Why Inequality, Rather than Free-Riding Concerns, is the Main Obstacle to Climate Change Mitigation

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Thesis: Why Inequality, Rather than Free-Riding Concerns, is the Main Obstacle to Climate Change Mitigation

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Introduction

When the Paris Agreement was signed in December 2015, it was celebrated as a turning point in the mitigation of climate change. In their press release, the UN referred to the Paris Agreement as a "landmark". What made the Paris Agreement such a "landmark" moment is that the Paris Agreement serves as the first legally binding agreement in which virtually all nations, including the largest economies, committed to combat climate change together (UNFCCC, 2016).

Prominent scholars in the field of economics and international politics had long been advocating for such a legal agreement as this would reduce the attractiveness and propriety of so-called free-riding behaviour. According to them, climate change mitigation posed a collective action problem (Posner & Weisbach, 2010, p.170; Nordhaus, 2015, p.1339-40; Stern, 2007; p.42-43; Weisbach, 2016a, p.194-196). In such a problem, it is in the self-interest of nations to mitigate climate change but only if enough other nations do so too, while countries that do not reduce their emissions still benefit if other countries do because we share one atmosphere on this planet. Which explains the incentive to free ride on the efforts taken by others.

The general consensus was that a legal agreement would provide states with the certainty and transparency that other states are putting effort into the emission reduction as well. Under the Paris Agreement, states share their mitigation plan, so-called nationally determined contributions (NDCs), which get renewed on a 5-yearly basis. There are two types of NDCs; a conditional NDC and an unconditional NDC. The option of a conditional NDC allows nations to make their NDCs dependent upon the efforts taken by other countries (United Nations Environment Programme, 2023, p.x). The transparency created by the Paris Agreement, along with the ability to make your NDC conditional upon the efforts taken by other nations should strongly reduce the concern that a nation's mitigation efforts would go to waste.

In their defence of the Paris Agreement, the UN seemed to endorse the argument that the Paris Agreement is a political instrument to resolve the collective action problem that the (international) politics of climate change mitigation poses. At the press conference, the UN stressed that it was in the economic self-interest of all countries, from the USA to Tuvalu, to

mitigate climate change. In the words of Christiana Figueres, the UN's Climate Chief, this self-interest should be "the most powerful driving force" behind the Paris Agreement (Nelson, 2018, p.113).

The agreement that states made in the Paris Agreement is to keep global warming "well below 2°C above pre-industrial levels" and to pursue "efforts to limit the temperature increase to 1.5°C" as this "would significantly reduce the risks and impacts of climate change" compared to 2.0°C (UNFCCC, 2015, p.3).

It's been almost eight years since the Paris Agreement was ratified and we've fallen behind the trajectory that was outlined by the Agreement. Sadly, emissions are not decreasing rapidly enough. In fact, based on the latest data, the global output of emissions has not even peaked yet (United Nations Environment Programme, 2023, p.xv). Under the current trajectory, global warming will increase up to 3.2°C during this century (IPCC, 2023a, p.22). If nations manage to implement their current NDCs, global warming will be 'limited' to 2.9°C. However, free-riding concerns do not seem to be able to explain this gap between commitment and output. Because global warming would still rise to 2.5°C under the conditional NDCs (United Nations Environment Programme, 2023, p.xv)

Naturally, this raises the question of how convincing it is, from a political viewpoint, to treat climate change mitigation as a collective action problem?
To answer this question, I will start by assessing the strength of the argument that the main priority of climate change politics should be to resolve the collective action problem. Subsequently, I will argue that the collective action framework is an ineffective foundation for the approach to the international politics of climate change. The difficulty in mobilising a global unified effort to mitigate climate change does not lie in the appeal of free-riding itself. Rather, I hold that it stems from the fact that those nations and individuals that are the least vulnerable for the impact of climate change are contributing, through their emissions, the most to climate change and vice versa.

The collective action framework does not provide a solution for this gridlock. Instead, the logical principles that can be deduced from the collective action framework weaken the prospective that global society rallies behind the 1.5°C target as a common priority. On the international level of politics, a focus on self-interest induces the developed nations to

condone a higher increase of temperature than the 1.5°C set by the Paris Agreement. On the national level, a focus on the pursuit of self-interest leads to NDCs that are skewed towards elite interests. I will argue that basing the climate change policy framework solely on self-interest is problematic because such frameworks violate the principles of distributive justice and exacerbate a vicious cycle of political and economic inequality.

As an alternative, I will offer the frame of distributive conflict as a means for successfully understanding and approaching the political puzzle of climate change mitigation. Thereafter, I will apply the frame of distributive conflict to a case study of the climate policy framework in the Netherlands to show that the largest obstacle in compliance with the Paris Agreement is the way in which, in developed nations, the climate policy framework tends to be geared towards the interests of the wealthiest citizens.

I argue that this tendency of the climate policy framework is ineffective in two ways. First, it is ineffective because the wealthiest citizens in developed nations have the largest ecological footprint and the largest capability to finance an accelerated transition towards climate neutrality. Without them as the driving force behind climate change policy, the 1.5°C or the 2.0°C target is unattainable. Second, the elite-geared bias in the design of climate change policy comes at the expense of electoral support for the climate policy framework. Without the electorate's support for more ambitious NDCs, we will not be able to mitigate climate change. Hence, this thesis argues that in order to uphold the Paris Agreement, and prevent millions of impoverished living conditions across the globe, creating a more equitable climate policy framework in the developed nations should be the utmost priority.

Chapter 1: Introduction of the Paris Agreement and Collective Action Theory

1.1 Disclaimer

This thesis builds on the scientific consensus that climate change is real and a forceful threat to the ecological stability on earth. I also take it for granted that global warming is caused by the emission of greenhouse gases (GHG) of which carbon dioxide (CO2) is the most important greenhouse gas in climate change mitigation. I have also adopted the claim that if the world is not on track with the Paris Agreement by 2030, it will become impossible to limit global warming to 1.5°C (United Nations Environment Programme, 2023, p.1). For further information, I refer to the latest synthesis report of the International Governmental Panel on Climate Change, the leading authority in the field of climate change science (IPCC, 2023ab).

Additionally, this thesis makes a distinction between developing (low- and middle-income nations) and developed nations (high income nations). In doing so, I have taken over the classifications used by the World Bank (Hamadeh et al., 2023).

Finally, some might argue that the Paris Agreement does not provide a real solution to the collective action problem of climate change mitigation because non-compliance with the Paris Agreement does not directly result in a penalty. However, I hold that the opportunity to present conditional NDCs under the Paris Agreement refutes this claim because it takes away the chance for a scenario in which, in hindsight, other nations have free-ridden upon the efforts taken by others. In fact, I consider the fact that states opted to not have a non-compliance penalty in the Paris Agreement as a sign that the biggest struggle for the (inter)national politics of climate change is not, after all, to resolve the collective action problem that climate change poses.

1.2 Collective Action Theory

Collective action theory builds on the assumptions made by the neoclassical model of economics which deploys the *homo economicus* model of human behaviour (Nelson, 2018, p.117). This model of human behaviour is centred around the assumption that humans behave in a self-interested, autonomous and rational manner. As a consequence, we base our decisions on a cost-benefit analysis of the options available to us. The best option then becomes the option that maximizes our personal welfare.

Collective action problems are an insight from economic theory to understand how the provision of public goods can lead to a flawed outcome without proper intervention. (Weisbach, 2016c, p.241). Public goods have two distinctive features. First, they are non-rivalrous, "meaning that one person's enjoyment of a good does not diminish the ability of other people to enjoy the same good" (Kotchen, 2012, p.1). Second, they are non-excludable, "meaning that people cannot be prevented from enjoying the good " (Kotchen, 2012, p.1).

When we discuss international politics, a collective action problem is a type of problem in which two, or multiple, nations each have bigger welfare gains when they cooperate in the provision of a public good than when they defect from the cooperation. However, each nation is best off if they can defect from cooperation while the other nations continue to do so. Thus, in a collective action problem, each nation has an individual incentive to defect from cooperation based on a self-interest minded cost-benefit analysis.

This defection is also known as "free-riding" (Aklin & Mildenberger, 2020, p.5). Nevertheless, if too many nations defect, which is the case in collective action problems, the outcome is suboptimal from cooperation. In collective action problems, the status quo is thus a suboptimal situation (Aklin & Mildenberger, 2020, p.6). The goal of political intervention, then, is to move towards an outcome that creates more welfare because the intervention creates an outcome that is better than the status quo. Ideally, the intervention is designed to create an optimal scenario which would maximise welfare. Within economic game-theory, collective action problems are also known as the "prisoner's dilemma" (Aklin & Mildenberger, 2020, p.6). The suboptimal status quo is also known as the Nash equilibrium (Aklin & Mildenberger, 2020, p.6-7).

1.3 Why Climate Change Mitigation is Considered to be a Collective Action Problem

The dominant literature within economic theory presents climate change mitigation as a collective action problem in which the political challenge lies to eliminate externalities and the temptation to free-ride (Posner & Weisbach, 2010, p.170; Nordhaus, 2015, p.1339-40; Stern, 2007; p.42-43; Weisbach, 2016a, p.194-196). Below I will explain why climate change mitigation is considered to be a collective action problem from the viewpoint of economic theory.

Climate change is the consequence of greenhouse gases that are emitted into the atmosphere. Those who produce GHG emissions, do not directly face the external costs of pollution because the atmosphere is a public good. Traditionally, the costs of pollution are not represented in the price level, and therefore polluters are not properly incentivized to reduce their emissions. Which led Stern to conclude that "human-induced climate change is an externality, one that is not 'corrected' through any institution or market, unless policy intervenes" (Stern, 2007, p.27).

In order to mitigate climate change, we should reduce our greenhouse gas (GHG) emissions, for instance through internalizing the costs of pollution into our economic system, and transition towards a renewable energy system. However, these actions are costly and "the benefits of action are contingent on the number and scale of group contributions" (Aklin & Mildenberger, 2020, p6).

Due to this combination, nations are incentivized to not contribute to climate change mitigation for two reasons. First, each contribution to climate change mitigation is rather marginal, despite nations' GHG reduction efforts, climate change might still not be mitigated if other nations do not put in equal effort. Second, if they do not reduce their GHG emissions, climate change might still be mitigated if other nations do fulfil their part. If all nations follow this logic, not a single nation will assign effort on the mitigation of climate change. Thus, the politics of climate change mitigation is very susceptible to free-riding behaviour. This is problematic because, although the exact effects of climate change are uncertain, it is believed to be certain that the effects of climate change will be far costlier than the costs of mitigating climate change (Stern, 2013, p.188-89). Hence, the mitigation of climate change is seen as a collective action problem (Aklin & Mildenberger, 2020, p.5).

To conclude, in order to be a collective action problem, the mitigation of climate change should be an issue in which all nations need to make some mitigation costs in order to move from a suboptimal situation (global warming) towards an outcome (global warming limited to 1.5°C or well below 2.0°C) that is superior for all. Therefore, to decide if the mitigation of climate change is a collective action problem I should broadly approach the mitigation of climate change as a cost-benefit analysis.

To do so, I will compare the benefit of mitigation, measured as the avoided impact of climate change, with the costs of transitioning to a climate-neutral economy. Which I measure by looking at the emissions that need to be reduced (either through a different consumption pattern or through a switch to green forms of energy).

1.4 Why the Paris Agreement Should be Able to Solve the Collective Action Problem

When the Paris Agreement was signed, the rationale to join the agreement, proclaimed by the UN, was that it is in the (economic) self-interest of all nations to commit towards the transition to a green economy (Nelson, 2018, p.13). Not doing so would inevitably result in much higher social and economic costs for all nations. The claim of self-interest is connected to the perception of climate change as a collective action problem in which climate change mitigation is about transforming a suboptimal Nash-equilibrium (dangerous effects of climate change) into a scenario that maximises public welfare (effective mitigation of climate change).

The Paris Agreement provides a solution for the collective action problem that climate change mitigation poses. The Paris Agreement is a legally binding treaty that is signed by virtually all member states (UNFCCC, 2015). It thus fostered an official shared responsibility to mitigate climate change which should reduce the fear that other nations will free-ride.

The Paris Agreement also reduces the opportunity to free-ride on the efforts of other nations because it creates global transparency in climate change mitigation through the introduction of nationally determined contributions (NDCs) and the instalment of a 5-yearly stocktake on the progress that has been made (UNFCCC, 2023a). In doing so, all nations' commitments to climate change mitigation have now become verifiable.

The Paris Agreement set a clear collective target for climate change mitigation. In the agreement, partaking nations agree to holding “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change (UNFCCC, 2015, p.3).

The Paris Agreement consists of the following roadmap of targets in order to keep global warming limited to 1.5°C. By 2030, emissions need to be reduced by 45% compared to the peak year. By 2050, economies must be climate neutral which means that the emission of GHG is limited to what the earth can absorb (United Nations, 2023). In order to comply with the suboptimal target of 2.0°C, emissions must fall by 28% by 2030 (United Nations Environment Programme, 2023, p.xv).

The Paris Agreement does not differentiate between nations; all involved parties, regardless of their size, wealth, or (historical) contribution to climate change, commit to the same targets of the roadmap. Nevertheless, the Paris Agreement did include that “the Paris Agreement builds on the principle of common but differentiated responsibilities and respective capabilities in light of national circumstances” (UNFCCC, 2015, p. 3).
To honour this principle, the developed nations pledged to contribute $100 billion, on a yearly basis, to support developing nations in their mitigation and adaptation efforts from 2020 onwards (UNFCCC, 2016).

The Paris Agreement leaves it open to the partaking nations to determine how the reduction of GHG emissions should be achieved. They can create their own policy plan through the NDCs. The NDCs get renewed after every five years and the newest update is planned by 2025 (UNFCCC, 2023).

1.5 Existing Critiques on the Collective Action Framework

Critiques on the Paris Agreement have taken multiple shapes of which I will discuss the ones that are most important for my thesis below.

Christina Figueres, the chief negotiator of the Paris Agreement, claimed that economic self-interest should be the driving force behind the decision to join the agreement and mitigate climate change (Nelson, 2018, p.113).

From within the paradigm of collective action, the argument has been that the Paris Agreement is illogical from a viewpoint of self-interest. Posner and Weisbach argue that certain states have a stronger (proportionate) interest in mitigating climate change than others because their climate is more vulnerable to climate change and/or because they have fewer financial means to adapt to climate change (Posner & Weisbach, 2010, p.84-86; 179-184; 189-192). Thus, generally speaking, poorer nations are more in need of a climate agreement than rich nations. Hence, Posner and Weisbach have pragmatically suggested that an ideal welfare promoting climate treaty involves side payments from poor nations to rich nations in order for the rich nations to comply with the treaty.

The conviction that economic self-interest should be the driving force behind a decision is one of the main principles of the neoclassical economic paradigm (Nelson, 2018, p.115). Outside the paradigm, these principles have been criticised and therefore, some critics focus their critique on the assumptions that underpin the Paris Agreement.

Social psychologists and cognitive neuroscientists have argued, for instance, through empirical observations that humans do not merely operate out of self-interest. Instead, they base their actions on multifaceted concerns; moral judgement and the issue of fairness also matters when deciding (Nelson, 2018, p.117).

Additionally, many theorists and citizens believe that the environment should be valued based on its intrinsic value and not be subjected, and in doing so be diminished, to a cost-benefit analysis (Anderson, 1993, p.209-210). A focus on the net economic benefit of mitigating climate change distorts the discussion on mitigating climate change, because the physical impact of climate change can hardly be measured into an economic impact. In other

words, we should not apply market logic to domains that cannot, and should not, be marketized. Hence, many academics, including economists, argue that "mitigation policies must be forcefully implemented anyway given the actual physical climate change crisis, in spite of the many uncertainties involved in trying to predict the net economics of doing so" (Rosen & Guenther, 2015, p.93).

Other critics do not focus on the principles that underpin collective action. Rather, they critique the understanding of climate change itself as a collective action problem. An example of this is the way in which Philosopher Mark Sagoff has argued that climate change is not a collective action problem (Sagoff, 2011, p.56). Instead, Sagoff argues that "people alive today have a conflicting interest—not a common interest—with those who will inhabit the earth after we are all dead" (p.56). Most effects of climate change will take place in the future, while the time to act is now. Therefore, Sagoff identifies a conflict between generations. A critical focus on individual self-interest should lead for the contemporary generations to the conclusion that the costs of tackling climate change today far outweigh the personal benefits that will be derived from mitigating climate change (p.63-64).

In this thesis, I will reject Sagoff's claim and extend his interpretation of self-interest by assuming that citizens alive today are at least concerned with the future of their own (future) offspring because of empathy towards them (Gardiner, 2016, p.170-72). In doing so, I hold that most people alive today are concerned with the future generations. I also reject Sagoff's claim because I wish to critique the collective action frame in its strongest state in order to be able to provide the strongest possible contribution to the theoretical understanding of climate change politics. Later on, in this thesis, I will explain why I believe that the critiques made by Nelson, and Posner and Weisbach do weaken the strength of the collective action argument.

I will now turn to my assessment of the strength of the argument that it is in the interest of all nations to mitigate climate change.

Chapter 2: Assessing the Collective Action Framework

2.1 Different Vulnerabilities for the Impact of Climate Change

It should be noted that it is very difficult to confidently determine the long-term economic costs and benefits of climate change mitigation (Rosen & Guenther, 2015, p.93). Both the costs of transitioning towards a green economy as well as the costs that are avoided by mitigating climate change are difficult to assess. Uncertainty plays a big factor when it comes to the mitigation of climate change (Stern, 2007, p.27-29; Weisbach, 2016a, p.191-193).

Nevertheless, there is a definite economic consensus that, over time, the costs of not mitigating climate change far exceed the costs of transitioning towards a climate neutral economy (IPCC, 2023ab; Stern, 2013, Nelson, 2018; Kompas et al., 2018, p.1161). However, within these economic analyses, there is also a widespread consensus that the impact of climate change will disproportionately (economically and physically) affect the developing nations (Kompas et al, 2018, p.1161-1169; Caney, 2018).

An example of this is the way in which Posner and Weisbach conclude that the developing countries are much more vulnerable for the impact of climate change than developed countries (2010, p.21-22). This conclusion partly has a geographical origin. Most developing nations tend to be located in the world's warmer regions. In these regions, increases in temperature lead to more disruptive consequences within their climate than temperate increases do in regions where the climate is more moderate. Additionally, developing countries tend to be more dependent on agricultural production, as a source of nutrition and income. Third, adaptation to climate change is even more difficult for developing countries because they have fewer resources to do so. Thus, the effects of climate change will be more severe in developing countries while their adaptive ability is lower.
Hence, the literature concludes that because of this higher vulnerability the developing nations have a higher interest in mitigating climate change than the developed nations (Posner & Weisbach, 2010, p.20-22; Kompas et al., 2018; Yohe et al., 2006).

This conclusion was already well known in 2015, back when the Paris Agreement was signed. As scientists became more aware of the severity of climate change impact, research into the social impact of climate change increased gradually. Since the turn of the century, the

attention of the IPCC, and other climate change related research, has partly shifted towards studying the broader social impact of climate change (Islam & Winkel, 2017).

For instance, in 2007, the Stern Review on the Economics of Climate Change had already established a link between vulnerability for climate change and inequality (p.31-33, p.42-43). The 5th synthesis report (AR5) further expanded on this relationship by concluding that climate change "exacerbates inequalities" (IPCC 2014, p.796). "It notes that socially and geographically disadvantaged people … are particularly affected negatively by climate hazards" (Islam & Winkel, 2017, p.4). The 6th, and latest, synthesis report (AR6) stated that "[a]daptation and mitigation actions that prioritise equity and social justice lead to more sustainable outcomes, reduce trade-offs, support transformative change and advance climate resilient development" (IPCC, 2023a, p.31). It further states that "[e]quity, inclusion and just transitions are key to … deeper societal ambitions for accelerated mitigation" (IPCC, 2023b, p.66).

Thus, we can observe a trend. As more research about the effect of climate change becomes available, the IPCC incrementally calls for a focus on the linkages between inequality and the adverse effects of climate change (climate hazards) in the design of climate mitigation and adaptation policies. However, because the task of the IPCC is to document the effects of climate change, and not to create policy, the question of how to do so remains open throughout their report(s).

To support this endeavour, researchers Islam and Winkel created in 2017 "a unifying conceptual framework for discussing and studying the relationship between climate change and inequality" (p.2). They believed this type of framework was needed because most of the discussion on climate change vulnerability and inequality has focussed on empirical observations of the phenomenon and not on the underlying mechanisms that drive this relationship. The discussion on climate change and inequality missed a unifying conceptual framework that guides this discussion (2017, p.5). As a consequence, the relationship between being vulnerable for climate change and inequality has not sufficiently been acknowledged nor understood (2017, p.1).

They believed that the misconception of climate change and inequality manifests itself through the fact that when climate change and inequality is being discussed, *within*-country

inequality receives significantly less attention in this discussion than *inter*-country inequality (p.1). Consequently, the discussion on *inter*-country inequality dominates the discussion on the burden of climate change.

However, Islam and Winkel believe that this focus on *between*-country inequality is problematic because climate change causes a vicious cycle of aggravated inequality both for *within*-country and inter-country inequality (p.3). Not being aware of this cycle, or this double scope of inequality, obstructs our ability to fully understand the relationship between climate change and inequality and to create climate policy that addresses the root cause of the problem.

This remainder of this section, will map out the relationship between inequality and climate change to show that the discussion of climate change policy as a 'collective action' problem does not adequately represent the different interests that are at stake in the mitigation of climate change.

I will discuss three different components of the political discussion on climate change. Respectively, the different contributions to climate change when we observe the emission of greenhouse gases, the different levels of vulnerability for the impact of climate change (through the use of Islam and Winkel's framework), and the differing abilities to pay for an accelerated global transition to a net-zero economy in order to mitigate climate change to 1.5°C or well below 2.0°C. Ultimately, a consideration of these three components should lead to the conclusion that the complexity of climate change politics lies in the following paradox; the Paris Agreement can only be met if the wealthier citizens in the developed nations become the driving force, both in terms of financial investments as well as in reduction of GHG emissions, in the mitigation of climate change on a global scale. However, this same group of citizens is also the group who has the lowest interest in compliance with the Paris Agreement.

The following section, will map out the framework for the understanding of climate change and inequality. Additionally, I will add empirical research examples to illustrate its value.

2.2 Climate Change Impact and Inequality Framework

This section discusses the relationship between inequality and vulnerability for the impact of climate change. It attempts to show that the relationship between climate change and inequality can best be understood as a vicious cycle in which initial inequality makes underprivileged social groups suffer disproportionately from the detrimental effects of climate change (2017, p.2). By doing so, climate change leads to more inequality. Hence, climate change aggravates inequality. Islam and Winkel focus on *within*-country inequality because this form of inequality is too often overlooked in the discussion on climate change. Nevertheless, the vicious cycle that is being discussed in their framework applies to *between*-country inequality in a similar fashion. In this chapter, I will discuss both.

However, I will first define the key concepts within the used framework.
The framework uses the term "social inequalities" to discuss *within*-country inequality (Islam and Winkel, 2017, p.2). Social inequality refers to the various, and interlinked, forms in which inequality can manifest itself within nations. Islam and Winkel's framework has incorporated four forms of social inequality. First, they include demographic characteristics "such as, gender, race, ethnicity, religion, and age". Second, they focus on economic forms of inequality. Thus, their framework includes differences in financial assets and income. Thirdly, it incorporates inequality in the public decision-making process (political power). Finally, it includes inequality in access to public resources such as healthcare, education, and housing (p.2). The framework is thus multi-dimensional. However, because most of the public data available for research is limited to information on socio-economic inequality, most of the presented evidence, in this chapter, will point at the differences in financial resources. Nevertheless, it should be kept in mind that the relationship between inequality and vulnerability is better understood through a socio-economic lens than a purely economic lens.

The term "vulnerability" is often raised when we discuss the impact of climate change. For instance, one of the subtitles of the IPCC's latest synthesis report is called "Impacts, Adaptation and Vulnerability" (2023ab).

Islam and Winkel believe that the discussion of climate change and inequality should include an awareness of, at least, three different mechanisms through which inequality intermediates with one's vulnerability for the impact of climate change (2017, p.10).
Together they form the vicious cycle through which climate change aggravates inequality.

To start, the factor inequality increases the **exposure** of underprivileged social groups to climate hazards. Second, given these different levels of exposure, inequality increases the underprivileged groups' **susceptibility** to the damages that are caused by climate hazards. Which means that underprivileged groups are more often exposed to climate hazards and when they do, this exposure is more intense. Which means that the vulnerability to climate hazards has a quantitative and qualitative component. Third, the combination of these two mechanisms decreases underprivileged group's relative **ability** to "cope with and recover from the damages they suffer" (2017, p.2).

Below, I will use the example of water security to illustrate the workings of this vicious cycle. However, the effect of the described vicious cycle is not limited to rising sea levels and floodings, instead the same cycle also characterises the impact of other climate hazards (Islam and Winkel, 2017, p.5-6).

It is well-known that climate change reduces water security. Climate change leads to the rising of sea-levels, increases the acidity of water bodies, and results in a higher prevalence of extreme weather events such as heatwaves, droughts, tsunamis, hurricanes and cyclones (IPCC, 2023a, p.5, p.12-13). By doing so, climate change leads to more water scarcity as it reduces both the global supply and quality of drinking water (IPCC, 2023a, p.5).
Additionally, the rise of sea-levels and the increase of extreme weather events increases water hazards such as flooding. It is mainly the low income countries, and citizens living in poverty, that will suffer from the impact of climate change on water security.

Relatively, low-income countries are more often located in tsunami, hurricane and cyclone zones. Moreover, lower income countries are generally lower elevated than high-income countries. Thus, it is mainly the lower income countries that will be exposed to water hazards (Islam and Winkel, 2017, p.22). However, the inequality doesn't stop there.
When the sea levels rise or when the occurrence of hurricanes increases, the lower income countries will be more susceptible for damages by the flooding or hurricane than higher

income countries with similar elevation (below sea-level) or within the same hurricane region. This is the case because lower income countries have less resources (financially and in terms of expertise) available to them to take precautions against floods. Therefore, they will face differential damage (compared to high-income countries??) when faced with a similar scenario. To illustrate this, significant parts of both the Netherlands, a high-income country, and Bangladesh, a lower income country, liebelow sea-level. Together they form the two countries with the highest share of their population (58%) being exposed to significant flood-risk (Chancel et al., 2023, p.55).

However, after a major flood in 1953, the Netherlands has been able to build an ingenious and costly structure of protection against rising sea-levels or floodings whereas Bangladesh has not been able to (Islam & Winkel, 2017, p.23). Between 1971 and 2014, Bangladesh has faced 78 floods, causing the deaths of 41.783 people and $12.2 billion in damages (Letsch et al., 2023, p.5)

As a consequence, climate hazards, such as floodings, lead, relatively, to much more damage in the developing nations than they do in the developed nations. This is illustrated by the fact that, over the period 1995-2015, losses from weather related disasters accounted for 5 percent of the GDP of the lowest-income countries, as compared to only 0.2 percent for the highest-income countries (Islam & Winkel, 2017, p.23).

Likewise, within countries, it is the lower income citizens who suffer the most damage from the weather-related disasters. Their houses are more often located in regions that are vulnerable for floodings because these houses are cheaper. Additionally, cheaper houses tend to be less sturdy and thus less protected against extreme weather events (Islam & Winkel, 2017, p.6). The relationship between lower income citizens and disproportionate losses from extreme weather events holds for both developed and developing nations. Despite the fact that developed nations can protect themselves better against extreme weather events, when damage occurs, this damage excessively falls on the underprivileged citizens.

Research on Germany, for instance, has found that “welfare losses after floods disproportionately harm low income households and increase inequality” (Tovar Reaños, 2021, p.1). In the Netherlands, rising global temperatures have been linked to a higher heat-related mortality in lower-income groups (Visser et al., 2022, p.1). Nevertheless, because

inadequate recognition is given for the relationship between climate change and *within*-country inequality, especially in the developed nations, the dynamic between climate change and inequality is underexplored within the developed nations. For instance, specific attention for the relationship between climate change risks and inequality was omitted during the Dutch government's climate risk analysis for the years 2022-2026 due to 'budgetary' restrictions (Planbureau voor de Leefomgeving, 2023a, p.56, p.75).

So far, I have used Islam and Winkel's framework to explain how inequality aggravates the damage suffered from climate hazards. The reason for this is that lower income countries and citizens are both more exposed to climate hazards and more susceptible to potential damages. However, by itself, this relationship does not imply a vicious cycle. It is the third mechanism that locks the relationship between inequality and the impact of climate change into a vicious cycle.

Because underprivileged groups are more exposed and susceptible to the impact of climate change, they suffer more physical and economical damages. These damages need to be repaired. However, prior to the damages, underprivileged citizens/nations already possessed fewer resources to make ends meet. Thus, underprivileged citizens and nations have fewer resources available to them to repair the damage. Hence, underprivileged citizens have a lower ability to cope with and recover from the damages they suffer. As a consequence, underprivileged nations/households have a slower process of recovery from climate hazards. This slower process of recovery leads to greater subsequent inequality.

When it comes to inequality *between*-nations, developing countries recover slower because their governments have fewer public resources available to support citizens and restore infrastructure. When it comes to inequality *within*-nations, inequality is aggravated because of a double trade-off (Islam & Winkel, 2017, p.17-19). First, poorer households had fewer means available to insure themselves against climate hazards. Second, because poorer households may not have enough resources available to them to repair all the damage they face a trade-off between preserving their physical (financial) or human capital in the aftermath of climate hazards. Sacrificing the former hampers their current welfare whereas sacrificing the latter hampers their future welfare. The mechanism described above is affirmed by a significant body of research (Islam & Winkel, 2017, p.19; Guivarch et al., 2021).

To conclude, in this section, I attempted to explain how the impact of climate change does not generate an equal burden. In general, developing nations are far more vulnerable to the impact of climate change than the developed nations. Within nations, it is the underprivileged citizens that are primarily affected. As a consequence, the mitigation of climate change is most important for the underprivileged nations and the underprivileged citizens within developed nations. It is clear that climate hazards disproportionately affect underprivileged nations and underprivileged citizens to the extent that climate hazards aggravate pre-existing inequalities. However, in the discussion on climate change and inequality, *between*-country inequality has received much more spotlight than *within*-country inequality. As a consequence, there is insufficient knowledge about the risks that climate change poses for underprivileged citizens in the developed nations.
The next section will approach climate change from the opposite side by looking at the way in which emissions are distributed.

2.3 Emissions and Between-Country Inequality

When we approach climate change from the perspective of emissions, it becomes prevalent that wealth and greenhouse gas emissions are interlinked (Islam, 2015, p.20-22). On a global scale, the richest 10% emit roughly half of the global greenhouse gases whereas the poorest half of the population emits about only 10% of total emissions (United Nations Environment Programme, 2023, p.10).

This relationship can be visualised by comparison of the per capita GDP of nations with their per capita greenhouse gas emission (Islam 2015, p.22). Such an analysis shows that the per capita emissions of developing nations are only a fraction compared to the developed nations. When a nation's per capita GDP rises to a higher income level, the per capita CO2 emissions grow as well.

This relationship is the opposite of the relationship between wealth and vulnerability to the impact of change which was discussed in the previous section. As a consequence, the IPCC's sixth synthesis report drew a disheartening conclusion. The lower a nation's per capita emission of greenhouse gases, the more vulnerable this same population tends to be for the impact of climate change (IPCC, 2023b, p.14).

2.4 Emissions and Within-Country Inequality

Similar to an analysis of the vulnerability for the impact of climate change. A focus on inequality between nations shines light on only half of the issue.
Indeed, there is a great disparity in the emission of greenhouse gases per capita between nations. Especially between the developed and developing nations. However, the greatest difference in carbon emissions can be found within nations themselves. Research shows that this is true for both the developed and developing nations, the emission of greenhouse gases shows immense differences per household, based on differences in income, *within* the nations themselves (United Nations Environment Programme, 2023, p.10).

In fact, most of the inequality in emissions occurs within the nations themselves. To specify, 64% of global carbon inequality can be explained by *within*-country inequality (Chancel, 2022, p.933). This used to be different when climate change became a political issue during the 1990's. In 1990, 38%of all global carbon inequality was due to *within*-country inequality whereas 62% of all global carbon inequality was due to *between*-country inequality. But since the 1990s the tables have turned. The majority (64%) of global carbon inequality nowadays comes from *within*-country inequality (Chancel, 2022, p.933).

The distribution of carbon inequality has shifted because the global distribution of income has shifted. As explained earlier in this section, there is a positive relationship between economic wealth and the emission of greenhouse gases. The wealthier people get, the more they tend to emit.

Back in 1980, 57% of the global income inequality could be explained by *between*-country inequality. In 2020 this number was only 32%. In contemporary society, 68% of global income inequality comes from *within*-country inequality (Chancel et al., 2022, p.13).
The shift from *between*-country inequality to *within*-country inequality is related to the different growth of income that different segments of the global population have experienced since the 1980's.
Since then, the income of citizens has increased. However, when we focus on the distribution of this gain in income, it becomes clear that it is mainly the richest 1% and, to a lesser extent, the bottom 75% of citizens on this planet whose income has increased. Generally speaking,

the richest 1% of the globe is made up by the richer people in the developed nations and the bottom 75% of the globe is made up by the lower and middle-class in the developing nations. Compared to the richest 1% and the bottom 75% of global citizens, the income of the lower and middle-class in the developed nations has increased less. As a consequence, the income share of the lower and middle-class in the developed nations has stagnated or even decreased over the past decades (Chancel et al., 2022, p.15). *Between*-country inequality has been overtaken by *within*-country inequality as the main driver of uneven income distributions.

The growth of *within*-country income inequality is also reflected in the changed distribution of greenhouse gas emissions. Due to their rising incomes, the bottom 75% has seen a relatively uniform growth in their per capita emissions. Nevertheless, these emissions are still very marginal, on a global scale, because this group started on such a relatively low level of emissions.

Those between the 75th and 95th percentile, generally speaking the lower and middle-class of developed nations, have seen a drop of 16% in their per capita emissions since 1990. This is the only percentile range that has lowered their emissions. Contrarily, the richest 5%, and particularly the richest 1%, generally speaking the upper class in developed nations, have experienced a rapid increase of their emissions. The carbon footprint of the richest 1% has almost doubled since 1990 (Chancel et al., 2023, p.28-29).

As we speak, the richest 10% of the world is responsible for half of the global emissions. The richest 1% is responsible for 17% of total global emissions (Chancel et al., 20223, p.18). The drivers of these high footprints include “living space (very large homes or secondary homes), the use of large vehicles such as sport utility vehicles, leisure and work that involve driving and air travel, and the high consumption of meat, dairy and fast fashion” and carbon-intensive investments (United Nations Environment Programme, 2023, p.9).

2.5 Climate Change Mitigation is not About Resolving a Collective Action Problem

The Paris Agreement has been introduced, and defended, on the claim that this agreement provides international politics with a safeguard against free-riding nations and in doing so, the Paris Agreement would provide a solution to the collective action problem that the mitigation of climate change poses. Strictly speaking, climate change mitigation might fulfil the description of a collective action problem in the international mitigation of climate change. It is possible that for each nation, the impact of climate change will outweigh the costs of mitigation. This thesis does not seek to deny that. However, I do hold that the framing of climate change mitigation as a collective action problem is an ineffective as well as problematic approach the political reality of climate change mitigation because the collective action frame is unhelpful in identifying the obstacles that climate change mitigation needs to overcome in order to be successful.

I believe the collective action framework's focus on self-interest is ineffective because it does not provide the developed nations, and within these nations the wealthiest citizens, with a convincing incentive to mitigate climate change. Most of the reduction in emissions needs to come from their side whereas the mitigation itself is, comparatively, much less important for them.

Additionally, I argue that applying the principles of collective action theory to the (inter)national politics of climate change mitigation is problematic in two ways.

First, to claim that climate change mitigation is beneficial for all suggests that climate change is an equitable issue. It is not. The burden of climate change will fall disproportionately upon the most vulnerable countries and citizens whereas the developed nations and wealthier citizens are contributing the most in terms of GHG emissions. This is what makes mitigation of climate change such a complex political issue.
As I will argue for later on in this thesis, a failure to acknowledge this contrast leads to an inadequate understanding of the implications of climate change and therefore a flawed understanding of policy needs.

Second, the collective action framework endorses an analytical cost-benefit minded approach to climate change mitigation. In doing so, it promotes an approach in which the mitigation of

climate change is a calculative and rational undertaking, one in which the prevented impact needs to outweigh the costs of emission reduction.

This is problematic both for the national as well as international domain of politics. In the international arena of politics, it provides an argument for the developed nations to find degrees of global warming that are higher than 1.5°C acceptable (Posner & Weisbach, 2010, p.26-28). As climate change entails fewer risks to the developed nations in comparison to the developing nations, a higher level of global warming is acceptable to them. Even though the relationship between additional increases in global warming and climate change impact is exponential, most of the additional impact of the difference between 1.5°C and 2.0°C falls upon the vulnerable nations (Levin, 2018). Which means that in the developing nations, any degree of global warming above 1.5°C will lead to millions of extra people in impoverished living conditions at an exponential rate.

In the national domain of politics, collective action's logic can convince wealthiest people, with the highest capacity and responsibility to mitigate, to quit contributing to climate change mitigation. The wealthiest citizens, especially in the developed nations, would have to reduce their emissions the most in order to comply with the Paris Agreement while they can shield themselves from most of the negative implications of climate change. Aside from the ethical objections that can be raised against the collective action framework's logic, this logical reasoning is also highly impractical. The only practical possibility to abide by the Paris Agreement, and mitigate climate change on time, is a scenario in which the developed nations, and within these nations the 10% wealthiest citizens, reduce their emissions the most because they currently hold the highest emission-output.

An additional complication for the consideration of climate change mitigation as a collective action problem is the way in which years of inadequate mitigation efforts have raised the burden of mitigation and the costs of adaptation. The global emission of greenhouse gases has not started to decline yet (United Nations Environment Programme, 2023, p.5).

Had serious climate action been initiated back in 2010, the yearly needed reduction in emissions necessary to comply with the below 2°C and the 1.5°C scenario by 2030 would have been just about 0.7% and 3.3% reduction on average. In order to get back on track with the 2°C pathway in 2030, we will from now on need a reduction of 5.3% per year. For the

1.5°C scenario this is 8.7% (United Nations Environment Programme, 2023, p.30). To reach this goal requires at least a 400% increase, on an annual basis, of investments into climate mitigation on a global scale (Buchner et al, 2023, p.3).
To conclude, I hold the treatment of climate change mitigation as a collective action problem is an unfruitful approach to the political reality of climate change mitigation.

2.6 Distributive Justice Instead of Self-Interest

The logic of collective action provides the developed nations with a basis to conclude that the developing nations should compensate them for their efforts to mitigate climate change. The idea for this so-called 'polluted pay' model has been put forward, as mentioned earlier, by economists Posner and Weisbach (2010, p.88-96).

However, the polluted pay model is both unethical as well as highly impractical. The polluted pay model is unethical because it endorses the logic of extortion and in doing so exploits the vulnerable situation of the developing nations. If the developing nations do not 'compensate' the developed nations, the developed nations will continue to inflict climate change upon the developing nations through their much higher rates of emission. As section 2.2 showed, the harmful effects of climate change will disproportionately fall upon the developing nations. Hence, from the viewpoint of rationality, the developing nations face no other choice than to pay the developed nations in order to mitigate climate change as long as this 'compensation' is less than the costs of climate change. This extortion is unethical because it degrades the developing nations and fails to treat them with a standard of basic respect (Gardiner, 2016, p.91-92). Moreover, the polluted pay model is also impractical for two reasons.
First, it leads to a downward spiral. To give in to extortion only encourages further extortion and extortion in general also undermines the social trust in our political institutions (p.92).
Second, the side-payments policy is likely infeasible because developing nations have less money and therefore no credible incentive to offer (p.91).

The example of the polluted pay model shows that the collective action framework fails to provide us with a theoretical basis from which we can induce compelling incentives to mitigate climate change and comply with the Paris Agreement.

This is troublesome given the immense importance, which is stressed by the growing body of scientific research, of obtaining the Paris Agreement's target of limiting global warming to 1.5°C or well below 2.0°C. In fact, given that the threat of climate change is real, there is an academic consensus that the contemporary generations alive today have a moral obligation towards future generations to mitigate climate change. I derive this claim from Simon Caney's principle that "members of one generation should act in such a way that they leave future people with a standard of living that is at least equal to their own" (Caney, 2018, p.158). A principle which is, for different normative foundations, endorsed by economists, philosophers and legal scholars (Caney, 2018, p.157-59).

What divides economists and philosophers, on this matter, is not the question of whether climate change should be mitigated, but rather the question of which normative principles should guide our mitigation efforts. If we dismiss self-interest as the basis behind compliance with the Paris Agreement, which I propose to do, this discussion becomes more relevant. To aid to this discussion, I will argue in this section that principles of distributive justice, specifically the Basic Rights Model, provide an alternative normative guide for climate change mitigation as opposed to self-interest.

At its core, philosophers are concerned with identifying a framework for just mitigation, whereas economists are concerned with identifying the framework that would maximise the total sum of welfare while mitigating (Gardiner, 2016, p.87; Caney, 2018, p.157-159; Alves & Mariano, 2018, p.360; Weisbach, 2016c, p.242; Stern, 2007, p.31).

To clarify, the burden of mitigation is twofold. It entails the reduction of emissions as well as financial investments into the transition to a climate neutral economy (Gardiner, 2016, p.101). Therefore, the responsibility to mitigate can extend beyond the scope of reducing your own emissions, it can also include technological or financial investments into the green transition.

The transition towards green energy is crucial in the mitigation of climate change because energy use is the main source of greenhouse gas emissions; it currently accounts for 86% of global CO2 emissions (United Nations Environment Programme, 2023, p.8). The use of energy is directly related to income. This relationship is also known as "the iron law of wealth" (Weisbach, 2016a, p.181). According to this law, "increased wealth means increased

energy use" (p.181). Without an exception, so far, there is no group within society that has left poverty and become wealthier without the use of energy. For this reason, transitioning towards renewable energy sources is essential for any future form of sustainable economic growth and the (increased) provision of the contemporary standard of human livelihood (Weisbach, 2016a, p.182).

Nevertheless, within the literature on climate justice, there is a "broad ethical consensus that richer, more developed countries should shoulder most of the burden of action, at least initially" (Gardiner, 2016, p.100). There are two fundamental arguments behind this consensus, in the field of climate justice, to endorse distributive justice principles in the mitigation of climate change (Alves & Mariano, 2018, p. 360). First, in line with notions of utilitarianism and the law of diminishing marginal utility, a distributive justice-oriented approach to climate change mitigation will lead to more well-being on earth (Gardiner, 2016, p.101; Weisbach, 2016b, p.202). When we take the capacity to mitigate into account, the burden of mitigation weighs much lower on the shoulders of the developed nations and its privileged citizens.

Second, apparent from this utilitarian argument, distributive justice-based policy frameworks will also lead to fairer approaches to the mitigation of climate change. Given that the most underprivileged citizens and nations have contributed the least to climate change, it would not be fair for these groups to have their living conditions severely diminished either due to climate change mitigation expenses or the impact of climate change itself (Gardiner, 2016, p.99-104). Together, these two arguments explain the broad support, within the literature on climate justice, for the enforcement of distributive justice in the mitigation of climate change.

Within the literature, the Basic Rights model is the most widely endorsed model (Alves & Mariano, 2018, p.365). This model takes up a rights-holder based approach to climate justice. It focuses on safeguarding "the necessary rights, duties, and responsibilities" that are needed to ensure that the basic human rights are upheld, improved and/or sustained, even under the environmental instability that will be caused by climate change and the financial instability that can be caused while transitioning to climate neutral economies (Alves & Mariano, 2018, p.361). Whereas other models seek to find justice through the correction of past emission outputs, the Basic Rights model has a forward oriented outlook. It holds that, in the

mitigation of climate change (or adaptation to it), justice entails a distribution scheme which protects the minimum standards of human livelihood.

In order to connect the Basic Rights model to climate change mitigation policies, the minimum standards of human livelihood have been translated into different categories of need (Gough, 2015, p.1202). From this list, protective housing (heating and isolation), nutrition, and means of transportation are the needs that are most carbon intensive (Lorek et al, 2021, p.12-15). Thus, in order to comply with the Basic Rights model, a climate policy framework needs to be extra attentive to the impact of its policy on these three needs. Because the Basic Rights model seeks to distribute the burden of climate change mitigation in a fair manner, it promotes a form of distributive justice, also known as allocative justice (Gardiner, 2016, p.100-103; Weisbach, 2016b, p.202-203).

Nevertheless, economists and legal scholars who endorse the neoclassical school of economics and the treatment of climate change mitigation as a collective action problem have argued that ethical arguments add "little or nothing" to the political puzzle of climate change mitigation (Weisbach, 2016c, p.241; Gardiner, 2016, p.88). They maintain that the design of climate policies should not be based on, or even incorporate, a concern with distributive justice.

To strengthen this argument, two arguments have been raised against the incorporation of distributive justice concerns into the creation of climate change policy.
First, it is argued that distributive concerns will lead to less efficient or infeasible climate policies. The reason for this is that if we choose climate policy to "redistribute rather than to reduce emissions as cheaply as possible, we risk significantly raising the costs of emissions reductions or reducing their efficacy" (Posner & Weisbach, 2010, p.4). Because the threat of climate change is so severe we must complete the transition of "our fossil fuel infrastructure to clean energy as quickly as possible" (Weisbach, 2016c, p.241). Hence, climate policies should solely be based on a concern with efficiency (Weisbach, 2016b, p.232; Posner & Weisbach, 2010, p.4).

Second, it is argued that justice-based approaches to climate change mitigation suffer from so-called "climate change blinders" (Weisbach, 2016b, p.201). When it comes to distributive

justice, the argument holds that the philosophical literature on climate change mitigation fails to understand that even though philosophy helps to explain why distributive goals are important, it does not inform us on how to achieve them (Weisbach, 2016b, p.232).

According to this argument, to assume that climate change policies should take distributive considerations into account, is to operate with climate change blinders. However, "when we take off the blinders, we see that we have two serious problems: (i) climate change and (ii) a large number of people living in poverty at a time when others are enormously wealthy. We need to solve both. But we do not necessarily need to solve them both with the same policy" (Weisbach, 2016b, p.208). Instead, explicitly including distributive concerns in the design of climate policy will likely be counter effective because of reduced efficiency. Hence, there should be no place for normative foundations of distributive justice in the design of climate policies (Weisbach, 2016b, p.232).

However, I disagree with this argument. Instead, I argue that climate change policy can only be effective if it actually does include concerns with distributive justice in its framework because this is the only possible way in which the transition to climate neutrality can actually be executed.

I believe that the mistake that is being made by critics of including distributive justice concerns into the design of the climate change policy framework is that they assert too much value to the incentive that efficiency, driven by self-interest, provides to mitigate climate change. As a consequence, they treat the mitigation of climate change as a given fact, one that is borne out of a rational evaluation of the options at hand. If this was the case, it might make sense to mitigate climate change in the most efficient manner. However, in reality, the road to climate change mitigation is filled with economic obstacles and political alternatives. Without a policy framework that incorporates distributive justice concerns, developing nations lack the capacity to mitigate and the developed nations will lack the democratic support to execute the climate policy framework.

My analysis of the collective action framework has shown that the self-interests in the mitigation of climate change highly differ between the developed and the developing nations. Thus, when we focus on self-interest, the developed nations are not provided with an incentive to mitigate their own emissions to a standard compatible with the 1.5°C target, let

alone that they will finance the transition to climate neutral economies for the developing nations. This is problematic because I believe that without such aid, the developing nations will not be able to abide by the Paris Agreement.

As a rebuttal, one might point out that my analysis has shown how important it is for the developing nations to mitigate climate change. If this is true, wouldn't the developing nations be able to mitigate climate change on their own? I hold that such a belief would be naive for two reasons.

First, the capacities to mitigate are much lower for developing nations. When it comes to financing mitigation efforts, low- and middle- income countries face two struggles in comparison to the United States, the European Union or other developed nations. First, their GDP, per capita, is lower and their citizens hold less wealth which gives these governments less resources to draw funds from. To exemplify, the implementation of the African NDCs will cost about 3$ trillion dollars in total, this number is almost equal to the yearly GDP of the whole continent (United Nations Environment Programme, 2023, p.44). According to the UN, the lower capacity to finance the transition to carbon-neutral economies is the largest obstacle for the developing world (United Nations Environment Programme, 2023, p.41-42).

Thus, these governments need to take up loans in order to finance the mitigation which leads to the second issue. Most of the financial status of the developing governments is already characterised through high levels of debt. As a consequence, the financing costs in low- and middle-income countries are up to seven times higher than those in the United States of America and Europe (United Nations Environment Programme, 2023, p.xxiv, p. 39, p. 44).

Second, humans are prone to hyperbolic discounting. Which means that we tend to underestimate the value of future satisfaction (Heath, 2006, p.324). As a consequence, governments and constituents are likely to deprioritize the importance of climate change mitigation and allocate the resources within their capacity to more short-term goals which is understandable when we consider that 62% of the global population lives under a budget of 10$ per day (Roser, 2022).

Thus, without the aid of the developed nations, the developing nations do not have the capacity and willpower to mitigate climate change. Therefore, I hold that in order to comply

with the Paris Agreement the developed nations must support the developing nations in their transition to climate-neutrality. This aid would be a form of distributive justice but this is not the only way in which incorporating distributive justice concerns into the design of climate change policies matters.

On the national level, I expect distributive justice to be essential to maintain, and create, support for the climate change policy framework for two reasons. First, the issue of hyperbolic discounting is also an obstacle on the national level. Within nations, the underprivileged citizens have fewer resources available at hand, because of this scarcity they are also more likely to prioritise short-term interest over the longer-term interest of climate change mitigation. This is understandable when we consider that even in the developed nations, around 20% of the population lives on a total budget of under 30$ a day (Roser, 2022).

Second, as mentioned earlier, empirical research has shown that moral judgement matters when we make a decision (Nelson, 2018, p.117). The transition towards carbon neutral economies is not a certainty but, at least within the developed nations, a democratic political decision that needs to be made. Public surveys in the Netherlands, which I will discuss later in this thesis in detail, have indicated that citizens prioritise fairness over efficiency when deciding whether to support climate policies or not (WRR, 2023, p.11). Hence, I argue that a failure to include distributive justice concerns into the climate change policy framework will come at the expense of the public's support, in the developed nations, for a more ambitious climate change policy framework because of the combined reasons above.

Therefore I argue that without distributive justice as a part of the international and national approach to climate change policy, global compliance with the Paris Agreement will not be politically feasible. Additionally, I argue that noncompliance with the Paris Agreement is very problematic from an ethical standpoint.

Whereas contemporary generations can be excused for the emissions of past generations, because of so-called "excusable ignorance" (Gardiner, 2016, p.111), I believe that this argument does not hold for the actions taken by the contemporary generations themselves due to the overwhelming scientific research on the harmful impact of GHG emissions that exists today (IPCC, 2023).

In this regard, I disagree with David Weisbach, who has argued that causal responsibility for climate change should not be assigned based on emission rates.
He argues that if we assign causal responsibility for climate change based on emission level, this type of corrective justice argument should be applied to "any limited resource anywhere in the globe that is not shared equally" (Weisbach, 2016b, p.219). Thus, Weisbach holds that we cannot blame the contemporary generations for overemitting as long as we don't apply the same principle to "minerals, oil, forests, fresh water, fertile soil, or any other limited resource" (Weisbach, 2016b, p.220).

However, I disagree with Weisbach because I think that emissions should not be treated as any other limited resource. Firstly, that emissions are a limited resource is factually incorrect. In theory, it would be possible to emit indefinitely. If emissions were limited, most people in this world would be much more cautious with their footprint. Because emissions are not limited, those who are not concerned about climate change, lack an incentive to emit less. Neither is the atmosphere a limited resource. The atmosphere is non-excludable, it is only the quality of the atmosphere that deteriorates which makes it an (impure) public good (Stern, 2007, p.27). Second, and most importantly, from the perspective of justice, we should not treat emissions as similar to other resources because unlike other resources, emissions directly harm the living conditions of all (young) people alive today, born today and future generations. The mining of gold, or another type of limited resource which offers the potential to generate personal wealth, does not have such a direct adverse impact on others.

Therefore, I do not concur with Weisbach that we need to support a radical redistribution of all limited resources on this globe in order to believe that corrective justice should be applied on contemporary contributions to climate change (Weisbach, 2016b, p.222-223). Because of the unique characteristics of emissions, climate change is an issue distinct from the distribution of other resources. A failure to mitigate climate change leads to impoverished potentials for human livelihood for future generations and some people alive today. Hence, I hold that a failure to mitigate climate change violates the principles of justice (Caney, 2018, p.158-59).

To conclude this section, as mentioned earlier, David Weisbach, and other scholars from the Chicago School, have argued that we do not have to combine a concern for resolving inequality with climate change policies (Weisbach, 2016b, p.208). I explicitly argue for the contrary. When we take into account the capacity to mitigate, it becomes evident that the mitigation of climate change is likely only politically feasible on the international level if the developed nations take the lead in the burden of mitigation. They can do so by more drastically reducing their own emissions and by providing aid to the transition towards climate neutrality in the developing world. The developed nations can only provide aid to the developing nations if this aid is supported by their constituency and I suspect that this support is tied to the economic impact of the policy framework on constituents and on the perceived fairness of the policy framework. Hence, I argue that a concern with distributive justice is crucial in the creation of the climate change policy framework. In line with the Basic Rights model, I argue that in order to be distributively just, the climate policy framework needs to be extra attentive to its implications for carbon-intensive basic needs such as protective housing (heating and isolation), nutrition, and means of transport (Gough, 2015, p.1202).

2.7 The UN underestimates the Viciousness of Within-Country Inequality

8 years after the thus far unsuccessful Paris Agreement, the UN seems to agree with my analysis that distributive justice needs to be an integral part of our approach to climate change mitigation. It appears as if the UN has realized that the collective action framework does not provide the correct incentive to successfully mitigate climate change. Throughout their latest Emission Gap Report, no mention is given to collective interest, or sortlike terms, as an argument to mitigate climate change (United Nations Environment Programme, 2023). Rather, the UN now repeatedly refers to the principle of "common but differentiated responsibilities and respective capabilities in light of national circumstances" which is included in the Paris Agreement, as a means to motivate the developed nations to take the lead (2023, p.12, p.21, p.34, p.36, p.46, p.54; UNFCCC, 2015, p. 3).

According to the UN, "for high-income countries, this implies further accelerating domestic emissions reductions, committing to reaching net-zero as soon as possible – and sooner than the global averages from the latest IPCC report implies – and at the same time providing financial and technical support to low- and middle-income countries. For low- and middle-

income countries, this means that pressing development needs must be met alongside a transition away from fossil fuels" (United Nations Environment Programme, 2023, p.2).

Thus far, the developed nations have been somewhat tone deaf for this call. As mentioned earlier, the agreement has been made that $100 billion a year will be mobilised, by the developed nation, towards a UN Climate Fund that supports climate mitigation and adaptation. Even though this number falls short of what is actually needed, the target is not met. In 2022, $83.3 billion was mobilised. Roughly $50.0 billion went to mitigation and the remainder to adaptation. Moreover, only 8% of this amount went to low-income countries. Most of the funds were loans, with interest, that were given out to the middle-income countries (United Nations, 2023).

However, I hold that, although this principle is a big step forward compared to the collective action rationale, this principle places too much focus on the inequality *between* nations. In doing so, the UN overlooks the biggest political obstacle in the mitigation of climate change. Which is the growth of *within*-country inequality that has occurred across the globe during the past decades.

I argue that this is problematic for two reasons.
First, by merely focussing on the inequality between-nations instead of inequality within-nations, the UN ignores the reality of climate change mitigation politics and policies. States may make international agreements but at the end of the day, each government only possesses accountability within their own jurisdiction. In democratic nations, it is also the national electorate who determines if the government can continue their policy ideas or not. Policy in general but also climate change policy under the Paris Agreement is created by national governments and national governments are mainly responsive to their national electorate. Under the Paris Agreement, nations are granted the discretion to determine their own nationally determined contributions (NDCs) and to determine their own (financial or technological) contributions to climate change mitigation in developing nations. For instance through the UN Climate Fund. Therefore, in order to accelerate the transition towards climate neutrality, we need more ambitious NDCs and international solidarity. Especially from the developed nations. Most of the developed nations are democracies, and in democracies the only way towards more ambitious NDCs (including international solidarity) is a more ambitious constituency.

Second, as I will further explain later on in this thesis, within-country inequality in emissions, especially within developed nations, is the biggest obstacle that stands between the current trajectory of failing the Paris Agreement and the road to compliance with the Paris Agreement. Resolving the growing inequality of emissions within the developed nations is what policy design should focus on in order to make compliance with the Paris Agreement realistic again.

When we zoom in on the European Union, it becomes evident how within-country inequality severely hampers the developed nations' transition towards a net-zero economy. The European Union has made the most progress compared to other developed nations, or regions, respectively North America, Japan and South Korea, and Australia and New Zealand, when it comes to the reduction of carbon emission (Ritchie et al., 2020).

The European Union has reduced their collective emissions by 30% compared to the 1990s (European Environment Agency, 2023). In 2022, the EU was able to reduce its emissions with 0.8% compared to 2021 (United Nations Environment Programme, 2023, p.6). As of October 2021, the EU was on track for an emission reduction of 41% by 2030 (Tomany et al., 2021, p.11). However, the EU realises that as one of the most developed political blocs in this world, they need to be a forerunner in the mitigation of climate change. To do so, they have increased the Paris Agreement's reduction target of 45% to a reduction target of 55% by 2030.

The consumption pattern of the richest European Union citizens seems to be the biggest obstacle in achieving this objective. Within the EU, the wealthiest 1% emits per capita 10 times as much as the bottom 50% (Tomany et al., 2021, p.16). Although the average per capita emissions differ per member states, the emissions per income group are highly unequal within each member state (Gore & Alestig, 2020, p.6).

Researchers have analysed the per capita reduction in GHG emissions between 1990 and 2015 in the European Union per income group. Their findings do not resemble a scenario in which citizens collectively take action against climate change. Instead, not only do poorer citizens emit less, they have also managed to reduce their emissions to a far greater extent than richer counterparts. Between 1990 and 2015, "the per capita GHG emissions generated

by the bottom 50% of the EU's population by income have fallen by 32%" (Lorek et al., 2021, p.10). The emissions of the 51th to 90th percentile of EU citizens has reduced with 22%, whereas the richest 10% reduced their footprint with 10%. However, emissions have gone up for the richest 1% with 7%. This observation is not unique to the European Union. Instead, the other developed nations have experienced a similar trend; the richest citizens contribute, in proportion, the least to climate change mitigation because their footprint has the slowest decline rate (Zheng et al., 2023, p.1). As a consequence, inequality in emissions is rising.

The earlier discussed difference in economic growth among different income groups within the EU can only partially explain this trend because since 1990, the EU has been able to decouple emissions from economic growth (Ritchie & Roser, 2021). Therefore, these findings should disturb policymakers as it indicates that the policy framework which focuses on enabling economic growth with emission reductions is not adequately calibrated with the consumption pattern of the upper class.
Hence, research concludes that in order to comply with the Paris Agreement, "targeted policies are necessary to shift the reduction burden away from low- and middle-income households and onto the households where reductions are needed the most" (Tomany et al., 2021, p.16).

Thus, even though the UN has rightfully departed from the collective action frame, in its communication the UN still seems to lack a comprehensive understanding of the obstructive dynamics that climate change politics needs to resolve in order to comply with the Paris Agreement. In the next chapter. I will suggest a theoretical alternative for the collective action framework in order to better understand the complex issue of climate change mitigation.

Chapter 3: The Politics of Climate Change Mitigation is a Matter of Distributive Conflict

3.1 Introduction of theory

If we analyse the progress that has been made up to 8 years after the Paris Agreement, it seems as if free-riding concerns are not the primary obstacle between the current trajectory of climate change and the 1.5°C scenario. As mentioned in the introduction, nations that partake in the Paris Agreement submit nationally determined contributions (NDCs) which are updated 5 yearly. The next round of NDCs will be submitted in 2025 but if all nations successfully implement their currently existing NDC's it will lead to the following scenarios, respectively, a 2.9°C temperature rise under the unconditional NDCs and a 2.5°C temperature rise under the implementation of the conditional NDCs.

The fact that global warming will still rise to 2.5°C during this century even when nations are offered with a safeguard against free-riding concerns shows that free-ridings concerns are not what is standing in the way between climate catastrophe and a sustainable future for our planet.

Moreover, an empirical study into climate change policy by researchers Aklin and Mildenberger supports my analysis that the collective action framework is an unhelpful characterisation of the political challenge that climate change mitigation poses (2021). They introduce their article with reference to the influential scholarly literature that has used collective action theory to explain the "global failure to mitigate climate risks" (p.5). They note that the collective action account has become widely accepted within the literature even though it has never been tested empirically.

This propelled them to empirically test several conflicts of climate politics, which have often been used as evidence in the need for collective international climate action. Their goal was to see if free-riding concerns actually influenced the outcome of national climate policies (p.11-16).

Aklin and Mildenberger's findings contradict the collective action account (2021, p.19). To quote, studies on, among others, the US, Europe, India, China and Russia found "little evidence that either national publics or political actors routinely behave in ways consistent

with collective theory, with respect to both domestic climate policy making and their engagement with multilateral climate treaty making" (p.14). Thus, neither citizens nor politicians seemed to act in accordance with the logic of collective action (p.14-19). Instead, they more often acted inconsistent with the logic of collective action. An example of this is how, in one study, the public's support for climate action increased by 5% when faced with global inaction (p.14). Other studies show that those citizens who tend to support climate change mitigation, tend to do so regardless of the action taken by other countries and vice versa (p.15). This observation also holds for politicians and interests groups that are involved in the political decision-making process (p.18).

Instead, Aklin and Mildenberger suggest that claims on conditional cooperation should rather be seen as a rhetorical strategy than as a fitting characterization of the policy making process (p.14). Thus, politicians, or political interest groups, that defended their willingness to support certain climate policies on the basis of free-riding concerns by other nations (*conditional cooperators*), were in reality unwilling to support climate policies at all (*unconditional non-cooperators*) (p.18). More often, this unconditional non-cooperation is often connected to political actors that hold strong ties with carbon-intensive economic sectors or hold carbon-intensive footprints on their own. The concern about other free-riding nations seems to be used as a strategic rhetoric tool to add credibility to their bargaining position. Akin and Mildenberger refer to this dynamic as an issue of "epiphenomenality" to emphasise that surface rhetoric may not reflect underlying behavioural motivations" (p.21). Additionally, Aklin and Mildenberger explain how the greatest analytical strength from the collective action frame is derived from the performative power that this rhetorical strategy holds (p.22). If citizens, or other political actors, are convinced to believe that it is only effective to support climate change mitigation if others do so as well, the logic of game-theory takes over and the support for policies that aim to mitigate climate change decreases.

However, scholarly research should transcend performativity. Hence, Akin and Mildenberger argue that scholars fail to recognize that free-riding concerns are merely a rhetorical strategy because scholars have conflated the outcome of climate change with the creation of climate mitigation policy (p.5). They explain that, in the bigger picture, climate change indeed is an embodiment of a collective action problem. However, our understanding of the creation of climate policy is not helped by making use of collective action theory. Because climate policy is drafted according to a different logic.

In essence, the primary concern of governments is to maintain the support of their key constituencies as this is the only way to remain in office (Akin & Mildenberger, 2021, p.5). In the case of climate change policy, the government's standpoint is shaped by the outcome of political conflict between proponents and opponents of climate reform interests.

As the previous chapter showed, climate change is not an equitable issue nor is its mitigation. When it comes to climate change mitigation, opposing interests clash. This is the case for citizens and opposing consumption levels and/or lifestyles, but even more so from the perspective of corporate interest. Certain carbon-intensive industries need to innovate or become obsolete in order to transition towards a net-zero economy.

To do so, new policies need to be drafted which intensively restructure the economic and social activity within each nation's economy, especially within the developed nations. These policies, and the restructuring it accompanies, inevitably creates winners and losers. Both in terms of funding and certain consumption habits/styles that are discouraged or encouraged. Additionally, in the creation of climate policies, opposing ideologies on how society ought to be structured clash.

Thus, the creation of climate policy is a matter of distributive conflict over material benefits and opposing ideologies (p.5). To better understand why our political institutions are on the road to failure in the mitigation of climate change, even so after the creation of the Paris Agreement that served to take away free-riding concerns, we need to step away from the collective action framework and include a focus on distributive conflict in our analysis of climate change mitigation.

Thus, this thesis holds that the key to climate change mitigation is overcoming distributive conflict in the creation of climate policies.
I find support for this theory within my analysis in the previous chapter of inequality and climate change mitigation as collective action problem. From a rational perspective, the wealthiest citizens in the developed nations have a much lower interest in the mitigation of climate change than less privileged groups.

This analysis seems to be reflected in the fact that the wealthiest 10%, and specifically the wealthiest 1%, of citizens are the income group that has reduced their emissions the least in proportion to other income groups. In fact, in some developed nations, the wealthiest citizens are the only income group that has managed to increase their footprint since the mitigation of climate change has increasingly become a priority on the political agenda since the 1990's. To conclude, I hold that the developed countries' lack of ambition to commit to the Paris Agreement should be understood as a political clash over the distributive side of climate policies in which elite interests have gained the upper hand.

At this point, it should be granted that countries' lack of ambition to commit to the Paris Agreement, which is reflected in the fact that all the conditional NDCs combined will still lead to a global increase of temperature with 2.5°C, cannot automatically be related to a political clash over the distributive side of climate policies in which elite interests have gained the upper hand.

First, in order to make such a statement we would have to look at the design of policy itself and not footprints. Second, one could critique my analysis that elite interests are the biggest obstacle to succeeding the Paris Agreement by stating that the lack of ambitious NDCs is an expression of the outcome of democratic elections. In other words, the critique could hold that the NDCs are the outcome of a national democratic process. In democracies, all eligible voters are granted an equal vote. Hence, it would not be fair to attribute the seeming lack of democratic support for more ambitious NDCs to a distributive conflict in which elite interests have gained the upper hand.

To rebuttal these concerns, I will first theorise how socio-economic inequality can perpetuate into political inequality as a means to explain how elite interests can dominate democratic procedures. Second, I will do a case study of the existing framework of Dutch climate policies to see if the existing climate policies are actually skewed towards elite interests. Finally, I will discuss the implications of my findings for the greater discussion on how to approach the (inter)national politics of climate change mitigation and the outcome of national elections in developed nations that tend to discourage more ambitious NDCs.

3.2 Socio-economic Inequality Perpetuates Political Inequality

Earlier in this thesis, I discussed, with the use of Islam and Winkel's framework, the vicious cycle of inequality. In doing so, I merely focused on the economic aspect of the relationship between climate change and aggravating inequality. However, Islam and Winkel have also pointed out the political relationship between environmental impact and aggravated inequality.

Thus, the vicious cycle of inequality can be manifested through two channels, respectively, the economic channel and the political channel. Islam and Winkel explain, "[t]he economic channel works through reduction of private resources available to the disadvantaged group" and the political channel "on the other hand, works through the state power" (2017, p.10-11). Islam and Winkel continue "[i]n an unequal society, the advantaged groups (who own most of the productive assets) usually "capture" or exert dominating influence on the state and skew its policies in their favour" (2017, p.1). Additionally, I would like to stress that the political and economic channels are interlinked because financial inequality leads to political inequality.

Islam and Winkel focus on the dominance of elite-interests in the creation of policies.
I underscore their analysis, but before I do, I wish to strengthen their argument by pointing out that an exertion of elite-interests also precedes the process of policy creation, namely, it also influences the agenda-setting of discussed policies.

As Achen and Bartels explained in their book on democracy, elections are mainly a competition in the organisation of competing interests (Achen & Bartels, 2016, p.540) Those who can successfully organise into interest groups can influence political parties and the public perspective. Thereby, successful interest groups influence the outcome of elections. The available body of research makes it clear that the wealthy and/or university-educated citizens have a higher capacity to organise themselves effectively, and in doing so, to influence elections and the agenda-setting of policy ideas (p.537-539). The same dynamic can be identified for powerful corporations (who often represent their shareholders which are the wealthier citizens). As a consequence, democratic elections fail to produce governments that are responsive to the needs of the majority of citizens (Achen & Bartels, 2016, p.4; Hoogeboom, 2022, p.2).

Thus the exertion of influence by the wealthiest in the creation of policies occurs in, at least, a twofold way. First, the wealthiest disproportionately influence which topics are prioritised on the agenda and how they are framed as explained by Achen and Bartels. Second, their preferences receive more weight in the creation of policies.

To explain how this higher weighting in the creation of policy works, I refer to the influential work of James Boyce (1994). The general consensus, in the creation of policy, is that, when choosing from different policy options, policy makers should pick the policy that maximises welfare. To do so, a cost-benefit analysis is often deployed. Under a cost-benefit analysis, the policy with the highest net-benefit is chosen. Additionally, the premise of cost-benefit analysis is that it honours the democratic principles because the preferences of each citizen receive equal weight in the analysis. Similar to collective action theory, cost-benefit analysis is based on the theoretical foundations of neoclassical economics.

However, research has shown how cost-benefit analysis can create a flawed perspective of democratic welfare. Boyce demonstrated that "in reality social decisions are not based on maximisation of the simple sum of utilities that accrue from a particular decision to different members of the society. Instead they are based on a weighted sum, in which the utilities of the advantaged (powerful) groups get greater weights" (Islam & Winkel, 2017, p.11). Hence, cost-benefit analysis will often lead to policies that are more aligned with the interest of the rich. Thus, Boyce's research has shown that cost benefit analyses tend to result in a so-called "Power Weighted Social Decision Rule" (PWSDR) in which the preferences of the powerful are granted superior influence (1994, p.170-171).

Unfortunately for the environment, the financial interests of the wealthy are more often aligned with policies that are harmful for the environment which results in an undervaluation of environment-friendly policies. This dynamic grows stronger if the rich can isolate themselves from the consequences of environmental degradation. Islam and Winkel's framework has shown that they can. The impact of inequality on public policy impacts climate change policy both on the mitigation and adaptation side.
When it comes to adaptation, "inequality leads to public policies that leave the disadvantaged groups more exposed and susceptible to climate hazards" and research has shown that adaptation policies "often benefit the advantaged groups more than the disadvantaged" and in doing so end up aggravating inequality (Islam & Winkel, 2017, p.11).

When it comes to policy instruments focussed on mitigation, such as carbon taxes, research has shown that such policies "have done little to address the vast inequalities in carbon footprints, and may have exacerbated them in some countries. Carbon taxes have been found to place a disproportionate burden on low-income and low-emitter groups, while the carbon price signal for high and wealthy emitters may be too low to force changes in consumption (or investment) patterns among wealthy individuals" (Chancel, 2022, p.935).

The harmful effect that inequality has on the environment also becomes prevalent when we focus on countries that have similar standards of wealth but different levels of inequality. It seems that inequality results in more unsustainable societies. To illustrate, Japanese and Swedish societies are much more egalitarian than American and Canadian societies. Shockingly, the per capita ecological footprint of the United States and Canada is respectively twice as big as in Japan and Sweden (Islam, 2015, p.14).

To conclude, in this section, I hope to have demonstrated how economic inequality can aggravate political inequality and in return be aggravated through political inequality. Economic inequality hurts democratic equality because wealthier citizens are more powerful in raising attention for certain policy issues and ideas. Moreover, in the creation of policy, the dominant paradigm of cost-benefit analysis tends to give superior weight to the preferences of wealthier citizens. As a consequence, the outcome of policies tend to be favoured towards elite interests. This is a large obstacle in the mitigation of climate change because it is the rich that benefit the most from environmental pollution. As a consequence, not enough mitigation or adaptation policies are created and if they are, they tend to be skewed towards elite preferences.

To strengthen the theoretical underpinning above, I will now turn to an analysis of the Dutch climate policies. Additionally, I will pay specific attention to the Netherlands for two reasons. First, in the Netherlands, a conducive study was published in November 2023 which analysed both the costs of climate mitigation and the emission under the current policy trajectory up to 2030. This study divided the Netherlands into 10 income groups based on percentile ranges and by comparing the costs of climate mitigation to emissions for each income group, this study provides insight into climate policy that are unique on a global scale. Second, in the same month the Netherlands held parliamentary elections in which a majority of the votes

went to political parties that do not support additional public funding into an accelerated transition towards climate neutrality.

In the next chapter, I will argue that a combination of the collective action framing of climate change mitigation and the planned framework of climate policies that is skewed towards elite interests together form a blockade for the creation of a Dutch NDC that honours the Dutch commitment to the Paris Agreement. Subsequently, I will, as an alternative, propose to discourage (e.g. through taxation) the consumption of carbon-intensive luxury goods. Simultaneously, the climate policy framework should further aim to protect the provision of basic needs that have traditionally been carbon-intensive, such as heating, nutrition and transportation, to the underprivileged citizens. Preferably, they should do so by decisively incentivising green options for these needs in order to make a green lifestyle more accessible to the lower income groups. These changes will make the climate policy framework more distributively just and more effective in terms of emission reduction and the level of democratic support. Finally, I will discuss the philosophical implications of my thesis.

Chapter 4: Climate Politics in the Netherlands

4.1 Analysis of Dutch Policy Framework

The Netherlands is one of the wealthier nations within the European Union.
At the end of 2022, the Netherlands had reduced their emissions by 31% compared to 1990 (van de Hulsbeek, 2023). In April 2023, the ministry announced an extra package of climate policies in order to accelerate mitigation (Ministerie van Economische Zaken en Klimaat, 2023).

In September 2023, The Dutch Environmental Assessment Agency announced that with this extra package, for the first time, meeting the EU's objective of a 55% emission reduction by 2030 was within the margin of possibility under the current trajectory. They estimated the Dutch reduction of emissions by 2030 between 46% and 57%. However, the Dutch Environmental Assessment Agency also warned that the 55% target could only be met by 2030 under ideal conditions. Which means, among other factors, that all the planned climate policy plans of the government will need to be implemented swiftly and need to meticulously fit into the existing framework (Planbureau voor de Leefomgeving, 2023b).

However, the Dutch government coalition fell in the summer of 2023 over a dispute on immigration and new elections were held in November 2023 (Kiesraad, 2023).
Even though the reduction goal of 55% by 2030 is anchored within the Dutch Climate Law, I fear that the victory of right-wing parties at the 2023 parliamentary election foreshadows that the 55% reduction goal by 2030 will not be met. Because at the latest election, right-wing parties received enough votes to win them a majority in parliament. Three of the 4 right-wing parties that are together currently being considered to form a coalition, ran on an election manifesto which claimed to drastically reduce the amount of investments into climate mitigation. Hence, the election result likely means a big blow for the Dutch climate ambitions because some policies have not been implemented and/or could be revoked by the new right-wing government.

November 2023, is also the month in which a unique report was published in the Netherlands. Namely, a report that estimated how the current Dutch policy framework for climate mitigation will impact the costs of mitigation and the emissions levels of ten different income

groups (based on income percentile ranges) (Milieudefensie, 2023a). Thus, this report analyses how the Dutch government distributes the impact of their climate policies.

Before I dive into this report, I will shortly sketch the inequality in reductions between 1990 and 2015 for context and because this data corresponds to the years for which data is available for the other developed nations.
Even though all income groups in the Netherlands have declined their per capita emissions since 1990, the proportionate reductions up to 2015 presented a pattern that is similar to the other developed nations. The richer you are, the lower your reduction percentage tends to be. For instance, the bottom 50% had declined their emission with 50% between 1990-2015 and the richest 1% underwent a 14% decline. As it stands, the richest 10% emits, per capita, around 2.5 times as much as the bottom 50%, and the richest 1% emits ten times as much (Ecorys, 2022, p.13, p.20-21).

Under the current policy framework, the burden of mitigation will become somewhat more equal. Between now and 2030, all income groups will reduce their emissions with more or less the same amount (Milieudefensie, 2023a, p.2). However, because the reductions in emissions were very unequal between 1990 and 2015, it should be observed that under the current policy framework lower-income groups will have, in proportion, contributed more to the mitigation of climate change than the richer income groups.

The fact that lower income groups will have reduced their footprint more under the current policy framework does not have to do with a higher ideological commitment to the need for climate mitigation. Rather, it has to do with the fact that, for the lower income groups, the transition to a net-zero economy has a much higher impact on their financial situation.

Despite the fact that, as mentioned before, the higher income groups have a much higher footprint, poorer households have to allocate a much higher part of their disposable income to basic needs such as heating, mobility and food (Lorek et al., 2021, p.9). In the Netherlands, the lower income groups spend a 3 times bigger fraction of their income on these basic needs than the higher income groups (Velthuijsen & Tezel, 2023).

Most of the climate mitigation policy focuses on internalising the impact of co2 emissions by raising the price of ecologically harmful consumption. The basic needs are carbon intensive

and are thus the focus of many climate policies such as carbon taxes. Because of the differences in disposable income, the poorer population is disproportionately hurt by these taxes. Both in the EU and the Netherlands, the costs of taxation on the basic needs have a 3 to 4 times higher impact for the lowest income groups compared to the highest income groups (Velthuijsen & Tezel, 2023; Lorek et al., 2021, p.9).

Contrary to the basic needs, there are also luxurious consumption goods. “Luxury” goods are those goods of which the consumption rises with more than 1% when income rises with 1%. Both in the EU and in the Netherlands, luxury goods such as aviation tend to be undertaxed, and receive less attention, compared to the basic needs within the climate mitigation policy framework. Even though the consumption of luxury goods is what creates the huge inequality in GHG emissions between income groups (Lorek et al., 2021, p.14; Ecorys, 2022, p.19; (Milieudefensie, 2023b). This is a fine example of the way in which the policy creation process tends to be more responsive to the interests and preferences of wealthier citizens.

Additionally, the Dutch climate mitigation policy framework seems to be strengthening rather than dismantling the vicious cycle of inequality. Islam and Winkel’s framework gave insight into the way in which wealthier citizens have more resources to lower the burden of climate change and mitigations. Through investments they can make their assets more sustainable and resilient against climate impact. In my opinion, (climate) policies should empower underprivileged citizens with the means to make similar investments. Such policies reduce inequality and are more cost-effective in the long term because they create a structural benefit instead of a temporary relief (Islam & Winkel, 2017, p.17-19). Nonetheless, the Dutch climate policy framework has been doing the opposite during the recent years.

Policies that support a structural reduction of footprint through investments have dominantly been made available to rich citizens whereas policies that only provide temporary relief have been used to address the poorest citizens.

In 2016, the Dutch government started with the provision of a policy plan that aimed to incentivize, through subsidies, sustainable investments to lower income households’ need for fossil energies in the long run. Examples of such are subsidies for the purchase of solar panels, electric cars and heat pumps. However, cars are luxury goods and thus this subsidy dominantly benefitted those who could already afford a car (Wiegman, 2022). Additionally,

the subsidy plan for solar panels and heat pumps, meant to make homes more sustainable, was only available for homeowners. In the Netherlands, the richest 40% is 8.5 times more likely to possess their own home than the poorest 40%. Add to this the fact that wealthier citizens are much more often aware of the existence of subsidies and the correct procedure to request them and the following should not come as a surprise; the 40% richest households received ten times more funding than the poorest 40% of households (Ecorys, 2022, p.23).

Moreover, 80% of the climate investment related tax benefits went to citizens classified as rich compared to citizens classified as poor(er) (Ecorys, 2022, p.24).
Policies that are skewed towards elite-interests, such as the sustainable-investment subsidy for homeowners, structurally increase the vicious cycle of inequality. Because, thanks to the subsidy-induced investments, richer households will be able to reduce both their costs and their footprint in the long term.

Alternatively, the Dutch policy framework has tended to opt for policies that generically reduce the percentual costs of investment and/or consumption. An example of such is the reduction of the energy tax (21% to 9%) in 2022 after the Russian invasion of Ukraine sparked a gas crisis. These policies do nothing to reduce inequality and in absolute terms they lead to more funding being dedicated towards higher income groups because of their higher consumption level.

During the same gas crisis, the Dutch government decided to temporarily provide an energy allowance to support those who earn below 120% of minimum wage to support their energy bill. Without this allowance 1 million Dutch households (12.5% of total) would have fallen into energy poverty. With this allowance, 600.000 households still face energy poverty (Sociaal en Cultureel Planbureau, 2023, p.104). Critics have warned that, although helpful in the short-term, these policies do nothing to reduce both energy poverty and these households' dependence on fossil fuels in the long-term (C. Chen et al., 2023; Nationale ombudsman, 2022, p.4).

To conclude, the Dutch climate policy framework has been unevenly skewed towards the interests of the wealthier citizens. Thereby, it has strengthened rather than weakened the aggravating impact that climate change has on the vicious cycle of inequality.

4.2 Policy Recommendations

In this section, I will recommend guiding principles that can transform the climate policy framework towards a policy framework that effectively reduces GHG emissions through targeted policies and breaks with the vicious cycle of inequality. Such a framework will be more sustainable because it is more efficient and its fairness will help to increase the public support for climate policies.

A more effective policy mix combines a targeted focus on reducing the consumption of carbon-intensive luxury goods with need-based support of vulnerable groups in the transition towards an emissionless provision of the basic needs such as heating, nutrition and transport (Lorek et al., 2021, p.16, p.19). This policy mix should be predominantly financed through taxes that place the burden on the interlinked group of rich and high-emitting citizens. Raised funds should be used to create greener options for the provision of basic needs (heating, transport, nutrition) and to protect the provision of basic needs during the transition.

The first step in the creation of a better policy framework is to distinguish needs from desires. Therefore, I'd like to introduce the concept of "consumption corridors" (Lorek et al, 2021, p.15). The climate policy framework should revolve around safeguarding the access of all income groups to their basic needs during the transition towards climate neutrality. Thus, a minimum consumption standard should be defined and protected. In order to be able to comply with the Paris Agreement, a maximum consumption standard should be identified as well.

Luckily, in recent years, the awareness of the need to incorporate special attention to the vulnerable income groups has grown in the Netherlands, the EU, and at the UN. Policies that specifically focus on the vulnerable parts of the population are starting to receive more attention within the policy framework. An example of this is how the latest package of climate policies that was announced by the Dutch government in April 2023 did include policies that are specifically designed to make social housing and the homes of poorer citizens more sustainable. However, I fear that in the Netherlands this attention may have come too late for three reasons.

First, currently, there is no detailed knowledge available about both the way in which underprivileged groups need to be financially, and technically, supported in their mitigation and adaptation efforts as well as the risks that climate change poses for these groups. As mentioned before, specific attention for the relationship between climate change risks and inequality was omitted during the Dutch government's climate risk analysis for the years 2022-2026 due to 'budgetary' restrictions (Planbureau voor de Leefomgeving, 2023a, p.56, p.75). This shows that, despite progress, inequality is not a priority yet within the Dutch approach to climate change.

Second, within the Netherlands at least, the recent addition of vulnerability-attentive policies seem to even out the priorly existing over-responsiveness to elite-interests within the climate policy framework rather than turning the policy framework towards being the most attentive to the needs of the most vulnerable. Because it is estimated that by 2030, the current framework of Dutch climate policies will lead to a 3% decrease of costs for the poorest income group and a 2% increase of costs for the richest income groups compared to today's status (Milieudefensie, 2023a, p.1). In other words, the status quo remains the same. Despite their higher ability to transition to climate-neutrality, the richest 10% of Dutch households will remain to emit 2.5 times as much as the poorest 10% of households in 2030.

Third, the unfair and unequal distribution of climate policies has negatively impacted the public support for climate change mitigation policies. This is demonstrated by the overwhelming support during the 2023 elections for political parties who wish to reduce, or abandon, the climate policy framework based on the claim that this framework is (1) too expensive for ordinary citizens and (2) make use of the collective action rhetoric by stating that Dutch mitigation efforts are useless if other countries do not comply with the Paris Agreement either. Because of this result, the Dutch climate policy framework, and its commitment to the 55% reduction by 2030 target, is in danger of being revoked.

This election revolved around the broader concept of livelihood security (bestaanszekerheid) and more specifically the question whether Dutch society is able to combine the provision of livelihood security with immigration. Although livelihood security is most definitely related to climate change (policy), it's difficult to draw definite conclusions from this election result about the Dutch public perception on the need for climate change mitigation policies.

Nevertheless, there have been clear indicators that the unequal design of the climate policy framework comes at the expense of broader support for climate change mitigation in the developed nations. The most prominent example of such are the French “yellow vests” protests (Lorek et al., 2021, p.9). In a nation-wide survey, Dutch citizens stated that for them, justice is even more important than efficiency during the transition. A just transition is citizens’ primary concern (WRR, 2023, p.11). Additionally, dissatisfaction with climate policies showed a high correlation with underprivileged financial situations and ‘lower’ types of education. Underprivileged citizens are more likely to be dissatisfied with climate policies (Sociaal en Cultureel Planbureau, 2023, p.24). Lastly, the National Ombudsman warned that the media and government often use technical argumentation to defend the need for climate change mitigation, causing citizens to be detached from the topic (Nationale ombudsman, 2022, p.23). For this reason, researchers concluded that the Dutch transition towards climate neutrality was at the risk of failing due to a lack of public support (WRR, 2023, p.6).

Chapter 5 Conclusion

5.1 Conclusion & Discussion

To conclude, this thesis aimed to answer the question of how convincing it is, from a political viewpoint, to treat climate change mitigation as a collective action problem.
I have argued that the collective action framework is an ineffective foundation for the approach to the international politics of climate change because the political complexity of mitigating climate change is not the temptation to free-ride itself. Rather, I argue, the difficulty lies in overcoming a distributive conflict in which the wealthiest 10% on this globe, who hold the most political power, have the biggest capability to mitigate climate change but the least interest to do so. Subsequently, I have shown how the rejection of the climate policy framework in The Netherlands can be linked to the way in which this framework is skewed towards elite interests. Hence, I argue that overcoming the distributive conflict in the creation of climate policy should be the main priority in order to get on track with the Paris Agreement by 2030. I am aware of an important limitation in my thesis which is that I did not include how investments into climate change mitigation can also be financially profitable. I suspect that this increases the incentive for the wealthy to participate in climate change mitigation and I encourage future research into the effect that this incentive will have on the strength of the collective action framework.

To discuss the implications of this thesis, I wish to connect my thesis to the growing awareness of the way in which the embrace of liberal open-market policies, in combination with globalism, has sparked the growth of inequality within the Western developed nations since the 1980s (Chancel et al., 2022, p.3). As a consequence, the social mobility of the lower and middle-class is declining. To quote, “increasingly, an individual’s chances in life are determined by their starting point (socio-economic status at birth, where they were born, etc.), resulting in economies and societies that too often reproduce rather than reduce historic inequalities” (World Economic Forum, 2020, p.8).

This thesis wishes to contribute to the debate on inequality in a twofold manner. First, by addressing how climate change exacerbates this trend of growing structural inequality. Second, by addressing the way in which inequality obstructs the mitigation of climate change. Economic inequality aggravates political inequality and vice versa. I have shown that, in the Netherlands, political inequality has led to the creation of policy frameworks that

are skewed towards elite interests, which is both unsustainable and comes at the expense of political support for the climate policy framework.

However, in the Netherlands, this dissatisfaction has not led to more political support for a more equitable climate policy framework, but rather, to an overall rejection of the climate policy framework. My suspicion is that this rejection is related to the rhetorical strength of the free-riding argument, which can make the mitigation of climate change seem like a hopeless or worthless endeavour. In doing so, the rhetorical strength of the collective action framework obscures the potential for a more equitable climate policy framework.
An analysis of the way in which an equitable climate policy framework could appeal to the larger electorate is suggested as a topic for future research by this thesis.

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