

WHO WILL COLLAPSE?

Jared Diamond's theory implemented: how Bangladesh and the Netherlands choose to fail or survive, from 1989 to 2020.



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This is not a story that's already been written, it's a story that we will be writing in the decades ahead, based on the choices that we make.

David Wallace-Wells
*Earth's Climate Future*¹

¹ David Wallace-Wells, "Earth's Climate Future," *Journal of International Affairs* 73 (2019): 1, 267-272, here: 269. Via *Gale General OneFile*, <https://link-gale-com.proxy.library.uu.nl/apps/doc/A616630805/ITOF?u=utrecht&sid=ITOF&xid=9cd40617>, accessed June 16, 2020.

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ABSTRACT

In his book *Collapse*, Jared Diamond explained how societies from the past were facing environmental problems. A lack of strong society's response caused their eventual collapse. He warned modern societies: these problems are similar to what we are experiencing today, and he called for urgent action. The most vulnerable would be Third World countries, such as Bangladesh, while a country like the Netherlands appears to be the most "environmentally aware", Diamond argued. In his theory, the society's response to environmental problems is the most significant factor to determine an upcoming collapse. This thesis implemented that theory. It concludes how Bangladesh is not as likely to collapse and how the Netherlands is not as "environmentally aware" as Diamond assumes. Bangladesh acknowledges its vulnerability, but this causes the country to take effective measures immediately to protect citizens and adapt to climate change. With slow and occasionally ineffective adaptation and mitigation measures to reduce climate change, the Netherlands demonstrates how the country is not nearly as "environmentally aware" as it appears to be. The palpability of climate change in Bangladesh causes the country to take more drastic action than the Netherlands currently takes. Taking into account Diamond's own "most significant" factor, this research concludes that Bangladesh has gone in the right direction, leaving the Netherlands behind.

PREFACE

When I started with my bachelor Journalism in 2012 I was wondering why nobody seemed to be worrying about something that I found extremely unsettling: climate change. I wrote a few articles about it but it felt like nothing was happening to prevent the world from warming up, while studies mentioned how destructive it would be if the earth warmed up with 4 degree Celsius.² Since a few years the discourse has completely changed. Newspapers write more and more about climate change and there have been several global climate strikes.³ The European Union just announced that it will support the Green Deal that should make Europe the first carbon-neutral continent by 2050.⁴ Action against climate change and environmental problems is exactly what is needed for a society to survive, states Jared Diamond. In his book *Collapse: How societies choose to fail or survive* he explains how societies from the past were facing the same environmental problems we are experiencing right now, and they collapsed due to lack of response to overcome these problems.⁵ In this thesis, I will use his approach and test it using two contemporary case studies: the Netherlands and Bangladesh, both countries with a high population density, both countries with a large delta. I will find out what their response is to the environmental problems they face and answer Diamond's question: are the countries choosing to fail or survive?

While Bangladesh might seem the most vulnerable, conducting extensive research allowed me to answer what the Dutch could learn from the case of Bangladesh. During this

² World Bank, *Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience*, a report for the World Bank by the Potsdam Institute for Climate Impact Research and Climate Analytics (Washington DC: World Bank, 2013), 1.

³ Matthew Taylor and John Bartlett, "Fresh wave of climate strikes takes place around the world," *The Guardian*, September 27, 2019, <https://www.theguardian.com/environment/2019/sep/27/fresh-wave-of-climate-strikes-take-place-around-the-world>, accessed on Jan. 21, 2020.

⁴ The Associated Press, "EU Lays Out 1 Trillion-Euro Plan to Support Green Deal," *The New York Times*, January 14, 2020, <https://www.nytimes.com/aponline/2020/01/14/business/bc-eu-europe-climate-change.html>, accessed on Jan. 21, 2020.

⁵ Jared Diamond, *Collapse: How societies choose to fail or survive* (London: Penguin Books, 2005), 14.

process, fortunately, my supervisor Dr. Hans Schouwenburg was always available and willing to answer my queries. I would like to take this opportunity to thank him for his support and excellent guidance. I also wish to thank Kaja Bouman for the extensive assistance while writing my thesis, and Lina Mulder and Rosa Langeveld for the many helpful peer feedback sessions. I benefitted from debating issues with my family and friends as well. You kept me motivated and I was always welcome to bat ideas about my analysis around with you. A special note of thanks to Paul Heuts, (again) Kaja Bouman, Manon Boonman and to my parents: your motivational words, shelter and food during the corona crisis kept me going. Thank all of you for reading my thesis. I hope you will enjoy it.

Vera Boonman

Utrecht, June 22, 2020

CHAPTER 1:

INTRODUCTION

While writing this chapter, the fate of nature in Australia is uncertain. Massive bushfires ravage through the country, fuelled by record-breaking temperatures and severe droughts. Rain has brought relief, but in some places there was more rain in one day than normally in three months, which led to power failure and made roads impassable. The heavy rain flushed the ashes of the bushfires to the rivers, which created new environmental problems to worry about.⁶ Stating these problems can make anyone miserable. It is awful to hear about the 10 million square kilometres that have burned, the 28 people that have been killed, and many, many more animals that couldn't survive the fires. However, it does make the world more aware of climate change.⁷ And awareness is the first step towards trying to solve this major problem.⁸

CONTRIBUTING TO COLLAPSE

In his book *Collapse: How societies choose to fail or survive* Jared Diamond describes how the Mayans, Anasazi, Eastern Islanders and more societies all suffered environmental problems, which eventually resulted in their collapse. In a five-point framework he lists the contributing factors to the collapse of these societies:

1. Environmental damage: the first set of factors is damage inadvertently inflicted by people on their environment. Diamond produced a list of environmental damage, divided into twelve categories. According to him, these are problems we are facing today. Past societies encountered eight of these processes.⁹ Four additional elements today are: human-caused climate change, buildup of toxic chemicals in the environment, energy shortages and full human utilization of the Earth's photosynthetic capacity. It is claimed that these twelve threats in the next decades will become "globally critical".¹⁰ In the current discussion on climate change today, eleven of these threats are disregarded.

⁶ BBC News, "Australia fires: A visual guide to the bushfire crisis," January 13, 2020, <https://www.bbc.com/news/world-australia-50951043>, accessed on Feb. 3, 2020; NOS, "Na bosbranden kampt Australië nu ook met overstromingen," January 18, 2020, <https://nos.nl/artikel/2319136-na-bosbranden-kampt-australie-nu-ook-met-overstromingen.html>, accessed on Feb. 3, 2020.

⁷ Jack Goodman, "What is Australia doing to tackle climate change?" BBC News, January 2, 2020, <https://www.bbc.com/news/world-australia-50869565>, accessed on Feb. 4, 2020.

⁸ Diamond, *Collapse*, 421.

⁹ The eight processes mentioned by Diamond are: deforestation and habitat destruction, soil problems (erosion, salinization, and soil fertility losses), water management problems, overhunting, overfishing, effects of introduced species on native species, human population growth and increased per-capita impact of people.

¹⁰ Diamond, *Collapse*, 6-7.

2. Climate change: today, we associate climate change with global warming caused by humans, but in history there were also natural forces that drove climate and caused it to become hotter or colder, wetter or drier. While there is more attention for environmental problems in the current global media landscape than in the previous century, there also seems to be more resistance.¹¹
3. Hostile neighbors: this might not be a problem if a society is strong and able to hold off its enemies, but it will succumb when it is weakened, for example by environmental damage. In this case, a military conquest is the direct cause of collapse, but Diamond explains how the factor that led to collapse in the cases mentioned by him was the environmental problems that caused the weakening of society's structure.
4. Friendly trade partners: this is the opposite of the previous factor. Nearly every society depends on its neighbors, either for protection, for imports or for cohesion within society. Often a society can have one enemy which can also shift to partner. Decreased support by friendly neighbors is the fourth factor.
5. The society's response to its environmental problems. Different societies respond differently to similar problems, Diamond states. He explains how deforestation arose for many societies and while it caused Easter Island, Mangareva and Norse Greenland to collapse, other countries such as Highland New Guinea, Japan and Tikopia developed successful forest management. The response depended on the social, economic and political institutions and on its cultural values of the society under threat, Diamond argues. These aspects affect whether a society solves or at least engaged with its problems. The author notes that every collapse mentioned in his research involved an environmental component. The first four factors may have contributed to a society's collapse, but this last factor proved to have been significant in every single case.¹²

DIAMOND AND OTHERS

Diamond shows historical precedents and draws parallels with modern society. His warning: do not make the same mistakes as those made in the past. "[He is] more interested in unsustainability and collapse, than in identifying the secrets and strategies of successful long-standing societies", Jeremy Caradonna argues. The origins and development of the

¹¹ Frank Staver, "Deze klimaatwetenschapper trekt ten strijde tegen de klimaatonzin van Baudet, Trump en de media," *Trouw*, June 29, 2019, <https://www.trouw.nl/duurzaamheid-natuur/deze-klimaatwetenschapper-trekt-ten-strijde-tegen-de-klimaatonzin-van-baudet-trump-en-de-media~b8a7fb03/>, accessed on Jan. 29, 2020.

¹² Diamond, *Collapse*, 13-15.

sustainability movement in the modern world remains largely neglected.¹³ Diamond is primarily interested by the failures of societies. This thesis examines failures *and* successes, which provides an alternate perspective on countries defined by Diamond as “vulnerable”. Several other authors describe societal collapse, although not exclusively comparatively and mainly with a regional focus.¹⁴ In an article published by Michael McCormick and others, the climate context during the demise of the Roman Empire is examined, which shows that during the rise of the Empire, Rome enjoyed climatic stability, while toward the end of Rome the climate became drier and cooler, before it returned to a period of warming. The political, military and monetary crisis peaked between 250 and 290 AD. Such rapid short-term changes had a great influence, for instance on food production, the authors argue.¹⁵

Since the Industrial Revolution, the gap between rich and poor countries has increased significantly. There has been much debate about the divergence that occurred, a debate Jared Diamond contributed to as well with his book *Guns, Germs and Steel* (1997). He attributes the intercontinental inequality to geographical differences. Different animals and plant species led to different kinds and intensities of farming, and created other paths of technological change and prosperity.¹⁶ His argument is disputed by Daron Acemoglu and James Robinson in *Why Nations Fail* (2012). It is man-made political and economic institutions that underlie economic success or lack of it, disagreeing with every author that ever claimed the divergence is due to culture, weather, ignorance or geography.¹⁷ Acemoglu and Robinson argue how institutions create poverty. To achieve prosperity basic political problems have to be solved.¹⁸ Considering the fifth factor in Diamond’s five-point framework in *Collapse*, social, economic and political

¹³ Jeremy Caradonna, “Sustainability: A new historiography”, in: idem (ed.), *Routledge Handbook of the History of Sustainability* (London: Routledge, 2017), 16.

¹⁴ Joseph Tainter, *The Collapse of Complex Societies* (Cambridge: Cambridge University Press, 1988); Arthur Demarest, *Ancient Maya: The Rise and Fall of a Rainforest Civilization* (Cambridge: Cambridge University Press, 2005); Charles C. Mann, *1491: New Revelations of the Americas Before Columbus* (New York: Vintage, 2006); Charles C. Mann, *1493: Uncovering the New World Columbus Created* (New York: Vintage, 2011); Michael McCormick *et al.*, “Climate Change During and After the Roman Empire: Reconstructing the Past from Scientific and Historical Evidence,” *Journal of Interdisciplinary History* 43 (August 2012): 2, 169–220.

¹⁵ McCormick *et al.*, “Climate Change During and After the Roman Empire,” 186.

¹⁶ Jared Diamond, *Guns, Germs and Steel: The Fates of Human Societies* (New York: W.W. Norton, 1997).

¹⁷ Daron Acemoglu and James Robinson, *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (New York: Crown Publishing Groups, 2012), 51-54.

¹⁸ Acemoglu and Robinson, *Why Nations Fail*, 68.

institutions and cultural values *do* define the society's response on environmental problems, and whether they solve or at least try to solve them.¹⁹

THE NETHERLANDS VS. BANGLADESH

As Jared Diamond previously pointed out, the world is facing climate change at this very moment – and not only climate change, but also deforestation, habitat destruction, soil problems, water management problems, overhunting, overfishing, human population growth and increased impact of people on the world.²⁰ According to Diamond, citizens in the Netherlands might have the highest level of environmental awareness in the world. Nearly a thousand years ago the Dutch reclaimed land from the sea and called those areas “polders”. The water that gradually seeps in still has to be pumped out. If the dikes and pumps fail, the Netherlands will perish. “If global warming causes polar ice melting and a global rise in sea level, the consequences will be more severe for the Netherlands than for any other country in the world [...]. That's why we Dutch are so aware of our environment”, a friend told Diamond.²¹ Though described by Diamond as one of the most environmentally aware countries in the world, the Netherlands is continuously lagging behind on a number of important policies. The OECD reviews environmental performance and found how the country still has one of the largest shares of fossil fuels, ranking fifth-highest of all OECD-members. Air quality is improving, but hot spots remain, 95% of habitat types and 75% of species are considered threatened in the Netherlands, a higher percentage than in many other countries, and quantity of nitrogen fertilizer and pesticides used continue to increase. But the research also states how the small European country is making progress compared to 2000.²² Will that save the Netherlands from collapse? The country also needs protection from the sea, something that became abundantly clear in 1953, when a disastrous storm flooded part of the country. The Delta Works were constructed. The sea-level rise is a new threat to the Dutch protection. Projections on sea-level rise by *Deltares* are, until 2050, similar to the scenarios described by national institutions, but significant discrepancies arise in the projections after 2050. While the Delta scenarios only account for a 1 meter sea-level rise maximum in 2100, with a global warming of 4 ° Celsius, the sea-level could rise to 3 meters in 2100.²³

¹⁹ Diamond, *Collapse*, 13-15.

²⁰ Ibid., 6-7.

²¹ Ibid., 519-520.

²² OECD, *OECD Environmental Performance Reviews: The Netherlands 2015*, OECD Publishing, 2015, <http://dx.doi.org/10.1787/9789264240056-en>, accessed on Jan. 28, 2020.

²³ Marjolijn Haasnoot *et al.*, “Mogelijke gevolgen van versnelde zeespiegelstijging voor het Deltaprogramma. Een verkenning,” *Deltares* (September 2018), 75.

Diamond would argue how Dutch environmental problems are nothing compared to those of Bangladesh. Here they face climate change, ecosystem changes, overgrazing, import of hazardous wastes, soil problems, pollution, population pressure and many more environmental problems.²⁴ Bangladesh is often referred to as ground zero for climate change. The long-term Climate Risk Index estimates Bangladesh to be in seventh place to be most affected by climate change.²⁵ The rivers flood, the sea overflows, cyclones sweep through the country and some parts deal with severe droughts. Bangladesh is one big delta, with a high population density.²⁶ Since 2016, the Netherlands and Bangladesh have formed a delta coalition, and the latter is trying to follow the footsteps of the Netherlands in water management.²⁷

In this thesis, Jared Diamond's suggestion Bangladesh is more likely to collapse due to their environmental problems will be critically assessed. This hypothesis will be tested by an examination of the factor that – according to Diamond – always proves to be significant for survival: the society's response towards environmental problems. The main question in this thesis will be: Why is Bangladesh more likely to collapse than the Netherlands due to environmental problems?

ANALYSIS

In order to analyze this question, I will look at three variables based on Diamond's theory: discourse, implementation and results. Core components crucial for a strong society's response to environmental problems, according to Diamond, are the cultural and institutional values stated by the government in the policy, which is why the discourse analysis includes these elements. How the government wishes to implement solutions can define the success or failure, and therefore measures implemented by the government are analyzed by the second variable. Finally, (the construction of) strong institutions, new laws adopted by the government and results of implemented measures are factors considered in the third variable. These variables collectively present a comprehensive image of the society's response to water management problems and climate change. Each variable will be analyzed separately in the case of

²⁴ Tanjina Hasnat, Alamgir Kabir and Akhter Hossain, "Major Environmental Issues and Problems of South Asia, Particularly Bangladesh," in: Hussain C. (eds), *Handbook of Environmental Materials Management* (January 2018), 2.

²⁵ David Eckstein *et al.*, "Global Climate Risk Index 2020: Who Suffers Most from Extreme Weather Events?" *German Watch* (December 2019), 9.

²⁶ Eva Oude Elferink, "In Bangladesh is klimaatverandering nú," Podcast by *NRC Vandaag* (November 28, 2019), timecode 04.48 – 05.55.

²⁷ Ben van Raaij, "Bangladesh wapent zich tegen stijgende zeespiegel en steeds zwaardere stormen," *De Volkskrant*, September 5, 2018, <https://www.volkskrant.nl/>, accessed on Feb. 4, 2020.

Bangladesh as well as in the case of the Netherlands, followed by a comparison of both countries on the basis of the variables. Diamond determines twelve different environmental problems, all of which are significant today. Analyzing each problem extensively is too elaborate for this thesis, which is why it's narrowed down to two problems: water management problems and human-caused climate change. Both are serious issues in Bangladesh as well as in the Netherlands

The first national environment policy in both countries are the starting point for this thesis. In the Netherlands, the first policy was implemented in 1989 and in Bangladesh, the Environment Conservation Act of 1995 was the earliest national policy. For both countries, the most significant policy papers are analyzed. These are key documents and exemplary for water management and climate change policies. Digital archives of the government of Bangladesh and international organizations such as the World Bank provided the policy papers used in the case of Bangladesh.²⁸ The most significant Dutch policy papers are also freely available online, in the digital archive of the state.²⁹

In this thesis, frameworks are used that are also seen as part of a Western discourse. In his paper, Gregory Bankoff argued how “tropicality, development and vulnerability” form part of the same cultural discourse that “denigrates large regions of the world as disease-ridden, poverty-stricken and disaster-prone”.³⁰ He mentions Edward Said, Ranajit Guha and others, who suggested Western knowledge is a means to perpetuate its “cultural hegemony” over the world and Western critique is specifically unable to escape its own capitalist dominant culture.³¹ While acknowledging those comments, this thesis still uses frameworks such as vulnerable countries, developed and less developed, East and West. However, as Bankoff prescribes, it devoted much greater attention to non-Western knowledge and especially Bangladeshi research.³² Therefore, this thesis aims to contribute to the cultural discourse represented beyond merely the Western discourse .

²⁸ Due to an at this time insurmountable language barrier, policy documents published in the Bengali language are not suitable sources and merely documents translated or drawn up in English or Dutch will be referenced in this research. Luckily, the most important policies were to be found in English.

²⁹ Via the archive of the Rijksoverheid and the Tweede Kamer.

³⁰ Gregory Bankoff, “Rendering the World Unsafe: ‘Vulnerability’ as Western Discourse”, *Disasters* 25 (2001): 1 19-35, here: 29.

³¹ Edward Said, *Culture and Imperialism*, (Londen: Vintage, 1994); Ramachandra Guha, *Dominance Without Hegemony. History and Power in Colonial India*, (Cambridge and London: Harvard University Press, 1997).

³² Bankoff, “Rendering the World Unsafe”, 29.

THE PLAN

The next chapter, chapter 2, will be an analysis of Bangladesh's response to climate change and water management problems. It will contain the historical context of the environmental policies, followed by an analysis of the variables: discourse, implementation and results. This chapter reveals how Bangladesh developed an urgent and effective action plan – with special focus on improving resilience to combat the vulnerability it faces. The government of Bangladesh emphasizes the need to adapt and mitigate climate change, protect vulnerable citizens in the process and asks developed countries for their aid. Meanwhile, chapter 3 confronts the situation in the Netherlands by the same structure and this demonstrates how the Dutch are primarily concentrated on economic profit. Vulnerable citizens aren't mentioned. Instead, the government asks for responsibility of *all* citizens and that of the global community. Obviously, the Netherlands experienced a different historical context. While Bangladesh encounters weather-extremes due to climate change regularly, the Netherlands has not gone through any weather-related disasters since 1953. These differences and similarities are discussed in chapter 4. The variables and historical context will be compared, which contributes to a fresh insight on Diamond's theory. Bangladesh's vulnerability leads to more environmental awareness and therefore a more urgent and drastic society's response. Chapter 5 elaborates on this conclusion, and explains what influence this could have on the academic debate. Finally, future lessons provided by the Bangladeshi case are discussed. These illustrate how the Netherlands could help combat environmental problems – and maybe even become a global leader in a new phase of *international cooperation*.

CHAPTER 2: THE
“VULNERABLE”
FOUGHT BACK

Bangladesh, or officially People's Republic of Bangladesh, has made impressive progress in reducing poverty. With sustained economic growth, the country reached the lower middle-income status in 2015 and is up for graduation from the UN's Least Developed Countries list in 2024.³³ However, Bangladesh is also a country that suffers severely from climate change. "Here, the climate crisis is so palpable that the debate is not about restricting carbon emissions or preventing global warming, but about how to adapt to the change and survive in times of unpredictable weather", The Guardian wrote in January 2020.³⁴ Multiple newspapers in the Netherlands also reported on Bangladesh's fight against floods, the increasing monsoons and dry seasons, cyclones and salination.³⁵ And it *has* been a fight for Bangladesh, but with a number of notable successes as well. The cyclone-related mortality rate has declined significantly, a result of effective measures taken by the government.³⁶ Since the 1970s, important institutions have been introduced and strengthened to adapt and mitigate the effects of climate change.³⁷

Action taken by the government radiate the urgency: disaster management is necessary now. However, the fact that Bangladesh still belongs to the list of least developed countries, also results in a country that is waiting to cut back on carbon emissions. According to its government it still is an energy starved country, and reducing emissions and investing in green technology might affect the growing economy in the short term. Since the start of the new government in 2008, Bangladesh has been transitioning into a more sustainable country, but the South Asian country also points the finger at developed countries, since it believes the western world and their lack of responsibility is the cause behind climate change. This chapter will show the urgent measures the government takes in the area of disaster management, and the remaining chances Bangladesh fails to seize.

³³ "The World Bank In Bangladesh", World Bank, last modified April 13, 2020, <https://www.worldbank.org/en/country/bangladesh/overview>, accessed on Apr. 25, 2020.

³⁴ Sarah Marsh, "On the frontline of the climate emergency, Bangladesh adapts," *The Guardian*, January 8, 2020, <https://www.theguardian.com/world/2020/jan/08/on-the-frontline-of-the-climate-emergency-bangladesh-adapts>, accessed on Apr. 25, 2020.

³⁵ Raaij, Van, "Bangladesh wapent zich tegen stijgende zeespiegel en steeds zwaardere stormen."

³⁶ Bulletin of the World Health Organization, "Reduced death rates from cyclones in Bangladesh: what more needs to be done?" 2012, 90: 150-156, <https://www.who.int/bulletin/volumes/90/2/11-088302/en/>, accessed on Apr. 25, 2020; *Bangladesh Climate Change Strategy and Action Plan 2009*, by The Government of the People's Republic of Bangladesh, September 2009, 18-19.

³⁷ *Bangladesh Climate Change Strategy and Action Plan*, 18-19.

CONTEXT: THE ROAD TO SUSTAINABILITY

In 1971, Bangladesh gained independence from Pakistan and the economy has undergone different stages of development since then. Back in the seventies, Bangladesh was already a disaster prone area, but effective and urgent measures weren't implemented until later. To understand the nature of the government legislation, it is crucial to examine its origin. Since the independence of Bangladesh, the environmental development of the country can be distinguished in three distinct phases. In the first phase, small regulations established boundaries to air pollution and toxic substances. Several acts were introduced to improve the land use, forest conservation and wildlife preservation. Central institutions were established in this period, such as the Department of Environment. This department was transferred to the new Ministry of Environment and Forests in 1989.³⁸ The second phase started with the adaptation of The Bangladesh Conservation Act in 1995. It paved the way to formulate better rules and guidelines for the conservation of the environment, improvement of environmental standards and control and mitigation of environmental pollution.³⁹ This phase is characterized by the acknowledgement of environmental problems Bangladesh is facing and the realization of how vulnerable the country is to climate change. However, the government didn't take immediate action. Significant action wasn't taken until the most recent phase. In 2008, the Bangladesh Awami League party came into power and adopted the Bangladesh Climate Change Strategy and Action Plan in 2009. It was the beginning of adaptation and mitigation to climate change. From then on, sustainability has been a prominent subject mentioned in the Five Year Plan. In addition, the National Plan of Disaster Management was drawn up. The geographical location of Bangladesh doesn't work in its favor. It makes the country one of the most vulnerable to climate change, particularly sea level rise. Disasters claim lives and cause severe damage to infrastructure and other assets.⁴⁰ The NPDM 2016-2020 stated how investments in disaster management have led to decreasing disaster mortality in recent decades.⁴¹

It is possible that the next phase will be characterized by an important aspect to disaster management that was previously mentioned in policy papers: prevention. The Bangladesh Delta Plan 2100 has the potential to effectively protect the country against floods in the future, and

³⁸ Mentioned by the website of the Ministry of Environment and Forests, http://old.moef.gov.bd/html/about/about_us.html, accessed on Apr. 10, 2020.

³⁹ *The Bangladesh Environment Conservation Act 1995*, by Ministry of Environment and Forests Bangladesh, June 1995.

⁴⁰ *National Report on Sustainable Development*, by Ministry of Environment and Forests Bangladesh, May 2012, 53.

⁴¹ *National Plan for Disaster Management (2016-2020): building resilience for sustainable human development*, by Ministry of Disaster Management and Relief, March 2017, ii.

policy papers mention how the government wants to contribute to the reduction of greenhouse gas emissions. Bangladesh is a “low energy-consuming but energy-starved country” and with the rise in GDP per capita, the speed at which demand for energy is increasing will likely rise with at least 50 percent.⁴² With innovative technology, Bangladesh will potentially be able to prevent that kind of development but the urgency to cut back on carbon emissions is lacking among authority figures. However, the relatively small contribution to greenhouse gasses is another indisputable fact.

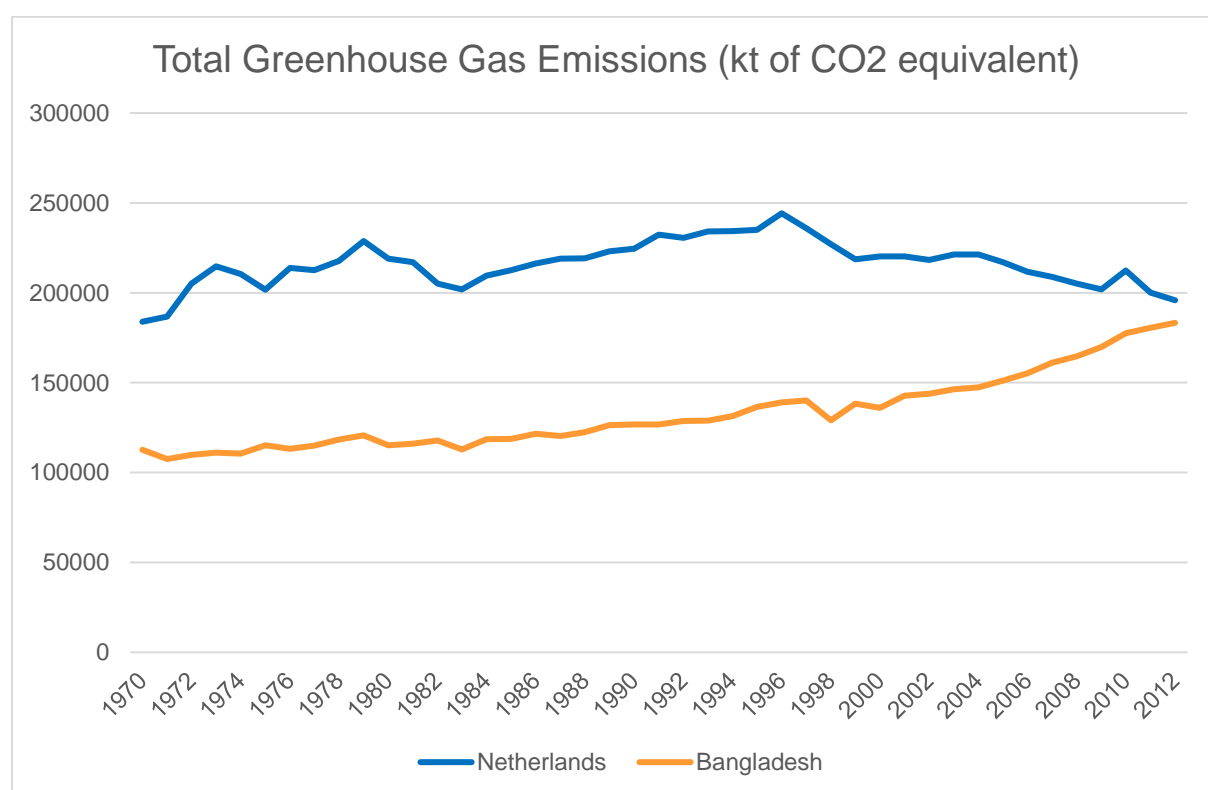


Figure 1 – Total greenhouse gas emissions in the Netherlands and Bangladesh. While Bangladesh had 155,7 million citizens in 2012, the Netherlands had only 16,7 million citizens and the latter country’s greenhouse gas emissions were higher than that of Bangladesh.

Source: World Bank, <https://data.worldbank.org/indicator/EN.ATM.GHGT.KT.CE>.

DISCOURSE: PROTECT AND ADAPT

In the policy documents by the government of Bangladesh, three central themes emerged from the climate change debate. These themes emphasize adaptation and mitigation, protection of vulnerable citizens and the aid needed from developed countries. The first theme, adaptation

⁴² *Bangladesh Climate Change Strategy and Action Plan*, 23.

and mitigation to climate problems, mainly focusses on the preservation of environment. The Bangladesh Environment Conservation Act 1995 was the first in which mitigation to climate change was discussed, such as restrictions regarding vehicles emitting injurious smoke to environment and on manufacturing of articles injurious to environment. Also, remedial measures were introduced for injury to the ecosystem.⁴³ In 2000, The Rural Development Unit in the South Asia Region for World Bank refers to models that predict a sea level rise from 15 cm to 95 cm by 2100, increased precipitation and more floods. The Unit recommends an anticipatory long term strategy.⁴⁴ These climate problems and vulnerable geography are also acknowledged by the Ministry of Environment and Forests of Bangladesh in 2012.⁴⁵ This is why the government issued the National Plan for Disaster Management in 2010. The NPDM 2016-2020 is built upon the preceding NPDM 2010-2015, and it states how investments in disaster management have led to decreasing disaster mortality in recent decades.⁴⁶ However, the context is changing due to climate change: in Bangladesh, more than 75 percent of all disasters originate in weather-climate extremes, authors of Climate Change Adaptation Actions in Bangladesh write.⁴⁷

Adaptation and mitigation were also important aspects in the manifesto written by the Awami League Party in 2006. This manifesto has a political vision for Bangladesh in the year 2021, the year in which the country celebrates its 50th anniversary of independence, and it sets different goals – including the goal to have more environmental sustainability. It suggests a tough stance to reduce air pollution, action to clean up the rivers and policies in the National Water Plan that will ensure the surface water flows and ways to preserve rainwater. In cooperation with the neighboring countries, Bangladesh wants to find mutually beneficial ways to manage water, with a stress on floodwater.⁴⁸ It is a measure that Jared Diamond would encourage. He states that every society depends on its neighbors, and if a country experiences less support from a “friendly neighbor” it could be one of the factors leading to the society’s collapse.⁴⁹ Measures in Vision 2021 are also mentioned in the most recent Five Year Plan.⁵⁰

⁴³ *The Bangladesh Environment Conservation Act.*

⁴⁴ *Bangladesh Climate Change and Sustainable Development*, World Bank, Rural Development Unit South Asia Region, December 19, 2000.

⁴⁵ *National Report on Sustainability*, 53.

⁴⁶ *National Plan for Disaster Management*, ii.

⁴⁷ *Climate Change Adaptation Actions in Bangladesh: Disaster Risk Reduction; Methods, Approaches and Practices*, by Rajib Shaw, Fuad Mallick and Aminul Islam, Springer, 2013, 95.

⁴⁸ *Bangladesh Vision*, by Centre for Policy Dialogue, prepared under the initiative of Nagorik Committee 2006, August 2007, 40-41.

⁴⁹ Diamond, *Collapse*, 14.

⁵⁰ *Development Planning in Bangladesh: 7th Five Year Plan and SDG Implementation*, by the Government of the People’s Republic of Bangladesh, June 2016, 20-24.

Institutional formation and transformation is a fundamental aspect in adaptation and mitigation to climate change. The Rural Development Unit suggests a perspective that is more focused towards long-term preparation, which would require special institutions to pay substantial attention to long-term issues. Improvement of the coordination between central and local levels of management would make Bangladesh more adaptable to climate change.⁵¹ A few years later, Vision 2021 proposed decentralized urban local governments that have a better overall view of the environmental situation, which was implemented by the Strategy and Action Plan in 2009.⁵²

The second theme that emerged in the policy papers is the matter of vulnerability of different groups in Bangladesh. In the Climate Change Strategy and Action Plan of 2009, adopted after the Awami League party came to power in 2008, mentions how people in poverty-stricken layers of society are often more vulnerable to climate change, since these groups tend to mainly rely on agriculture and natural recourses.⁵³ The National Plan for Disaster Management goes on to describe how the emerging risks of climate change present major challenges to human development, and the poorest communities are hit hardest by disasters. Furthermore, women are disproportionately impacted by disasters, which calls for a more gender-responsive approach in managing risks.⁵⁴ The vision of NPDM is “winning resilience against all odds”.⁵⁵ The NPDM gives an indication of the priority level of each step in risk management, resulting in an urgent message for policy makers. The urgency of the issue becomes clear in many of the policy papers of Bangladesh, even in the first Environmental Conservation Act of 1995.⁵⁶

The Strategy and Action Plan of 2009 stressed the importance of climate actions and supporting vulnerable communities and people in rural areas.⁵⁷ The Action Plan went on to elaborate: “Any delay will increase the risks associated with climate change, which could be expensive to manage later on but, more importantly, the human costs will be immeasurable.”⁵⁸ The human cost is an important value some policy papers are emphasizing: if the effects of climate change aren’t mitigated, it could eradicate years of development and reduction of poverty.⁵⁹ It would plunge the most vulnerable in the communities – women, children and the disabled. Sustainable development should be anchored on three pillars, according to the

⁵¹ *Bangladesh Climate Change and Sustainable Development*, World Bank.

⁵² *Bangladesh Vision 2021*, 39.

⁵³ *Bangladesh Climate Change Strategy and Action Plan*, 18.

⁵⁴ *National Plan for Disaster Management*, ii.

⁵⁵ *Ibid.*, iv.

⁵⁶ *Bangladesh Environment Conservation Act*.

⁵⁷ *Bangladesh Climate Change Strategy and Action Plan*, 18.

⁵⁸ *Ibid.*, 24.

⁵⁹ *National Plan for Disaster Management*, iii.

Ministry of Environment and Forests: economic, social and environmental.⁶⁰ Vision 2021 added that a strategy for better management of our environment will be based on collaborative efforts by a determined government, conscious citizens and responsible businesses, because if the resource base is eroded, “we will have failed our next generation”.⁶¹

The last, yet major theme in Bangladesh’s policy papers is the responsibility that first world countries have towards climate change. Evolving climate change is a major concern for the national socio-economic progress, but “Bangladesh has no responsibility at all to this climate change”. However, Bangladesh *is* one of the most vulnerable countries to climate change. “Without international support for countering the effects of climate change, largely through adaptation actions, Bangladesh is not in a position to fight it alone. The country faces climate change not only as a development challenge, but also as a human rights and justice issue”, the Ministry stated. Bangladesh expects developed countries to lead the way with deep cuts in their greenhouse gas emissions, that have to be made now, while Bangladesh itself is also committed to a low carbon development path – as long as this doesn’t put an extra burden on the economy and it happens with adequate international support.⁶² Bangladesh is a low energy-consuming but energy-starved country and with the rise in GDP per capita, the demand for energy is likely to rise faster with at least 50 percent. “Adaptation to climate change has to be leveraged by adequate financial flows and technology transfer from the Annex to the Non-Annex 1 Countries”, The Climate Change Strategy and Action Plan stated in 2009.⁶³ These Non-Annex 1 Countries are developing countries such as Bangladesh under the Kyoto Protocol, which means that they didn’t have legally binding emission reduction targets. To lower carbon emissions, the Ministry reiterates that financial support for climate change must be additional to the Official Development Assistance that Bangladesh already receives.⁶⁴ In the Strategy and Action Plan, the government emphasizes that Bangladesh’s contribution to the generation of greenhouse gasses is miniscule, but the country still wants to play its part in reducing emissions now and in the future.⁶⁵ However, the costs for energy-efficient technology should be paid for through international financial mechanisms, otherwise, “Bangladesh will not be able to adopt them”.⁶⁶

⁶⁰ *National Report on Sustainability*, XVI and 53.

⁶¹ *Bangladesh Vision 2021*, 39.

⁶² *National Report on Sustainability*, 61.

⁶³ *Bangladesh Climate Change Strategy and Action Plan*, 23-24.

⁶⁴ *Bangladesh National Report on Sustainability*, XX.

⁶⁵ *Bangladesh Climate Change Strategy and Action Plan*, 23.

⁶⁶ *Ibid.*, 30.

IMPLEMENTATION: FIGHTING FOR RESILIENCE

Bangladesh's transition to a sustainable, healthy economy with the ability to prevent natural disasters or be resilient to them, is also recognizable in the implementation of measures. In two policy papers, the solutions and the concrete measures are examined extensively. The first, the Strategy and Action Plan, was implemented in 2009 after the elections won by the Awami League party. The Action Plan consisted of six pillars.⁶⁷ The described actions fall within the scope of adaptation to climate change, mitigation, technology transfer or adequate and timely flow of funds for investments. It is a ten year program.⁶⁸ The solutions are categorized beneath the six pillars.

The first pillar, food security, social protection and health, focused on increasing the resilience of vulnerable groups, including women and children, through development of community-level adaptation, livelihood diversification, better access to basic services such as energy and social protection, for instance through safety nets and insurance. The government wants to develop cropping systems with agricultural research that are resilient to the effects of climate change, such as flooding, drought and salinity. Fisheries and livestock systems have to ensure local and national food security. Drinking water and sanitation programs will help areas at risk from climate change, such as coastal areas and areas prone to floods and droughts.⁶⁹ In the second pillar, comprehensive disaster management, the strengthening of disaster management systems is the center of attention. Furthermore, community-based adaptation programs are strengthened and established in disaster prone parts of the country.⁷⁰ In order to know how to deal effectively with disasters and other impacts of climate change, the third pillar discusses infrastructure. Existing infrastructure such as coastal embankments and drainage systems will be repaired and rehabilitated, and urgently needed new infrastructure such as cyclone shelters, river erosion control works and flood shelters are being designed and constructed.⁷¹ The fourth pillar is about research and knowledge management. The measures all boil down to in-depth research to estimate the likely scale and timing of climate change impacts on different sectors of the economy and to inform on planning of future investment

⁶⁷ The six pillars are: food security, social protection and health, comprehensive disaster management, infrastructure, research and knowledge management, mitigation and low carbon development, capacity building and institutional strengthening.

⁶⁸ *Bangladesh Climate Change Strategy and Action Plan*, 27-29.

⁶⁹ *Ibid.*, 27.

⁷⁰ *Ibid.*, 28.

⁷¹ *Ibid.*

strategies. Bangladesh will be linked to regional and national knowledge networks, to make organizations and the public aware of climate change research, lessons and technologies.⁷²

The fifth pillar plans for an expansion of the greenbelt coastal forestation program, an expansion of the social forestry program, a transfer to the best technologies from developed countries to ensure that the country follows a low-carbon growth path and the development of a strategic energy plan.⁷³ The last pillar concentrates on the strengthening of institutions: all government policies will be reviewed and revised to ensure that they take full account of climate change and its impacts, climate change should become more mainstream in national, sectoral and spatial development planning and the vulnerable groups should be prioritized in the plans and the capacity of key government ministries will be expanded. Furthermore, the government will undertake more international and regional negotiations on climate change for increased cooperation essential to build resilience in the country. Global climate funds have to help the government, civil society and the private sector to increase capacity and environmental refugees should get education and training, to facilitate their integration in new societies and migration to other countries.⁷⁴ It is necessary to mention how themes from the discourse (adaptation and mitigation, protection of the vulnerable, and asking for aid from developed countries) can be discerned in the Action Plan.

The National Plan for Disaster Management 2016-2020 addresses disaster management with a clear vision: “Winning resilience against all odds”. Urgency to act now is the core of this policy. First, it conducts research to understand the disaster risks. Then, disaster risk governance to manage risks is strengthened. Third, the government will invest in disaster risk reduction for resilience. And finally, disaster preparedness will be enhanced for effective response and to “build back better” in recovery, rehabilitation and reconstruction.⁷⁵ To achieve these goals, eight strategic directions are established. These include improving existing disaster management programs, social protection and inclusivity for the poor and vulnerable, risk-proof economic and physical investments for business continuity and planning for emerging risks with focus on the potentially catastrophic disasters for the urban area.⁷⁶ Once again, an significant theme is social inclusion. In all priority actions of the NPDM, all genders are

⁷² Ibid.

⁷³ Ibid., 29.

⁷⁴ Ibid., 29.

⁷⁵ *National Plan for Disaster Management*, iv.

⁷⁶ Ibid., 22-23.

accounted for, as well as people of a vulnerable social demographic including age, disability or marital status.⁷⁷

RESULTS: STRENGTHENING AND IMPROVING

Institutions to help with the environmental problems have been changing since 1995. The Department of Environment was established, which could intervene immediately to prevent accidents that could cause environmental damage.⁷⁸ To adapt to climate change, the government has recently established a National Climate Change Fund. This Fund will focus mainly on adaptation. For mitigation, Bangladesh currently has two Clean Development Mechanism projects (CDM) concerned with solar energy and waste management.⁷⁹ Furthermore, a National Steering Committee has been established to coordinate and facilitate national actions on climate change. A Climate Change Unit will be established in the near future to support the committee in dealing with environmental issues.⁸⁰ The Strategy and Action Plan focusses on the strengthening of these institutions. This will give them additional power and the means to implement measures successfully.⁸¹ The Strategy and Action Plan is a 10 year program (2009-2018) to build capacity and resilience. It is a significant action plan, and it took drastic and urgent measures. However, at the time of writing this paper, the year is 2020 and no new plan has been released yet. Rest assured, it is “soon to be published” and it is expected to share the progress made and announce new measures.

The NPDM was prepared by the Ministry of Disaster Management Relief, which has the responsibility to maintain national disaster management efforts and the National Disaster Management Council is the supreme body providing overall direction. NPDM 2016-2020 states how the Standing Orders of Disaster in 1997 was an important milestone to guide and monitor disaster management in Bangladesh. Since then, there have been several national level disaster management institutions established.⁸² The Disaster Management Act of 2012 was drawn up after the first NPDM in 2010. This plan strongly emphasized the strengthening capacity of the government, with the Disaster Management Act as a result. It became the legal framework for disaster management in the entire country.⁸³ The Government of Bangladesh acknowledged the need for a National Adaptation Program of Action, implemented the necessary measures and

⁷⁷ Ibid., 24.

⁷⁸ *The Bangladesh Environment Conservation Act.*

⁷⁹ *Bangladesh Climate Change Strategy and Action Plan*, 24.

⁸⁰ Ibid., 30

⁸¹ Ibid., 29

⁸² *National Plan for Disaster Management*, ii-iii.

⁸³ Ibid., i-ii.

provided a response to the urgent and immediate needs of adaptation and identified priority programs accordingly.⁸⁴

The policy papers mention of the relevant measures taken to adapt or mitigate to climate change. A number of the concrete examples from the last 50 years are flood management schemes, flood protection and drainage schemes, coastal embankment projects, over 2,000 cyclone shelters, comprehensive disaster management projects, irrigation schemes for farmers; agricultural research programs and coastal greenbelt projects.⁸⁵ The Ministry of Environment and Forests explains how the government has spent a total of US \$1,310 million since the year 2000, an investment in development of flood control, irrigation and drainage.⁸⁶ And the most significant result of all: the number of fatalities from natural disasters has declined over the last 15 years, as the country has become increasingly able to manage risks, especially floods and cyclones, through community-based systems that were put in place, the Bangladesh Strategy and Action Plan stated in 2009.⁸⁷ Cyclone-related mortality has declined from 500,000 deaths in 1970 to 4234 deaths in 2007 in Bangladesh. The World Health Organization acknowledges how the main cause behind the reduced fatality rate are the measures taken by Bangladesh.⁸⁸

While the results are largely positive, there is a considerable critical note to make. The reluctance to reduce greenhouse gasses was noticeable in the discourse, and for a large part this is understandable. Developed countries have gone at least a century emitting carbon and causing the climate change we are confronted with today. Merely 14 percent of the population of Bangladesh had access to energy in 1991, and this number obviously inclined as the economy developed.⁸⁹ The fact that greenhouse gas emissions only increased for Bangladesh makes sense, and it is the cause of figure 2 looking the way it does. Some would note that the whole world is responsible for mitigating climate change. However, developed countries should take the responsibility to advise and help (financially and with shared technologies) less developed countries. The United States' withdrawal from the Paris Climate Agreement is a fundamental mistake in this regard.

⁸⁴ *Bangladesh Climate Change Strategy and Action Plan*, 25.

⁸⁵ *Ibid.*, 18-19.

⁸⁶ *National Report on Sustainability*, 52.

⁸⁷ *Bangladesh Climate Change Strategy and Action Plan*, 19.

⁸⁸ Bulletin of the World Health Organization, "Reduced death rates from cyclones in Bangladesh." <https://www.who.int/bulletin/volumes/90/2/11-088302/en/>.

⁸⁹ Eventually, in 2018, 85 percent of the country gained access to electricity; World Bank, "Access to electricity (% of population)", <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BD>.

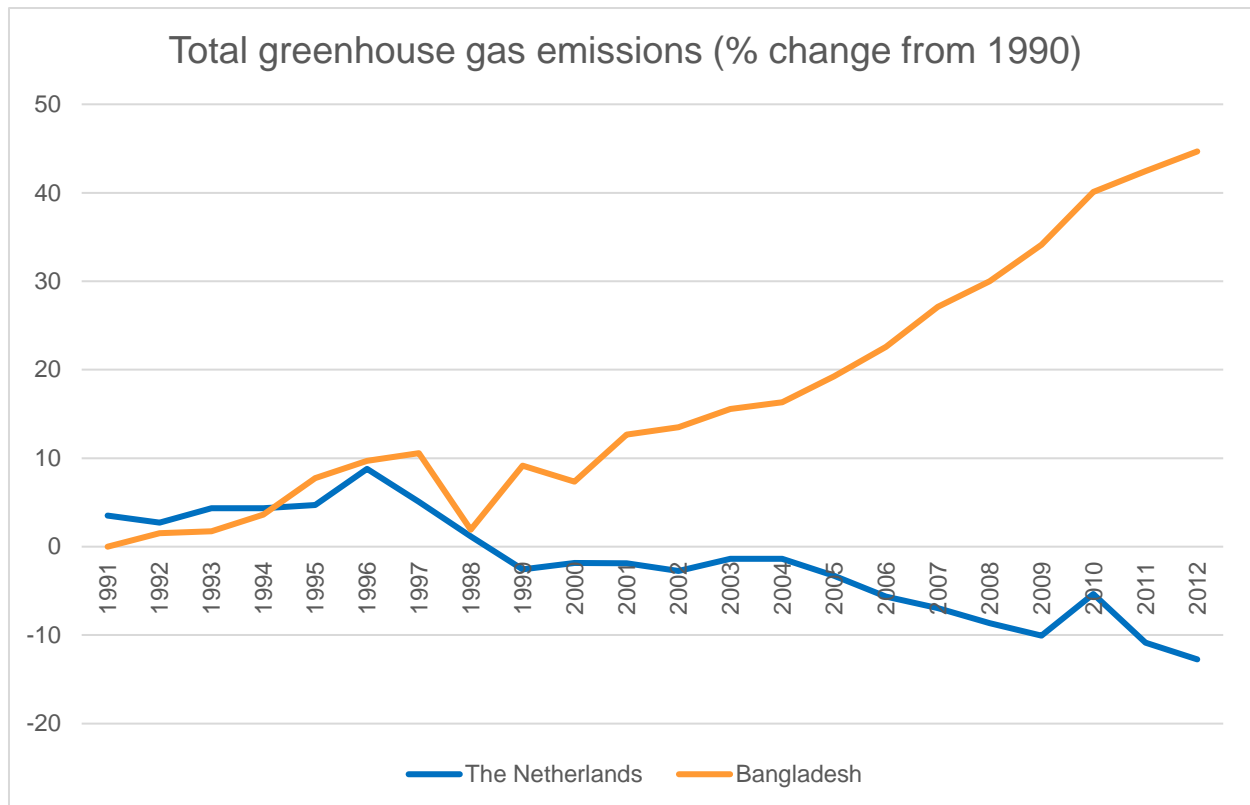


Figure 2 – The percentage of change from 1990 in the total of greenhouse gas emissions.

Source: World Bank, <https://data.worldbank.org/indicator/EN.ATM.GHGT.ZG?locations=BD-NL>.

CONCLUSION

This chapter showed the drastic actions Bangladesh is taking to improve disaster management. The number of fatalities due to climate related events decreased significantly in the last 50 years. The country is now able to focus more on building resilience and preserving as much infrastructure as it can. The reduction of greenhouse gasses is lacking, but this fact is understandable when looking at the economic development Bangladesh has made since 1970. However, it should be a focus point in the upcoming years – with the help of others, the country *can* make a difference. Altogether, the Bangladeshi policy is effective, focused on adaptation to climate change and mitigating climate related disasters. The country remains vulnerable, but it is also trying to *win resilience – against all odds*.

CHAPTER 3: THE
“ENVIRONMENTALLY
AWARE” FORGOT

Diamond tells the story of his “Dutch friend” in *Collapse*. According to him, the citizens of the Netherlands are “perhaps the most environmentally aware”, due to the fact that one fifth of the country lies below sea-level. A big storm and high tides swept inland on February 1, 1953, which caused the death of almost 2,000 people and the Dutch swore they would never let that happen again. The whole country paid for an extremely expensive set of tide barriers. Diamond’s friend claims that the history of the fight against water is what makes the Dutch environmentally aware. If climate change causes the sea-level to rise, the consequences are bound to be severe for the Netherlands.⁹⁰ The region is called the Low Countries and this is because – as Diamond’s friend said – 26 percent of the Netherlands lies below sea-level, which is more than one fifth of the country, and 59 percent is vulnerable to floods.⁹¹ Rijkswaterstaat has constructed four imposing storm surge barriers to protect the country from flooding. After 1953, dams, locks, and these storm surge barriers were built to protect a large area of land and together they are called the Delta Works.⁹² So it is true that the Dutch are aware of the water around them, but the “environmental awareness” that is claimed by Diamond’s friend is debatable. When looking at the greenhouse gas emissions per citizen and comparing with other European countries, the Dutch turn out to be major polluters. Only five other European countries have a *higher* greenhouse gas emission per person.⁹³

This chapter is about the actions taken by the Dutch government to prevent or overcome the effects of climate change. To understand the nature of the policy, the measures that are being taken will be explored. This way, we can determine the level of environmental awareness. In the policies, the Netherlands seems to be aware that the climate is changing, however, the urgency to adapt to climate change *immediately* is notably lacking.

CONTEXT: THE ROAD TO FALLING SHORT

Even before 1953, the Dutch government was aware of the vulnerability of the dikes. The Directorate-General for Public Works and Water Management warned for a disastrous flood in

⁹⁰ Diamond, *Collapse*, 519-520.

⁹¹ “Correctie formulering over overstromingsrisico Nederland in IPCC-rapport,” Planbureau voor de Leefomgeving, <https://www.pbl.nl/correctie-formulering-over-overstromingsrisico>, accessed on May 6, 2020.

⁹² “Delta Works,” Rijkswaterstaat, Ministry of Infrastructure and Water Management, <https://www.rijkswaterstaat.nl/english/water/water-safety/delta-works/index.aspx>, accessed on May 6, 2020.

⁹³ Gerard Reijn, “Minder CO2, maar liever niet vandaag. Qua uitstoot zijn we een land van smeerkezen,” *De Volkskrant*, January 11, 2019, <https://www.volkskrant.nl/economie/minder-co2-maar-liever-niet-vandaag-qua-uitstoot-zijn-we-een-land-van-smeerkezen~b77e1b24/>, accessed on May 6, 2020.

1930, but during the Second World War and the following period of recovery the threat of water faded from the people's minds.⁹⁴ The dikes were significantly weakened by the lack of maintenance and damage during the Second World War, and after 1945 the plan for much-needed improvement was never actually implemented.⁹⁵ Due to a severe storm the dikes were breached on 67 locations in 1953. The high death toll and horrible news stories of death and suffering that followed, caused public and political pressure on the government to do everything to repair the damage and prevent a new disaster.⁹⁶ The events made the urgency for extremely expensive storm surge barriers, dams and locks abundantly clear. However, it seems like this vulnerability to the sea faded from the people's minds again. For example, with the construction of the Oosterscheldekering, part of the Delta Works, only a 40 centimeter sea-level rise was taken into account. Currently, there is no scenario as optimistic with a sea-level rise of merely 40 centimeters.⁹⁷ A new study in *PNAS* by a group of 22 researchers even predicts a sea-level rise of 2 meters if greenhouse gas emissions continue to rise unrestricted.⁹⁸ In the last decades, the inhabitants weren't aware of the root causes for the sea-level to rise and there is a strong probability climate goals won't be achieved.⁹⁹

Different climate policies define different phases in the history of climate adaptation and mitigation in the Netherlands. The first National Environment Policy Plan (Nationaal Milieubeleidsplan or NMP) from 1989 introduced a phase of more awareness to climate change. Internationally, climate change became an issue prominent on the public agenda and the first NMP was a milestone for the Dutch state.¹⁰⁰ The problem of climate change was perceived, but an effective solution had to wait. The Kyoto Protocol could have introduced a new phase, since the countries agreed upon climate goals and restricted greenhouse gas emissions. However, the Netherlands did not achieve the goal to reduce emissions to the level of 1990 by the year

⁹⁴ Harry Lintsen, "Two Centuries of Central Water Management in The Netherlands," *Technology and Culture*, 43(2002):3, 549-568, here: 565.

⁹⁵ "Watersnoodramp van 1953", Stichting Deltawerken Online, <http://www.deltawerken.com/Watersnoodramp-van-1953/1547.html>, accessed on May 7, 2020.

⁹⁶ Samuël Kruizinga and Pepijn Lewis, "How High is High Enough? Dutch Flood Defences and the Politics of Security," *Low Countries Historical Review* 133 (2018) :4, 4-27, here: 11.

⁹⁷ Rolf Schuttenhelm, "Dit is wat er gebeurt met Nederland als de zee meer dan 2 meter stijgt," May 22, 2019, <https://www.vice.com/nl/article/xwna9n/wat-gebeurt-er-met-nederland-als-de-zee-met-meer-dan-2-meter-stijgt>, accessed on May 7, 2020.

⁹⁸ Jonathan L. Bamber *et al.*, "Ice sheet contributions to future sea-level rise from structured expert judgment," *National Academy of Sciences* 116 (June 4, 2019): 23, 11195-11200, here: 11195.

⁹⁹ "Klimaatzaak tegen de staat," Stichting Urgenda, <https://www.urgenda.nl/themas/klimaat-en-energie/klimaatzaak/>, accessed on Apr. 3, 2020.

¹⁰⁰ *Nationaal Milieubeleidsplan 1989 (NMP)*, notitie, Tweede Kamer der Staten-Generaal, vergaderjaar 1988-1989.

2000.¹⁰¹ It did start with JI and CDM-projects (Joint Implementation and Clean Development Mechanism).¹⁰² These allowed countries to reduce the emission in less expensive countries rather than in their own country. In return, the country obtained emission reduction rights with a certificate.¹⁰³ Results were uncertain. The implementation of the Kyoto Protocol in 2004 did introduce a phase of some restrictions in emissions in the Dutch policies. In 2003, emissions were 5 percent less than it would have been without the climate agreements.¹⁰⁴ Minor actions were taken in this period. In 2013, Urgenda, a Dutch organization for sustainability and innovation, filed a lawsuit against the Dutch state, together with almost 900 co-plaintiffs. They stated that the Netherlands didn't take enough effective measures to reduce emissions by 25% in 2020 opposed to the level in 1990. The court decided in Urgenda's favor in 2015, and again, in 2018, the court decided in appeal that the government should do everything to reduce the greenhouse gas emissions by 2020. Further appeal by the state was rejected by the Supreme Court (Hoge Raad).¹⁰⁵ Meanwhile, the Netherlands signed the Paris Agreement in 2015 and the public agenda pushed towards more and urgent action against climate change. This all led to a Climate Law in 2018 and a national Climate Agreement in 2019 and the Netherlands is transitioning to its most recent phase: a period of taking necessary action. However, the urgency that helps Bangladesh to take effective measures, is lacking in the policies of the Netherlands.

DISCOURSE: ECONOMIC GAIN AND AVOIDING ADAPTATION

In policy documents by the Dutch government three central themes emerged in the climate change debate: the economic asset of a sustainable transition, the responsibility of its citizens to contribute to this transition and the global responsibility to contribute to the climate goals. The first theme is the emphasis on the economic asset a sustainable transition could have. The relation between environment and economy has been a subject of interest for the government since 1997. According to the Environment Program (2000-2003), “de beleidsfilosofie dat milieu en economie in veel gevallen goed samen kunnen gaan, heeft duidelijk postgevat in de

¹⁰¹ *Evaluatienota Klimaatbeleid*, de voortgang van het Nederlandse klimaatbeleid: een evaluatie bij het ijkmoment 2002, Tweede Kamer der Staten-Generaal, vergaderjaar 2001-2002, 4.

¹⁰² *Evaluatienota Klimaatbeleid*, 5.

¹⁰³ NEA. “CDM- en JI-projecten,” Dutch Emission Authority, <https://www.emissieautoriteit.nl/onderwerpen/cdm--en-ji-projecten>, accessed on 29 Apr. 2020.

¹⁰⁴ *Onderweg naar Kyoto: Een evaluatie van het Nederlandse klimaatbeleid gericht op realisering van de verplichtingen in het Protocol van Kyoto*, evaluatienota 2005, Tweede Kamer der Staten-Generaal, versie 31 oktober 2005, 7-8

¹⁰⁵ “Klimaatzaak tegen de staat,” Stichting Urgenda.

maatschappij”.¹⁰⁶ Ultimately, the Netherlands aims for three targets: sustainable, affordable and reliable.¹⁰⁷ To keep the Netherlands safe and resilient to climate change, the Delta Program established several goals. The Delta Commissioner states how protection is necessary to preserve the environment *and* the economy.¹⁰⁸ There was a shift to a more economic focus within the ministry as well. From 1947 to 2010 this was called the Ministry of Public Housing, Spatial Planning and Environmental Management (VROM in Dutch), from 2010 to 2017 it changed to Ministry of Infrastructure and Environment and in 2017 it changed again. Currently, it goes by the Ministry of Economic Affairs and Climate Policy. The website claims that this ministry is working towards a sustainable and enterprising country. “Die twee zaken [economy and environment] zijn aan elkaar verbonden, ze hebben elkaar keihard nodig”, according to the government.¹⁰⁹ This focus on economic gain can be explained: the government is trying to convince each citizen that investing in the environment will be profitable in the future. While Bangladesh receives money for economic *and* sustainable development, the Netherlands – a rich, already developed, Annex I country – has to pay itself. In other words: the taxpayer pays. The government makes sure these taxpayers are supporting the sustainable development, because it wants to be reelected in a few years. Reassuring that there will be economic gain is a way to do that.

Citizens are an important aspect of the second theme that emerges in the Dutch policy papers. The government strongly emphasizes the responsibility of the citizens. The Environment Program of 2000-2003 calls for collective responsibility, carried by key players, including governments, citizens, et cetera – they are the cause *and* solution of environmental problems.¹¹⁰ The government prefers to set a proper example, but “waar bijdragen van burgers aan het beleid nodig zijn, moeten burgers ook in staat en bereid zijn een aandeel te leveren”.¹¹¹ Or as the Climate Agreement in 2019 stated: “Burgers, bedrijven en overheden zijn op elkaar

¹⁰⁶ *Milieuprogramma 2000-2003*, Tweede Kamer der Staten-Generaal, vergaderjaar 1999-2000, 14; Translation: “The policy philosophy that the issues environment and economy should mainly be discussed collectively, is clearly widely supported in the society.”

¹⁰⁷ *Energiebeleid: op weg naar samenhang. Terugblik op tien jaar rekenkameronderzoek naar energiebeleid (2006-2015)*, Algemene Rekenkamer, December 8, 2015, submitted to the Tweede Kamer on December 10, 2015, 3.

¹⁰⁸ *Doorwerken aan de delta: nuchter, alert en voorbereid*, Delta Programma 2020, Deltacommissie, submitted to the Tweede Kamer on September 17, 2019, 6.

¹⁰⁹ Mentioned by the website of the Ministry of Economic Affairs and Climate Policy, link hier, accessed on May 3, 2020; Translation: “These two issues [economy and environment] are intertwined. They pressingly need each other”

¹¹⁰ Other sectors mentioned: the agricultural sector, the industrial sector, refineries, energy companies, the infrastructure, the retail sector, the construction sector, waste disposal companies and players in the water chain; *Milieuprogramma 2000-2003*, 33.

¹¹¹ *Ibid.*, 34 and 38; Translation: “When contributions from citizens are needed, citizens should be prepared to contribute.”

aangewezen om hun bijdrage aan dit doel [reducing greenhouse gas emissions] te kunnen leveren.”¹¹² The reappearance of this theme can be explained by the social-liberal background of the Netherlands that relies on the individual responsibility of citizens. Besides, as a democracy and a country famous for its ability to compromise, the government might not want to force citizens by law to adapt and mitigate to the effects of climate change.

The last recurring theme that emerges in the Dutch policy papers is the matter of global responsibility. It is important to the Netherlands to keep track of other countries and whether or not they are trying to pursue their climate goals. International effort is asked to overcome climate change.¹¹³ In 2005, the government added: “Een geïsoleerd ambitieus Nederlands klimaatbeleid heeft weinig zin; Nederland draagt immers voor 1 procent bij aan de mondiale uitstoot.”¹¹⁴ European measures are a key point in other policies as well. The Netherlands negotiated agreements within the European Union about sustainable energy supply, and the European Union was pressing to make new global agreements when the Kyoto Protocol ended in 2012.¹¹⁵ In 2019, the government agreed upon a reduction of emissions by 49 percent in 2030 in Dutch territory and measures were taken, previously achievement of this goal remained largely dependent on European policy.¹¹⁶ The government mentions how they want to be a “first-mover”. It started with CDM and JI-projects before other countries, and as a first mover, the Netherlands could profit from favorable conditions.¹¹⁷ “Nederland wil graag een koploperpositie innemen en zo, naast het terugdringen van CO₂-emissies, leidend zijn in de ontwikkeling van innovaties”, the government stated.¹¹⁸ However, when comparing the greenhouse gas emissions per citizen in the European Union and the emphasis on global responsibility, the Netherlands isn’t a “first-mover” at all.¹¹⁹

¹¹² *Klimaatakkoord*, Tweede Kamer der Staten-Generaal, The Hague, June 28, 2019, 9; Translation: “Citizens, businesses and the government depend on each other to contribute to this issue [the reduction of greenhouse gas emissions].”

¹¹³ *Evaluatienota Klimaatbeleid*, 3.

¹¹⁴ *Onderweg naar Kyoto*, 98; “Translation: An isolated, ambitious Dutch climate policy doesn’t make sense; after all, the Netherlands is merely responsible for 1 percentage of global emissions.”

¹¹⁵ *Energiebeleid: op weg naar samenhang*, 3; *Onderweg naar Kyoto*, 99.

¹¹⁶ *Klimaatakkoord*, 7.

¹¹⁷ *Onderweg naar Kyoto*, 7-8.

¹¹⁸ *Ibid.*, 80; Translation: “The Netherlands wants to be a leader, reduce CO₂-emissions and be a leader in developing innovations.”

¹¹⁹ “Factsheet Klimaat in Nederland 2017,” CBS, last modified December 21, 2017, <https://www.cbs.nl/nl-nl/achtergrond/2017/51/factsheet-klimaat-in-nederland-2017>, accessed on May 17, 2020.

IMPLEMENTATION: RELUCTANT TO ADJUST

In the first part of this chapter about climate policy in the Netherlands, several policy documents were analyzed. To examine the most recent solutions extensively, in the implementation of solutions the main focus will be on two policy papers: the Climate Agreement 2019 (Klimaatakkoord) and the Delta Program 2020. In 2015 opposition leaders of the Dutch government initiated a climate law that would hold the coalition accountable. With many negotiations, coalition and opposition partners finally reached an agreement in 2018. By 2050, the emissions need to be 95 percent less than in 1990. The government also needs to strive to 49 percent less emissions in 2030.¹²⁰ How the Netherlands will achieve these goals was determined by the Climate Agreement in 2019. The measures in this agreement are divided in 5 sectors: urban environment, mobility, industry, electricity and agriculture and land use.¹²¹ The previously mentioned key players belong within these sectors. In every sector the amount of CO₂-reduction and how this number will be achieved is determined. For example, 1,5 million houses have to become sustainable, and new carbon neutral houses should be build.¹²² Meanwhile, concrete measures within the mobility sector are lacking.

The twelve largest industrial companies in the Netherlands are responsible for 60 percent of all industrial CO₂-emissions, which is why the government asks these companies to become leaders within the global program to emission-reduction.¹²³ The government intends the industry sector to be circular, similar to the agricultural and electricity sector.¹²⁴ Arable farming, livestock farming and horticulture use each other's raw materials and residual flows.¹²⁵ By 2050, the electricity system needs to be CO₂-free. Fossil fuels should be replaced by renewable energy sources. The transition is "everybody's responsibility". This way, the governments wants to secure public support.¹²⁶ The energy transition is also a subject that considerably changes, the Climate Agreement stated, with new innovations and breakthroughs that will transform the field. This causes the government to act slightly reserved, but "we doen nu wél alles dat ook straks nog steeds verstandig is (*no regret*)".¹²⁷ Once again, this shows some lack of urgency in the Dutch case, but it can also be seen as caution for the economy: don't invest in renewable energy sources, if in the future, they turn out to be fruitless.

¹²⁰ *Klimaatwet*, or: Climate Law was adopted July 2, 2019 and is implemented since January 1, 2020 in the Netherlands, <https://wetten.overheid.nl/BWBR0042394/2020-01-01>.

¹²¹ *Klimaatakkoord*, 4.

¹²² *Ibid.*, 16.

¹²³ *Ibid.*, 85

¹²⁴ *Ibid.*, 86

¹²⁵ *Ibid.*, 117.

¹²⁶ *Ibid.*, 157.

¹²⁷ *Ibid.*, 158-159; Translation: "We'll do anything that will still be responsible in the future (*no regret*)."

In 2008 the Dutch government established a new Delta commission. The commission decided that every year since 2010, a Delta Program has been needed. These programs closely monitor relevant developments around water management and water security. In the Delta Program 2020, the commissioner explained how the programs define a preferred strategy every five years, the next strategy plan will be released in 2021. Right now, the strategy is primarily focused to keep the Netherlands safe, climate resistant and water secure with minor adjustments. “Ná 2050 kunnen de opgaven echter ingrijpend wijzigen, doordat de zeespiegel dan mogelijk sneller stijgt dan in DP2015 werd gedacht.”¹²⁸ Until 2050, one kilometer of dike needs to be strengthened every week. The Delta Program 2020 showed that planned measures are on schedule. Additionally, almost every security region in the Netherlands made significant progress in their disaster management.¹²⁹ To gather more information and execute the Delta Plan Spatial Adaptation, €20 million euros is available in the short term, funded by the government.¹³⁰ These specific commissions and the extra funding to help with water management show more urgency than other Dutch policy papers. If it is enough, and whether concrete measures are executed, will be discussed in the following subchapter.

RESULTS: TO LEAD OR NOT TO LEAD

In the beginning of the 2000s, the Dutch government focused on the emission trade for a while. These were the CDM and JI-projects previously mentioned. The agreed upon maximum was the amount of 220 Mton (in carbon emission). In Dutch estimates the amount of Mton would not exceed the limit, but these estimates were rather uncertain; there was a 50 percent chance the target would be exceeded. The government acknowledged that to be more sure of the eventual result, more emission reduction was needed, but did not take action.¹³¹ The positive news is that the Netherlands did not exceed the limit, but the text showed the uncertainty the government was dealing with. Eventually, results of CDM-projects turned out to be fluctuating. In the policy papers in the early 2000s, there was a large focus on the CDM-projects, but due to the unpredictability of emission forecasts, the insufficient progress made and the controversy

¹²⁸ *Doorwerken aan de delta*, 9; Translation: “After 2050, however, the task at hand could change drastically, due to a higher sea level rise than previously thought in the Delta Program of 2015.”

¹²⁹ For example: the impact analyses are nearly completed and the regions are working on their strategies during a (predicted) flood. Stress tests formulate the vulnerabilities of roughly every region.

¹³⁰ *Doorwerken aan de delta*, 14.

¹³¹ *Onderweg naar Kyoto*, 8.

about whether or not emission reduction is “real”, the Clean Development Mechanisms weren’t mentioned again in the Climate Agreement in 2019.¹³²

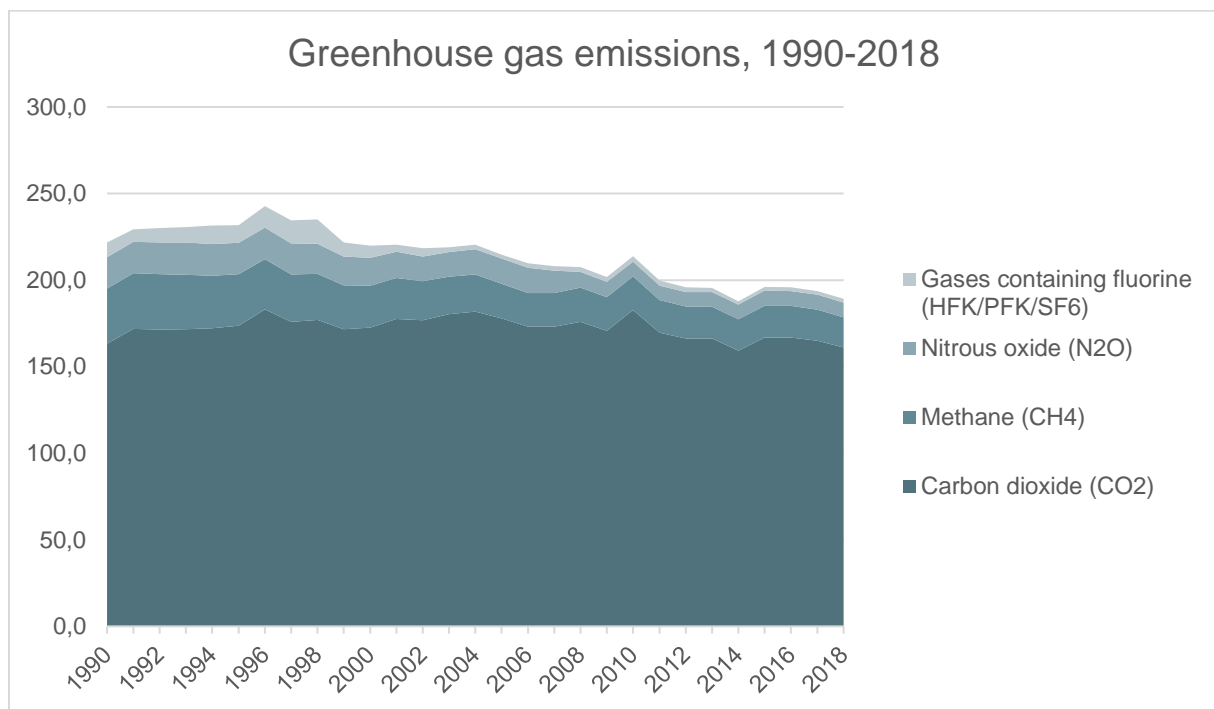


Figure 3 – Greenhouse gas emissions in the Netherlands, from 1990 to 2018.

Source: RIVM/Emissieregistratie, via <https://www.clo.nl/indicatoren/nl016535-broeikasgasemissies-in-nederland>.

The Netherlands is making progress in reducing greenhouse gas emissions, however, the rate of the reduction is expected to be too slow, and, as seen in the graph, reduction of carbon dioxide (CO₂) does not occur at all. By 2020, the emissions shouldn’t be higher than 166 Mton, ordered by law, which means a reduction of more than 20 Mton, but the Netherlands are likely to not achieve this goal.¹³³ Furthermore, the Climate Agreement stated how the country “strives” to lower the emissions in 2030 to 49 percent of the emissions in 1990.¹³⁴ This means a reduction of 76,2 Mton opposed to 2018. These targets require action. The Netherlands did develop laws and institutions in the last years to target climate problems more efficiently. Several laws such as the Climate Law inaugurated the start of important policies and measures such as the Delta

¹³² *Beleidsvaluatie Clean Development Mechanism (CDM)*, by the Ministry of Infrastructure and Environment (previously VROM), February 1, 2014, 4-6; *Klimaatakkoord*.

¹³³ As seen in figure 3; *Trouw*, “Hoge Raad geeft Urgenda gelijk, overheid moet meer doen tegen broeikasgassen,” December 20, 2019, <https://www.trouw.nl/binnenland/hoge-raad-geeft-urgenda-gelijk-overheid-moet-meer-doen-tegen-broeikasgassen~b05384e3/>, accessed on May 18, 2020.

¹³⁴ *Klimaatakkoord*, 7.

Program and the Climate Agreement. Institutions changed and evolved to focus more on climate change and the environment. The National Institute for Health (RIV) merged in 1984 to become the with the National Institute for Health and Environment (RIVM). A new Delta Committee was appointed in 2008 and since 2010 the Delta Program has been released every year. The Ministry of VROM¹³⁵ became the Ministry of Infrastructure and Environment in 2010. In 2017 this changed again with a newly appointed government. Since then, the ministry has been called the Ministry of Economy and Climate. The institutions typify the phases the Netherlands went through in their policies regarding climate: some awareness and a national institution that focused more on environment in the 1980s, minor actions and a new Delta Committee to prevent disasters, and eventually a period of taking necessary action since 2017, after the Netherlands signed the Paris agreement and introduced a ministry focused solely on the economy and climate.

The Delta Committee and Delta Law resulted in a Delta Program every year. Since then, the dikes have continued to be strengthened. Key measures for the preservation of fresh water turned out to be effective after the drought in 2018 – it worked even better than predicted. The drought also showed the necessity for climate adaptation in nature and agriculture: for both sectors there will be an Action Program Climate Adaption by 2021.¹³⁶ Furthermore, the committee acknowledges how the climate situation can change drastically by 2050. There is an extensive use of joint fact finding to increase knowledge and research and adapt better or sooner if this is needed.¹³⁷

While research and adaptation to climate change were already introduced in the new Delta Committee in 2008, a climate agreement focusing on reducing emissions had to wait until 2019. Public support and the Paris Agreement in 2015 finally resulted in more direct and profound measures to mitigate climate change. The national Climate Agreement states there will be a Climate and Energy Examination, planned to be released annually starting in 2020, that reports suspected carbon emissions by 2030 and takes into account the windfalls and setbacks caused by exogen factors and international or national policy.¹³⁸ A progress monitor will carefully watch the progress made by the measures and report the results so far. The new Annual Climate Budget is based on the Climate and Energy Examination and the Progress Monitor, and it revises the climate plans and the budget spent on it.¹³⁹ Further, the Climate

¹³⁵ Ministry of Public Housing, Spatial Planning and Environmental Management.

¹³⁶ *Doorwerken aan de delta*, 14.

¹³⁷ *Ibid.*

¹³⁸ *Klimaatakkoord*, 8.

¹³⁹ *Ibid.*, 11.

Agreement mentions measures for every sector, such as Carbon Capture and Storage measures (CSS) for the industry sector and the use of innovative techniques in agriculture to reduce emissions.¹⁴⁰ The government wants to use biomass as an energy source in every climate sector in the Netherlands. In agriculture it can be used for soil fertility and eventually, it can become a (raw) material. Yet, the purpose for biomass will particularly be: replacing fossil fuels to reduce CO₂-emissions. The idea is that only sustainable biomass will contribute to a sustainable economy, but especially sustainable biomass will ultimately be scarce globally.¹⁴¹ This fact is acknowledged in the Climate Agreement and there is a considerable amount of controversy when speaking of biomass energy and how carbon neutral it really is.¹⁴² However, biomass is already responsible for 60 percent of “sustainable produced energy” in the Netherlands.¹⁴³ It might be the easy choice, but similar to the unclear results of CDM-projects, the results of using biomass are also uncertain.

The results of implemented solutions demonstrate the Dutch environmental awareness, but as seen before, the results also demonstrate the general lack of urgency in cutting back greenhouse gas emissions. While Diamond identifies the society’s response to climate problems as the most significant factor, the Dutch response with regards to climate change is slow, mainly focused on securing economic gain and the results of certain measures are questionable. However, with a Progress Monitor, an Annual Climate Budget and a Climate and Energy Examination every year starting in 2020, the future is promising.

CONCLUSION

This chapter describes the actions taken by the Dutch government to improve climate change mitigation and protection against a rising sea-level. Measures are taken in five sectors to reduce carbon emissions and an annual Delta Program monitors water management, including the strengthening of the dikes. While there are hopeful signs of substantial measures, such as the Annual Climate Budget, the reduction in greenhouse gasses is behind, some measures are inadequate or uncertain and the climate change discourse is primarily determined by waiting. Economic gain is one of the most important aspects for a sustainable transition, the government shows insufficient leadership and mainly asks other countries and its own citizens to take

¹⁴⁰ Ibid., 106 and 123-124.

¹⁴¹ Ibid., 188

¹⁴² Roderick Veelo, “Bijna iedereen is klaar met biomassa, behalve het kabinet,” RTL Nieuws, June 15, 2020, <https://www.rtlnieuws.nl/economie/artikel/5153566/iedereen-klaar-met-biomassa-behalve-het-kabinet>, accessed on June 20, 2020.

¹⁴³ “Biomassa,” Milieu Centraal, <https://www.milieucentraal.nl/klimaat-en-aarde/energiebronnen/biomassa/>, accessed on May 19, 2020.

responsibility. Urgency to adapt to and mitigate climate change now is noticeably lacking. In the next chapter these findings will be discussed in comparison with Bangladesh's climate policy.

CHAPTER 4:

ACTION VS. WAITING

In his book *Collapse*, Diamond tried to find an answer to the question why a society either fails or succeeds to overcome environmental problems. As mentioned before, the society's response is a significant factor, and when societies end up destroying themselves through disastrous measures the problem is mainly found in failures of decision-making. Large groups experience clashes of interest, which can lead to bad behavior, such as the so called "tragedy of the commons".¹⁴⁴ This is applicable to many cases in the debate of global warming: if one country reduces greenhouse gasses, it could negatively affect its economic growth, and when no country follows its lead, the effort made becomes pointless. In this light, it appears complicated to deal with environmental issues such as global warming. This is why binding international agreements are crucial. According to Diamond, there are a few other factors contributing to failed group-decision making. "First of all, a group may fail to anticipate a problem [...]. Second, when the problem does arrive, the group may fail to perceive it. Then, after they perceive it, they may fail to try to solve it." This is where the clashes of interest occur, and for now, the world seems to be in this phase of the road map. It can be followed by the last phase: "Finally, [the group] may try to solve it, but may not succeed."¹⁴⁵ Diamond admitted: this seems depressing, but he reassured there are solutions. Regulation and agreements are key, whether citizens design, obey and enforce quotas themselves or the government does.¹⁴⁶

The two cases of Bangladesh and the Netherlands show profound differences. This chapter compares the differences and similarities between the two countries. Since 2019, both have devised an action plan to combat or at least mitigate climate change. Both achieved results. The part where the countries significantly differ is the discourse. While the Dutch focus on economic asset, responsibility of the citizens and global responsibility, Bangladesh stands for acute adaptation and mitigation, protection of the most vulnerable and asks for aid from developed countries. Both countries obviously evade some of the responsibility, nevertheless, Bangladesh does not lose sight of the crucial society's response: urgent adaptation and mitigation to climate change, and protection for all citizens. The Netherlands, on the other hand, tries to shift the burden onto other countries, its citizens and only directs into a sustainable path if it brings economic results. This chapter will expand on this subject, but before comparing Bangladesh and the Netherlands to determine how "successful" their environmental decision-making has been, it is useful to compare both country's history of environmental policy-making.

¹⁴⁴ A term originally coined by Garrett Hardin in a famous article in *Science* 162 (1968): 3859, 1243-1248; Diamond, *Collapse*, 428.

¹⁴⁵ Diamond, *Collapse*, 421.

¹⁴⁶ Ibid., 429

CONTEXT: THE ROAD TO WHAT?

Ever since the Industrial Revolution in the 19th century, developed countries have been emitting greenhouse gasses causing climate change. This problem was concealed by wide fluctuations. For years, countries failed to perceive the problem – the first and second step on Diamond’s road map. “The West” experienced enormous economic growth, a period later known as the Great Divergence. Several authors attempted to explain why Europe and the United States developed rapidly, while leaving other countries (sometimes defined as “the East”) behind, but a consensus was never reached. Some scholars attribute the Great Divergence to cultural differences or Western superiority, but this is also fiercely disputed. Ian Morris presents another theory. According to him, three factors are essential for human development: biology, sociology and geography. Biology and sociology provide “universal laws”, which apply to all humans. Morris: “Biology tells us why humans push social development upward; sociology tells us how they do this.”¹⁴⁷ If societies hit a ceiling, a stagnation of social development, and they do not figure out how to smash that ceiling, problems cannot be controlled any longer. Morris calls it the “five horsemen of the apocalypse”.¹⁴⁸ In history, Western and Eastern development have hit that hard ceiling. It drove development down, sometimes for centuries. The way Westerners broke the ceiling after 1750 was by tapping into energy of fossil fuels. Biology and sociology, even when put together, cannot be the only reason why the West rules, considering these are universal laws that also apply for Easterners.¹⁴⁹ The last, and most important factor according to Morris, is geography. “Given enough time, Easterners would probably have made the same discoveries and had their own industrial revolution, but geography made it much easier for Westerners.”¹⁵⁰

Returning to Diamond’s road map of failed decision-making to prevent collapse, or as Morris would call it: “preventing the five horsemen of the apocalypse”. In the last fifty years, policymakers in both the Netherlands and Bangladesh have recognized the problem of global warming and aspired to solve it. Until the Kyoto Protocol and the Paris Agreement, where global agreements were negotiated to solve the clashes of interests, attempts to solve the problem mostly failed, the third phase in the road map. The international arrangements resulted in the development of national climate policies as well. As seen in previous chapters, cutting back emissions is a complex subject, especially in Bangladesh, a country in development that requires (fossil) fuels for substantial economic growth. The matter of urgency is addressed in

¹⁴⁷ Ian Morris, *Why the West Rules... For Now* (New York: Farrar, Straus and Giroux, 2010), 557.

¹⁴⁸ These are: famine, disease, migration, state collapse and climate change.

¹⁴⁹ Morris, *Why the West Rules*, 560.

¹⁵⁰ *Ibid.*, 565

the policy papers of Bangladesh, but as a country that newly developed, it is still catching up. The Netherlands is a developed country, and a country affected by climate change with an imminent sea-level rise. Despite its development, the Netherlands established its first Climate Agreement in 2019, ten years after Bangladesh. This ten year gap between their responses to global warming is striking. There could be several explanations for the slow Dutch response. The Netherlands's multi-party democracy with representatives develops policy by compromise and the fact that environment policy needed to be profitable for economic growth, can be explanations for the slow Dutch response. Another explanation could be Ian Morris's theory: geography. The West learned several significant technologies from the East and "eager to tap into the wealth of the East, Western sailors fanned out and [...] bumped into the Americas". The meaning of geography changed dramatically and the new oceanic highway opened up markets and possibilities.¹⁵¹ This eagerness is now experienced by the less developed countries, trying to catch up, while the Netherlands has merely the aspiration to preserve the economic growth they already experienced. This causes geography to be an advantage and disadvantage for Bangladesh. The country is vulnerable, but at least the need for a sustainable transition is extremely palpable in Bangladesh, while the Dutch don't experience this in the same way.

Diamond's road map is not finished, the last phase being: "The group may try to solve it, but may not succeed." Bangladesh and the Netherlands are trying to solve climate change, but whether they will succeed is uncertain up until now. When comparing the two countries, Bangladesh has directed into the right, sustainable path, while the Netherlands is reluctant to follow.

DISCOURSE: LESS URGENCY MEANS LESS ADAPTATION

This historical background is significant to understand the nature of the Dutch slow response to climate change and the urgent adaptation and protection Bangladesh offers. The discourse makes this perfectly clear again. The main themes in Bangladesh policy are protection and adaptation, protection for vulnerable groups in the society and it asks developed countries for responsibility. The main themes in policies of the Netherlands are an emphasis on the economic asset of sustainability, and the government that mainly asks responsibility of citizens and the global community, rather than taking the responsibility for adaptation and mitigation. Of course, climate change is a global issue, which asks for a global change, but every battle needs a leader. The Netherlands – developed and proclaimed as "environmentally aware" by Diamond

¹⁵¹ Ibid., 564.

and his Dutch friend – could be that leader. However, it prefers to wait until other countries take the lead.

<i>Bangladesh</i>	<i>The Netherlands</i>
Adaptation and mitigation to climate change	Economic asset of a sustainable transition
Vulnerability of different groups	Own responsibility of the citizens
The responsibility of first world countries	Global responsibility

The suggestion for the Dutch to become a leader, a so-called “first-mover”, originated in their own policy papers. In the themes that run through the policy papers, the *lack* of leadership of the Netherlands became all too apparent. Global responsibility is a dominant topic, as an “isolated climate policy would not make sense”.¹⁵² The fact that a leader could inspire other countries to contribute as well, is not discussed, while this *is* asked from the twelve largest industrial companies.¹⁵³ The responsibility of all citizens is also a theme that emerges in the Dutch policy papers.¹⁵⁴ This shows a fundamental difference with Bangladesh, where the government emphasized on the vulnerability of different groups. The poorest communities are hardest hit by disasters, and women are disproportionally impacted by disasters. The National Plan for Disaster Management therefore proposed a gender-responsive manner in managing risks.¹⁵⁵ The policies largely focused on the support for communities and people in rural areas, because they are more vulnerable.¹⁵⁶ Globally, Bangladesh does not appear to be a leader either, as it emphasized the responsibility of the first world countries, those who caused climate change by their rapid development.¹⁵⁷ As discussed previously, this idea is justifiable.

As a last theme in the discourse, both countries focus on adaptation and mitigation to climate change, but this is expressed differently. Bangladesh mainly aims its attention at the preservation of environment and adaptation to climate extremes.¹⁵⁸ For the country, adaptation and mitigation includes strengthening institutions and improve systems to feed, educate and protect people.¹⁵⁹ In the Netherlands, the economic asset of a sustainable transition is in the center of attention.¹⁶⁰ This approach helps to find public support, necessary for every

¹⁵² *Onderweg naar Kyoto*, 98.

¹⁵³ *Klimaataakkoord*, 85.

¹⁵⁴ *Milieuprogramma 2000-2003*, 33.

¹⁵⁵ *National Plan for Disaster Management*, ii.

¹⁵⁶ *Bangladesh Climate Change Strategy and Action Plan*, 18.

¹⁵⁷ *National Report on Sustainability*, XX.

¹⁵⁸ *Ibid.*, 53.

¹⁵⁹ *Bangladesh Vision 2021*, 41-43.

¹⁶⁰ *Energiebeleid: op weg naar samenhang*, 3.

democracy. Without this support, adaptation and mitigation measures could be reversed by the next elections as soon as a new party comes to power. However, it also opens the subject up for debate: how much money is too much to adapt and mitigate to climate change? In a country like the Netherlands, the climate crisis is not as palpable as in Bangladesh, which makes the subject appear less urgent than in the country actively fighting against floods, increasing monsoons, dry seasons, cyclones and salination.

IMPLEMENTATION: TOWARDS INTERNATIONAL COLLABORATION

When comparing the implementation of measures side by side, Bangladesh and the Netherlands are not that different: both implement measures focused on adaptation and mitigation to climate change and the prevention of disasters, but at a different scale. The Netherlands already possesses storm barriers, while similar systems in Bangladesh are still under construction. It is the discourse that makes the difference. Additionally, the Dutch Climate Agreement was introduced rather late. If this thesis was written two years earlier in 2018, the analysis would be less positive about the Netherlands. The measures taken until then were relatively small and dependent on European legislation. The Climate Agreement adopted in 2019 changed this. Detailed measures followed in five sectors, mainly to reduce greenhouse gas emissions.¹⁶¹

<i>Bangladesh</i>	<i>Netherlands</i>
Strategy and Action Plan in 2009	Climate Agreement in 2019
Basic measures to ensure food, protection and health	Measures in five sectors, while asking for the responsibility of key players in those sectors
Large focus on disaster management and maintaining/improving infrastructure	A Delta Program every year since 2010 that monitors water management
Research and development (innovation)	Innovation is asked from key players
Urgent action for disasters: “Winning resilience against all odds”	Dikes are strengthened, for more drastic measures: wait until 2050
Member of the Delta Coalition since 2016	Member of the Delta Coalition since 2016

¹⁶¹ *Klimaatakkoord*, 85.

The measures introduced by Bangladesh are mainly basic actions to ensure food, protection and health.¹⁶² There is a focus on disaster management and securing infrastructure to uphold economic development.¹⁶³ Institutions are strengthened for more cooperation to build a resilience in the country. Similarly to the Netherlands, the government would like to enhance knowledge and innovation with regards to climate change, but while the Dutch remain slightly vague, Bangladesh follows with concrete measures: research to estimate scale and timing of climate change impacts and connecting regional and national knowledge networks for public and organizational awareness.¹⁶⁴ Innovation is encouraged in both countries, but again: Bangladesh wants to use the regional and the South-Asian input, while the Netherlands remains vague.¹⁶⁵ In the five sectors mentioned by the Netherlands, the measures are more detailed and focused on reducing emissions, and this makes sense: basic protection, infrastructure and strong institutions are already in place. This was not the case for Bangladesh, which is why their measures focus mainly on primary needs. One part of the Bangladesh Strategy and Action Plan concentrates on following a low-carbon growth path, but support from developed countries is asked.¹⁶⁶ It is possible that the Netherlands would be able to help with CDM-projects, however, the effectiveness of these projects did not always show.

While leadership in greenhouse gas emissions is lacking, the Netherlands *is* considered to be a leader in water management. The Delta Works, a massive project started in 1958, are revolutionary in the protection against floods and new programs introduced since 1995 strengthened dikes around Dutch rivers and gave way for increasing rain water and the rising sea level due to melting ice sheets.¹⁶⁷ The Delta Program is issued every year since 2010, which is significant progress. Water management is monitored, dikes are strengthened and emerging problems can be noticed shortly.¹⁶⁸ Bangladesh is still constructing the protection the Netherlands was able to build half a century ago. However, the country has already improved its disaster management drastically and is aware of its vulnerability.¹⁶⁹ Bangladesh operates the policies with urgency, which is understandable, since the county needs protection against floods, and the Netherlands, where the protection is already in place, generally focuses on

¹⁶² *Bangladesh Climate Change Strategy and Action Plan*, 27.

¹⁶³ *National Plan for Disaster Management*, 22-23.

¹⁶⁴ *Bangladesh Climate Change Strategy and Action Plan*, 28.

¹⁶⁵ *Klimaataakkoord*, 85

¹⁶⁶ *Strategy and Action Plan*, 29.

¹⁶⁷ "Ruimte voor de rivieren," Rijkswaterstaat, Ministry of Infrastructure and Water Management, <https://www.rijkswaterstaat.nl/water/waterbeheer/bescherming-tegen-het-water/maatregelen-om-overstromingen-te-voorkomen/ruimte-voor-de-rivieren/index.aspx>, accessed on May 29, 2020.

¹⁶⁸ *Doorwerken aan de delta*, 9.

¹⁶⁹ *National Plan for Disaster Management*, iv.

strengthening dikes and monitoring water management. Coastal flooding, wetland loss, shoreline retreat and loss of infrastructure are problems many deltas are experiencing. To make deltas more resilient, twelve countries formed the Delta Coalition in 2016. Delta countries joined forces: knowledge on deltas is shared and the coalition will facilitate adaptation, resilience and sustainable urban development.¹⁷⁰ Bangladesh and the Netherlands are members, and this global support can be beneficial for both.

RESULTS: A LEADER IS NEEDED

This chapter compares Bangladesh's urgent response to the Dutch slower and reluctant response. These differences are mainly found in the discourse. Both countries achieve results from measures taken over the last fifty years.

<i>Bangladesh</i>	<i>Netherlands</i>
Institutions strengthened	Institutions focus more on climate problems
Strategy and Action Plan doesn't have a follow up yet.	Reducing greenhouse gasses might go too slow
Less fatalities due to disasters	Delta program every years that watches the sea level rise and changes the budget
Measures such as flood management schemes and coastal embankment projects	Measures with uncertain results, such as CDM-projects and biomass.
No new technologies are introduced, waiting for developed countries to implement	A new budget every year to monitor the progress in mitigating climate change

Since 1970, Bangladesh has found several solutions and taken a number of precautions, such as the previously mentioned flood management schemes, et cetera.¹⁷¹ These were significant in reducing the number of fatalities caused by weather extremes. These preventive actions were already in place in the Netherlands: water management in the Dutch polders originated in the eleventh century and other protection against the sea such as the Delta Works was introduced after 1953. The Standing Orders of Disaster in 1997 in Bangladesh was an important milestone to guide and monitor disaster management in Bangladesh, similarly to the Netherlands, where

¹⁷⁰ Explained by the website of the Delta Coalition, <https://www.deltacoalition.net/about/>.

¹⁷¹ *Bangladesh Climate Change Strategy and Action Plan*, 18-19.

the first Delta Law in 1958 inaugurated the construction of the Delta Works.¹⁷² Other legislation in Bangladesh, such as the Disaster Law in 2012 and the National Adaptation Program of Action, provided the foundation for stronger institutions and the development of urgent adaptation programs.¹⁷³ This is similar to the Netherlands with its Delta Programs, established in 2010, an annual monitor of the sea-level and action taken for prevention of disasters.¹⁷⁴ Bangladesh is catching up and the unified Delta Coalition between Bangladesh, the Netherlands, and other countries, could support the rapid development.

The government of Bangladesh established a National Climate Change Fund to focus mainly on adaptation to climate change.¹⁷⁵ Several new Committees and Units support the achievement of the national climate goals and the Strategy and Action Plan increases the influence these institutions obtain.¹⁷⁶ While the government discusses reducing greenhouse gas repeatedly, climate change also remains subordinate to disaster risk. Additionally, climate change is perceived as a problem caused by developed countries, which makes them accountable.¹⁷⁷ Separately, the Netherlands realizes the joint responsibility it has, but references the global responsibility frequently.¹⁷⁸ Both countries liberate themselves from the entire burden. Bangladesh primarily strives to raise equality for all citizens, since a large part of the country only recently received basic needs such as energy, and the Netherlands strives to reduce greenhouse gas, but achieves minor goals and focusses mainly on economic significance. The Dutch turn to several measures with questionable results, such as biomass and CDM-projects. The country wants to profit and be a “first-mover” in these measures.¹⁷⁹ However, measures taken show no leadership at all.

Nonetheless, since the Paris Agreement in 2015, the world has been transitioning into an approach of more international cooperation and support for less developed countries with the differentiation between countries achieved in the agreement.¹⁸⁰ This is highly essential to prevent collapse, Diamond argued. While he assumed Third World countries to be the most vulnerable, he also acknowledged how this can be dangerous for First World countries. When

¹⁷² *Deltawet*, or: Delta Law was adopted May 8, 1958 in the Netherlands, <https://wetten.overheid.nl/BWBR0002283/2004-07-01>, accessed on June 3, 2020.

¹⁷³ *Bangladesh Climate Change Strategy and Action Plan*, 25.

¹⁷⁴ *Doorwerken aan de delta*.

¹⁷⁵ *Bangladesh Climate Change Strategy and Action Plan*, 24

¹⁷⁶ *Ibid.*, 29

¹⁷⁷ *National Report on Sustainability*, XX.

¹⁷⁸ *Onderweg naar Kyoto*, 98.

¹⁷⁹ *Ibid.*, 7-8.

¹⁸⁰ Pieter Pauw, Kennedy Mbeva and Harro van Asselt, “Subtle differentiation of countries’ responsibilities under the Paris Agreement,” *Palgrave Commun* 5 (2019): 86. <https://doi.org/10.1057/s41599-019-0298-6>

people in vulnerable countries are desperate, they will fight against their government, fight each other over land, they'll try to emigrate at any cost. "The problems of all these environmentally devastated, overpopulated, distant countries become our own problems because of globalization", Diamond explained.¹⁸¹ Considering this notion, unifications such as the Delta Coalition and the global Paris Agreement – initially adopted by all countries until the United States' withdrawal – is recognized to be crucial. Shared knowledge and shared technologies could compellingly contribute to survival for all countries. In 2019, The Netherlands finally took essential measures that report suspected carbon emissions, monitor the climate crisis and allocate the climate budget. It might make the Dutch the "first-mover" they initially said they desired to be, and with that, it can help the global community, but for now the country lacks the urgency to become that desired leader.

CONCLUSION

In both countries the rise of the sea is perceived as a constant threat and both countries have been taking serious action in the last decade. While Bangladesh acts with more urgency – understandably, due to the desperate need for protection against floods – the Netherlands generally focuses on strengthening dikes and monitoring water management. Climate change is an environmental problem globally and this remains a problem to be solved collectively. Both countries have taken some measures, but drastic solutions are lacking. International agreements are crucial to prevent collapse, and the Paris Agreement was the foundation of the Dutch national Climate Agreement. It finally resulted in measures to reduce carbon emissions, and this might make the Netherlands the "first-mover" it dreamed to be – hopefully, including aid for less developed countries like Bangladesh. The future is unclear, but there are hopeful signs both countries won't reach the last phase of Diamond's road map: "failing to succeed". However, when specifically focusing on the society's response, the comparison of the discourse in policy papers demonstrates the most significant differences, and this could result in Bangladesh turning to the right and sustainable path, leaving the Netherlands behind.

¹⁸¹ Ibid., 516-517.

CHAPTER 5:

CONCLUSION

Half a year has passed since writing the introduction of this thesis. By March 2020, most fires in Australia had been extinguished completely. The summer of 2019-2020 will be remembered as *Black Summer*: the most devastating fire season ever.¹⁸² But even before March, the disastrous situation in Australia caused by global warming, was soon forgotten by the rest of the world. The corona crisis emerged. Despite the demand for new climate regulations in the Netherlands, the government delayed implementing measures blaming the crisis.¹⁸³ The government suspended the investment fund containing tens of billions euros meant for a sustainable economic growth and future wealth. When or if the investment fund will continue, is yet to be determined.¹⁸⁴ Recently, economist emphasized the necessity for investments in a sustainable future.¹⁸⁵ The economy of Bangladesh is heavily impacted by COVID-19 and following lock-downs. In May 2020, cyclone Amphan caused even more economic loss. Nevertheless, Bangladesh takes the lead in the push for global climate action. The Minister of Foreign Affairs: “The pandemic is one crisis. Climate change could be worse than that, so we have to be aware of it.” He urged international donors to provide assistance to “Climate Vulnerable Forum”-countries.¹⁸⁶ Bangladesh’s leading research center (ICCCAD) called for global solidarity as well.¹⁸⁷ While the Netherlands is able to postpone climate measures without repercussions, Bangladesh does not have that privilege.

This thesis aimed to identify a society’s response to environmental problems such as human-caused climate change and water management problems. Based on a detailed comparison between Bangladesh and the Netherlands, this thesis presented an answer to the question: Why is Bangladesh more likely to collapse than the Netherlands due to environmental problems? The conclusion, however, contradicts with Jared Diamond’s assumption of vulnerability of third world countries. Bangladesh is not more likely to collapse than the

¹⁸² The Passionate Eye, “Australia’s Black Summer,” *CBC News Network*, March 7, 2020, https://www.cbc.ca/passionateeye/m_episodes/australias-black-summer, accessed on June 16, 2020.

¹⁸³ NOS, “Kabinet stelt nieuwe klimaatplannen uit,” March 27, 2020, <https://nos.nl/artikel/2328548-kabinet-stelt-nieuwe-klimaatplannen-uit.html>, accessed on June 16, 2020.

¹⁸⁴ Pepijn Nagtzaam, “Investeringsfonds met miljarden voorlopig in ijskast: 'Uitstel mag geen afstel worden',” *RTL Nieuws*, May 7, 2020, <https://www.rtlnieuws.nl/economie/artikel/5115316/investeringsfonds-wopke-wiebes-miljarden-euros-uitgesteld>, accessed on June 16, 2020.

¹⁸⁵ Otto Raspe, Sjoerd Hardeman and Jesse Groenewegen, “Haal ook het klimaatbeleid snel uit zijn lockdown,” *RTL Nieuws*, May 20, 2020, <https://www.rtlnieuws.nl/economie/opinie/artikel/5127366/klimaatbeleid-duurzaamheid-coronacrisis-wiebes-hoekstra-maatregelen>, accessed on June 16, 2020.

¹⁸⁶ Megan Rowling, “Bangladesh leads climate-threatened nations in push for global action,” *Thomas Reuters Foundation News*, June 9, 2020, <https://news.trust.org/item/20200609161704-q17ve/>, accessed on June 16, 2020.

¹⁸⁷ Saleemul Huq, “The double whammy of Covid-19 and climate change,” *International Centre for Climate Change and Development (ICCCAD)*, April 23, 2020, <http://www.icccad.net/daily-star-articles/the-double-whammy-of-covid-19-and-climate-change/>, accessed on June 16, 2020.

Netherlands. The palpability of climate change in Bangladesh causes the country to take more drastic action than the Netherlands currently takes. The society's response to the environmental problems is the most significant factor to determine an eventual collapse, according to Diamond. When omitting vulnerable geography or the development head start and solely focusing on the society's response to environmental problems, the South-Asian country demonstrates its urgent and sustainable transition. Bangladesh is catching up to the level of protection the Netherlands already got the chance to develop. Bangladesh is following the path of development the Netherlands already got the chance to follow. And Bangladesh is taking a lead in its own country to protect citizens and adapt and mitigate climate change, while the Netherlands is waiting for its citizens to take responsibility and waiting on its economy to be a driving factor behind sustainable development. Taking into account Diamond's own "most significant" factor – societal response to environmental problems – this research concludes that Bangladesh has gone in the right direction, leaving the Netherlands behind.

DEBATING COLLAPSE

With *Collapse*, Diamond added to the ongoing debate concerned with the modern fate of societies in the branch of historical sustainability. As already stated by Caradonna, Diamond is primarily interested in unsustainability and collapse, and less in identifying the secrets and strategies of successful long-standing societies. Several authors argue over Diamond being a determinist, mainly focused on failures of societies. In the light of failures, Bangladesh appears weakened by environmental problems. However, this thesis examines as much the successes as the failures. Suddenly, Bangladesh's image shifts to a sustainable country, taking urgent action to prevent its environmental problems. The historical sustainability of scholars attempted to identify either structuralist techniques, overarching theories or typologies of collapse, because they fear that similar forms of collapse could occur in modern societies. This thesis demonstrates how a less developed country like Bangladesh may be vulnerable, as Diamond assumes, however, because Bangladesh directly experiences the immediate need for urgent action every day, the country is also more likely to act promptly, rather than delay and wait until it is possibly too late. This makes Bangladesh's society's response more determined and with a focus on protection for every citizen, even the most vulnerable.

Additional research could elaborate on this outcome, to examine the situation in different environmental problems, such as biodiversity, deforestation or other issues Diamond mentioned in his book. For example, biodiversity has only decreased in the Netherlands, from

40 percent in 1990 to 15 percent in 2010 – leaving the Netherlands far behind compared to Europe or the rest of the world.¹⁸⁸ Meanwhile, Bangladesh is a biodiversity-rich country, and trying to protect forest land and to ensure conservation of resources.¹⁸⁹ These are subjects to explore in further research. In addition, radical solutions could be analyzed, such as floating cities or urban forestry.¹⁹⁰ Radical change could possibly shape a new situation for the Netherlands and Bangladesh. However, this is merely a prospect for the future, and might turn out to be unfeasible or inconvenient.

FUTURE LESSONS

By analyzing themes occurring in the climate discourse, the implementation of climate policy and the results of this implementation, this thesis has shown the differences between Bangladesh and the Netherlands. It also offers the opportunity to demonstrate future possibilities: the Netherlands could learn from a country like Bangladesh. To conclude, this thesis suggests three lessons Bangladesh offers the Netherlands for a strong society's response to environmental problems.

1. Adaptation and mitigation to climate change is needed *first* and this can protect economic asset in the future. While Bangladesh focusses on drastic and effective measures for adaptation, the Netherlands reacts to upcoming problems, but fails to anticipate problems before they arrive and occasionally focusses on ineffective measures. For example, the use of biomass is fiercely disputed. A research commissioned by the Ministry of Infrastructure and Water Management explained how biomass will result in *more* CO₂-emissions, rather than reduce emissions.¹⁹¹ CDM-projects turned out to be unsuccessful and newly proposed measures to reduce nitrous oxide has repeatedly proved to be

¹⁸⁸ Globally, 70 percent of biodiversity is preserved; Planbureau voor de Leefomgeving, "Verlies aan biodiversiteit in Nederland groter dan elders in Europa," *PBL*, Balans van de leefomgeving 2014, <https://themasites.pbl.nl/balansvandeleeftomgeving/jaargang-2014/natuur/biodiversiteit-en-oorzaken-van-verlies-in-europa>, accessed on June 17, 2020.

¹⁸⁹ "Bangladesh – Biodiversity Facts," Convention on Biological Diversity, <https://www.cbd.int/countries/profile/?country=bd#:~:text=Bangladesh%20is%20one%20of%20the,and%20man%2Dmade%20homestead%20ecosystems>, accessed on June 17, 2020.

¹⁹⁰ Mentioned by the exhibition "Metabolism: the city of the future" in the Mori Art Museum in Japan <https://www.mori.art.museum/english/contents/metabolism/about/index.html>, accessed on June 4, 2020; Mentioned by the website of Vibrant Cities, <https://www.vibrantcitieslab.com/toolkit/>, accessed on June 4, 2020.

¹⁹¹ NOS, "Onderzoek: biomassacentrales stoten meer CO₂ uit dan steenkoolcentrales," October 30, 2019, <https://nos.nl/artikel/2308292-onderzoek-biomassacentrales-stoten-meer-co2-uit-dan-steenkoolcentrales.html>, accessed on June 17, 2020.

insufficient.¹⁹² These failing solutions proposed by the government, lead to the second lesson found in the case of Bangladesh.

2. Focus on effective measures, *globally*. Results from measures such as CDM-projects or biomass fuel appear uncertain, however, the Dutch authorities have implemented these measures anyway for economic gain. This is not merely a waste of time, it is also a display of divergence, while a problem like global warming needs uniformity and solidarity. This directly relates to the idea of Common But Differentiated Responsibilities formalized by the United Nations Framework Convention of Climate Change in 1992. For the first time, an international legal instrument addressed climate change and stipulated how all states are obligated to address environmental destruction, but are not equally responsible. “Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.”¹⁹³ However, as already mentioned, up until now, the Netherlands lacks leadership. The Paris Agreement still addresses climate change with subtle differentiation between the responsibilities of countries.¹⁹⁴
3. Support less developed countries like Bangladesh supports its most vulnerable citizens: with protection, knowledge and aid. Annex 1-countries such as the Netherlands are the root cause of climate change and have profited from economic growth, sustained by fossil fuels, since the Industrial Revolution. Chapter 4 cited Ian Morris, who claimed that the Industrial Revolution generated rapid social development for the so-called “West” that it could break the hard ceiling and avoid the “five horsemen of the apocalypse”. The discovery of the Americas was an important event leading up to the revolution, the inner Asian steppe highway was closed, “ending nomadic migration and effectively killing one of the horsemen of the apocalypse”, according to Morris.¹⁹⁵ He fails, however, to mention the influence of colonialism and slavery, introduced in the 17th century, in which human lives were exploited for the gain of countries such as England and the Netherlands. Social development increased dramatically in these countries, but at the expense of countries

¹⁹² RTL Nieuws, “Commissie: stikstofmaatregelen kabinet gaan niet ver genoeg, corona heeft niets opgelost,” June 8, 2020, <https://www.rtlnieuws.nl/nieuws/politiek/artikel/5146361/stevice-kritiek-op-stikstofbeleid-plannen-te-vrijblijvend>, accessed on June 17, 2020.

¹⁹³ *United Nations Framework Convention On Climate Change*, by the United Nations, 1992, 4.

¹⁹⁴ Pieter Pauw, Kennedy Mbeva and Harro van Asselt, “Subtle differentiation of countries’ responsibilities.”

¹⁹⁵ Morris, *Why the West Rules*, 565.

below the Brandt Line in the North-South divide.¹⁹⁶ Capitalism produced inequality, and since the 17th century, people of color constitute the majority of the world's poor.¹⁹⁷

Climate change is inextricably linked to economic inequality, Oxfam Novib acknowledges in 2015. "The poorest half of the global population are responsible for only around 10% of global emissions yet live overwhelmingly in the countries most vulnerable to climate change – while the richest 10% of people in the world are responsible for around 50% of global emissions."¹⁹⁸ In this light, the idea of Common But Differentiated Responsibilities emerged, but there is also the moral consideration of environmental justice.¹⁹⁹ In this post-colonial world, the Netherlands has to acknowledge the inequality it initially caused and provide countries like Bangladesh with agency and financial support to combat climate change. Alongside this ethical factor, there is a rational argument to be made, previously mentioned by Diamond. Due to globalization, environmentally devastated countries become the Netherlands' own problem eventually. Following these lessons would introduce a new phase in the environmental development of both Bangladesh and the Netherlands: international cooperation. The first step on this path was the Paris Agreement, but for continuation global support remains necessary.

¹⁹⁶ In the 1980s, the Brandt Line was developed as a way of showing how the world was geographically split into relatively richer and poorer nations. It is seen as a more accurate description than the divide between East and West. Southern countries in the divide often share a history of colonialism by Northern states. <https://www.rgs.org/CMSPages/GetFile.aspx?nodeguid=9c1ce781-9117-4741-af0a-a6a8b75f32b4&lang=en-GB>

¹⁹⁷ Patricia Hill Collins and John Solomos (eds), *The SAGE Handbook of Race and Ethnic Studies* (New York: SAGE Publications, 2010), 512.

¹⁹⁸ Oxfam Novib, "Extreme Carbon Inequality: Why the Paris climate deal must put the poorest, lowest emitting and most vulnerable people first", briefing by Oxfam Novib, December 2, 2015, 1.

¹⁹⁹ *Principles of Environmental Justice*, Delegates to the First National People of Color Environmental Leadership Summit held on October 24-27, 1991, in Washington DC. Since then, *The Principles* has served as a defining document for the growing grassroots movement for environmental justice. <http://www.ejnet.org/ej/principles.html>

BIBLIOGRAPHY

PRIMARY SOURCES

Bangladesh (archives of the government and World Bank)

Bangladesh Climate Change and Sustainable Development, World Bank, Rural Development Unit South Asia Region, December 19, 2000.

Bangladesh Climate Change Strategy and Action Plan 2009, by The Government of the People's Republic of Bangladesh, September 2009.

Bangladesh Vision 2021, by Centre for Policy Dialogue. Prepared under the initiative of Nagorik Committee 2006, August 2007.

Climate Change Adaptation Actions in Bangladesh: Disaster Risk Reduction; Methods, Approaches and Practices, by Rajib Shaw, Fuad Mallick and Aminul Islam, Springer, 2013.

Development Planning in Bangladesh: 7th Five Year Plan and SDG Implementation, by the Government of the People's Republic of Bangladesh, June 2016.

National Plan for Disaster Management (2016-2020): building resilience for sustainable human development, by Ministry of Disaster Management and Relief, March 2017.

National Report on Sustainable Development, by Ministry of Environment and Forests Bangladesh, May 2012.

The Bangladesh Environment Conservation Act 1995, by Ministry of Environment and Forests Bangladesh, June 1995.

The Netherlands (archives of Rijksoverheid and Tweede Kamer)

Beleidsevaluatie Clean Development Mechanism (CDM), by the Ministry of Infrastructure and Environment (previously VROM), February 1, 2014.

Doorwerken aan de delta: nuchter, alert en voorbereid, Delta Programma 2020, Deltacommissie, submitted to the Tweede Kamer on September 17, 2019.

Energiebeleid: op weg naar samenhang. Terugblik op tien jaar rekenkameronderzoek naar energiebeleid (2006-2015), Algemene Rekenkamer, December 8, 2015, submitted to the Tweede Kamer on December 10, 2015.

Evaluatienota Klimaatbeleid, de voortgang van het Nederlandse klimaatbeleid: een evaluatie bij het ijkmoment 2002, Tweede Kamer der Staten-Generaal, vergaderjaar 2001-2002.

Milieuprogramma 2000-2003, Tweede Kamer der Staten-Generaal, vergaderjaar 1999-2000, 14; Translation: "The policy philosophy that the issues environment and economy should mainly be discussed collectively, is clearly widely supported in the society."

Nationaal Milieubeleidsplan 1989 (NMP), notitie, Tweede Kamer der Staten-Generaal, vergaderjaar 1988-1989.

Onderweg naar Kyoto: Een evaluatie van het Nederlandse klimaatbeleid gericht op realisering van de verplichtingen in het Protocol van Kyoto, evaluatienota 2005, Tweede Kamer der Staten-Generaal, versie 31 oktober 2005.

International (archives of the UN)

United Nations Framework Convention On Climate Change, by the United Nations, 1992.

SECONDARY SOURCES

Acemoglu, Daron, and James Robinson. *Why Nations Fail: The Origins of Power, Prosperity and Poverty*. New York: Crown Publishing Groups, 2012.

Bamber, Jonathan L., *et al.* "Ice sheet contributions to future sea-level rise from structured expert judgment." *National Academy of Sciences* 116 (June 4, 2019): 23, 11195-11200.

Bankoff, Gregory. "Rendering the World Unsafe: 'Vulnerability' as Western Discourse." *Disasters* 25 (2001): 1, 19-35.

BBC News. "Australia fires: A visual guide to the bushfire crisis." January 13, 2020, <https://www.bbc.com/news/world-australia-50951043>. Accessed on Feb. 3, 2020.

Bulletin of the World Health Organization. "Reduced death rates from cyclones in Bangladesh: what more needs to be done?" (2012): 90, 150-156, <https://www.who.int/bulletin/volumes/90/2/11-088302/en/>. Accessed on Apr. 25, 2020.

Caradonna, Jeremy. "Sustainability: A new historiography." In: idem (ed.), *Routledge Handbook of the History of Sustainability*. London: Routledge, 2017.

Convention on Biological Diversity. "Bangladesh – Biodiversity Facts." <https://www.cbd.int/countries/profile/?country=bd#:~:text=Bangladesh%20is%20one%20of%20the,and%20man%2Dmade%20homestead%20ecosystems..> Accessed on June 17, 2020.

Demarest, Arthur. *Ancient Maya: The Rise and Fall of a Rainforest Civilization*. Cambridge: Cambridge University Press, 2005.

Diamond, Jared. *Collapse: How societies choose to fail or survive*. London: Penguin Books, 2005.

Diamond, Jared. *Guns, Germs and Steel: The Fates of Human Societies*. New York: W.W. Norton, 1997.

Eckstein, David, et al. "Global Climate Risk Index 2020: Who Suffers Most from Extreme Weather Events?" *German Watch*. December 2019.

Goodman, Jack. "What is Australia doing to tackle climate change?" *BBC News*, January 2, 2020, <https://www.bbc.com/news/world-australia-50869565>. Accessed on Feb. 4, 2020.

Guha, Ramachandra. *Dominance Without Hegemony. History and Power in Colonial India*. Cambridge and London: Harvard University Press, 1997.

Haasnoot, Marjolijn, et al. "Mogelijke gevolgen van versnelde zeespiegelstijging voor het Deltaprogramma. Een verkenning." *Deltares*. September 2018.

Hardin, Garrett. "Tragedy of the Commons." *Science* 162 (1968): 3859, 1243-1248.

Hasnat, Tanjina, Alamgir Kabir and Akhter Hossain. "Major Environmental Issues and Problems of South Asia, Particularly Bangladesh." In: Hussain C. (eds), *Handbook of Environmental Materials Management*. New York: Springer, 2018.

Hill Collins, Patricia, and John Solomos (eds). *The SAGE Handbook of Race and Ethnic Studies*. New York: SAGE Publications, 2010.

Huq, Saleemul. "The double whammy of Covid-19 and climate change." *International Centre for Climate Change and Development (ICCCAD)*, April 23, 2020, <http://www.icccad.net/daily-star-articles/the-double-whammy-of-covid-19-and-climate-change/>. Accessed on June 16, 2020.

Kruizinga, Samuël, and Pepijn Lewis. "How High is High Enough? Dutch Flood Defences and the Politics of Security." *Low Countries Historical Review* 133 (2018): 4, 4-27.

Lintsen, Harry. "Two Centuries of Central Water Management in The Netherlands." *Technology and Culture*, 43(2002): 3, 549-568.

Mann, Charles C. *1491: New Revelations of the Americas Before Columbus*. New York: Vintage, 2006.

Mann, Charles C. *1493: Uncovering the New World Columbus Created*. New York: Vintage, 2011

Marsh, Sarah. "On the frontline of the climate emergency, Bangladesh adapts." *The Guardian*, January 8, 2020, <https://www.theguardian.com/world/2020/jan/08/on-the-frontline-of-the-climate-emergency-bangladesh-adapts>. Accessed on Apr. 25, 2020.

McCormick, Michael, *et al.* "Climate Change During and After the Roman Empire: Reconstructing the Past from Scientific and Historical Evidence." *Journal of Interdisciplinary History* 43 (August 2012): 2, 169–220.

Milieu Centraal. "Biomassa," <https://www.milieucentraal.nl/klimaat-en-aarde/energiebronnen/biomassa/>. Accessed on May 19, 2020.

Morris, Ian. *Why the West Rules... For Now*. New York: Farrar, Straus and Giroux, 2010.

Nagtzaam, Pepijn. "Investeringsfonds met miljarden voorlopig in ijskast: 'Uitstel mag geen afstel worden'." *RTL Nieuws*, May 7, 2020, <https://www.rtlnieuws.nl/economie/artikel/5115316/investeringsfonds-wopke-wiebes-miljarden-euros-uitgesteld>. Accessed on June 16, 2020.

NEA. "CDM- en JI-projecten." Dutch Emission Authority, <https://www.emissieautoriteit.nl/onderwerpen/cdm--en-ji-projecten>. Accessed on 29 Apr. 2020.

NOS. "Kabinet stelt nieuwe klimaatplannen uit." March 27, 2020, <https://nos.nl/artikel/2328548-kabinet-stelt-nieuwe-klimaatplannen-uit.html>. Accessed on June 16, 2020.

NOS. "Na bosbranden kampt Australië nu ook met overstromingen." January 18, 2020, <https://nos.nl/artikel/2319136-na-bosbranden-kampt-australie-nu-ook-met-overstromingen.html>. Accessed on Feb. 3, 2020.

NOS. "Onderzoek: biomassacentrales stoten meer CO₂ uit dan steenkoolcentrales." October 30, 2019, <https://nos.nl/artikel/2308292-onderzoek-biomassacentrales-stoten-meer-co2-uit-dan-steenkoolcentrales.html>. Accessed on June 17, 2020.

OECD. *OECD Environmental Performance Reviews: The Netherlands 2015*. OECD Publishing, 2015, <http://dx.doi.org/10.1787/9789264240056-en>. Accessed on Jan. 28, 2020.

Oude Elferink, Eva. "In Bangladesh is klimaatverandering nú." Podcast by *NRC Vandaag*. November 28, 2019. Timecode 04.48 – 05.55.

Oxfam Novib. "Extreme Carbon Inequality: Why the Paris climate deal must put the poorest, lowest emitting and most vulnerable people first." Briefing by Oxfam Novib, December 2, 2015.

Pauw, Pieter, Kennedy Mbeva and Harro van Asselt. "Subtle differentiation of countries' responsibilities under the Paris Agreement." *Palgrave Commun* 5 (2019): 86. <https://doi.org/10.1057/s41599-019-0298-6>

Planbureau voor de Leefomgeving. "Correctie formulering over overstromingsrisico Nederland in IPCC-rapport." <https://www.pbl.nl/correctie-formulering-over-overstromingsrisico>. Accessed on May 6, 2020.

Planbureau voor de Leefomgeving. "Verlies aan biodiversiteit in Nederland groter dan elders in Europa." *PBL, Balans van de leefomgeving* 2014, <https://themasites.pbl.nl/balansvandeleeftomgeving/jaargang-2014/natuur/biodiversiteit-en-oorzaken-van-verlies-in-europa>. Accessed on June 17, 2020.

Raaij, Ben van. "Bangladesh wapent zich tegen stijgende zeespiegel en steeds zwaardere stormen." *De Volkskrant*, September 5, 2018, <https://www.volkskrant.nl/>. Accessed on Feb. 4, 2020.

Raspe, Otto, Sjoerd Hardeman and Jesse Groenewegen. "Haal ook het klimaatbeleid snel uit zijn lockdown," *RTL Nieuws*, May 20, 2020, <https://www.rtlnieuws.nl/economie/opinie/artikel/5127366/klimaatbeleid-duurzaamheid-coronacrisis-wiebes-hoekstra-maatregelen>. Accessed on June 16, 2020.

Reijn, Gerard. "Minder CO2, maar liever niet vandaag. Qua uitstoot zijn we een land van smeerkezen." *De Volkskrant*, January 11, 2019, <https://www.volkskrant.nl/economie/minder-co2-maar-liever-niet-vandaag-qua-uitstoot-zijn-we-een-land-van-smeerkezen~b77e1b24/>. Accessed on May 6, 2020.

Rijkswaterstaat. "Delta Works." *Ministry of Infrastructure and Water Management*, <https://www.rijkswaterstaat.nl/english/water/water-safety/delta-works/index.aspx>. Accessed on May 6, 2020.

Rijkswaterstaat. "Ruimte voor de rivieren." *Ministry of Infrastructure and Water Management*, <https://www.rijkswaterstaat.nl/water/waterbeheer/bescherming-tegen-het-water/maatregelen-om-overstromingen-te-voorkomen/ruimte-voor-de-rivieren/index.aspx>. Accessed on May 29, 2020.

Rowling, Megan. "Bangladesh leads climate-threatened nations in push for global action." *Thomas Reuters Foundation News*, June 9, 2020, <https://news.trust.org/item/20200609161704-q17ve/>. Accessed on June 16, 2020.

RTL Nieuws. "Commissie: stikstofmaatregelen kabinet gaan niet ver genoeg, corona heeft niets opgelost." June 8, 2020, <https://www.rtlnieuws.nl/nieuws/politiek/artikel/5146361/stevige-kritiek-op-stikstofbeleid-plannen-te-vrijblijvend>. Accessed on June 17, 2020.

Said, Edward. *Culture and Imperialism*. Londen: Vintage, 1994.

Schuttenhelm, Rolf. "Dit is wat er gebeurt met Nederland als de zee meer dan 2 meter stijgt." May 22, 2019, <https://www.vice.com/nl/article/xwna9n/wat-gebeurt-er-met-nederland-als-de-zee-met-meer-dan-2-meter-stijgt>. Accessed on May 7, 2020.

Staver, Frank. "Deze klimaatwetenschapper trekt ten strijde tegen de klimaatonzin van Baudet, Trump en de media." *Trouw*, June 29, 2019, <https://www.trouw.nl/duurzaamheid-natuur/deze-klimaatwetenschapper-trekt-ten-strijde-tegen-de-klimaatonzin-van-baudet-trump-en-de-media~b8a7fb03/>. Accessed on Jan. 29, 2020.

Stichting Deltawerken Online. "Watersnoodramp van 1953." <http://www.deltawerken.com/Watersnoodramp-van-1953/1547.html>. Accessed on May 7, 2020.

Stichting Urgenda. "Klimaatzaak tegen de staat." <https://www.urgenda.nl/themas/klimaat-en-energie/klimaatzaak/>. Accessed on Apr. 3, 2020.

Tainter, Joseph. *The Collapse of Complex Societies*. Cambridge: Cambridge University Press, 1988.

Taylor, Matthew, and John Bartlett. "Fresh wave of climate strikes takes place around the world." *The Guardian*, September 27, 2019, <https://www.theguardian.com/environment/2019/sep/27/fresh-wave-of-climate-strikes-take-place-around-the-world>. Accessed on Jan. 21, 2020.

The Associated Press. "EU Lays Out 1 Trillion-Euro Plan to Support Green Deal." *The New York Times*, January 14, 2020, <https://www.nytimes.com/aponline/2020/01/14/business/bc-eu-europe-climate-change.html>. Accessed on Jan. 21, 2020.

The Passionate Eye. "Australia's Black Summer." *CBC News Network*, March 7, 2020, https://www.cbc.ca/passionateeye/m_episodes/australias-black-summer. Accessed on June 16, 2020.

Trouw. "Hoge Raad geeft Urgenda gelijk, overheid moet meer doen tegen broeikasgassen." December 20, 2019, <https://www.trouw.nl/binnenland/hoge-raad-geeft-urgenda-gelijk-overheid-moet-meer-doen-tegen-broeikasgassen~b05384e3/>. Accessed on May 18, 2020.

Veelo, Roderick. "Bijna iedereen is klaar met biomassa, behalve het kabinet." *RTL Nieuws*, June 15, 2020, <https://www.rtlnieuws.nl/economie/artikel/5153566/iedereen-klaar-met-biomassa-behalve-het-kabinet>. Accessed on June 20, 2020.

Wallace-Wells, David. "Earth's Climate Future." *Journal of International Affairs* 73 (2019): 1, 267-272. Via *Gale General OneFile*, <https://link-gale-com.proxy.library.uu.nl/apps/doc/A616630805/ITOF?u=utrecht&sid=ITOF&xid=9cd40617>. Accessed June 16, 2020.

World Bank. "The World Bank In Bangladesh." Last modified April 13, 2020, <https://www.worldbank.org/en/country/bangladesh/overview>. Accessed on Apr. 25, 2020.

World Bank. *Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience*. A report for the World Bank by the Potsdam Institute for Climate Impact Research and Climate Analytics. Washington DC: World Bank, 2013.