Abbreviation List

Abbreviations	List of Abbreviated Terms
GHGs	Greenhouse Gases
UNFCCC	United Nations Framework Convention on Climate Change
COPs	Conference of Parties (to the UNFCCC)
KP	Kyoto Protocol
CDM	Clean Development Mechanism
EU ETS	European Union Emissions Trading System
NAMAs	Nationally Appropriate Mitigation Actions
REDD+	Reducing emissions from deforestation and forest degradation, with the role of conservation, sustainable management and enhancement of forest carbon stocks
GCF	Green Climate Fund
FAO	Food and Agriculture Organisation
PA	Paris Agreement
NDCs	Nationally Determined Contributions
GCP	Glasgow Climate Pact
GDA	Global Decarbonisation Acceleration Programme

Introduction:

Over the last decade, the phrase' climate change' has become increasingly popular, sparking debate and concern. This wider recognition highlights the urgency of our climate situation, wherein anthropogenic releases of greenhouse gases (GHGs) have led to significant changes in our climate that are proving to have global effects (Abbass *et al.,* 2022; Johnsson, Kjarstad & Rootzen, 2019). Global warming, a consequence of climate change, threatens the future and security of many essential systems, including global health, food and energy production, and biodiversity (Abbass *et al.,* 2022; Vijaya Venkata Raman *et al., 2012*), with human activities causing the global temperature to have already risen dramatically as of 2020 (Fawzy *et al.,* 2020). Unsurprisingly, solutions and pathways to combat and limit climate change have also increased in popularity.

Climate mitigation refers to actions and advances taken to reduce and prevent the emissions of harmful greenhouse gases (Nakhooda *et al.,* 2014). These actions and advances are responsible for slowing down the rate at which our climate changes and directly addressing the source of climate change. They commonly include implementing policies to reduce emissions, developing technology to increase the efficiency and storage of GHGs, and enhancing carbon sinks (Nakhooda *et al.,* 2014). Without implementing climate mitigation and emission reduction measures, society would be experiencing the unimaginable losses we are still trying to avoid today.

In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) (Maslin, Lang & Harvey, 2023) was formed with 198 parties worldwide, signifying the commencement of global climate action (Harris, 2023; Maslin, Lang & Harvey, 2023). Since the foundation of this international treaty, many more climate mitigation landmarks have been achieved, which have evolved to address the needs of the parties and the needs of the climate at the time of the meetings.

Therefore, this essay aims to explore and scrutinise the outcomes of the Conference of Parties (COPs) under the UNFCCC, to assess to what extent they have delivered on climate mitigation, and to discuss the prospects of the topic from the most recent meetings. The scope of the essay will only concern the COPs that have been referred to as landmarks for mitigation for action or addressing unprecedented topics, emphasising meetings with significant accomplishments, summarising the progress of mitigating climate change under the UNFCCC, and identifying potential works for future mitigation.

Pre-2010 (COP 3 and COP 13):

COP 3, Kyoto, Japan (1997) established the Kyoto Protocol (KP) (Kim, Tanaka & Matsuoka, 2020) which set legally binding targets for 37 industrialised countries to reduce emissions by 5% between 2008-2012 (Maamoun, 2019; United Nations Framework Convention on Climate Change, 1997). This COP protocol is hailed as the trailblazer for climate mitigation (Nyirenda, 2023; Aichele & Felbermayr, 2012). Setting emission reduction targets was an unprecedented event and solidified reducing emissions via targets as a core objective for mitigation. The introduction of the KP also paved the way for future international environmental agreements and opened up the discussion for future COP meetings. In addition to the targets set, the KP also established flexible mechanisms to assist parties in reducing emissions by introducing the clean development mechanism, joint implementation, and International carbon markets (Mele, Paglialunga & Sforna, 2021). However, despite being praised for pioneering climate mitigation, opposition to the US's initial ratification of the protocol (Maslin, Lang & Harvey, 2023) raised doubts about the protocol's success, and its efficacy in reducing emissions remains controversial.

Even after establishing the protocol, GHG emissions have risen exponentially (Figure 1), with parties including the United States and China still producing vast amounts of GHGs. Therefore, in terms of meeting the emission reduction targets set, the KP and its mechanisms could have been more successful (Najam & Page, 1998; Aichele & Felbermayr, 2013). However, regarding solely reducing emissions, the KP effectively reduced emissions by as much as 7% for ratified countries compared to a no-Kyoto Protocol model (Maamoun, 2019; Kim, Tanaka & Matsuoka, 2020). For that reason, the effectiveness of the KP in literature is very much under the authors' discretion. It depends on how stringent they are with the definition of emission reductions alongside the protocol.

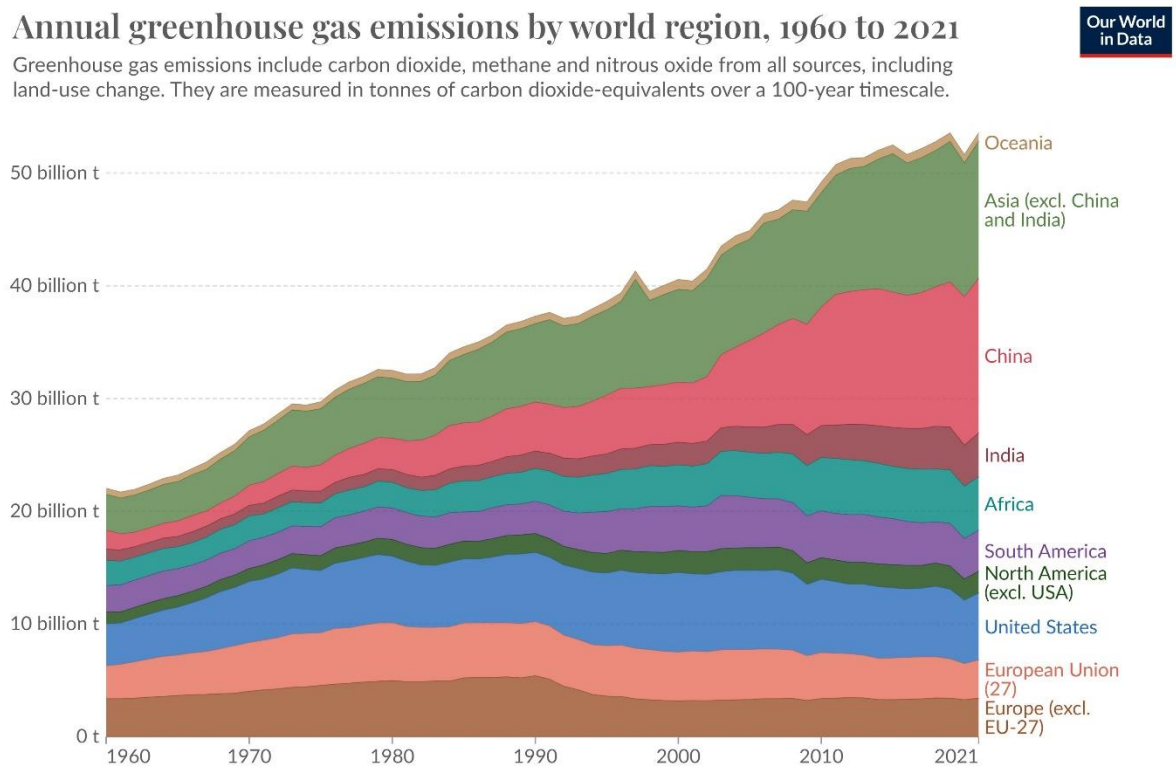


Figure 1: Trends of greenhouse gas emissions categorised by world regions from 1960 to 2021. Units for emissions are defined as billion tonnes. Graph taken from Our World in Data from Jones *et al.,* 2023.

Another topic of controversy within the Kyoto Protocol is the concept of flexibility. Of the 37 countries, also known as Annex I Parties, some parties were 'allowed' to increase their emissions while others were to reduce them (Nyirenda, 2023). For example, Japan and the EU bubble (comprising 15 European countries) were targeted to reduce emissions by 6% and 8%, respectively (Najam & Page, 1998). Iceland and Norway were allowed to increase emissions to 10% and 1%, respectively (Aichele & Felbermayr, 2013). This flexibility raised uncertainty in the protocol as the call to reduce emissions was disparate across the parties. However, by addressing the most industrialised countries, the KP was given the best chance for success by asking the Parties with the most resources to take the first leap to mitigate climate change.

The clean development mechanism (CDM) involves the collection of credits by industrialised countries for implementing emission reduction projects in a developing country (Erikson, Lazarus & Spalding-Fecher, 2014). International carbon markets, which involve the selling and purchasing of emission units, are now common strategies by parties to regulate

emissions. The European Union Emissions Trading System (EU ETS) (Hepburn, 2007) has saved around 1.2 billion tonnes of carbon dioxide under the KP commitment period. It is considered a flagship initiative for climate mitigation (Bayer & Aklin, 2020). Yet, despite saving emissions compared to a society without these mechanisms, countries' accountability to reduce emissions under these schemes is put into question, wherein the ability to acquire more allowance wavers the commitment to the core objective of the protocol.

The Kyoto Protocol effectively initiated the fight against climate change with significant advances in international agreements and emission reduction targets despite not significantly reducing emissions under the targets set.

Fast forward a decade to Bali, Indonesia (2007) for COP 13, which saw the adoption of the Bali Action Roadmap, which detailed the process of moving toward a secure climate future (Rovere *et al.,* 2014). The action plan centred around four climate pillars: mitigation, adaptation, technology, and finance, and although intended to be a comprehensive plan, it did not deliver any significant outcomes for mitigation bar continuing working towards achieving targets set in COP 3. Despite this setback, COP 13 held many discussions concerning climate mitigation. It involved the first documented discussions of nationally appropriate mitigation actions (NAMA's) (Coetzee & Winkler, 2014), in which developed countries submitted actions and actions relating to reducing emissions from deforestation and forest degradation, now commonly referred to as REDD+ (Sanz & Penman, 2016; Andoh & Lee, 2018). These topics had never been raised before in previous meetings, wherein they acknowledged the need for nationwide action and the contribution of global emissions by acts of deforestation and land use change (Andoh & Lee, 2018). Therefore, despite the insufficient mitigation action, the benefit of the discussions at COP 13 are invaluable to climate mitigation by opening up the conversation for all parties to contribute to mitigating emissions by starting to consider national circumstances and opportunities, as well as address forestry and agricultural practices as an emitter of GHGs.

Early 2010's (COP 16, COP 18 and COP 19):

Moving on to COP 16, which took place in Cancun, Mexico (2010), commitments to and action for climate mitigation took a significant step in a positive direction compared to the previous meeting after failing to reach a consensus (Glomsrod, Wei & Alfsen, 2012). The lowered expectations following the previous COP were well exceeded as COP 16 is praised as a turn-around, with successfully deciding on multi-lateral agreements for several topics, including mitigation, technology, finance, adaptation, and capacity building (Oberthur & Groen, 2020), which are increasingly being discussed in conjunction. The meeting in Cancun saw the adoption of Cancun Agreements with nationally appropriate mitigation actions (NAMA's) for developing countries and developments in funding for projects aimed towards reducing emissions under the Green Climate Fund (GCF) (Andoh & Lee, 2018). It was agreed that NAMA's would be undertaken by developing countries, as discussed in prior COPs, to develop sustainably with reduced emissions (Morel, Legvet & Bellassen, 2013), and asked industrialised countries to increase transparency and frequency of reporting (Roser *et al.,* 2011). This adoption of NAMAs noted the first documented decision, which asked developing countries to work towards mitigation while providing aid in other areas to support countries in developing alongside emission reduction goals. The criteria and definition of what constituted a NAMA needs more clarity, leading to submitted actions ranging from local projects to overarching policies (Roser *et al.,* 2011). Consequently, due to diversity in actions, analysing progress and comparing submissions is rather unfeasible.

Nonetheless, NAMAs are still considered a success as they started holding all parties accountable and asked all parties to consider what mitigation actions were achievable for them.

To support parties in achieving these actions, the Green Climate Fund (GCF) was established as a global funding initiative to provide developed and developing parties financial support to undertake projects aimed at reducing emissions (Horstmann & Hein, 2017). The fund itself was envisioned to receive money by pledged donations from developed countries, pledging to raise $10 billion for the fund each year (Lattanzio, 2018; Kotb, 2022). Between 2022 and 2023, 79 projects were approved with funding from the GCF, the equivalent of $5.8 million, with an approximate savings of 2.1 btCO2e (United Nations Framework Convention on Climate Change, 2022). Of these projects, the approval for funding is biased towards three

of the eight result areas: energy, health, and livelihoods (Fonta, Ayuk & van Huysen, 2018), two of which are considered adaptation more than mitigation (Figure 3).

Figure 3: The eight result areas of the Green Climate Fund, where green categories reflect adaptation topics, while blue categories reflect mitigation topics. Image taken from the Green Climate Fund official website (Green Climate Fund, 2023).

Overall, COP 16 delivered reasonably well on global mitigation, with the growing trend of mitigation being considered alongside adaptation. However, the voluntary associations with these actions may impede future mitigation if priorities change.

In 2012, in Doha, Qatar, COP 18 adopted the Doha Amendment, a marginal milestone that approved the second commitment period of the Kyoto Protocol (Savaresi, 2013). However, compared to its predecessor, several significant industrialised parties including Canada, Japan, New Zealand, and Russia, did not sign up to ratify the second commitment period in the Doha Amendment to reduce emissions by 18% from 2013-2020 (United Nations Framework Convention on Climate Change, 2012). Despite this, the mere fact that the other parties ratified the Doha Amendment, either in continuation of the KP or as a new participant, identifies COP 18 as a marginal milestone for climate mitigation despite suffering some setbacks.

A year after Doha, Warsaw, Poland (2013), hosted the 19th COP 19 making significant advancements in diversifying strategies to mitigate emissions with the adoption of the Warsaw Framework for REDD+ (Andoh & Lee, 2018; Sanz & Penman, 2016), a concept from the Bali Action Plan, the REDD+ framework was altered to encompass emissions from deforestation and forest degradation, consider the role of conservation, sustainable forest management and enhancement of forest carbon stocks (Voigt & Ferreva, 2016). This scheme is a significant development for mitigation as deforestation is the second largest source of GHGs, second only to the combustion of fossil fuels (Pinsky & Kruglianskas, 2019; Simonet *et al.,* 2019). Furthermore, the inclusion of sustainable practices and conservation aims to right the wrongs of global warming by encouraging habitat creation and protection of biodiversity, further enhancing and creating potential carbon sinks.

The REDD+ was established by the Green Climate Fund (GCF); therefore, parties can receive financial support and payments once a REDD+ project is operational, and as of 2019, Brazil received the first REDD+ related payment reducing emissions by limiting deforestation by saving 6.125 btCO2e between 2014 and 2015 (Sax, 2019; United Nations Development Programme, 2019). Since the adoption of the framework, countries around the world have submitted REDD+ related activities as part of their fight against climate change, wherein countries like India have pledged to capture 2.5-3 btCO2e by enhancing tree cover (Verma & Ghosh, 2022), and Indonesia received $56 million in 2017 for reducing 4.8 MtCO2e (Nofyanza *et al.,* 2020).

In Figure 2, it can be seen that many countries, particularly within the Tropics, are positively changing the net forest area, and considering the previously high deforestation rates within the Amazon, more and more countries are undertaking afforestation and sustainable forestry practices as a result of the REDD+ framework (Sax, 2019). Despite this progress, the incentive-based mechanism may unintentionally encourage parties to report fictitious results to receive payment, and, due to the complexity of gathering an accurate baseline and calculating emission reductions (Sax, 2019), issues on integrity for the project, its results and the candour of parties involved are raised.

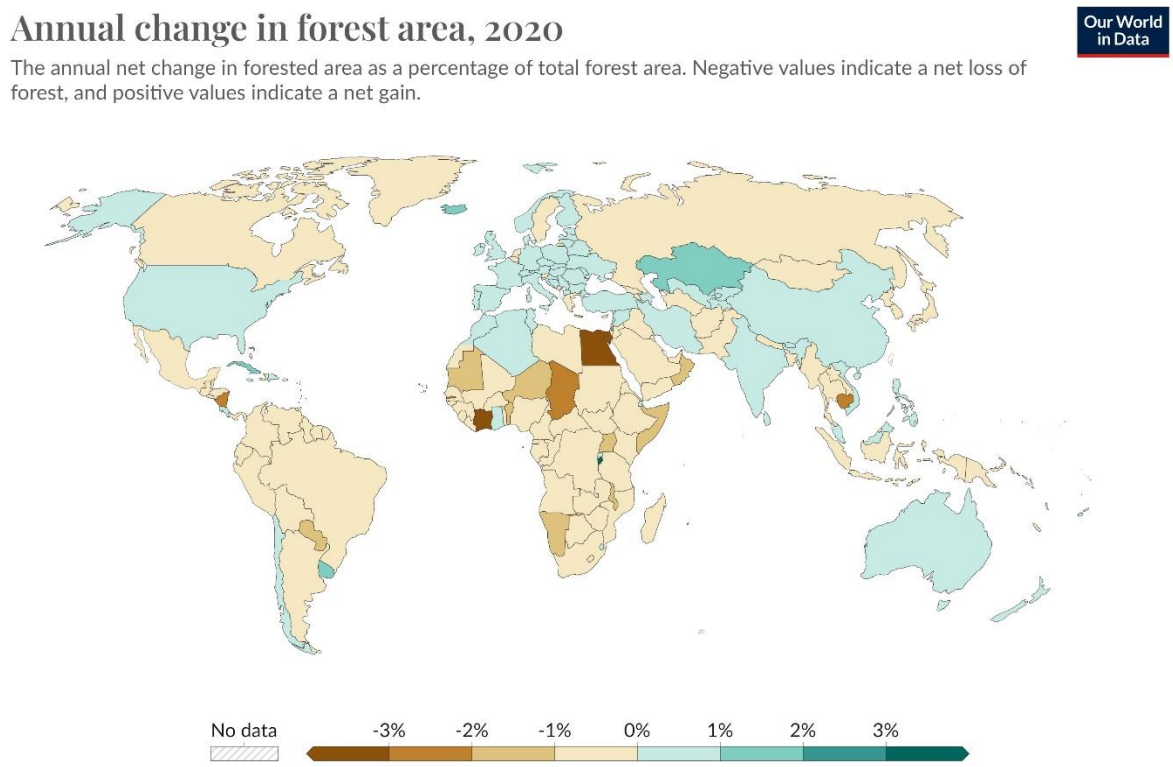


Figure 2: Annual change in forest area for the year 2020 for individual countries across the globe, expressed as a percentage of positive or negative net loss. Data taken from Our World in Data from Food and Agriculture Organisation's Forest Resources Assessment (Food and Agriculture Organisation, 2020).

Regardless of these issues, COP 19 has evolved climate mitigation for the better by encouraging nature-based mitigation with multi-beneficial projects. By providing financial aid to curb deforestation and promote sustainable practices, forestry, and agricultural communities can continue while meeting global emission targets.

Late 2010's (COP 21 and COP 26):

COP 21, held in Paris, France (2015), is undoubtedly the most notorious COP meeting out of all of the UNFCCC COPs, with the adoption of the Paris Agreement (PA), which saw a breakthrough in negotiations and first attempt to address rising global average temperatures (United Nations Framework Convention on Climate Change, 2015; Kim, Tanaka & Matsuoka, 2020). The Paris Agreement was ratified and consolidated by an astounding 198 parties (Maslin, Lang & Harvey, 2023), making it a record achievement for a nearly unanimous international agreement. This unprecedented event within the UNFCCC is one of the key

reasons why the Paris meeting is seen as the most successful COP conference to date. Another critical reason why the agreement is so infamous within the climate mitigation field is due to the international treaty itself, which is legally binding, stepping away from emission reduction goals to focus on tackling the rising trends of global average temperature (Kinley, 2021). The PA's parties have committed to limiting global average temperature rise to well below two °C and are committed to actively pursuing a further limit of 1.5°C (Fekete *et al.,* 2021). Therefore, with such significant developments, it is not surprising that COP 21 and the Paris Agreement in general have significantly higher returns in literature searches than other COP meetings, with authors deliberating on its successes, challenges and opportunities.

As such, many authors agree that without the pressure of emission reduction overarching climate response, the Paris Agreement has strengthened global response and motivation by setting a global target for each party to strive towards, at which common goals are more likely to see progress. Yet even though this treaty is highly accepted and legally binding, like some precedents before, there remains a lack of enforcement wherein the action is voluntary and inaction goes unpunished (Raiser *et al.,* 2020). Therefore, despite global warming and climate change being a common threat to countries across the globe, varying circumstances, politics, and agendas may move mitigation with the goal of limiting to 2°C down the order of business.

As part of the Paris Agreement, it was agreed that all parties are to prepare, submit, and report on nationally determined contributions (NDCs) to meet its long-term goals (Oberther & Groen, 2020; Estrada & Wouter Botzen, 2021). These contributions demonstrate a party's plans and commitments to meeting the two °C goal. Many NDCs are concerned with the implementation or pledge for enhancing renewable energy systems, sustainable forestry practices, increasing the efficiency of technologies to reduce emissions or for storage, and the electrification of different sectors, most notably the transport and energy sector (Fekete *et al.,* 2021). The evolution of NDCs to cover sustainable development showcases how parties' commitments are evolving. These changes in ambitions only further emphasise the wide-scale schooling that is occurring across the globe, where more parties are actively trying to reduce emissions in all sectors and create a sustainable future under climate change. However, the question remains whether these changes are driven by political agendas or by pure ambition to combat climate change (Mor & Ghimire, 2022; Hohne *et al.*, 2021).

In addition to NDCs, another mechanism introduced under the agreement is the global stocktake organised every five years (Kinley, 2016). This inventory of climate actions works to increase the transparency of parties' commitments by holding their efforts accountable and comparing progress at every stocktake. Through this mechanism, the Paris Agreement has accelerated climate ambition by publicly addressing each party's commitments, thereby urging parties to compete and achieve pledges in an unofficial competition.

All in all, COP 21 was a landmark meeting for climate mitigation, for successfully negotiating climate decisions, by strengthening the parties' response in a unified global target under the international treaty, and lastly, by raising climate mitigation activities, particularly carbon neutrality, up the political agenda. By having a united goal that does not focus on reducing emissions but rather focuses on limiting their effect of them, parties are given more freedom with broader opportunities in which they can action - in effect, intensifying the party's ability to mitigate. Despite this, the fact remains, that without enforcement or penalisation for not meeting emission reductions, the ability to meet the two °C target and mitigate climate change is still in jeopardy.

Pressing onward, in 2021, Glasgow, Scotland hosted the 26th COP meeting after a year-long postponement thanks to the global Coronavirus pandemic, with high expectations for delivery with the success of the Paris Agreement still being discussed (Wang, Liu & Gu, 2022). Yet, despite following the triumph of Paris, COP 26 made its path into the COP Hall of Fame for being the first meeting to address fossil fuels and hit the record for the number of badge holders present (Depledge, Saldiva & Penasco, 2022). The largest COP saw the adoption of the Glasgow Climate Pact (GCP), a climate package calling for the 'phase down' of unabated coal power and the removal of inefficient subsidies for fossil fuels (Singh *et al.,* 2023).

Although this move was significant, the achievement was diminished slightly by the changing of 'phase out' to 'phase down' in final proceedings due to disapprovals among party members, most notably large coal exporters and dependents (Cohen *et al.,* 2022). This does not reflect well for mitigation, as it illustrates that the appeasement of party members may be a higher priority than addressing sources of GHG emissions. Besides these administrative issues, the GCP continued the work from 2015 by elucidating the urgency for climate action, stating that the 1.5°C target would require a minimum of 45% reduction in global emissions by the start of the next decade (Lyester, 2023; Wang, Liu & Gu, 2022). This reiteration of needing urgent action to meet targets is not a new phrase for COP meetings. However, it is

beyond question that moving to reduce sources of emission in fossil fuels effectively is a crucial step in the right direction.

Looking ahead to the future of climate mitigation (COP 27 and COP 28):

Unlike COP meetings before it, COP 27, held in Sharm el-Sheikh, Egypt (2022), took a step backward in the fight against climate change with the implementation of the mitigation work programme, a reiterative document lacking clarity and ambition bar the reiterations of earlier commitments (Pfleiger, 2023; Harris, 2023). Similar to the situation in Glasgow, COP 27 had the chance to make mitigation history with discussions on sustainability and fossil fuels, however, pressure from parties meant concept targets such as decarbonisation by 2025 were abolished (Arora & Arora, 2023; Pfleiger, 2023).

However, in addition to the mitigation work program, COP 27 also adopted the loss and damage fund (Harris, 2023; Arora & Arora, 2023), which aims to finance developing countries that are vulnerable to the consequences of climate change. This idea of supporting developing countries through climate change is familiar; instead, it has only been implemented in recent years. Ethically, more schemes should be implemented to support disadvantaged communities through climate hardships. However, this growing movement to adapt to climate change and compensate for loss minimizes the urgency to mitigate emissions still. As a result, COP 27 has fallen short of progressing us any further in the fight against climate change, almost self-sabotaging any progress and efforts for the future.

Conversely to Sharm el-Sheikh, the 28th COP hosted in Dubai, United Arab Emirates (2023), made the historical decision to transition away from fossil fuels to commence the end of the fossil fuel era (Arora, 2024). One of the key outcomes of COP 28 was the launch of the Global Decarbonisation Acceleration (GDA) programme, a scheme to aid parties in an organised but quick transition to net zero in energy sectors (Konneke & Adolphsen, 2024). This commitment to decarbonisation, although late in the history of COPs, positively motivates parties to mitigate emissions through sustainable and clean development. This trend of reducing emissions by building for the future has become increasingly popular as a mitigation strategy. However, the GDA programme marks the first official COP outcome to set a net zero future in stone.

In addition to the GDA, the first global stocktake was undertaken following its establishment in Paris, concluding that current action will be insufficient to meet the two °C

target, making the 1.5°C essentially impossible (Jacques, 2023; Konnekeke & Adolphsen, 2024), with GHG emissions needing to be cut further by a minimum of 28% to make the higher target attainable (Arora, 2024). Consequent to these findings, parties responded by upping their commitments to decarbonise emissions in all sectors by 2050, with the formation and implementation of policies such as the EU's Renewable Energy Directive and the UK's Net Zero Strategy (Sajjadian, 2023; Fekete *et al.,* 2021; Gudde *et al.,* 2021), where the UK has committed to cutting emissions by at least 86% by 2030 on the path to decarbonising by 2050 (Sajjadian, 2023).

Therefore, in this respect, the future of climate mitigation appears optimistic, with renewed ambition and renewed vigour to implement the goals set in recent years (Arora, 2024). Trends in cleaner, more sustainable technology and increasing commitments to a net zero society insinuate that decarbonisation will undoubtedly have a huge role to play in the upcoming years. The industry, transport, and energy sectors will require intensified and rapid action as they emit large quantities of emissions, but also due to their importance in sustaining economies worldwide (Cronin, Anandarajah & Dessens, 2018; Larkin *et al.,* 2017). In the pursuit of net zero, electrification of sectors and advancements in energy efficiency and renewable energy sources will be crucial for the transition (Martins, Moura & de Almeida, 2022; Intergovernmental Panel on Climate Change, 2022). Yet, continuing the reduction of emissions through REDD+ activities should also remain a core objective for the transition due to its capability to reduce emissions and store carbon, but to also mitigate the disappearing of habitats as a result of global warming (Intergovernmental Panel on Climate Change, 2022). The ability of parties to partake in such practices is and will be unequally distributed. Therefore, it is fundamental that goals and actions are catered to each party to ensure no party is disadvantaged while trying to transition.

Moreover, looking back at past lapses, penalisation of insubordination must be considered to deter parties from backing down from commitments, which may have reduced the effectiveness of previous non-binding treaties. Additionally, new targets must be introduced with clear actions and realistic deadlines, as achievable goals encourage action and build momentum to improve.

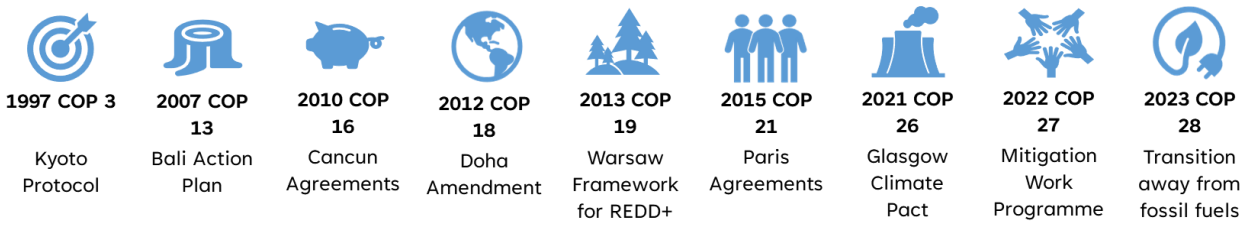
Conclusion:

In summary, COP negotiations have made instrumental achievements throughout its course, setting records for raising awareness, strengthening global action, and adopting landmark mutli-lateral environmental agreements (Oberthur & Groen, 2020). Therefore, on this basis, COPs have delivered by providing members a platform to voice concerns and collaborate on global issues at a global level.

However, after considering the fundamental core of climate mitigation, which is to drastically reduce emissions, it is clear that COP meetings have not effectively delivered on this goal by failing to substantially reduce greenhouse gas emissions (Maamoun, 2019; Fekete *et al.,* 2021). However, it must be said that without the influence of COPs, society would very much be in a different situation, most likely a much more dire situation.

Nevertheless, significant treaties such as the Paris Agreement and the call to transition away from fossil fuels (Oberthur & Groen, 2020) paint a much brighter future for climate mitigation, with a diverse array of strategies to tackle GHG emissions (Andoh & Lee, 2018) and the accommodation of adaption allowing for greater reach.

With that being said, only time will tell whether we transition to net zero and meet our decarbonisation commitments and whether we reach them this side of the century. To achieve them, caution must be taken if political tensions threaten to sidetrack our progress. Either way, action must be taken now, not later, to save the world not for ourselves, but for future generations.



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Appendix:

Student Led Seminar Summary Sheet:

Mitigation throughout the Climate Change Conferences (COPs)

Mitigation definition:

Term used to describe actions and efforts that aim to reduce greenhouse gas emissions in all sectors, including mitigation used to enhance carbon sinks

Covers policies, treaties, schemes and programs addressing the production and release of greenhouse gases

Considered a key solution to tackling climate change

Trends of COP Mitigation:

Mitigation actions focused primarily on curbing greenhouse gas emissions, with a fixation on reducing emissions with set targets.

Moving forward, mitigation blended with climate adaptation to focus on enhancing technology for cleaner, more sustainable development, improving funding provisions for mitigation action, reducing and removing the reliability on fossil fuels and looking towards forest protection as stores.

Despite the lack of enforcement and the incapability of Parties to meet reduction targets, COP conferences have raised awareness of the drivers of climate change and highlighted the need for mitigation as a key solution to the climate issue.

Key Milestones of Climate Change Mitigation

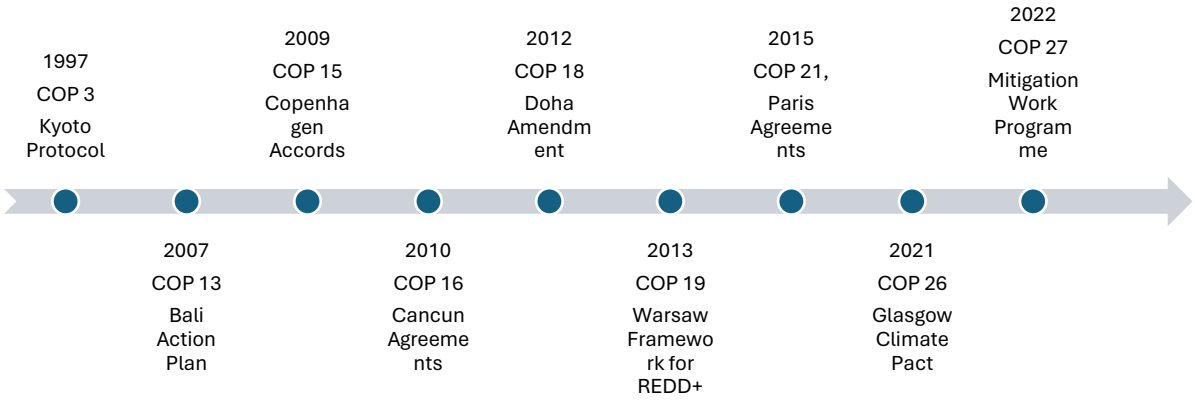
1997 COP 3 Kyoto Protocol: First International treaty between 40 industrialised Parties which aimed to set legally binding emission reduction targets of at least 5% reduction between 2008 and 2012.

2010 COP 16 Cancun Agreements: Following negotiations at Copenhagen, the agreements are one of the largest collective set of agreements by Governments to help developing countries address long-term climate change to keep global average temperature rise below 2°c.

2012 COP 18 Doha Amendment: Parties of the Kyoto Protocol second commitment period (2013-2020) with new commitments to reduce emissions by at least 18% below the levels from 1990.

2013 COP 19 Warsaw Framework for REDD+ (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries): New framework built upon decisions from Bali, working on the implementation of forest protection and management as mass carbon stores.

2015 COP 21 Paris Agreements: Considered a landmark agreement, with 195 out of 198 Parties, signed the agreements to combat climate change with the focus of multilateral implementation. First binding agreement to bring together all nations, to work towards keeping the global temperature rise well below 2°c this century, while limiting the temperature increase even further to 1.5°c.


1997
COP 3
Kyoto Protocol
2007
COP 13
Bali Action Plan
2009
COP 15
Copenhagen Accords
2010
COP 16
Cancun Agreements
2012
COP 18
Doha Amendment
2013
COP 19
Warsaw Framework for REDD+
2015
COP 21,
Paris Agreements
2021
COP 26
Glasgow Climate Pact
2022
COP 27
Mitigation Work Programme

Student Led Seminar Presentation Script:

Mitigation presentation script:

Introduction:

Hello, my name is Casey Colcombe and today I'll be talking through mitigation through climate change conferences. So to start with, I'll give you a brief introduction, then provide an overview of mitigation milestones from the conferences, which we'll then discuss further later on, exploring strengths, weaknesses, and effectiveness of such action.

So, mitigation is the umbrella term used to describe the actions and efforts aimed towards reducing greenhouse gas emissions, encompassing all sectors with the addition of covering the enhancement of carbon sinks.

After the discovery of the ozone layer hole in 1985, which was attributed to the increased use of greenhouse gases in previous years, the Montreal protocol was established in 1987 which called for a ban of CFC's, setting the foundations for climate mitigation which has been continued ever since by the UNFCCC Parties and other organisations

1997 COP 3 Kyoto Protocol

The 3rd Conference was the first convention to address mitigation with the establishment of the Kyoto Protocol, which was signed by 192 parties.

The internationally binding treaty set emission reduction targets of at least 5% between 2008 and 2012 for industrialised countries – the first reduction target of its kind.

The protocol included the introduction of 'flexible mechanisms' which are based on the idea that each developed country has an assigned emission amount but can earn, buy or sell more allowance to help stay within their allowance.

This treaty was the starting point to climate mitigation, while the mechanisms helped developed countries realise their emission impacts

2012 COP 18 Doha

At the 18th COP, the adopted Doha Amendment committed parties to a second commitment period of the Kyoto protocol between 2013-2020.

Despite the drop in participants to 148, new commitments were made to reduce the emissions further to at least 18%, with an additional list of greenhouse gases that Parties must report on including nitrogen trifluoride and sulphur hexafluoride.

Overall, these conferences marked crucial steps in beginning firm action against climate change by emphasising the need to reduce greenhouse emissions

2010 COP 16 Cancun

After the setbacks faced in the 15th COP, the conference at Cancun was hailed a success as it became the largest collective effort made by Government's to date towards addressing long-term mitigation of climate change.

The Cancun Agreements were agreed by Governments to focus on helping developing nations and initiated the merging of mitigation and adaptation, with the emphasis on inclusivity.

The agreements saw the establishment of Nationally Appropriate Mitigation Action reports, in which developing countries submit mitigation actions based on equity and national circumstance.

While, the green climate fund and climate technology centre helped to scale up resources and provisions to further the actions declared by developing nations.

2013 COP 19 Warsaw

2013 saw a major breakthrough for mitigation within the conferences, with the adoption of the Warsaw Framework for REDD+, the framework to address emissions through forest deforestation and degradation.

Deforestation accounts for 17% of the globe's emissions, therefore the REDD+ framework which incentivises activities such as sustainable forest management and conservation/protection of forest cover has been a huge step forward for reduction of emissions, particularly in tropical rainforest countries.

2015 COP 21 Paris

The 21st COP is generally hailed as the biggest success for climate mitigation through the adoption of the Paris Agreements, a nation-wide agreement which legally binds 196 Parties to keep within global warming temperature limits under 2 degrees this century and further aims to limit temperature increase to 1.5 degrees.

Nationally determined contributions and long-term low greenhouse gas emission development strategies were also introduced as part of the agreement, which are scrutinised every five years in a global stocktake to assess Parties progress to achieve the new targets.

The 21st COP is the first time all Nations agreed to a uniformed approach to tackle climate change, particularly with changing international climate change policy, which is why the conference is remarked as being a major and notable achievement.

2021 COP 26 Glasgow

The 26th conference was another step forward in the right direction as it further emphasised the need to accelerate action to achieve the ambitious targets set in 2015.

The convention saw the adoption of the Glasgow Climate Pact, which is another advancement in mitigation, as it was the first decision to address fossil fuels as greenhouse gas emission sources.

Despite controversy, the pact finalised the call to phase down coal power stations and inefficient fossil fuel subsidies as a drastic measure to meet global targets, while also setting further targets to accelerate low-carbon and sustainable net-zero developments.

Signed by 197 Parties, Glasgow is the first conference to effectively address the energy sector with regards to the amount of emission produced globally, referenced by the phrase 'the most productive COP since Paris'

Conclusion

Overall, COP conventions have seen major advancements in climate mitigation, particularly in reference to international climate policy and inclusion of both industrialised and developing countries.

Moreover, emphasis of mitigation efforts have evolved to cover other areas of emissions, with policies and agreements in place to protect forests as carbon stores but to also address fossil fuel production, which is a major portion of the world's emissions

Mitigation has also evolved to encompass climate change adaptation, which has opened many doors to further mitigate climate change.

But despite us not meeting the targets set in Kyoto or Paris just yet, COP conferences has opened up opportunities for multilateral approaches, helping raise awareness of the issue, but also raised the issue to high political priority – which encourages hope for the future.

Thank you for listening, is there any questions before the discussion.

Student Led Seminar Presentation Slides:

Mitigation through the climate change conferences (COPs)

Introduction

Definition:

Umbrella term used to describe the actions and efforts that aim to reduce greenhouse gas emissions in all sectors, with the inclusion of carbon sink enhancement.

Background:

Discovery of ozone depletion in 1985 due to the rising emissions of greenhouse gases set the course for climate awareness.

Two years later, the first global environmental policy, the Montreal Protocol, was established to reduce, and subsequently ban CFC's (Chlorofluorocarbons) – setting the basis of climate mitigation

Seminar plan:

- Brief overview of climate mitigation milestones
- Discussion – exploring mitigation milestones, debating strengths, challenges and limitations of climate mitigation

2

1997 COP 3 Kyoto – 2012 COP 18 Doha

- First convention of the COP to set target to address greenhouse gas emissions, with the establishment of the Kyoto protocol
- International treaty for industrialised countries - legally binding targets to cut emissions by at least 5% between 2008 and 2012
- Formation of 'flexible mechanisms' to support Parties' achieve targets
  - International carbon market– trade of extra units to Parties that are over target
  - Clean Development Mechanism (CDM) – implementation of emission-reduction projects in developing countries
  - Joint Implementation (JI) – Developed countries can earn extra units from CDM projects
- Adoption of the Doha Amendment, the second commitment period to the Kyoto Protocol 2013-2020
- New commitments made to the protocol with an additional list of greenhouse gases in which Parties must report on
- New target set for Parties to reduce emissions by at least 18%below 1990 levels for the second commitment period

2010 COP 16 Cancun

Green Climate Fund:
- Scheme to scale up provision and funds for long-term mitigation for developing countries
- $378 million funded sustainable energy programme in Egypt, Jordan, Morocco and Tunisia

Nationally Appropriate Mitigation Actions:
- Concept from Bali conference
- Developing countries submit mitigation actions based on equity and national circumstance

Climate Technology Centre and Network:
- Promotes accelerated transfer of environmentally smart technology

- Adoption of the Cancun Agreements, at the time was the largest collective effort by Governments to agree and address long-term climate change
- Decisions made at the convention aimed towards helping developing nations
- Cancun agreements saw erection of schemes and programmes relating to mitigation, adaptation, transparency, finance or technology transfer

COP16 CMP6 México2010
United Nations Climate Change Conference

2013 COP 19 Warsaw

- Adoption of the REDD concept from the Bali Action Plan, the Warsaw Framework for REDD+ re-envisions the need to address other drivers of greenhouse gas emissions
- REDD+ framework provides methodological and financing guidance for implementation of REDD+ activities to reduce the emission of gases
- Since introduction, many developing countries have significantly improved forest monitoring, protection ad cover over the long term
- The Acre project in Brazil through the REDD+ scheme has reduced 7.2 million tCO^2e between 2015 and 2019, worth $63 million in results-based payments

Warsaw Framework for REDD+:
Reducing emissions from deforestation and forest degradation, plus sustainable forest management and conservation

2015 COP 21 Paris

Climate change target:
Keep the global average temperature rise this century well below 2°c, above pre-industrial levels
Pursue efforts to limit the temperature increase even further to 1.5°c

- Landmark convention – first conference with all nations to agree on action for climate change
- Paris Agreements – called upon all parties to accelerate and intensify climate mitigation action.
- First binding agreement with multilateral approach to combat climate change
- Nationally Determined Contributions (NDC's) – outline Parties' mitigation commitments with long-term low greenhouse gas emission development strategies (LT-LEDS)
- Global stocktake – record of all Parties' NDC's to increase transparency and assess Parties' progress every five years

2021 COP 26 Glasgow

- Conference expressed urgency to accelerate climate action to achieve targets set in Paris
- Establishment of the Glasgow Climate Pact
- First COP to set targets for 'low-carbon development' and 'net-zero emissions' under the Glasgow Climate Pact, with focus on other greenhouse gases
- First mention and focus regarding fossil fuel emissions – led to phasing 'down' of coal power stations

Conclusion

Summary of Milestones:

COP 3: Kyoto Protocol

COP 16: Cancun Agreements

COP 12: Doha Amendment

COP 19: Warsaw Framework for REDD+

COP 21: Paris Agreements

COP 26: Glasgow Climate Pact

- COP conventions has seen major breakthroughs in awareness and motivation towards achieving target goals set in Kyoto and Paris
- Focus of mitigation strategies has been on the industry section with reducing emissions during development, however, recent years have seen the inclusion of fossil fuel emission sources and drivers of emissions through land change and destruction
- Throughout the years, mitigation action has blended to include adaptation, technology and finance, wherein successes for reducing emissions has encompassed one of these concepts
- COP conferences have raised awareness of the climate issue, and advocated for Parties to raise the priority of climate mitigation to the top of their political agenda – encourages hope for further progress towards global targets in upcoming years

Mitigation Timeline

Thank you for listening

Student Led Seminar Discussion Transcript Notes:

- Progress has been made in climate mitigation, particularly Paris Agreement 2015, even though parties may have not committed fully and followed through with the pledge
- Changes in agreements and protocols were made to suit parties – protocols were driven by politics rather than being driven by climate change – Glasgow Climate Pact – phase down instead of phase out
- Mitigation and adaptation have become very much interchangeable – where we've started to mitigate loss and adapt to climate change rather than mitigate emissions and adapt to cleaner solutions
- In that sense, we have to work even harder to mitigate the emissions we're allowing by mitigate loss and damage and through adaptation
- Push back of emission reductions and push back of deadlines for mitigation projects continue to threaten achieving true climate mitigation
- Targets and deadlines for projects were not realistic
- Commitments not realistic or achievable with the lack of penalisation and enforcement for the worst offenders who aren't helping to alleviate ore remediate the situation
- Question the likelihood of making progress if offenders aren't penalised and continue to offend
- Voluntary commitments reduce effectiveness of protocols, with offenders receiving 'just a slap on the wrist'
- Issue of the 'blame game' and lack of accountability at the start
- Developing countries and less economically developed countries have other priorities limiting their ability and commitment to participate
- A lot of the vulnerable countries struggle to participate due to circumstance, and may be under the influence of developed countries offcuts
- Issue of setting more realistic targets that may be set too low for effective action
- Issue gets pushed back, or pushed onto another party – lack of effective accountability and change
- Paris Agreement 1.5 but definitely below 2 goal – already given parties leeway and flexibility in emissions
- Opportunity to give more power to those in locally affected areas and educate those on the reasons on why actions must be carried out i.e. local agricultural farmers – provide knowledge to those that should have it
- Give vulnerable communities a bigger voice at meetings and climate negotiations – small pacific island nations
- Opportunities for small scale mitigation, education, and enforcement
- Try to limit larger parties offsetting emissions in smaller, developing countries
- Issue of false promises in unrealistic targets
- Provide further support to developing countries and vulnerable communities so that they don't require offhanded 'help' from industrialised countries

- Hard to enforce and punish developing nations with large scale poverty, drought, starvation etc. – ethical justice