

HABSMUN 2020

Special Commission briefing Paper

the question of the mitigation of, and adaption to, climate change

**Background**

 On the 23rd February 1979, the first World Climate Conference was hosted in Geneva. This was monumental in being the first major global international meeting on climate change. Although modern research suggests humans have been contributing to the enhanced greenhouse effect since industrialization across developed nations in the 18th Century. However, the growth of population and energy consumption has amplified the influence of humans on climate change since and we are now rapidly approaching the severe consequences of our historical actions.

The primary causes for the accumulation of greenhouse gases in the atmosphere, and the resultant global warming, is the combustion of fossil fuels alongside worldwide deforestation culminating in the reduction and destruction of carbon sinks in favour of fulfilling energy consumption requirements.

In juxtaposition, there are widespread negatives in multiple sections, primarily related to rises in sea levels and a gross reduction in biodiversity. The National Aeronautics and Space Agency reports the global average surface temperature has increased by more than 1 degree Celsius between 1917-2017, and this has correlated with an increasingly acidic ocean and the loss of numerous habitats.

These rising temperatures and sea levels pose threats to human health and economic survival; Industries like fishing are being devastated by ocean acidification, and food supplies are devastated by droughts rendered more likely by climate change. These, in conjunction with similar effects regarding heat waves, have the capacity to result in hundreds of thousands, if not millions of deaths in the future.

Thus, it’s the responsibility of the United Nations to combat, adapt and mitigate the effects of climate change and a wide variety of methods have been put in place by an assortment of countries across the worlds in order to do so. From Emissions Trading Systems, to promoting local business and reducing carbon emission from transport fuels, to subsidising low-carbon technology, there’s an abundance of potential plans, available.

**Key Issues**

* Sea Levels and Oceanic Acidification
	+ The Global Sea Level has risen by approximately 8 inches since records began in 1880.
	+ It’s predicted to rise further from 1-4 feet by 2100 due to melting icecaps and seawater expanding due to warmth.
	+ Further, extreme weather patterns including storm surges and tropical storms could, alongside sea level rise, amplify the effects of flooding.
	+ A $40 billion project has been established in Jakarta with the aim of creating an 80ft high seawall to protect the region.
	+ Other nations like the Marshall Islands, Tuvalu and Kiribati are increasingly losing homes to the sea, and are being forced to artificially accumulate land or purchase land from foreign nations and relocate, risking their own culture in the process.
	+ Ocean Acidification has resulted in the bleaching of coral species, which cannot survive naturally, alongside the loss of certain fish species.
* Fossil Fuels
	+ Fossil fuels all originate from buried remains of organic matter, and include oil, coal and natural gas.
	+ In 2016, 80% of the world’s consumed energy originated from fossil fuels.
	+ Fossil Fuels produce heavy quantities of carbon dioxide when burned, with ¾ of the American carbon emissions originating from them.
* Deforestation
	+ As of February 2019, forests covered approximately 30% of the global land area.
	+ Trees have a powerful impact on reducing carbon emission due to their ability to be carbon sinks; Forests in the European Union absorb approximately 10% of the annual total greenhouse emissions of the organization.
	+ Deforestation not only reduces the absorbed carbon dioxide due to a lack of respiration, but further combustion and burning of trees causes further emissions.
	+ Since initial deforestation began, more than 46% of global forest cover has been felled.
	+ Tropical tree cover, in isolation, has been estimated to be able to provide 23% of the climate mitigation required to successfully fulfil the goals established in the Paris Agreement in 2015.
* Biodiversity
	+ The Mountain Pygmy Possum, indigenous to Australia, is deemed critically endangered, among thousands of other species. The suggested cause is climate change devastating its habitat.
	+ Marine Species must adapt to warmer oceanic temperatures, and many species must migrate to cooler conditions far from their natural habitats; For species where migration is rendered unlikely to due to hostile environmental conditions or human barriers, they are likely to be endangered or rendered extinct.
	+ The mass deforestation of the Amazon, alongside other forests in Indonesia and around the world, has further contributed to a loss of biodiversity (With one in ten known species inhabiting the Amazon.)
* Weather Patterns
	+ 68% of extreme weather events studied in recorded history are considered to have occurred with a significant extent of the reason being related to human-caused climate change.
	+ Altered weather patterns, especially when causing droughts, can have devastating effects on food supply and have been linked to poor harvests in Southern Africa.

**Timeline of Key Events**

1827- Jean-Baptiste Fourier, a French polymath, coined the ‘greenhouse’ analogy to describe his prediction that an atmospheric effect was causing the earth to be warmer than natural.

1863 – John Tyndall, an Irish Scientist, officially described water vapour as a greenhouse gas.

1890-1900 – Two scientists, Arrhenius and Chamberlain, independently consider the combustion of fossil fuels may accelerate global warming, through the accumulation of carbon dioxide.

1890-1940 - The average surface temperature increases by 0.25°C.

1940-1970 - Worldwide cooling of 0.2°C.

1972 – The United Tasmania Group, contesting the April 1972 State Election in Australia, are deemed to be the first political party to campaign on a primarily environmental platform.

1979 – First World Climate Conference suggests governments ‘foresee and prevent potential man-made changes in climate’ and deems climate change a major issue.

1985 – Villach, Austria hosts the first significant international conference regarding the greenhouse effect, declaring sea levels and global temperatures may rise alongside the fact that other gases including methane and CFCs contribute to global warming.

1987 – Warmest year in recorded history up to that date.

1988 – Toronto hosts a congregation of climate change scientists, which requests a 20% cut in global Carbon Dioxide emissions by 2005.

1988 – The United Nations establishes the Intergovernmental Panel on Climate Change (IPCC) in order to analyse and report on scientific findings.

1990 – First report of the IPCC establishes the planet has warmed by 0.5°C.

1990 – Following a UN General Assembly in December, negotiations regarding a climate convention begin.

1991 – Mount Pinatubo, a volcano in the Philippines, erupts which disrupts the stratosphere through disruption and interrupts global warming. Average annual temperatures drop for two years before beginning to rise again, demonstrating global warmth sensitivity.

1992 – Rio de Janeiro hosts the ‘United Nations Framework Convention on Climate Change’ (UNFCC), dubbed the ‘Rio Convention’ which declares its official aim to be ‘preventing dangerous human interference with the climate system’; It focuses on developed countries, funds developing nations, signposts the issue’s significance and began formal consideration.

1994 – The UNFCC enters force on the 21st March, with 195 ratified parties.

1944 – The Alliance of Small Island States demand a 20% cut in greenhouse emissions by 2005, in order to limit the rise in sea-level to 20cm

1995 – The Berlin Mandate is agreed in March at the first official, completed meeting of the Climate Change Convention. It established a two-year negotiation in order to establish binding objectives for industrialized nations regarding greenhouse gas emissions.

1995 – In November, the IPCC states global warming is ‘unlikely to be entirely natural in origin’.

1996 – The Climate Change Convention’s second meeting yields the agreement of the United States to legally binding targets; Scientists warn most developed nations will fail to stabilise emissions at the levels experienced in 1990 by 2000.

1997 – The Kyoto Protocol establishes legally binding cuts for developed nations by 2010, averaging at 5.4%, with significant methods of flexibility including suggestions of growing forests and introducing emissions permits for corporations. The United States declare they won’t ratify the agreement without clear evidence of ‘meaningful participation’

1998 – Meetings in Buenos Aires attempt to rectify issues regarding the Kyoto Convention, however instead set a deadline for resolution; the end of 2000. It’s the hottest year in the hottest decade in recorded history.

2000 – The IPCC warn that the world could potentially warm by 6°C. During Autumn, Western Europe experiences floods that cost approximately $2 billion across all nations. The finalizing of the Kyoto Protocol is postponed until May 2001 or beyond.

2001 – G. Bush, the American President, declares his belief the Kyoto Protocol would damage the American economy and leaves. Regardless, other nations continued and discussions in November, hosted in Marrakech, finalize the agreement; Signatory nations are urged to ratify the protocol to ensure effectiveness by 2003. Analysts declared MEDCs have cut emissions by less than a third of what was promised.

2002 – Many European nations, alongside Japan and others, ratify the Kyoto Protocol . However, Australia additionally leaves and Russia hesitates on its position.

2003 – 3rd Hottest Year on record. European heatwave causes 30,000 fatalities, with contemporary researchers deeming climate change doubled the risk of its occurrence. $60 billion is lost through extreme weather.

2004 – Putin, Russia’s President, announced Russia will support the Kyoto Protocol and the Russian government ratifies it by the 18th November.

2005 – On the 16th February, the Kyoto Protocol begins. In December, signatories discuss emissions for beyond 2012, while China and the United States among other ‘targetless’ nations agree to a non-binding dialogue.

2005 – Europe launches their Emissions Trading Scheme, the word’s largest scheme for trading greenhouse gas emissions allowances. It sets a price for companies releasing carbon, and hence reduced the carbon outputs of some industries through altering the cost-benefit analysis.

2006 – The British Government commissions the Stern Report, arguing the costs of adapting to Climate Change would outweigh the costs of prevention. The US Environmental Protection Agency is taken to the Supreme Court regarding its refusal to regulate Carbon Dioxide emissions.

2007 – The IPCC’s fourth Assessment Report largely blames humanity for global warming and estimates the cost of stabilising greenhouse gas emissions at $1830 billion, with criticisms it was watered down,.

2007 – Solar Activity proven to have declined since 1980s, debunking the popular claim it caused global warming. The annual UN Climate summit, hosted in Bali during December, agrees on a timetable to establish a replacement for the Kyoto Protocol following 2012.

2008 – The Polar Bear is listed on the UN endangered species act, due to the decline of its habitat which is heavily linked to climate change. Alaska threatens to sue the American government following the inclusion, and the World Conservation Union deems thousands of species vulnerable from climate change.

2009 – Indigenous people worldwide meet in Anchorage, Alaska to form a common position on climate change.

2009 – It’s estimated humanity cannot emit more than 1 trillion more tonnes of carbon without temperatures rises of more than 2°C.

2009 – China overtakes the United States to become the world’s biggest greenhouse gas emitter, although America remains as the greatest in terms of emissions per capita.

2009 – 192 Nations convene in Copenhagen for the UN Climate Summit, however the result is a heavily criticized Copenhagen Accord.

2010 – MEDCs begin to contribute to $30bn to begin a three-year deal on ‘Fast Start Finance’ to help developing nations adapt to climate impacts

2010 – The UN Summit in Mexico is predicted to collapse, but survives.

2011 – Scientists suggest concentrations of greenhouse gases are rising faster than in previous years.

2012 – Arctic Sea ice reaches a minimum extent of 3.41 million square kilometres.

2013 – The Mauna Loa Observatory, Hawaii, declares the daily mean concentration of Carbon Dioxide in the atmosphere has surpassed 400 parts per million..

2013 – Scientists declare they’re 95% certain humans are the ‘dominant cause’ of global warming since 1950s.

2013 – Richard Heede publishes an article in the journal ‘Climatic Change’ which declares 90 companies responsible for producing two-thirds of the carbon that entered the atmosphere since the 1700s.

2015 – The Paris Agreement is signed, known as COP 21, by 195 nations with the aim of combatting climate change and investing in a low-carbon, sustainable and resilient future.

2016 – Marrakech Partnership for Global Climate Action was launched in order to progress discussions on the Paris Agreement.

2017 – Exxon, Chevron and BP donate more than $500,000 in support of Donald Trump, with allegations of motivations due to his stance on climate change.

2018 – Extinction Rebellion, a major environmentalist organization dedicated to combatting climate change, was founded and attracted a largely young base.

2019 – M. Barkindo, OPEC’s secretary general, claim climate campaigners are the greatest threat to the oil industry.

2019 – Greta Thunberg was declared Times Person of the Year for her involvement in fighting climate change and spreading awareness.

2020 – Australia experiences widespread, highly damaging fires especially located in New south Wales and Victoria. Air quality measured 11 times the ‘hazardous’ level in Sydney in December 2019. Entire towns have been destroyed, with over 2000 homes damaged and an area larger than Denmark and Belgium combined burned. The Australian Prime Minister, Morrison, affirmed his commitment to reduce Australian carbon emissions. Hundreds of smaller, less-known species have been engulfed and over 8000 koalas have died, with Australia’s famous biodiversity heavily affected.

2020 – The United States will officially exit the Paris Agreement by November.

**Relevant Stakeholders**

Alliance of Small Island States – AOSIS

* Members include: Cabo Verde, Comoros, Guinea-Bisseau, Maldives, Mauritius, Sao Tome & Principe, Seychelles, Singapore, Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Nieu, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvlau, Vanuatu, Antigua and Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad & Tobago.
* Fiji and the Marshall Islands have suffered major floods and droughts disrupting crop harvests and forcing relocation of entire communities.
* After Cyclone Pam leveled Port Vila, Vanuatu, 3300 people were displaced with widespread belief climate change heavily influenced the altered weather patterns.
* Kiribati is predicted to be entirely submerged by 2080 and have purchased land on Fiji as a safety net if climate change renders local homes uninhabitable.
* In 2013, The Marshall Islands declared a state of emergency after a month-long drought which caused a shortage of drinking water and severe crop damage.

European Union

* Members include: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom
* The EU Emissions Trading System, introduced in 2005, sets a cap on the net greenhouse gas emissions allowed to be emitted by included installations. This cap is gradually reduced to decrease net emissions; Companies can purchase or sell emission allowances, and any company violating the cap must experience and suffer heavy fines. 45% of the EU’s greenhouse gas emissions are covered by the EU-ETS.
* They aim to reduce emissions by 10% by 2020 and 30% by 2030 under the Effort Sharing Decision and the EU’s climate and energy policy framework for both 2020 and 2030.
* The EU has invested heavily in the Innovation Fund, which is dedicated to creating and designing low-carbon technologies, primarily in energy-intensive industries.

OPEC – Organization of the Petroleum Exporting Countries

* Members include: Islamic Republic of Iran, Iraq, Kuwait, Saudi Arabia, Venezuela, Qatar, Indonesia, Libya, United Arab Emirates, Algeria, Nigeria, Ecuador, Gabon, Angola, Equatorial Guinea and the Congo (Republic of).
* In Bonn, OPEC Secretary General Barkindo published a joint press release alongside the Executive Secretary of the UNFCCC agreeing on the benefits of closer co-operation in tackling climate change.
* A restriction of OPEC members’ oil sales and increased prices has been suggested to link to a reduced carbon footprint due to a cleaner mix and less oil consumed. It may also be more sustainable for member nations such as Angola and Indonesia who are estimated to run out of oil in 14 and 12 years respectively.

Extinction Rebellion

* A global environmental movement with the explicit ambition of utilizing passive disobedience in order to pressure governments into taking action on Climate Change.
* It has staged strikes primarily in the United Kingdom, but additionally in Australia, Belgium, the Netherlands, Germany, Spain, Brazil, the United States and France.
* They have been frequently arrested and were once termed an ‘extremist organisation’ by the United Kingdom’s terrorism list.

Caribbean

* 250,000 estimated additional deaths per year between 2030-2050, from malnutrition, heat stress, malaria and diarrhea
* 70-90% of coral reefs will die at 1.5 degrees Celcius, estimated to occur by 2030; 99 of coral reefs will die at 2, which may occur by 2100.
* Major coastal defences will be required by 2050 to prevent the loss of hundreds of kilometres of coastlines.
* Significant relocation of people and coastal infrastructure will be required by 2050.
* The World Bank estimates annual damage to Caribbean nations will grow to $11 billion by 2080, 11% of the collective regional GDP.

The United States of America

* Signed the Kyoto Protocol, without ratification and voted under the Byrd-Hagel Resolution against signing it.
* Announced they would withdraw from the Paris Agreement in June 2017 and will leave in November 2020.
* Produces 16% of the World’s Carbon Dioxide emissions per year (2nd), with 15.0T emissions per capita (3rd) behind Saudi Arabia and Australia.

Brazil

* Prior to Bolsonaro’s regime, Brazil was considered a global leader in tackling climate change.
* Between 2005-2012, Brazil reduced deforestation by approximately 80%.
* Under Jair Bolsonaro, Brazil has in the past threated to withdraw from the Paris agreement (although this has now been rescinded), and many members of his ministry including R. Salles, the Environmental Minister, have been fined for mismanagement of environmentally protected areas.
* Further, Bolsonaro has transferred ~13% of Brazil’s territory, primarily in the Amazon, from the National Indian Foundation (for indigenous peoples) to the agriculture ministry, with ambitions for greater deforestation.
* However, Brazil has extremely clean electricity (More than 80% of its electricity originating from hydropower and other renewable sources in 2018) and Bolsonaro has advocated for an increased presence of solar and wind farms in Brazil.

China

* Although China is the world’s greatest net carbon emitter, it’s per capita emissions are similar to the Islamic Republic of Iran and the United Kingdom at 12th.
* China’s government begun an immense action plan to halt the growth of coal consumption in order to improve air quality and thus reduce carbon emissions as a by-product.
* 72% of Chinese emissions in the apparel sector are largely due to foreign companies utilizing Chinese territory, factories and labour.
* Historically, the Chinese stance on climate change was referred to, by Chinese delegates and officials, as ‘common but differentiated responsibilities’, however there has been a major growth in terms describing green actions, with ambitions for an ‘ecological civilisation.’

**Previous Measures to combat the issue**

1972 – The United Nations Environmental Programme (UNEP) was founded, acting as one of the most prominent international institutions dedicated to combatting climate change. The UNEP guides nations in drafting and implementing policies, alongside reducing carbon emissions and deforestation.

1988 – The World Meteorological Organisation’s Executive Council established the Intergovernmental Panel on Climate Change (IPCC), with the primary objectives of furthering human knowledge regarding climate change as well as preparing an action plan regarding solutions.

1992 – The United Nations Conference on Environment and Development (UNCED) created the United Nations Framework Convention on Climate Change (UNFCCC) to implement legal solutions to reduce the effects of climate change.

1997 – The Kyoto Protocol was adopted in Japan on December 11th and set legally binding targets for 37 Industrialized nations alongside the European Union.

2000 – The United Nations established the Millennium Development Goals regarding mechanisms discussed at the contemporary Millennium Summit. Goal 7 explicitly refers to ensuring environmental sustainability, including reducing the effects of global warming and adapting to it.

2012 – The United Nations Conference on Sustainable Development (UNCSD) was held in Rio de Janeiro, and encouraged governments to adopt practical measures to further sustainable development.

2016 – The Paris Agreement was adopted, with the aims of ‘achiev[ing] a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases.’

**Questions to consider**

* How has climate change historically affected your nation?
* How is climate change predicted to affect your nation?
* Can your country afford to adapt or to mitigate climate change?
* What is your country’s view, if any, regarding policies like Emissions Trading Schemes or universal energy?
* Are the world’s superpowers engaging sufficiently in the mitigation of climate change?
* Does your government have any campaigns or programmes in order to address climate change, deforestation or carbon emissions?
* Has your nation’s government made any official statements regarding climate change?
* Does your government’s nation stand to lose out from methods of mitigating climate change, due to economic inability or profits from industries including oil and gas?
* Is your government involved in the Kyoto Protocol, Paris Agreement or UNCSD?
* Is it fair to blame developing nations, including Brazil, for deforestation or high rates of emissions considering MEDCs historically did this to reach their current stage of wealth?
* Should there be tougher sanctions for nations failing to oblige with environmental sanctions, including to deal with more powerful nations including India or China?

**Bibliography**

<https://www.ucsusa.org/resources/each-countrys-share-co2-emissions>

<https://foreignpolicy.com/2019/01/04/brazil-was-a-global-leader-on-climate-change-now-its-a-threat/>

<https://www.theguardian.com/australia-news/2020/jan/09/australia-fires-victorians-urged-to-leave-amid-fears-heat-spike-will-cause-bushfires-to-merge>

<https://www.aosis.org/>

<https://peakoil.com/geology/10-countries-that-are-running-out-of-oil>

<https://www.counterpunch.org/2018/12/18/the-impact-of-opec-on-climate-change/>

<https://climateandcapitalism.com/2009/04/28/the-anchorage-declaration-indigenous-meeting-demands-action-on-climate-crisis/>

<https://time.com/5669061/china-climate-change/>

<https://climate.nasa.gov/effects/>

<https://www.economist.com/leaders/2020/01/11/the-lessons-from-australias-fires>

<https://foreignpolicy.com/2019/01/04/brazil-was-a-global-leader-on-climate-change-now-its-a-threat/>

<https://www.theguardian.com/environment/2011/jun/07/ets-emissions-trading>

<https://unfccc.int/resource/docs/cop1/07a01.pdf>

<https://europa.eu/capacity4dev/public-environment-climate/document/united-nations-framework-convention-climate-change-rio-1992>

<https://ec.europa.eu/clima/policies/international/negotiations/paris_en>

<https://www.newscientist.com/article/dn9912-timeline-climate-change/>

<https://www.aosis.org/2019/10/07/the-climate-change-countdown-a-timeline-of-impacts/>

<https://www.theguardian.com/environment/ng-interactive/2019/oct/09/half-century-dither-denial-climate-crisis-timeline>

<https://link.springer.com/article/10.1007/s10584-013-0986-y>

<https://www.state.gov/on-the-u-s-withdrawal-from-the-paris-agreement/>

<https://ec.europa.eu/clima/citizens/eu_en>

<https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>

<https://time.com/5669061/china-climate-change/>

<https://www.nationalgeographic.com/environment/global-warming/deforestation/>

<https://www.carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world>

<https://www.nationalgeographic.com/environment/global-warming/sea-level-rise/>

<https://www.science.org.au/curious/earth-environment/climate-change-and-biodiversity>

<https://www.nrdc.org/stories/fossil-fuels-dirty-facts>