaptation towards just adaptation. Flood protection should be connected to secure housing, fair compensation, livelihood protection, and transparent consultation, recognition of informal residents, fisher participation, gender-sensitive planning and strengthening ecosystem-based measures. The question of adapting to protect Jakarta from water should not be limited to protecting the city's infrastructure. It should also question what needs to be done to safeguard those who live and work at the coast.

CHAPTER V

CONCLUSION AND POLICY RECOMMENDATIONS

5.1.Conclusion

To conclude, we can say that NCICD addresses climate justice only partially. It acknowledges the critical coastal hazards and provides robust technical protection, yet it does not fully consider the social factors that make some communities more vulnerable than others.

The theoretical contribution of this thesis is that it demonstrates a difference between protection and justice in the context of adaptation. NCICD is definitely an adaptation policy as it addresses flooding, sea-level rise, land subsidence and drainage issues. However, it is apparent from the theory of climate justice that adaptation is more than just infrastructure products. It also needs to be assessed on its benefit to whom, its participation with whom, and the vulnerability of whom it acknowledges. Based on this framework, NCICD seems technically proficient yet socially deficient. This research shows that a climate resilience assessment based on infrastructure is too narrow an approach to adaptation. The lens of climate justice offers a more expansive analytical perspective on adaptation results, showing how the distribution of benefits, decision-making and recognition of vulnerable populations shape results. The author's findings, therefore, fit into a growing literature that suggests successful adaptation to climate change requires engineering solutions in combination with principles of social equity.

Distributive justice is partially met. NCICD protects against flooding by means of sea walls, polders, embankments, pumps and drainage systems. These benefits are important for North Jakarta. But the policy also involves waterfront development, integration of transport, tourism and economic growth. This poses a risk of strategic urban areas, investors and future commercial spaces getting better benefit than vulnerable coastal communities. Fishers and informal settlers face the costs of relocation, loss of fishing spaces, precarious incomes and lack of access to improved coastal spaces.

Procedural justice is not met. There is good institutional coordination between government agencies, technical experts, international partners and private

actors in the policy. However, the communities impacted are not explicitly represented as agents of decision making. Often participation is presented in the guise of consultation, socialization or information sharing. This is not enough for the community in Muara Angke and Muara Baru. Their voice in decision making about their relocation, access to the shore, fishing facilities, housing, drainage system and assistance in livelihoods was also important and needed. This gap is especially significant between the years 2021 to 2025, when vulnerable groups face significant economic challenges and require more involvement in recovery and adaptation measures.

Recognitional justice is also only partly fulfilled. The NCICD acknowledges flooding, land subsidence, water issues, degradation, slum settlements and fishing livelihoods. But vulnerability is largely perceived as susceptibility to hazard. The policy under focuses less on poverty, housing insecurity, informal land tenure, cultural attachment to place, gendered vulnerability, local knowledge, and livelihood dependence. Clearly, the fishers and informal inhabitants are seen as impacted groups, but they are not yet recognized as having rights, history, knowledge, and autonomy as fishers.

The focus of this work is therefore not on the lack of adaptation. The issue is that there is no full justice adaptation. The NCICD ought to shield the city from water hazards and also ensure the security of the residents and workers along coastline. In Muara Angke and Muara Baru, only adaptation is considered when it comes to flood safety, stable livelihoods, equitable involvement, housing security, recognition of fishing communities, and improved ecosystem-oriented approaches. It acknowledges the critical coastal hazards and provides robust technical protection, yet it does not fully consider the social factors that make some communities more vulnerable than others.

5.2.Policy Recommendations

First, the author highly suggests the establishment of an official system of community engagement for Muara Angke and Muara Baru. The initiative should be carried out by the Jakarta Provincial Government, Ministry of Public Works and Housing, the kelurahan offices, fishermen associations, the fisher women and representatives of informal settlements and civil society organizations. It must not

be something that is an afterthought. Involvement of communities from the beginning including in the planning for relocations, coastal access, fishing ports, drainage, market facilities and housing. This addresses directly the gap in the research about procedural justice.

The second recommendation is to include livelihood protection in the implementation of NCICD. In Muara Angke and Muara Baru, flood protection cannot be done without the consent of the access to the sea, sea-side harbour, fish markets, cold storage and convenient transport for the fishers. Government should make a livelihood impact assessment prior to construction or relocation. Where fishing areas, port or trade/commerce opportunity is impacted, it is not fair that compensation is one-off monetary. A suitable option should be sustainable income recovery, looking at other job opportunities available to the community, and providing opportunities for them to use fishing resources and capacity building support. This is a solution to the issue of distributive justice in which the costs of development are being undertaken by the fishers, and the benefits are going to others in the development process.

The third is to enhance social protection of relocation and shelter. Wherever relocations are unavoidable, these should be met with appropriate monetary compensation, access and minimal service delivery, as well as access to livelihoods in an equitable way. What happens is that if they are taken away from their working places, schools, markets, social networks, then the quantity of the so-called "rusun" (socio-economic housing) will not be sufficient. In addition to the distance to the livelihood, housing cost, availability of services and preference of the community should be included as indicators for relocation, added by the Ministry of Public Works and Housing – DKI Jakarta Government – and housing agencies.

It is recommended to incorporate the indicators in monitoring and evaluation of NCICD as the fourth recommendation. It is important that current monitoring measures the progress of the construction, flood reduction and performance of the infrastructure, but not just that. It should also assess: Who benefits? Who is moved? What was the income of whom? Who is involved? Does it provide protection for vulnerable groups? These indicators should include income of the fisher; security in their housing; community involvement; the quality of

compensation; gender inclusion; and access to clean water and informal resident's rights.

Last but not least, we suggest the development of infrastructure and solutions based on ecosystems / community-based adaptation. Sea walls and polders may be required, but should be used in conjunction with mangrove rehabilitation; water quality improvement; waste management; ground water management and coastal ecosystem protection. This is very critical because as the fishing activity goes down, the ecological degradation goes up and the affected families' means of earning a living as fishermen and their ability to cope will also be affected. Not alone is NCICD a protector and defender of Jakarta against the ocean, but it also holds the responsibility to restore the coastal ecosystem that makes it so reliant on the ocean.

5.3.Research Limitations and Future Research

Only policy documents, reports and secondary sources are used in this study. It does not feature interviews with locals, fishermen, or government or project officials. As such, the analysis can detect policy gaps, but it cannot completely assess what is happening on the ground. The study also is limited to the coastal communities of Muara Angke and Muara Baru in North Jakarta, not to all coastal communities in Jakarta Bay.

For future study, document analysis could be followed by field observations and interviews with the policymakers, local government officials, fishers, community leaders and residents of the villages of Muara Angke and Muara Baru in future studies. These studies will give more insight into the translation of climate justice principles from policy to practice.

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