JejuMUN XI

BACKGROUND GUIDE

Economic and Financial Affairs Council (ECOFIN)

1 |Balancing economic growth and carbon reduction

SDG: 7. Affordable and Clean Energy | 8. Decent Work and Economic Growth | 11. Sustainable Cities and Communities

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November 15th-16th, 2024

Last updated on September 10th, 2024

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Committee Introduction

The Economic and Financial Committee (ECOFIN) is responsible for bolstering the global economy. ECOFIN aims to achieve economic development by promoting international cooperation while eliminating impediments to such efforts.

More specifically, the committee's agenda is divided into 11 clusters. All 11 clusters serve the purpose of fostering economic growth, encouraging collaboration between nations, ensuring sustainable development, and ameliorating economic inequalities worldwide.

ECOFIN's role of attaining global economic stability often intersects with the responsibility of the United Nations Economic and Social Council (ECOSOC), one of the main principal organs of the UN alongside the General Assembly. Although both ECOFIN and ECOSOC grapple with socioeconomic challenges of the global world, ECOFIN is geared towards economic affairs in specific.

Past sessions in ECOFIN discussed measures to tackle a multitude of pressing global issues, such as COVID-19, Climate Change, etc. For instance, the 76th Session of the committee voiced struggles of different countries' as both natural catastrophes and the global pandemic left significant damage in their economy. During its 78th Session, the committee successfully approved nine draft resolutions on international tax cooperation. The resolutions addressed issues such as illegal financial flow and tax evasion, which can undermine tax systems in developing countries. As such, ECOFIN has been continuing its endeavors to stabilize and further strengthen the global financial system and the economy.

Agenda Introduction

Balancing economic growth and carbon reduction plays a great challenge. Strengthening a nation's economy often involves industrial expansion and increased energy consumption, which leads to inevitable environmental damage. For instance, the reliance on fossil fuels for economic activities results in higher carbon emissions, further exacerbating the greenhouse effect.

Climate change is an ever-growing issue that significantly affects the global economy and social structures. According to the Intergovernmental Panel on Climate Change (IPCC), the greenhouse effect is a primary factor of climate change, resulting from the accumulation of greenhouse gasses such as carbon dioxide and methane in the atmosphere. This phenomenon exacerbates global warming, leading to extreme environmental and socio-economic repercussions.

The effects of climate change on the environment include extreme weather events, rising sea levels, and modifying agricultural patterns, which partially contribute to economic inequality. Regions with limited financial and structural resources to adapt to such changes often suffer the most- intensifying poverty and reducing economic opportunities. Developing countries, in particular, are disproportionately affected due to their reliance on climate-sensitive sectors like agriculture and fisheries compared to their effect on global climate change.

There have been many efforts to alleviate climate change and its influence; exploring carbon neutrality, followed by carbon sequestration, and implementing carbon credits aimed at reducing carbon footprints. Carbon neutrality involves balancing emitted and absorbed carbon dioxide, while carbon sequestration refers to capturing and storing carbon dioxide in the atmosphere. Carbon credits allow companies to reduce their emissions by investing in environmental projects and market-based methods to reduce carbon emissions.

Regardless of all these efforts, progress in climate change remains a negative state–a cost incurred by companies and nations often overlooking environmental costs. Governmental interventions such as the imposition of regulations, provision of alternative and renewable energy sources, and setting of carbon pricing mechanisms would be necessary.

Letter from the Chairs

Dear esteemed delegates,

Welcome to the United Nation Economic and Financial Affairs Council! Hello, my name is Jiyoon Baek, and I am a junior at Branksome Hall Asia. It's my utmost pleasure to serve as your Head Chair for the upcoming JEJUMUN XI! This year marks the fourth year of my MUN journey, during which I have attended various conferences as both a delegate and a chair. I am fully aware of the extent to which a chair can make or break a MUN experience, so I will try my best to provide the support you need and create the optimal environment for discourse. I hope to build the most enthusiastic and memorable conference possible with you, so please make sure to review this background guide thoroughly. Do not hesitate to contact me if you have any questions or requests for feedback as I will be more than happy to reply. See you at the conference!

Greetings delegates! This is Yeonjae Kim, who will be serving as your deputy chair of the committee. I'm a sophomore at Branksome Hall Asia, and this is my third year participating in Model United Nations. As I began to experience both being a delegate and a chair, I came to realize how transformative Model UN can be. MUN is an opportunity to challenge yourself, build your understanding of the world around you, and, most importantly, make meaningful connections with people you would not have met otherwise. At this conference, I hope you will seize the opportunity to grow not only as a delegate, but also as a person. Try to step out of your comfort zone, and see how far that takes you. Please feel free to reach out if you have any questions, and I look forward to seeing you all in November!

Nice to meet you all, my name is Seoyoung Rabia Hong. I am a grade 9 student at BHA and will serve the ECOFIN committee as the associate chair in JEJUMUN XI. This is my second year participating in Model United Nations, and I only have one conference experience as a chair. However, I will try my very best to understand and assist all of you delegates to present the most memorable conference experience. Model United Nations is not only an extracurricular but a journey where you can develop your perspective on viewing the world and your interests in the global society. However, I would like to highlight the importance of savoring the moment and having fun. I wish you the very best in achieving what you aim for at this conference and please do not hesitate to contact me for any inquiries!

Best regards,

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Seoyoung Rabia Hong | Associate Chair | hongseoyoung04362@branksome.asia

Key Terms

Greenhouse effect

Just like a greenhouse used to prevent the flow of thermal energy out when growing plants, the term greenhouse effect similarly refers to a natural process in which heat is trapped by greenhouse gasses (GHGs) near the Earth's surface. GHGs, such as carbon dioxide (CO_2), methane (CH_4), and Ozone (O_3), absorb and re-radiate the heat instead of allowing them to escape back into space, so it acts as a blanket enveloping our planet. This phenomenon has helped Earth to retain a temperature at a level where many lives can be supported for millions of years. However, human activities in the last few decades, such as the act of burning fossil fuels for electricity and agricultural practices, amplified the amount of GHGs in the atmosphere and led to an exponential increase in temperature, which is also known as climate change.

Carbon neutrality

In the 2015 Paris agreement, 196 parties agreed to keep global warming below 1.5℃ through reaching carbon neutrality by 2050 at the latest. Carbon neutrality can be achieved when the amount of carbon dioxide released into the atmosphere and the amount removed through carbon sinks are equivalent to each other. Therefore, in order to reach carbon neutrality, we must not only continue to develop more effective artificial sinks, such as Carbon Capture and Storage (CCS) and Direct Air Capture and Storage (DACS), but also reduce our carbon footprints to allow our natural carbon sinks, such as forests, to absorb GHGs at a faster rate.

Carbon sequestration

Carbon sequestration refers to the process of capturing carbon dioxide from industrial facilities or directly from the atmosphere then storing them permanently in geological reservoirs. Broadly speaking, there are two types of carbon sequestration: biologic and geologic. In biologic carbon sequestration, carbon is stored in biological carbon sinks, such as woody plants and grasslands, as plants take in carbon dioxide during the process of photosynthesis. This is why preventing further forest cover loss is crucial in carbon reduction. On the other hand, geologic carbon sequestration involves injecting carbon in porous rock formations deep down whereby it is physically trapped in the pore spaces and dissolved as fluid within the structure.

Carbon credits

Carbon credits refer to permits that allow private companies to emit a limited amount of carbon dioxide. One carbon credit permits the emission of one ton of carbon dioxide or an equivalent amount of other greenhouse gasses. The concept is that the total amount of emissions is capped, so companies must either reduce their emissions or purchase additional allowances from others. However, some critics argue that carbon credits serve merely as a "pollution permit" for wealthy companies and countries to continue polluting. For instance, high-emitting companies, particularly from the Global North, can purchase cheap carbon

credits from countries in Africa and other regions. This allows them to maintain their emission levels, but the financial compensation provided to these countries are minimal compared to the actual costs they incur from climate change.

Negative externalities

Negative externalities occur when a transaction between a buyer and a seller impacts a third party, who is not involved in the exchange. Pollution is considered a traditional example of a negative externality. When a factory emits GHGs into the environment, it incurs a social cost, which neither the factory owner nor the consumers are held accountable for. As a result, individuals, our ecosystem, and even our future generations are ultimately impacted by this transaction through climate impacts like adverse weather patterns and prolonged droughts. Therefore, some countries implement government interventions such as taxation or cap-and-trade systems in order to internalize these externalities.

Carbon tax

Carbon tax is one way to internalize the external costs by having users of fossil fuels pay for the climate damage caused by the carbon they produced and emitted into the atmosphere. Because carbon tax holds the emitter accountable for their carbon footprint by putting a price on those emissions, it can serve as an effective method to encourage people, businesses, and governments to reduce them. The revenue generated from a carbon tax is often used to fund climate protection projects such as the development of renewable energy or the realization of energy efficiency measures. One leading example of a successful carbon tax implementation can be found in Sweden.

Sustainable Development Goals (SDGs) and SDG 7

In 2015, with 195 nations' agreement, the United Nations adopted the 17 goals for a universal development for a better world considering social, economic, and environmental aspects. Among them, SDG 7 is created for the demand for environment friendly yet affordable energy corresponding to the exponentially increasing population worldwide.

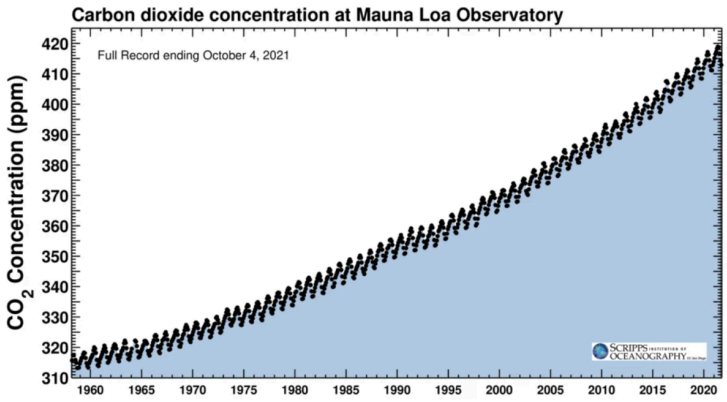
Alternative and renewable energy sources

Renewable energy is energy derived from natural resources that can be replenished at a faster rate than it is consumed, while fossil fuel requires hundreds of thousands of years to be naturally replenished. Some examples of renewable energy include solar, wind, geothermal, and hydropower. These all come from sources that are constantly replenished and leave less environmental footprint.

Nationally Determined Contributions (NDCs)

As its name suggests, NDCs are climate pledges to, for example, cut carbon emission or transition into a low-carbon economy that are self-defined depending on its capabilities and capacities. NDCs are updated every five years to a more ambitious goal. Each nation's NDC targets are stated under Paris agreement: https://unfccc.int/NDCREG

Historical Background

1958 - Dr. Charles David Keeling provides the first evidence that CO_2 levels are rising	The first unequivocal evidence that CO_2 levels are rising was provided by Dr. Charles David Keeling. He used the Keeling Curve (see figure #1) to show seasonal and annual changes in CO_2 concentrations since 1958.  Figure #1: The Keeling Curve shows the gradual increase in CO_2 concentrations in the atmosphere since 1958.
June 5-16, 1972 - The Stockholm Conference	The first ever major international conference, the UN conference on the Human Environment, also known as the Stockholm Conference was held. This conference is significant as it shows that awareness of climate change continued to heighten that it further led to the establishment of the United Nations Environmental Programme (UNEP) later.
December, 1988 - The establishment of IPCC	The Intergovernmental Panel on Climate Change (IPCC) was established by the UNEP. Its central aim was to observe and assesse global science pertaining to climate change in order to provide policymakers with regular scientific assessments.
March 21, 1994 - The first climate change legislation comes into force	With 197 parties ratifying, the first international treaty designed to limit GHG emissions, The United Nations Framework Convention on Climate Change (UNFCCC), came into force.
1997 - Kyoto Protocol	The second IPCC assessment in 1995 led to the Kyoto Protocol in 1997. It committed 37 industrialized countries to reduce their GHG emissions by 5% on average with the principle of “common but differentiated responsibility and respective capabilities.”

June 11, 2001 - US withdrawal from the Kyoto process	The US withdrew from the Kyoto process under the presidency of President Bush. The rationale behind its withdrawal was that China and India with emerging economies did not have obligations for climate targets and so the protocol would simply put the US at a perceived economic disadvantage.
2015 - Paris Agreement	This is a landmark accord that nearly all countries expressed their commitments to limit global warming to below 2 degrees Celsius above pre-industrial levels. Whereas the Kyoto Protocol binded only More Economically Developed Countries (MEDCs), the Paris Agreement differs from it in that no annexes are established to alleviate the burden of Less Economically Developed Countries (LEDCs); Instead, each country has different emission targets that are negotiated.
June, 2017 - US withdrawal from from the Paris Agreement	The US withdrew from the Paris Agreement in 2017, which is 2 years after it was signed. The rationale behind this decision was again that it greatly undermines the US economy. The withdrawal is considered a significant stepback to global cooperation for climate change as it impacted other states to reduce its financial aid to the Green Climate fund; omitted contributions from US to further IPCC reports; and affected carbon price and carbon emission space.
Nov 28, 2019 - Declaration of a climate emergency by the European Parliament	The resolution to declare a climate emergency was adopted with 429 votes for, 225 votes against, and 19 abstentions.
February 19, 2021 - US rejoins the Paris Agreement	After 107 days after the withdrawal, the United States formally rejoined the Paris Agreement again under the presidency of Biden.
June 25, 2023 - China abandons Paris Agreement	From 2022, China expressed its stance contradictory to their Paris Agreement pledges. They maintained that China will not abandon fossil fuel before renewables could substitute for the lost coal-fired power plant and rather create its own path to the issue. Such refusal to cooperate is significantly hindering global efforts to combat climate change.

Current State of Affairs

The vital importance of balancing economic growth with carbon reduction represents one of the most crucial challenges encountered by the international community since the 20th century. As climate change continues to raise existential dangers to ecosystems and human societies, the necessity to reduce greenhouse gas emissions has never been greater. However, this aim must be harmonized with the need for economic development, especially in the LEDCs (Less Economically Developed Countries) struggling to enhance living standards and minimize poverty. The Economic and Financial Affairs Council (ECOFIN) is at the vanguard of addressing this complicated intersection, pursuing sustainable resolutions that foster economic flexibility while alleviating environmental impact.

Global carbon dioxide (CO2) emissions have passed unparalleled levels, led primarily by fossil fuel consumption for the purpose of energy production, industrial projects, and transportation: conveyance. Regardless of international commitments such as the Paris Agreement, whose goal is to restrict global warming to below 2 degrees Celsius above pre-industrial levels, carbon emissions have continued to rise. According to the International Energy Agency (IEA), global energy-related carbon dioxide emissions grew by 6% in 2021 to 36.3 billion, which is the highest, related to the rebound of economy and demand for fossil fuels after the Covid-19 (IEA, Global Energy Review: CO2 Emissions in 2021).

Economic growth is linked with increased carbon emissions historically, which presents a dilemma. MEDCs: More Ecnonmically Developed Countries, have expansively developed their wealth and carbon-intenstive strands of the economy. On the other hand, LEDCs: Less Economically Developed Countries, seek for their right to pursue similar tracks to vitalize economy furthermore. In spite of this, the environmental consequences resulted from such economic growth patterns requires a reflection on conventional economic cycle.

The shift from conventional energy sources to renewable energy sources takes a critical role for reducing carbon emissions without impeding economic growth. Solar, wind, hydro, and geothermal energy are the types of renewable energy that offer feasible alternatives to fossil fuels, the renewable energies' prices are continuing to decrease due to technological advancements and economic trends. According to BloombergNEF, there has been a significant increase in investment: $623 billion investments on renewable projects in 2023. Nations such as China and Germany are at the forefront in renewable energy capacity, with currently developing economies such as India and Brazil, rapidly expanding their interest on implementation of renewable energies.

Moving further from energy transition, technological innovations have a significant role in balancing economic growth and carbon reduction. Technological developments in

energy efficiency such as carbon capture and storage (CCS) and electric vehicle (EV) technologies are affecting industries and consumer behaviors. Furthermore, governments and individual sectors are increasingly investing in research and development to support these innovations, acknowledging their potential to let economic growth be less dependent on carbon emissions.

Due to the complex interrelations regarding carbon emissions and economic growth, policy frameworks and international cooperation are necessary. Effective policy frameworks take a critical part in guiding the global economy towards sustainable growth. Carbon pricing initiatives, such as carbon taxes incentivized emissions reductions by setting economic value to carbon emissions. For instance, The European Union's Emissions Trading System (EU ETS) is a notable example, as it successfully reduced carbon emissions through power plants and industrial facilities since its establishment in 2005. Moreover, The Paris Agreement remains as a keystone of global efforts and cooperation, with 196 states and parties committed to Nationally Determined Contributions (NDCs), forming their emissions reduction goals. Nevertheless, the implementation of such NDCs diverge, with many nations struggling to reach their goals because of economic constraints and political obstacles. Reinforcing global cooperation, increasing financial and technical assistance for developing nations, and promoting inclusive environment are crucial for achieving collective climate goals.

The continuance of failing to address carbon emissions will result in severe economic consequences. The World Bank approximated that climate change could build up an additional 132 million people into poverty by 2030, with unjustifiably drastic effects on vulnerable populations in developing countries. Intense weather events, rising sea levels, and changing agricultural patterns will threaten food supply, infrastructure, and livelihoods, highlighting the need for secure economic systems.

Balancing economic growth and carbon reduction is not only a matter of policy but an essential step for sustainable development. ECOFIN's role in holding international communication and advocating innovative solutions is essential for guiding the global economy towards a low-carbon future. As nations struggle with this matter, the committee's efforts will build a path to global sustainability and prosperity for generations to come.

In conclusion, through addressing the following issue with an extensive, all-round approach, the ECOFIN committee can significantly contribute to a harmonized and resilient global economy that balances economic growth and environmental development.

Stances of Parties

Australia

Australia is one of the nine countries responsible for 90% of coal production in the entire world. Although Australia has shown efforts to reduce greenhouse gas emissions, the country is still struggling with managing its non-renewable energy use. Nonetheless, the economic benefits of fossil fuel production cannot be overlooked, since the oil and gas industry produced 17 billion AUD for the federal government between 2023 and 2024. In November 2023, Australia implemented the CCUS (Carbon Capture, Utilization, and Storage) technology. By capturing carbon dioxide and utilizing it for industrial purposes or storing it underground, the technology aimed to reduce carbon dioxide emitted from fossil fuel usage.

Brazil

After President Lula de Silva was elected in 2023, Brazil began to expedite its process of tackling climate change. The government's primary focus is to restore and conserve the Amazon rainforest, the largest tropical rainforest on Earth, which serves as a paramount carbon sink. While the previous government monetized the rainforest through deforestation and tourism, the current government is prioritizing protection over its economic benefits. In fact, the rate of deforestation reached its lowest level in five years in 2023. Brazil also demonstrated strong commitment to the Paris Agreement by adjusting its NDC (Nationally Determined Contribution) last October, which they affirmed to reduce its greenhouse gas emissions by 53% in comparison with 2005 by 2030.

China

China is the number one emitter of carbon dioxide in the world, producing 12.6 billion tons in 2023. The leading factor in the country's staggering carbon emissions is its coal consumption. Although China claimed to phase down its coal use, it recently developed new coal plant capacity that is tantamount to two-thirds of the global net coal capacity. As part of its efforts to achieve decarbonization, China relaunched its own carbon credit mechanism called the CCER (China Certified Emission Reduction) scheme in January 2024. Still, China remains stringent about its stance to continue relying on fossil fuels until it is certain that renewable energy can fully replace them.

Egypt

Contributing to approximately 0.63% of the global greenhouse gas emissions, Egypt's impact on the environment is less dire compared to its neighboring countries. Nonetheless, the country's GHG emissions have skyrocketed since 1990, demonstrating a need to achieve a more sustainable economy. Still, the country's recent economic struggles, such as inflation and debt, impeded Egypt's full commitment to tackling climate change. Egypt has therefore been seeking international support from organizations such as the European Investment Bank,to strengthen both its economy and its carbon reduction efforts.

Ethiopia

Ethiopia has been directly affected by climate change, but it was its agricultural industry that was damaged the most. Agriculture's share in Ethiopia's GDP decreased from 44% to 37% between 2012 and 2022, and experts specifically attribute the impact to the extreme weather conditions and increased temperature. However, agriculture took up 51% of the country's annual CO2 emissions in 2020, implying that environmental damage and its economic impact may be a repercussion of excessive development of the industry. To alleviate this issue, Ethiopia is focusing on climate adaptation through the development of infrastructure and social protection policies. It is also providing financial support to private sectors dedicated to green development.

France

Climate change has inflicted significant damages on France's industries, resulting in a substantial economic burden. With numerous experts expressing concern about the impact of the environmental calamity, the French government urged for a "far reaching economic policy". The country has thus been announcing its ambitious goal to curtail its carbon footprint, such as reducing 40% of its carbon emissions by 2030 in comparison to 1990, as well as investing 20 billion euros in green investment in 2022. Through its dedication to decarbonization, France's greenhouse gas emissions declined by 4.8% in 2023. Nevertheless, France still remains one of the biggest emitters of greenhouse gases in the European Union.

Germany

Germany is the sixth country that produces the most carbon emissions in the world. Despite the country's goal to achieve net-zero emissions by 2045, many believe such a progressive aim is difficult to achieve at this rate of climate action. Hence, the German government recently announced its goal to transform the entire economy, transitioning to greener substitutes in all sectors, including energy, transport, agriculture, etc. This change will have a substantial economic impact, however, as it requires investments exceeding 213 billion euros that can largely be accrued as state debt. Due to the exorbitant amount of money required for decarbonization, Germany remains ambivalent about balancing economic stability and carbon neutrality.

Iceland

Although Iceland uses renewable energy as its main energy source, specifically geothermal and hydropower, its consumption-based carbon footprint is significantly larger compared to other developing countries. Iceland's stable economy has been immensely impacted by sea level rise and increased ocean temperatures. Industries such as fishing and the production of aquatic products, which are essential to the Icelandic economy, were disrupted due to the drastic environmental change. To tackle this issue, Iceland launched the world's largest carbon capture plant, which uses DAC (Direct Air Capture) technology to

eliminate carbon dioxide in the atmosphere. Iceland should continue to reduce carbon emissions in order to eradicate the existing threats to the economy.

India

India is one of the world's largest greenhouse gas emitters that is struggling to balance economic growth with carbon reduction through its commitments to the Paris Agreement. India targets to lower the carbon emissions by 45% of its GDP by 2030, compared to the levels in 2005, and reach its installed electric power capacity from non-fossil fuels by 50%. India is heavily investing in solar and wind power to minimize its reliance on fossil fuels; coal, with a goal of 500 gigawatts of renewable energy capacity by 2030. Nevertheless, challenges such as the need for international support and finance while addressing the lack of climate impacts. In spite of such efforts, India's climate policies are classified as 'Insufficient'(Climate Action Tracker, India), emphasizing the necessity for further actions to be taken.

Indonesia

Indonesia is engaged in mitigating climate change and balancing development and environmental preservation. According to Indonesia's Nationally Determined Contribution (NDC) below the Paris Agreement, the country's goal is to reduce its carbon emissions by 29%, leading them to end up to 41% along with international support by 2030. Indonesia concentrates on transitioning to bioenergy, aiming for a portion of 31% of its total energy supply by 2050. Following this plan, investments in sectors such as geothermal, solar, and hydroelectric power increase as time goes by. Moreover, Indonesia prioritizes forest conservation through measures such as REDD+ to take action against deforestation. In spite of these efforts, challenges including the necessity for government cooperation and more persist- as Indonesia's climate policies are classified as 'Critically Insufficient' (Climate Action, Indonesia) by Climate Action Tracker in 2023.

Kenya

Through comprehensive policies and strategies, Kenya has strongly committed to alleviating climate change. According to Kenya's National Climate Change Framework Policy and the Climate Change Act of 2016, Kenya seeks to magnify facilitative capacity while fostering low-carbon development, with aspiring goals in renewable energy implementation. For instance, Kenya's climate policies are assessed as 'Almost Sufficient' by the Climate Action Tracker (Climate Action Tracker, Kenya), demonstrating its alliance with global temperature goals. Kenya has developed specific plans for emissions reduction for each sector and is on track to surpass its 2030 emissions reduction target; 108 Million metric tons of carbon dioxide equivalent. Even though challenges including financing and execution persist, Kenya's diverse approach highlights its commitment to constructing a low-carbon, climate-resilient future.

Lebanon

Lebanon is facing critical challenges in combating climate change as well as with ongoing economic and humanitarian crises. Currently, Lebanon is classified as one of the least prepared nations for climate action, globally. According to Lebanon's updated NDC submitted in 2021, the nation promised to unconditionally decrease greenhouse gas emissions by 30%, compared to business-as-usual (BAU) projections; scenarios assumed that are based on no new climate policies implemented, by 2030. Including severe influences on water availability, agriculture, and tourism, Climate change is estimated to reduce Lebanon's growth potential by up to 2% each year until 2040. To lessen such risks, Lebanon shall prioritize investments in sectors such as energy, conveyance, and solid water management. Even though Lebanon aimed to increase its renewable energy share to 12% by 2020, the nation currently lacks a thorough national climate change implementation policy or strategy. Moreover, the existing plans are sector-specific and segmented. However, Lebanon proceeded to attempt to engage in international climate efforts, even ratifying the Kyoto Protocol in 2006 and vigorously taking part in UNFCCC processes.

Malaysia

Malaysia is dedicated to addressing climate change through various policies and initiatives. According to Malaysia's updated NDC, the nation targets to reduce its economic-wide carbon emissions intensity by 45% by 2030 in contrast to 2005 levels, which is an increase from the previous target of 35%. Major policies including the National Policy on Climate Change and the Green Technology Policy, direct its climate action, in addition to the goal to increase renewable energy's share in the energy mix to 20% by 2025. Malaysia is also raising resilience to climate effects in water resources and agriculture, merging climate considerations into Malaysia's national development plans. Regardless of these efforts, struggles to maintain stabilizing economic growth with the reduction of carbon emissions, especially in forest management and palm oil production.

New Zealand

New Zealand is eager to mitigate climate change through various initiatives such as the Climate Change Response Amendment Act 2019, which aims to zero emissions of all greenhouse gasses, except for biogenic methane by 2050. Following New Zealand's updated NDC, the nation's goal is to reduce greenhouse gas emissions by 50% below the 2005 gross levels by 2030. Nevertheless, struggles including agriculture emissions management and more persist. According to the Climate Action Tracker, New Zealand's climate policies are considered 'Highly Insufficient', demonstrating the need for notable improvements to meet its Paris Agreement goals.

Pakistan

Through its ambitious updated NDC and Climate Change Policy, Pakistan has shown its commitment to addressing climate change. The nation's NDC aims to 'build climate resilient infrastructure'. The Climate Change Act of 2017 of Pakistan, built a framework for climate action as well as the Alternative and Renewable Energy Policy 2019 that recognizes UNFCCC 1992, Kyoto Protocol to the UNFCCC, The Paris Agreement, and other agreements relating to climate change to which Pakistan is a signatory. In spite of such attempts, Pakistan continues to encounter struggles in agricultural emissions management and is a highly vulnerable state to climate events, ranking as one of the least prepared countries for climate change, globally.

Republic of Korea

The Republic of Korea has shown its commitment to resolving climate change through measures such as the 'Korean Green New Deal', which targets for climate neutrality by 2050. According to its updated NDC, Korea aims for a 40% greenhouse gas emissions reduction based on 2018 levels by 2030. Significant policies include the Framework Act on Carbon Neutrality and K-ETS, which cover a big sector of national emissions. Nevertheless, Korea's climate policies are evaluated as 'Highly Insufficient', by the Climate Action Tracker, showing a necessity for considerable improvements, especially in reducing emissions from the industrial and energy portions dependent on fossil fuels.

Russia

The Climate Action Tracker (CAT) rated Russia's current effort to combat climate change as " critically insufficient." Despite Russia's pledges to reduce GHG emissions by 30% until 2030 and achieve net zero by 2060, Russia's emissions are continuing to rise when it should be rapidly decreasing, especially for such a large emitter. Not to mention, during Putin's 24 years in power, the reliance on gas-heavy electricity barely changed. Therefore, as a guardian of a fifth of the world's forest that helps to sequester carbon dioxide, Russia should take immediate actions to not only cut its carbon emissions but also preserve these forest ecosystems.

South Africa

Currently, South Africa is among the top 15 largest GHG emitters in the world largely due to its heavy reliance on coal as their primary energy source and thus has an obligation to cut the emissions. In order to accelerate their energy transition away from fossil fuels, South Africa formed a Just Energy Transition Partnership (JETP) with the US government, in collaboration with the UK, France, Germany, and the EU. This initiative, which has committed over $8.5 billion, aligns with South Africa's priorities to decarbonize the energy sector and thus serves as a template for supporting a just transition. Moreover, one mechanism for carbon reduction in South Africa is carbon tax, but some argue that the tax rate compares poorly with global standards of $60 per ton carbon dioxide equivalent (tCO_2e) emissions as the effective rate of South Africa's carbon tax is as little as US$0.4) per tCO_2e emissions.

Spain

As one of the EU countries most affected by climate change and its dire consequences, Spain has set its NDC targets to achieve climate neutrality by 2050 and reduce GHG emissions by 23% until 2030. To meet the pace and scale of carbon reduction required to fulfill its targets, Spain has significantly transitioned from fossil fuels to renewable energy. In 2022, just over 40% of its electricity generation was done by renewable energy sources, particularly wind power. Moreover, Spain's implementation of climate laws such as the prohibition of new fossil exploration and a requirement for corporate climate actions is exemplary.

Sweden

Sweden's NDC targets state that it must achieve net-zero emission of GHG by 2045 at the latest. To cut carbon emissions, Sweden became one of the first countries to implement carbon pricing policies that now levies the highest carbon tax rate at SEK 1,190 (US $126) per metric ton of CO2. Although the policy was first met with criticism, throughout the last 30 years after the implementation, Sweden has not only been able to cut its carbon emissions but also retain solid GDP growth. Moreover, in 2023, renewable energy sources accounted for almost 70% percent of the total energy consumed in Sweden. These remarkable achievements make Sweden the leading example in combating climate change.

Thailand

Thailand is one of the developing countries with a growing economy, which has led to increased carbon emissions and energy consumptions in the last few decades. Thailand's NDC mainly contains targets for carbon neutrality by 2050 and net zero greenhouse gas emissions by 2065. Currently, Thailand's strategic goals heavily rely on CCS technology and LULUCF (Land Use-Land Use Change and Forestry) sinks; however, because CCS technology in Thailand has proven neither its full effectiveness nor its economic viability, it is crucial to prioritize immediate emission reductions and the development of the renewable energy sector over seeking methods for artificial carbon removal.

Uganda

Uganda's NDC presents a target of reducing GHG emissions by 24% until 2030. However, along with the need to cut its emissions, it should be noted that because Uganda's economy is highly dependent on agriculture, the devastating consequences of climate change such as prolonged drought and extreme weather events are making lives of those in Uganda even more challenging. Not to mention, the rate of forest cover is decreasing by 2.6% annually, which is one of the fastest in the world, primarily due to high demand for wood fuel and lack of access to alternatives that are energy-efficient. In fact, more than 80% of rural households uses firewood for cooking, meaning that the forest cover in Uganda is in danger of persisted degradation. Therefore, poverty and climate change should not be seen as separate issues but rather as intertwined, since providing alternatives of wood fuel such as providing households with energy saving stoves for cooking and solar system for lighting should be prioritized.

United Kingdom

In 2022, The United Kingdom became the first major economy to reduce its emissions by 50 percent since 1990—while also achieving significant economic growth by 79%. This substantial decline was made possible largely due to transitioning from coal to renewables, cutting emissions from energy generation. However, the UK's Climate Change Committee (CCC) highlights the need for a rapid and significant scale up in the renewable-energy industry, which currently is very much in its infancy, concerned by its worryingly sluggish recent progress. Therefore, for further decarbonisation, more investments to facilitate the development of the emerging technologies used for carbon capture and hydrogen production would be crucial.

United States of America

Historically the largest GHG emitter and the world's largest oil and gas producer, the United States of America recognizes its significant contribution to climate change and is now actively engaged in climate initiatives. The US recently achieved credibility in passing the President's Inflation Reduction Act (IRA) of 2022, the single largest investment in energy, and rejoining the Paris Agreement; however, as the US compromises the achieving its NDC and continues to support the fossil fuel industry, the credibility it attained is being greatly undermined. As of 2022, the US not only has achieved only one third of its targets for emission reductions but also continued to reach the highest rates of oil and gas production and exports. Therefore, in order for the US to secure its place as a world leader in domestic clean energy manufacturing, efforts for a more pronounced reduction of GHG emissions and transition to renewables are indispensable.

Venezuela

Venezuela's carbon emissions from fossil fuels and industrial production were reduced by a third, from almost 200 million tons in 2013 to just under 62 million in 2020. This seems to be a huge leap towards low carbon development superficially, but, in reality, this decline was resulted from the sanctions from the United States in 2019 not a government driven clean energy push. In fact, Venezuela's reliance on oil did not wane, and the forest sector failed to reduce forest degradation; president Nicolas Maduro's administration is searching for new oil partnerships, both business and individuals are becoming increasingly reliant on fossil-fuelled generators for electricity, and many forests have been cleared for agriculture and pasture activities. Because the country is undergoing a prolonged economic challenge, forming partnerships would be conducive to support its energy transition from coal.

Possible Solutions

Financial Assistance to Encourage Carbon Removal and Reduction

Despite having the willingness to achieve carbon neutrality, numerous countries struggle to make substantial progress towards the goal due to the concomitant economic burden. Implementation of mechanisms including carbon credits, carbon sequestration, and transition to renewable energy sources can require significant amounts of money as well as putting the fossil fuel-dependent economy at risk. Hence, countries must seek ways to eliminate this concern by providing sufficient financial assistance to countries or organizations in need. The assistance can be manifested through government subsidies given to business within the nation, or funds and foreign aids provided to other countries. Measures to support and further incentivise nations and companies implementing carbon removal and reduction mechanisms will alleviate concerns for its economic impact.

Preservation and Restoration of Ecosystems and Biomes

As a consequence of climate change triggered by the massive carbon emissions, a myriad of ecosystems and biomes across the world have been severely affected. Countries must therefore prioritize reviving and protecting the natural environment, specifically since it also serves as a crucial source of natural carbon sequestration. Some essential actions include imposition of stricter government policies and regulation, investment for environmental protection, etc. Countries could also consider strengthening international cooperation, bridging gaps between countries that lack pragmatic actions and nations already demonstrating effective efforts of environmental protection. Through various initiatives, countries that rely heavily on natural resources will be able to undermine the economic impact of climate change while simultaneously growing their natural carbon sinks.

Questions to Consider

1. Could countries gain economic benefit from the environment while simultaneously protecting it?
    a. Should countries choose between economic growth and reduction of carbon emissions, or could they achieve both? If so, how?
2. What were the climate initiatives effective in your country and how can it be implemented in other countries?
3. How could the government cooperate with corporations to effectively reduce carbon emissions?
4. What could we learn from the Paris Agreement to ensure that countries are maintaining unwavering commitment to carbon reduction?

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