

The Groningen Model United Nations 2019

United Nations Framework Convention on Climate Change



The Perfect Storm: Recapturing the Spirit of Paris

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Welcome Letter

Honourable Delegates,

With esteemed pleasure we welcome you to the very first session of the United Nations Framework Convention on Climate Change (UNFCCC) at the 16th edition of the Groningen Model United Nations Conference. We, Thomas and Jochem, will be your chairs for the day to the best of our abilities and hope you are looking forward to the conference as much as we do.

The challenge ahead of you is a difficult one. Within the framework of the UNFCCC you are going to explore regulating climate change in an international context. For a resolution to be truly successful, all delegates are urged to satisfy the strong need for enhanced climate policies while taking into account the distribution of consequential costs in a fair way. This perfect storm is further complicated by your obligation to the citizens you will be representing. You will need to ensure they are not endangered unfairly in any kind of way as well.

As we have seen on the contemporary global stage, this cannot be done in simple ways. You will need to be both creative and cooperative and perhaps even persistent and cunning from time to time. We do hope you realise though that a realistic representation of global climate politics is resembled not only in your unique individual talents and approaches, but also in your capacity to sway the hearts and minds in the council and include everybody involved.

In order to prepare you for the sessions to come, we present you this background paper. In it, you will find a sketch of the most essential, but basic information concerning our discussions. Make sure you read this background paper before the conference, but please be aware that only this paper is not enough. In order to be prepared for the sessions, your own thorough research is required! At the day of the conference, we hope you will have a strong and realistic idea about how your country can contribute to solving this problem in a cooperative way.

If you have any questions, please feel free to contact us. We are here to help! We are looking forward to meeting you and wish you the best of luck in your preparations for GrunnMUN 2019.

With kind regards,

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Introduction

This year, the theme the TEIMUN foundation selected for our conference is ‘Vision 2020: Reforming the International System for a New Century’. This theme perfectly fits our own discussions, centring around global climate change policies. In order to make the world liveable for current and future generations, a new and improved approach is of a dire necessity. Back in 2015, when the Paris Agreement was approved by a wide variety of states, hard work and optimism went hand in hand to produce a framework for human development in a sustainable way. It seems though that this agreement is not being upheld by many actors involved and that new scientific insights beg for vast increases in our efforts to adapt to and prevent climate change in ways beyond Paris. Now, we ask you to increase global climate change prevention and adaptation efforts to the extent that the planet remains liveable, that the bill of these policies is shared in an equal way, and that no man or woman is hurt unfairly by this endeavour. It is, indeed, the perfect storm.

To start of this background paper, we will provide you with the basics of the UNFCCC and the climate change problem. In it you will find a short history of efforts to create international climate change policies, as well as what we currently know about the progression of climate change. After that, you may find a brief analysis of the actors involved in this problem field. Before concluding this paper, we outline the consequences of climate change as well. At the end of this paper, you can find the QARMA’s. These are questions you will need to answer during the conference together with your fellow delegates in your final resolutions.

The Climate, History and the UNFCCC

The UNFCCC

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty which was adopted on 9 May 1992 and opened for signature at the Earth Summit in Rio de Janeiro from 3 to 14 June 1992. Approaching almost universal membership, the UNFCCC treaty is of tremendous symbolic importance since it establishes a global commitment to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human interference with the climate system. Although the framework contains no enforcement mechanisms, it outlines how specific international treaties (called "protocols" or "Agreements") may be negotiated to specify further action towards achieving the objective of the UNFCCC. As a result, countries have met annually from 1995 in Conferences of the Parties (COP) to assess their progress in dealing with climate change. Out of these annual meetings a series of landmark agreements were concluded: the most important ones being the Kyoto Protocol and Paris Agreement. The Kyoto Protocol, concluded in 1997, was the first agreement to establish legally binding obligations for developed countries and to reduce greenhouse gas emissions in the period 2008–2012¹.

Historical Developments within the UNFCCC Framework

The strategic approach that was opted in the Kyoto Protocol to tackle the reduction of greenhouse gas emissions largely revolved around the recognition that the developed world should assume the primary burden of responsibility. In particular, the Protocol placed a heavier burden on developed nations under the principle of "common but differentiated responsibilities". This is linked back to the fact that in the past, the development of energy and food systems was unequally distributed between countries. Whilst the developed industrial world had a head start in the burning of fossil fuels which contributed to their economic growth, developing countries contributed to a relatively small share of the current century-plus build-up of CO₂.

¹ "History of the Convention", Process and Meetings, accessed January 23rd, 2019
<https://unfccc.int/process/the-convention/history-of-the-convention#eq-2>

For this reason, the principle was expressed in the categorisation of convention parties. The parties to the convention were divided into Annex 1 developed countries, charged with initial responsibility for taking the lead in emission reductions and provision of development finance under Article 4.2. In contrast developing countries were assigned to Annex 2 and were exempted from any responsibility towards climate change mitigation. This contentious point also attributed to the non-ratification of the treaty by the USA who believed that the burden of responsibility should be shared equally between states.²

Under Kyoto, developed nations pledged to cut their yearly carbon emissions, as measured in six greenhouse gases, by varying amounts, averaging 5.2%, by 2012 as compared to 1990. However, the protocol did not become international law until more than halfway through the 1990–2012 period. By that point, global emissions had risen substantially. Some countries and regions, including the European Union, were on track by 2011 to meet or exceed their Kyoto goals, but other large nations failed to meet them. The two biggest emitters of all – the United States and China – churned out more than enough extra greenhouse gas to erase all the reductions made by other countries during the Kyoto period. Globally, emissions soared by nearly 40% from 1990 to 2009, according to the Netherlands Environmental Assessment Agency³.

The principle that developed economies should assume the burden of responsibility for climate change paradoxically proved to be the Achilles heel of the Kyoto Protocol. Its weakness was tied to the economic pathway towards rapid industrialization and economic growth that many developing countries were following. Even though the motto of “common but differentiated responsibilities” was morally justifiable, it effectively undermined the long-term goal of reducing greenhouse gas emissions. This is because developing countries that did not have targets under the Kyoto Protocol were transmitting emission rates that exceeded the levels of many long-time industrialized nations. Therefore, this weakness was addressed in the Bali Plan of Action (Decision 1/CP.13) that introduced the concept of Nationally Appropriate Mitigation Actions (NAMAS) for developing countries. Through this concept developing countries are subjected to climate change responsibilities that are

² J.Volger, “The UNFCCC Regime”, in *Climate Change in World Politics* (Hampshire: Palgrave Macmillan, 2016), p40-42

³ Robert Henson, *The Rough Guide to Climate Change* (London:Rough Guides, 2011)

appropriate to their economic circumstances. It falls in line with the goal of sustainable development that is closely connected to the environmental policy objective enshrined in the UNFCCC charter. Article 4.3 places an obligation upon developed countries to provide “new and additional financial resources, to meet the agreed full costs of developing countries in fulfilling their obligations”⁴.

The concept of adaptation and mitigation

Article 4.3 must be interpreted in the context of adaptation towards climate change. Adaptation refers to “the adjustment of ecological, social and economic systems to the actual or potential impacts of a changing climate”. In general, although all states are exposed to the consequences of climate change, developing states are particularly vulnerable to its effects given their lack of means to protect themselves both economically as well as socially. In contrast to this, mitigation efforts consist of concrete actions by states to directly reduce or alleviate the severity of climate change. While the latter term requires policy plans to cut down emissions, adaptation refers to actions taken by states to become better suited to a changing climate system⁵. Once again, the mitigation vs adaptation debate is embedded within the historical divide between developing and developed countries in their position towards climate change. This historical divide is based on the observation that the developed economies that emitted the most were also the ones most qualified to adapt to climate change given their financial resources. Originally the need for adaptation had been largely ignored in the UNFCCC framework but has returned to prominence as the effects of climate change became more evident. In the 2007 Bali Action Plan adaptation was placed on equal footing with mitigation efforts and was formalised in the 2010 Cancun Adaptation Framework. This involves the drawing up of national adaptation plans by developing countries that will be financed through the Green Environment Facility and a dedicated adaptation fund. As a result, developing countries have stated that a prerequisite for their mitigation efforts is the assurance of development and adaptation finance. Accordingly, developed countries have

⁴ J.Volger, “The UNFCCC Regime”, in *Climate Change in World Politics* (Hampshire: Palgrave Macmillan, 2016), p42-44

⁵ Chang, Chiung Ting, Martens, Willem Jozef Meine, *The Social and Behavioural Aspects of Climate Change: Linking Vulnerability, Adaptation and Mitigation* (Sheffield, UK : Greenleaf Pub. ; The Hague, Netherlands : Netherlands Organisation for Scientific Research, Social Sciences), 2010

viewed this trend with apprehension, since they will be automatically assigned as the de facto financial contributor to any adaptation fund⁶.

Paris Agreement

A renewed step towards limiting greenhouse gas emissions was concluded under the Paris Agreement in 2015. Its main aim was to manage emission reductions from 2020 with the long-term goal to keep the increase in global warming to well below 2 °C above pre-industrial levels and to attempt to limit the increase to 1.5 °C. What distinguishes the Paris Agreement from its predecessors was its appraised diplomatic approach that encourages flexibility and grants individual autonomy to each state to determine its own contribution to mitigate global warming. It permits member states to align their national interests with their efforts to mitigate global warming in a way that doesn't jeopardize them in the short run. The Paris agreement seems to have overcome one of the major obstacles that voided past efforts, which concentrated on creating a mechanism that would assign liability and damages from climate change. The Kyoto Protocol for instance relied on a centralized system of bargaining that was orchestrated around the idea of fixed emission targets. Although the political sensitivities surrounding the allocation of responsibility remained- national pledges between developed and developing countries still differ significantly- the Paris Agreement was able to diffuse them by providing financial support to developing countries in their efforts to combat climate change⁷.

⁶ J.Volger, "The UNFCCC Regime", in *Climate Change in World Politics* (Hampshire: Palgrave Macmillan, 2016), p50-51

⁷ David Victor, "Why Paris Worked: A Different Approach to Climate Diplomacy", *Yale Environment* 360, December 15th, 2015
https://e360.yale.edu/features/why_paris_worked_a_different_approach_to_climate_diplomacy

A Status Quo on the Climate

A central feature of the UNFCCC is its constant dialogue with the scientific community on the extent, mechanisms and projected impacts of climate change. In fact, it aims to establish an institution that is open and responsive to changing scientific advice. Therefore, the Intergovernmental Panel on Climate Change (IPCC) was created to represent an international scientific community that evaluates and produces knowledge on climate change. Until now the IPCC has been pivotal in establishing scientific consensus on the impact and causes of climate change. To foster the link between the UNFCCC long term goal and changing scientific data, a periodic review of the IPCC assessment reports is carried out to assess the adequacy of current commitments⁸.

Nonetheless, the UNFCCC is subject to criticism from environmental activists and governments most affected by climate change for its inability to take this scientific evidence into account. In regard to the exact threshold of dangerous climate change, the UNFCCC has been slow in its response to incorporate the IPCC's findings in its decisions. Primarily its slow responsiveness is owed to the fact that effective action in accordance to the IPCC's findings would entail rigorous measures that could impact one's competitiveness vis a vis others in fossil fuel intensive global economy. In addition a fair allocation of costs between states in relation to climate change mitigation is always a contentious topic of discussion. In 1996 the EU announced that a mean temperature rise of 2C above pre-industrial levels represented the threshold of dangerous climate change. However, it was only in 2009 that this figure was recognised in the Copenhagen Accord and subsequently formally agreed at the 2010 Cancun COP. Adding to this, it is important to note that for the Alliance of Small Island States (AOSIS), and many others, the 2C figure is unacceptable and their main goal is to allow mean temperatures to rise by no more than 1.5C. Primarily its slow responsiveness is owed to the fact that ⁹.

Even now, despite its appraisal for displaying a more effective diplomatic approach, the Paris Agreement is far from reaching its intended goal. In fact, the national

⁸ "About the IPCC", IPCC, accessed January 23rd, 2019

<https://www.ipcc.ch/about/>

⁹ J.Volger, "The UNFCCC Regime", in *Climate Change in World Politics* (Hampshire: Palgrave Macmillan, 2016), p39-40

commitments expressed under the Paris Agreement will not come close to providing the emissions reductions needed to avoid the most severe effects of climate change. According to a report by the United Nations Environment Programme (UNEP) the national pledges, which constrain greenhouse gas emissions from now to 2030, will only deliver a third of the cuts needed to put the world on track to keep warming below the promised 2 degrees Celsius¹⁰. This is primarily because carbon dioxide remains in the atmosphere for centuries, which requires states to bring industrial emissions down to zero as fast as possible. In fact, how much countries emit between now and then will determine where global temperatures would end up. Although the world has been making good progress toward decoupling economic growth from carbon emissions, it has not yet resulted in a fall in global temperatures¹¹.

In addition, a new report unveiled by the Intergovernmental Panel on Climate Change (IPCC) indicates that the threshold of 2C, long considered a threshold for the most severe social and economic damage from climate change, which was agreed upon in the Paris Agreement, is inadequate to ensure the lowest impact of global warming. A key finding of the new IPCC report is the dramatic difference that restricting warming to 1.5C above pre-industrial levels would have on the global environment¹². The report details the economic damage that is expected should governments fail to enact policies to reduce emissions. The United States, it said, could lose roughly 1.2 percent of its gross domestic product for every 1.8 degrees of warming. In addition, it said, the United States along with Bangladesh, China, Egypt, India, Indonesia, Japan, the Philippines and Vietnam are home to 50 million people who will be exposed to the effects of increased coastal flooding by 2040, if 1.5 degrees

¹⁰ UN Environment, Emissions Gap Report 2017
<https://www.unenvironment.org/resources/emissions-gap-report-2017>

¹¹ Fred Pearce, "Why the Post-Paris Climate Challenge Is Even Harder Than We Thought", Yale Environment 360, November 7th, 2017
<https://e360.yale.edu/features/why-post-paris-climate-challenge-is-even-harder-than-we-thought>

¹² Jonathan Watts, "We have 12 years to limit climate change catastrophe, warns UN".The Guardian, October 8th, 2018
<https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report>

of warming occur¹³. Consequently, a more effective and ambitious response against climate change is needed.



Figure 1 is a table from the Climate Action Tracker that shows the current effort of the world's largest greenhouse gas producers in relation to their Paris Climate goals.¹⁴

Political situation

The pressing need to set targets that are more ambitious occurs at the backdrop of political uncertainty. In June 2017, U.S. President Donald Trump announced his intention to withdraw his country from the Paris agreement and has since then promoted policies that can potentially setback the progress that was realized under the Obama administration. There is a fear that a US withdrawal will provide political cover for the backsliding of targets in other countries and strengthen a political

¹³ Coral Daven Port, “Major Climate Report Describes a Strong Risk of Crisis as Early as 2040”, October 7th, 2018 <https://www.nytimes.com/2018/10/07/climate/ipcc-climate-report-2040.html>

¹⁴ Amanda Erickson, “Few countries are meeting the Paris climate goals. Here are the ones that are.”, Washington Post, October 11th, 2018 https://www.washingtonpost.com/world/2018/10/11/few-countries-are-meeting-paris-climate-goals-here-are-ones-that-are/?noredirect=on&utm_term=.4325f425bdc6

undercurrent that is opposed to ambitious environmental action¹⁵. However, there are also signs of other countries stepping up their efforts and filling in the leadership vacuum that was left by the USA. At the 20th EU-China summit on 16 July 2018 both actors reaffirmed their commitments to the Paris Agreement and announced their plans to cooperate on issues such as emissions trading and clean technologies¹⁶. China is already deploying low-carbon energy technology on a huge scale. Last year, more than half of the soaring global investment in solar generation, was in China¹⁷.

In addition, some argue that a transition to a green economy is inevitable and is reflective of current trends in the global market. Action on climate change is now more about advancing technology and changing economics rather than diplomacy and politics. The falling prices of renewables, and the rise of smart technologies to make more efficient use of energy, are making old energy-generating technologies obsolete¹⁸. According to an April report from the Center on Global Energy Policy at Columbia University, in the five years before the Paris accord was agreed, U.S. coal consumption fell 20 percent, and Trump's efforts are unlikely to reverse that. Globally, starting in 2015, the majority of new electricity generating capacity has been from renewables. The world has probably passed "peak coal." The global economy grew by 9 percent over the past three years, yet greenhouse gas emissions flatlined. U.S. greenhouse gas emissions have been in decline since 2007¹⁹. Nonetheless this trend abruptly ended in 2018 with greenhouse gas emissions reaching an all time

¹⁵ Fred Pearce, "With the U.S. Out of Paris, What Is the Future for Global Climate Fight?", Yale Environment 360, June 8th, 2017
<https://e360.yale.edu/features/with-the-u-s-out-of-paris-what-is-the-future-for-global-climate-fight>

¹⁶ European Council, Joint statement of the 20th EU-China Summit, July 16th, 2018
<https://www.consilium.europa.eu/en/meetings/international-summit/2018/07/16/>

¹⁷ Fred Pearce, "With China in the Lead, New Obstacles to Climate Progress Are Emerging", Yale Environment 360, May 24th, 2018
<https://e360.yale.edu/features/with-china-in-the-lead-new-obstacles-to-climate-progress-emerge>

¹⁸ Vaishnavi Chandrashekhar, "As Subsidies Wane, Market Forces Drive the Growth of Renewables", Yale Environment 360, June 12th, 2018
<https://e360.yale.edu/features/as-subsidies-wane-market-forces-drive-the-growth-of-renewables>

¹⁹ Trevor Houser, Jason Bordoff, and Peter Marsters, "Can Coal make a comeback?", Centre on Global Energy Policy- Columbia, April 2017
<https://energypolicy.columbia.edu/sites/default/files/Center%20on%20Global%20Energy%20Policy%20Can%20Coal%20Make%20a%20Comeback%20April%202017.pdf>

high according to a recent report by Global Carbon Watch. This serves as a stark reminder that a fall in carbon dioxide emissions is not sufficient to alter global warming, what is required is a complete reduction in emissions. In addition it highlights how positive developments in carbon emission reductions can easily be offset by countervailing trends in developing economies. According to the report the reason for this increase is a fossil fuel intensive global economy that is exacerbated by insufficient action and a need for increased energy use in developing countries.²⁰

Overall, it is fair to say that the Paris Agreement's most severe effect is the creation of insecurity for many developing countries that made their Paris promises contingent on funding from rich nations, with the U.S., until now, expected to be the biggest contributor. Most of the international funding, intended to reduce emissions and help countries adapt to climate change, is expected to come from the private sector rather than governments. But even so, the U.S. was scheduled to pay \$3 billion of the \$10 billion in government funding by 2020. With only \$1 billion paid, that looks a like a \$2 billion shortfall. In addition, with the USA backtracking, others may drop out too, leaving many more questions about whether the money will come at all. A reversal in funding can seriously influence the ability of developing countries to implement their conditional pledges. According to Joeri Rogelj, if those conditional pledges are abandoned, it could result in an increase in annual global emissions of between 1.0 and 2.7 billion tons of CO₂ by 2030. It is therefore crucial for developing countries to attain a financial guarantee in order to meet their national targets. Adding to this an effective environmental policy requires a collective response, for that reason US involvement in any climate deal remains of paramount importance²¹.

²⁰ R B Jackson, C Le Quéréz, R M Andrew, J G Canadell, J I Korsbakken, Z Liu, G P Peters and B Zheng, "Global energy growth is outpacing decarbonization", Environmental Research Letters, Volume 13, Number 12, 2018
<https://iopscience.iop.org/article/10.1088/1748-9326/aaf303/meta>

²¹ Fred Pearce, "With the U.S. Out of Paris, What Is the Future for Global Climate Fight?", Yale Environment 360, June 8th, 2017
<https://e360.yale.edu/features/with-the-u-s-out-of-paris-what-is-the-future-for-global-climate-fight>

Actor Analysis

Hereunder, we will mention the most important actors and stakeholders for you to think of when you prepare for the conference, as well as provide some background and positions.

States

The primary actors in any international system are of course states. The most important international organizations, like the United Nations, European Union and NATO, are organized in a way that favours the position of (member-)states. All-important binding agreements concerning our climate have been made by states, for example Kyoto (1997), Paris (2015) and Katowice (2018) or attempts thereof, for example in Copenhagen (2009).²² Support by member-states of international agreements plays a crucial role in bringing international agreements into effect. For example, we have seen how major economies and polluters like the United States of America and Brazil have behaved reluctantly towards climate agreements and even threatened with withdrawal.

Globalization and the growing interdependence in the world have cast doubt on the state centric approach adopted by the UNFCCC. In particular, since environmental issues transcend state borders, the territorial allocation of responsibility for greenhouse gases mitigation under the UNFCCC is highly disputed. For example, due to economic interconnectedness, developed countries have been able to report positive cut downs in CO₂ emissions by transferring major emissions to the developing world. Nonetheless this action does not resemble an actual reduction in carbon emissions but depicts merely the displacement of carbon intensive industry offshore. In fact, high consumption patterns in developed countries and their import of cheap manufacturing products dependent on fossil fuel still contribute to greenhouse gas emissions²³.

Intergovernmental Organizations (IGO's)

Climate change is clearly not a phenomenon that can be effectively tackled by states on their own. For example, when the Netherlands was increasing its efforts to keep

²² National Research Council (U.S.), *Verifying Greenhouse Gas Emissions: Methods to Support International Climate Agreements* (Washington, D.C: National Academies Press, 2010)

²³ J.Volger, "Framing and Fragmentation", in *Climate Change in World Politics* (Hampshire: Palgrave Macmillan, 2016), p26-27

the Rhine river clean and sustainable, French industry was still dumping waste in the river.²⁴ A solution was eventually found thanks to the processes of European Integration. Today, practically all IGO's work towards more effective agreements on climate change prevention and adaptation. The UNFCCC itself of course exists within the framework of the United Nations, but the UN has more organs concerned with climate change, most notably the General Assembly. The European Union too is concerned with this problem. It has various programmes and policies aimed at combating climate change, but like international agreements, policy making and bringing such policies into effect eventually is heavily dependent on individual member states. Since the EU is still one of the most integrated IGO's, the aforementioned problem is even more the case for its Non-Western counterparts like the African Union or ASEAN. Delegates will need to operate within the limitations of the UNFCCC as well but are free to make institutional recommendations if they feel this serves a purpose.

As was explained earlier on in this paper, the UNFCCC makes decisions through the COP meetings. The most recent COP (Katowice 2018) has been subject to an increased sense of urgency and international pressure due to the findings of the IPCC. Nevertheless, the COP failed to accept the IPCC report due to it being blocked by the United States, Saudi-Arabia, Russia and Kuwait.²⁵ Progress was made, but in a limited sense. New ways of implementing the Paris Accord were thought of, especially with regards to the 'rulebook' to decrease greenhouse gas emissions and in terms of transparency and communication between countries as a way of tracking global climate change commitments.²⁶ These tracking agreements included specifications on the kind of data member states are obliged to share and the timelines associated with such an exchange. Still, it seems uncertain that through these implementations the recommendations of the IPCC report will be met. Additionally, Katowice failed to address the speed with which member countries will need to shift to clean energy and the degree of support to poorer countries.

²⁴ Yung-Tse Hung, Lawrence K. Wang and Nazih K. Shammass, *Handbook of Environment and Waste Management: Air and Water Pollution Control* (Singapore: World Scientific Pub. Co, 2012).

²⁵ Matt McGrath (BBC), 'Climate Change: COP24 fails to adopt key scientific report' (2018)
<https://www.bbc.com/news/science-environment-46496967>

²⁶ Rebecca Hersher (NPR), Nations Agree On Rules To Put Paris Climate Agreement Into Action (2018)
<https://www.npr.org/2018/12/15/677109487/nations-agree-on-rules-to-put-paris-climate-agreement-into-action>



COP24 was concluded with a sense of optimism by the involved delegations, but many NGO's, scientists and the international press remained critical²⁷

Non-governmental Organizations (NGO's) / Civil Society

Various NGO's are occupied with climate change. Some famous examples are Greenpeace and CERES. NGO's have their part to play in climate change, most notably since they often aim at transformation at local levels, educative processes and aid on levels where states appear less effective from time to time, especially in the third world. In addition, they play a vital role in raising the public's awareness over climate change issues and have the capacity to frame environmental concerns in a way that influences the agenda setting in the decision-making process²⁸.

Currently there is a growing worry among NGO's concerning the development of carbon capture technology and its ethical ramifications. The discussion on carbon capture technology is closely associated with the field of Geoengineering, that focuses on artificial climate modification through cutting edge technologies. This entails deliberate large-scale intervention in the earth's climate system in order to ease the effects of global warming. Broadly speaking geo-engineering efforts can be divided

²⁷ Simon Evans and Jocelyn Timperley (CarbonBrief), COP24: Key outcomes agreed at the UN climate talks in Katowice (2018), <https://www.carbonbrief.org/tag/cop24>.

²⁸ Norichika Kanie, Peter M. Haas, "NGO's and environmental governance", In Emerging Forces in Environmental Governance, (Tokyo and New York : United Nations University Press, 2004).

into carbon dioxide removal efforts (CDR) and solar radiation management (SRM). Carbon dioxide removal involves a range of techniques including re-afforestation, various forms of land use management and carbon capture and sequestration. On the other hand, solar radiation includes attempts to change the surface albedo (a measure of reflectivity) of the planet leading to a direct cooling effect.²⁹

Although these technologies are far from complete, the current urgency to cut down on CO₂ emissions turns them into an important point of discussion. The UN IPCC estimates that a massive amount of CO₂ removal will be required this century- at least 500 metric tonnes pulled back out of the air- if we are to avoid the worst of global warming. This goal is unlikely to be achieved given the current political situation where the expansion of renewable energy production is outmatched by increases in fossil fuel consumption in developing economies such as China and India. Furthermore, the political unwillingness to place a tax on carbon emissions or to introduce thorough legislation on carbon pollution stresses the need to search for alternatives. This need is even recognised by the IPCC that has mentioned its preferred strategy: bioenergy with CO₂ capture and storage or BECCS for short³⁰. Nonetheless many NGOs have pointed to the fact that these technologies absolve the responsibility of governments to introduce ambitious measures that would ensure a sustainable climate. In addition, equal access to these technologies remains troublesome considering the disparity in resources between developed and developing economies³¹.

Regions and Local communities

As a delegate, it is essential that you are aware of the different impact climate policies may have within your country. For example, when awareness grew around the effects of industry on the climate in the second half of the 20th century, the effects in different parts of the U.K. were very different. Regions and communities heavily dependent on mining, fishery and forms of heavy industry were hit extensively

²⁹ J.Volger, "Framing and Fragmentation", in *Climate Change in World Politics* (Hampshire: Palgrave Macmillan, 2016), p28-30

³⁰ David Biello, "How Far Can Technology Go to Stave Off Climate Change?", *Yale Environment* 360, January 18th, 2017

https://e360.yale.edu/features/how_far_can_technology_go_to_stave_off_climate_change

³¹ Richard Conniff, "Why Green Groups Are Split on Subsidizing Carbon Capture Technology", *Yale Environment* 360, April 9th, 2018

<https://e360.yale.edu/features/why-green-groups-are-split-on-subsidizing-carbon-capture-technology>.

harder.³² That climate policies will affect some regions and communities more than others is inevitable, but how will you as a delegate provide the human security the citizens in these regions deserve?

A sense of growing distrust in international agreements could be dissected from recent developments, for example the Brexit and the election of various nationalist politicians into power, critical of IGO's.³³ Nevertheless, various polls show a growing fear for the effects of climate change. This is influenced by the fact that climate change is becoming more and more visible. Think for example of the extreme droughts and consequential water shortage in South Africa and the growing number of forest fires.

International companies and economic sectors
We already mentioned some economic sectors that will be severely impacted by climate regulations. These include, but are not limited to, many industrial sectors, agriculture, fishery, mining, tourism and energy. Many people are dependent on these industries though. Additionally, big international companies might aim to circumvent the rulebook and policies agreed to by the delegates.

Consequences of a Changing Climate

The results of the change in our climate are becoming more obviously apparent. Through the disappearance of numerous species, the biodiversity of our planet will be diminished. Here you may think mostly of polar bears and penguins, but this process has begun to affect various species of fish, frogs, trees, plants and most notably the coral reefs of the world.³⁴ Natural disasters (e.g. forest fires and hurricanes) are more prone to happen and with a more significant intensity. The last summers, numerous forests experienced intense fires. The one in California leading to the destruction of the town of Paradise, with a population of 26.000, unfortunately is only one of the

³² Daniel Hillel, and Cynthia Rosenzweig, *Handbook of Climate Change and Agroecosystems: Global and Regional Aspects and Implications* (London: Imperial College Press, 2013).

³³ Alfred James Moore, *Critical Elitism: Deliberation, Democracy and the Problem of Expertise* (Cambridge, Cambridge University Press, 2017).

³⁴ The Guardian (2017) <https://www.theguardian.com/environment/2017/jan/19/critical-10-species-at-risk-climate-change-endangered-world>.

many examples.³⁵ There will be a higher chance of flooding and certain regions of the world risk to be flooded. Heavy rain, decreasing water quality and availability of water resources will eventually lead to scarcer food production, while we may expect the global population increase to continue.³⁶ For example, climate change has resulted in hotter heatwaves, scarcer water availability and intensified dust storms in the Middle East.³⁷ Countries, mostly in the developing world, dependent on their natural environment and resources will be hit the hardest. For example, the rise of temperatures will increase the chance of harvest failures. One can imagine what this will do to developing economies heavily dependent on their agricultural products, perhaps even for self-consumption, and the livelihoods of the people dependant on such outputs. The non-availability of resources, hazards caused by climate change or costs of climate change adaptation have the potential of initiating, maintaining or strengthening situations of violent conflict.

Delegates should of course be aware that climate policies are not without consequences either. Climate policies have the tendency of redistributing a state's welfare differently and could potentially alter international socio-economic relationships as well. It is a serious danger that the most vulnerable people in the world, most notably in developing countries, will be impacted negatively by climate policies in terms of their livelihoods.³⁸

Conclusion

When former Secretary-General of the United Nations Ban-Ki Moon visited Groningen to receive an honorary doctorate, he stated that 'we are the first generation that can end poverty, but the last one that can end climate change'. Although it would not be fair to expect of the delegates that they solve all the world's problems in less than a day, we hope that this paper has pointed out some of the problems for you to work with on the day of the conference. In the QARMA's below,

³⁵New York Times (2018), 'Paradise is Gone: California Fires Devastate Community' <https://www.nytimes.com/2018/11/10/us/california-wildfires-paradise-malibu.html>

³⁶ Nicola Jones (2018), 'Redrawing the Map: How the World's Climate Zones are Shifting', <https://e360.yale.edu/features/redrawing-the-map-how-the-worlds-climate-zones-are-shifting>

³⁷ Buchignanni, Mercogliano, Panitz and Montesarchio, 'Climate change projections for the Middle East–North Africa domain with COSMO-CLM at different spatial resolutions', *Advances in Climate Change Research* 9, no.1 (2018), 66-80.

³⁸ Daniel Hillel and Cynthia Rosenzweig, *Handbook of Climate Change and Agroecosystems: Global and Regional Aspects and Implications* (London: Imperial College Press, 2013).

you may find how we have identified your potential resolution in a three-fold way: the council's final resolutions will need to address imminent climate policies and actions, sharing the costs of climate policies on the international level and the human security of the world citizens of the policies you will plot out together.

Questions A Resolution Must Answer (QARMA's)

1. In what way do the Paris Agreement and the recent findings of the COP24 meeting in Katowice need to be expanded or altered? How are we going to effectively increase our global climate efforts through policy?
2. What concrete actions need to be implemented in order to prevent and adapt to climate change?
3. In what way will the costs of climate change adaptation be spread over the involved states? Do we need to maintain exceptions for developing countries or has the speed with which we need to respond to the climate become too urgent?
4. In what way must the UNFCCC secure the livelihood and human security of world citizens in the light of their new plans?

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