

Strengthening International Legal and Institutional Systems Governing Climate Change and Pandemic Disease

Zhangjie Lou^{1,a}, Qingyuan Liu^{2,b}, Yicheng Wang^{3,c}, Chenxi Yang^{4,d}, Mucheng An^{5,e,*}

¹*Indian springs school, 190 Woodward Drive, Pelham, Alabama.*

²*Law school, Shandong University of Finance and Economics, 7366 Erhuan Dong Lu, 250014 Lixia, Jinan, Shandong, China.*

³*Basis international school Park Lane Harbour, Jingtuan North Road, Park Lane Harbour, Daya Bay, Huizhou, Guangdong, China,*

⁴*Nansha College Preparatory Academy, 11 Gangqian Avenue, 511466, Guangdong, China.*

⁵*Beijing International Bilingual Academy, 1 Yumin Road, 101300 Shunyi, Beijing, China*
e. stephanieacurl@gmail.com

**corresponding author*

Abstract: The paper focus on two significant issues-pandemic disease and climate change-to analyze possible ways in which the systems' governing on global issues can be strengthened. After comprehensive analysis on existing frameworks and international situations, the paper concludes that international legal and institutions systems governing climate change and pandemic disease can be enhanced by building on existing treaties and institutions. More specifically, international legal and institutions systems can be refined through amending and reforming areas of weakness within their structures, dedicating more financial aid to underdeveloped countries, and creating regional treaties, plans, and institutions to constantly adapt to new challenges.

Keywords: International laws, International institutions, climate change, COVID-19, reform.

1. Introduction

As the world become increasingly interconnected, international legal and institutional system are vital in securing global stability and facilitating the world's future development. International law and international institutions ought to help with promoting cooperation between nations and reducing conflict; however, last year's pandemic disease, international organizations and international law did not effectively prevent the spread of the epidemic or combat the epidemic. Meanwhile, Accelerating global warming, attributed to excessive CO2 emission by human activities, has already had an evident impact on the environment, albeit international systems are working to fix the threatening problem is failing. Hence, it is urgent to improve international legal and institutional systems by fixing loopholes and optimizing mechanisms.

2. Pandemic Disease

2.1. Reforming the WHO

As the world become increasingly interconnected, international legal and institutional system are vital in securing global stability and facilitating the world's future development. However, last year's pandemic disease, international organizations and international law did not effectively prevent the spread of the epidemic or combat the epidemic. Hence, it is urgent to improve international legal and institutional systems by fixing loopholes and optimizing mechanisms.

1). *What do WHO do in pandemic disease*

WHO (World Health Organization)'s goal is a future in which all people, regardless of race, religion, rich or poor, have the same right to health. In UN News, the official explanation of why WHO is needed is as follows. First, WHO can help countries prepare for and respond to outbreaks. WHO publishes preparedness for response and action, collecting data and information to help countries develop guidelines on how to deal with the virus. It has six regional offices and 150 country offices working closely with governments around the world to address the spread of the virus [1]. Secondly, WHO has authoritative scientists and teams to provide the most accurate information and data to countries. Finally, WHO distributes and transports supplies to ensure that poor and emergency countries have access to resources and research for vaccines. In the event of a sudden spread of a virus, WHO can respond quickly. By cracking down on misinformation and handing out billions of vaccines in COVAX. The WHO has an important role to play in addressing infectious diseases and scaling up disease interventions.

2). *Problem 1: Lack of funding*

But despite this, the WHO has receive many critics, and many want reform. First of all, the WHO needs to be reformed so that it has more money. WHO critics agree that its funding is insufficient to allow it to tackle urgent global infectious diseases, including AIDS and COVID-19. WHO has a deposit of 250 million US dollars, and only 20% of its annual budget comes from accessible contributions, while the remaining 80% is voluntary contributions, indicating that WHO does not have stable funds to protect global health [2]. Because WHO is an international organization composed of member countries, each country has a say in the World Health Assembly (WHA), the highest decision-making body. As a result, they can choose to donate, which leads to the underfunding of who. With insufficient contributions from member countries, the WHO has come to rely on voluntary donors. The main goals of donors often conflict with those of member states, such as the U.S. government and the Gates Foundation. The Gates Foundation, as a donor, will use the money for its purposes first, not for WHO's sake. With only 30 percent of the funds at their disposal, they spend it according to the needs of their donors, and cannot use it to deal with global problems and emergencies. So one way to change WHO is to increase its fund so that it can be directed and used more effectively to respond to pandemic and other events.

3). *Solution 1: Increase flexible funds*

Among the income sources of WHO, though the assessed contribution is the main one, as the fee is paid by various member states, each country will pay different fees according to its own wealth, and their approval needs to be agreed in the World Health Assembly. Therefore, it is quite difficult to improve assessed contribution. However, WHO can increase its voluntary contributions and get more countries on board by making national commitments to health coverage. Although many voluntary contributions will prioritize their needs, WHO can increase the unconditional voluntary contribution, meaning that the money is flexible and available to WHO. Although WHO also received \$190 million from Germany, Japan and the European Commission for strategic participation in 2013, it was still far from the WHO's target of \$3 billion [3]. Therefore, in the future, WHO can increase its own flexible fund, which can be used for emergency funds, so that they can respond to

disease outbreaks and respond more quickly. By telling private and public institutions about the benefits of investing in WHO, more expertise, less risk, and better health, WHO can attract more people to invest and increase unconditional investment, so that WHO can better use the epidemic response.

4). Problem 2: Deficiencies in management

In addition, WHO has serious deficiencies in its management. WHO could have declared a global emergency earlier, but it did not, resulting in more than 3.3 million novel Coronavirus deaths worldwide. Similarly, in the article COVID-19 and International Law Series: Reforming the World Health Organization, WHO's slow progress in declaring COVID-19 an international emergency is a measure of its policy failures. In this epidemic, when the disease was found in Wuhan for the first time, the Chinese government immediately notified WHO, but WHO did not realize the seriousness of the epidemic and concluded that it was not a threat [4]. The WHO did not recognize COVID-19 as a global problem until it began to spread to other countries, which led to delays in the prevention of COVID-19. It all comes down to the futility of the IHR(International Health Regulations) and the weakness of the legal framework. The IHR cannot compel all countries to comply, and many failed to meet standards for preparedness until the outbreak began. Less than half of countries comply with and meet standards for national discovery and reporting of up-to-date outbreak information and records. Having a new leader could help the WHO work better with other countries [5].

5). Solution 2: Improve management level

The WHO secretariat has been criticized for not being able to make decisions quickly enough to deal with the virus in its response to the coronavirus pandemic because of a lack of leadership to make decisions at critical moments. Therefore, in order to reform, the WHO management level should have a more decision-making leader to lead the development of WHO. The management system should be improved so that WHO staff can be more unified and leaders can have more say, so that WHO can complete statements and take countermeasures more quickly [6]. Moreover, due to the defects of the International Health Regulations, there is no way for member states to coordinate with each other to control the spread of the epidemic. WHO should also improve the international health regulations and implement stronger sanctions. To enable countries and member states to better coordinate their actions with WHO and report international emergencies and cases, otherwise countries that do not comply with the rules will be severely punished.

2.2. Vaccine Supply and Distribution

1). What Went Wrong with COVAX

COVID-19, a novel disease, as ruthless as it is seemingly random, has picked thousands of people off. While the developed countries spent billions of money on the research and development of vaccines, not many actions could be taken up by the lowest-income countries. Coordinated by CEPI, Gavi, and WHO, COVAX aims to ensure global equitable Covid-19 delivery of diagnostics, treatments and vaccines to developing countries [6]. To make it come true, COVAX will act as a platform. By joining COVAX, both funded countries and self-financing countries will get access to vaccines.

This plan seems completely reasonable, however, it failed to be carried out well as it was supposed to be. Initially, COVAX planned to provide 2 billion doses by the end of 2021. As of September 8, however, it had only delivered 243 million doses, far away from the expected target [7]. Supply bottlenecks and distribution issues complicated the COVAX. COVAX needs both more funds and political resources and this system now is inadequate to get vaccines for all those countries who need them.

2). Financial and Supply Predicament of COVAX

COVAX is the only global solution to this pandemic since it is the one truly effort to ensure that COVID-19 vaccines will be available for people all around the world regardless of wealth. To make it come true, more funds are supposed to be raised for vaccine production and distribution. However, vaccine nationalism, self-interest, unequal access to limited supply—made COVAX hard to be realistic. While COVAX struggled to raise funding, wealthy countries adhere to their own profits, signing unilateral deals and buying up limited supply [8].

The primary function of a sovereign state is to protect the interests of its own citizens while COVAX is always fighting against that. Even many countries assured to be part of the initiative [9], the promise were slow to be turned into real financial contributions. The promise of COVAX “Vaccines delivered as soon as they are available” seems like unrealized.

The implement of COVAX cannot be divorced from the funds and donations from wealthy countries. However, the situation of funds lacking would not be essentially improved until the high-income countries acquire the elementary inner protection for themselves. Some high-income countries, particularly China and the U.S. , initially expressed to be out of COVAX completely. It was naïf for some leaders of COVAX’ to even believed that wealthy states would whole-heartedly advocate this mechanism. For the U.S, the goal for 20% vaccination by the end of 2021 would never be regarded as a success .“Having such a low target perpetuated this injustice.” says Mark Eccleston-Turner, a medical law and ethics expert at Keele University in the U.K.

3). Issues of Distribution Efficiency

Here is a concern about substantial fairness and efficiency: Why were all states set to get the same proportion of vaccines, while requirements varied completely? Some experts say it would be more reasonable to distribute vaccines considering the severity of COVID-19 outbreaks in different states, rather than base on a rigid proportion. However, it is unpredictable when or if a country will face a pandemic in the future. But under the framework of same proportional number of vaccines, just as WTO mentioned, “Everyone, everywhere who could benefit from safe and effective COVID-19 vaccines should have access as quickly as possible, starting with those at highest risk of serious disease or death.” [10]. By this rule fairness, the essential fairness is available to be achieved.

It should be aware that even COVAX with achievable percentage that vaccinated 20% of countries populations, there is no guarantee that all countries in need will have the ability to use all vaccines it is given [11]. Up to now, lots of low-income countries that have received doses from COVAX have wasted large quantities of vaccines because the lack of health infrastructure and cold storage to reserve and distribute them [12]. Some vaccines even need to be stored at the temperature as low as -80°C.

4). Solutions for bottlenecks of fund and distribution

In this era of globalization, we are all in the same boat. A pandemic disease would not to be vanished until the last confirmed case recovered. The domestic protection for the citizens in wealthy countries is not permanent and reliable enough. The worldwide pandemic would come to the end only when the lowest-income countries get enough doses of vaccines. At this time, only if wealthy countries accept more responsibility, the predicament will be broken through. Sovereign states just need to take a bit of a shift in mindset to see the bigger picture and recognize that getting vaccines to all people around the world is veritable in their best benefits.

To prevent the lack of fund when facing the global pandemic disease in the future, a complete mechanism should be created. For example, assess contributions and fixed percentage of vaccines should be donated could be written down as the rules of this mechanism. It could be an attempt to make the plan of global cooperation running well when facing the next public health emergency.

It is not COVAX’s fault that many states even do not have the infrastructure for public health, distribute and manufacture vaccines [13]. Global health institutions should focus on building out

public-health infrastructure and manufacturing in in-need states, rather than just buying in and offering doses that some low-income countries do not have the ability to use even to their full extent. This is the efficient long-term solution for the promotion of efficiency.

3. Climate Change

3.1. Refining the Climate Negotiation Process in the UNFCCC

1). How can we refine the climate negotiation process to spur adequate action?

Climate change, as one of the most prominent transnational challenges facing nations today, is increasingly recognized as a central issue to address in international relations. However, the climate negotiation process has been criticized as being unable to deliver and too slow. The remainder of this essay will posit that 1), given the current state of the climate crisis, the climate negotiation process is failing to spur adequate action. 2), through reforming the decision-making process by exploring alternatives to consensus in the form of majority voting, states would be working towards strengthening pre-existing systems and fixing a failing global effort.

To truly understand the state of the climate negotiation process, one must recognize the primary legal and institutional convention, the United Nations Framework Convention on Climate Change. In the groundbreaking Rio Earth summit, 1992, the foundation for future accords was established with the United Nations Framework Convention on Climate Change [14]. As of 2019, 192 countries have ratified, attending meetings that aim to stabilize the concentration of greenhouse gasses in the atmosphere. These meetings are known as the Conference of Parties [15,16].

The key agreements formed during COP meetings include the Kyoto Protocol and the Paris Agreement. An unquestionably important first step in transnational climate diplomacy was the Kyoto Protocol in 1997. The protocol mandated industrialized states and unions to cut emissions to 5%, exempting 100+ developing nations from the treaty. The protocol also established an ambitious system of cap and trade, binding reductions of greenhouse gas emissions whilst creating a market for emissions [17]. However, as the treaty was a voluntary agreement, states were free to sign and withdraw as they pleased. The U.S and Canada withdrew from the treaty [18], two significant countries in the coverage of emissions [19]. Peter Kent, an environmental minister, said that Kyoto's goals were "unworkable" because of a lack of coverage in emissions [20].

The Paris Agreement, COP 21, 2015, is often seen as the most significant global climate agreement in history. The "nationally determined contribution" targets were clearly inconsistent with the goal of keeping the temperature increase below 2° celsius; following COP 23, the UN environmental program found that if countries were to stick to their pledges, the earth would get "at least three° celsius warmer by 2100 relative to preindustrial levels." [21]. The most recent COP, COP 26 in Glasgow, has seen a positive change, with new national commitments potentially limiting the around 2.4° Celsius. Despite this, there is still a "massive credibility, action and commitment gap," [22], as this well exceeds the temperature target of 1.5° in the Paris Agreement.

It can be seen that the legal and institutional systems currently in place suffer from many failures. As it stands, the UNFCCC is likely not capable of facilitating significant climate breakthroughs. Although the UNFCCC looks to be the central point for climate negotiations for the foreseeable future, this does not mean the processes of the status quo are the only means to deliver progress.

2). Reforming the Process by Weighing Consensus and Majority Voting

The procedure that we're following has in fact come into conflict with the complexity of the issues we discuss," the representative of the Russian Federation said in the final hours of the Warsaw conference [23]. Each year, the UNFCCC, the Kyoto Protocol, and the Paris Agreement make decisions for better implementation of the treaties through their respective decision-making bodies:

the COP, the CMP, and the CMA [24]. These decision-making bodies use consensus, where every country is effectively given veto power.

Reaching consensus is a process that requires significant time and effort to an extent that is sometimes even impossible to achieve. If it is achieved, it is likely to be the lowest-common-denominator outcome. The nature of the UNFCCC makes it inevitable that parties with a large range of varied interests would create an interconnected decision-making process, one that is founded on the trade off of different interests and issues. This diversity of interests results in the negotiation process being weighed down and stalled by lofty ambition.

There are many examples of consensus inhibiting the decision-making process within the UNFCCC. In 2013, Russia's veto delayed the Bonn negotiations by 2 weeks. At COP 24, 2018, the U.S, Russia, Saudi Arabia, and Kuwait vetoed the IPCC report from being welcomed. At the Copenhagen conference, a small number of countries prevented the adoption of the Copenhagen accord [25]. Impeding the way forward to substantial progress, consensus is a significant procedural weakness.

A suitable reform would be to develop majority voting either as a replacement for consensus or as an added measure to ensure effectiveness. Many influential and effective multilateral climate change institutions operate on frameworks that are not solely dependent on consensus. The Convention on International Trade in Endangered Species, and the Montreal Protocol on Substances that Deplete the Ozone Layer uses majority voting for procedural decisions and a two-thirds majority for all other decisions. The Parties to the International Whaling Convention uses consensus, but resorts to majority voting when consensus cannot be reached [25-26].

While the feasibility of implementing such a reform is a concern, it should be possible. There have been proposals made in the past to amend the constitution of the UNFCCC from Papua New Guinea and Mexico [27]. This proposal garnered support from many developing countries, as well as the E.U, but failed to make notable progress. The most feasible way to move beyond consensus would be to adopt the original draft rules of procedure [28]. The UNFCCC has operated under no formal rules for 20 years. Originally rejected by Saudi Arabia, the draft contained a majority voting process. Though the draft rules of procedure required consensus for it to be adopted, consensus was not officially defined [29], allowing for the potential of implementation given the will to. Another alternative would be applying the voting mechanism to procedural decisions, similar to CITES and MPDOL [30]. This would allow countries that are accustomed to veto power to maintain their trust in the legitimacy of the climate negotiations.

3). Conclusion

This paper has argued that the procedures for climate negotiations within the UNFCCC do not work. The climate negotiations are struggling to reach decisions that are necessary to prevent catastrophe, with existing pledges being far from enough. Consensus, as it exists within the current system, suffocates ambition and stagnates progress. Considering the alternative proposals made by Mexico and Papua New Guinea to the morass of consensus, the unadopted draft rules of procedure, and the numerous institutions that pave the way with effective consensus and majority voting systems, implementing reforms that develop majority voting either as a replacement for consensus or as an addition to it is feasible, and could help facilitate or even spur international action. Under these challenging time horizons, any procedural roadblock puts vulnerable groups closer to catastrophic disaster. It is crucial to fix this failing global effort by reforming the negotiation process within the UNFCCC.

3.2. Adjusting International Law System and Institutions to Cover the Needs of Climate Refugees

1). Introduction

In recent decades, scientists discovered the causality between climate change and human mobility, raising nations' attention on climate-induced forced migration. In 1990, IPCC's first assessment report on climate change has addressed that the adverse effect of climate change "could initiate large migrations of people" [31]. Those victims of climate change are referred to as "climate migrants".

As defined in the Cambridge dictionary, climate migrants are people who "move to a new country or area because climate change has made it very difficult for them to continue to live or work where they are" [32]. The term is aggravated to "climate refugees" when the relocation is forced by external environmental factors. However, the current international protection for climate refugees is inadequate as the obscurely defined group is excluded from international law protection and capable nations that can help hold a paradoxical attitude toward refugees. This paper aims at analyzing the predicament of climate refugees and will provide suggestions about amending existing policies and creating new mechanisms to resolve the challenges climate refugees faced based on the analysis.

2). Scope of the problem

Climate disasters' destructive impact on living conditions and disruption of social order has already been a reality with the support of substantial evidence from international institutions and local governments, as based on an estimation of the Internal Displacement Monitoring Center (IDMC), at least 22.5 million people were relocated annually on average between 2008 and 2014 due to the direct danger or effects of floods, landslides, storms, wildfires, and extreme temperatures on their safety, homes, and livelihoods [33].

Additionally, climate change can catalyze and elongate climate disasters [34]. The effect may be slow-onset, nevertheless, it will prompt a massive displacement of people in vulnerable regions, threatening global stability in the near future. Research by the World Bank indicates that by 2050, there will be over 216 million people who relocate within their countries due to natural disasters related to climate change [35]. These vulnerable areas that exposed to environmental threats mostly located in developed countries, yet this fact doesn't alleviate the stress on developed countries since the low resilience towards environmental damage of developing countries will eventually lead to a massive influx of refugees to developed countries as shown by an analysis done by Ecological Threat Register [36]. The potential significant number of climate refugees will provoked social unrest and political discord globally if there isn't a functioning mechanism that deals with the climate migrants.

3). Challenges to resolving the problem of climate refugees

The situation and future of internally-displaced climate refugees were frequently addressed in international conferences and treaties, there are no binding laws that protect the rights of climate refugees who migrate across nations' border in the existing international law system. Climate refugees are not even officially acknowledged by any conventions or treaties because they don't satisfy the criteria of refugees described in the Refugee Convention, in which "refugees" are defined as people who flee their counties "owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion", excluding those who relocate due to environmental factors.

Besides the structural deficiency in international law system, the reluctant attitude toward accepting refugees of some capable countries also strangled the progress in solving the issue. The refusal to refugees is not a newly-emerged issue, but one that has already appeared in the past refugee crisis. In 2015, about 1 million refugees were poured into Europe. While the EU as a whole had received a large number of refugees, only a few countries had taken their responsibilities in providing asylum for the refugees. Most of the Eastern European countries had only accepted a number of refugees that was an equivalent of less than 0.05% of their population [37]. In addition, Asian countries also make minimal efforts in protecting refugees. Concluding from countries' historical attitude towards refugees and the current stagnant situation of climate refugees, it is likely that in the future the climate refugees may confront great difficulties in seeking for asylum from other countries.

Another fundamental problem is the financial and technological inabilities of the climate change affected countries in settling the internal climate refugees. Given the fact that most climate migration occurred domestically in today's world, the nations' economic stability plays a significant role in mitigating the current problematic situation. Unfortunately, 90 percent of people who are living in coastal areas at high hazard of rising sea levels originated from poor developing countries and small island nations [38], which implies the plight of the climate refugees, such that their countries are likely to be unable to offer them proper livelihood and safety.

4). Possible solutions to the problem

Facing the worsening future, it is urgent for international institutions and countries to refine existing mechanisms or add new complementary ones to cover the needs of climate refugees. For internally displaced climate refugees, financial aids from international institutions are helpful for national governments as it can assuage the financial stress on less-developed nations so that the relocated people's livelihood in new locations can be ensured. Some climate-related aids were distributed to sub-Saharan Africa, South Asia, and Asia-Pacific, yet they couldn't satisfy the immense gap in financial resources needed to address the issue [36]. Consequently, international institutions, namely UNHCR, should allocate more financial support to the countries to build their resilience to climate-related disasters.

To resolve the concern that climate refugees are not included in a normative international framework, the definition of refugees in the Refugee Convention should be adjusted. Specifically, the criteria used to determine whether a person is being forced to migrate should be modified. Instead of determining the nature of one's migration in accordance with the presence of immediate drives, the sustainability of the livelihood in the originated land of the migrated people should be assessed and become the determinant factor for their state of migration. The process of modifying the Convention can be inevitably burdensome, nonetheless, it may be the most ideal way to address the issue as it can grant the climate refugees a legitimate status without establishing a distinct category for them. A less ideal, yet more feasible plan is to creating regional treaties. The African Union Convention Governing the Specific Aspects of Refugee Problems in Africa and the Cartagena Declaration on Refugees in Latin America are two successful example in which definition of refugees were expanded to cover climate refugees in the region, proving the expediency of the mechanism, and thus The Pacific states, as well as the Southeast Asian nations, should work on drafting regional treaties to provide their climate refugees with legitimate protection.

In addition to possible structural amendments, convincing capable countries to pledge that they will accept climate refugees is necessary. To achieve this, a complete and workable normative framework is essential, which can be built through the possible approaches mentioned above and the continuous effort of international institutions such as the UN and G20.

5). Conclusion

Settling Climate refugees is a global issue that relates to global peace and stability. Not only the affected less-developed countries should take steps to solve it, but also all the countries that have contributed to climate change are obliged to respond to the issue by amending existing frameworks and developing new mechanisms. In the meantime, International institutions are responsible for strengthening the bond among countries and drafting global solutions to effectively utilize the capability of all countries.

3.3. Adaptation V.S Mitigation

From 2000 to 2019, environmental change and environmental change related occasions had caused around 9.4% of the worldwide passing. As indicated by Monash and Shandong University, it is assessed that in each 100,000 individuals there seems to be 74 overabundance deaths [39]. It is normal to cause north of 150,000 total mortality a year [40]. To manage the undeniably extreme environment

emergency, two fundamental ways have been proposed: climate change adaptation and climate change mitigation. Climate change adaptation alludes to the means to adjust to the current environmental change, while climate change mitigation alludes to the headway individuals made to lessen outflow, or even concentrate ozone harming substances from the atmosphere [41]. Two arrangements each had their advantages, and a few downsides that made it difficult for specific nations to make it. In spite of the fact that environmental change is a worldwide emergency, developed countries ought to subsidize more to assist less developed nations with managing climate change and its effect, since environmental change variation is unreasonably expensive, environmental change moderation might sting a few nations' economy, and created nations are proficient and dependable to give reserves and tackle the issue.

Most importantly, numerous nations that are compromised by environmental change can't manage the cost of climate change adaptation. One serious issue of climate change adaptation is that it is costly. For developing nations, the yearly adaptation cost is assessed to be 70 billion USD. This is supposed to ascend to 140-300 every 2030 and practically twofold in 2050 [42]. So, numerous unfortunate nations that simultaneously are undermined by serious environmental change harm truly need to make sense of a way. For instance, in the Pacific Ocean there is a little nation called Tuvalu. It has an extremely low ocean level of 15.09 inches. The typical ocean level is just 2 meters and is assessed to be quite possibly the earliest country to be affected by environmental change and ocean level ascent. Researchers foresee that the whole Island will be inhabitable in the following 50-100 years [43]. This makes adaptation exceptionally pressing for Tuvalu. Nonetheless, it is remarkably difficult for them to bear the cost of the assessed 300 million dollars transformation plan with their poor GDP of just 48.86 million dollars [43, 44]. For Tuvalu, the dire need of environmental change transformation can not be satisfied by their own economy, and they will require the whole world to help them out of the danger. Tuvalu isn't simply the main country that can't shield from environmental change. According to the International Institute for Environment and Development, 46 of the world's most underdeveloped nations can't safeguard themselves against climate change financially [45]. This most certainly is a gigantic issue, and the United Nation ought to sort out ways of expanding fundings to safeguard immature nations.

Comparing to climate change adaptation, climate change mitigation might sting a few nations' economies. The fundamental issue for climate change mitigation is that it should require the worldwide "consensus" to be effective. If half of the nations on the planet are cutting emissions while the others are keep creating greenhouse gases, the mitigation plan will barely arrive at its objective. Along these lines, to accomplish the worldwide agreement, most nations sit down together at the Paris Agreement in 2014 and had a consent to cut emissions. Nonetheless, this doesn't mean the main issue is settled. It will be extremely difficult for the whole world to accomplish worldwide agreement since there are as yet numerous nations that vigorously depend on non-renewable energy sources. Petroleum derivative is as yet the most involved asset on the planet. In America, around 81% of its energy emerged from oil, coal, and natural gas [46]. As indicated by BP Statistical Review of World Energy 2020, in the World, 84% of the energy necessities are likewise satisfied by petroleum product, principally oil, coal, and natural gasses [47]. The absolute market for petroleum derivative is 1.5 trillion of every 2018 and estimated to be over 2.2 trillion by 2023 [48]. Slicing emission is most certainly going to essentially hurt a few nations' economies. For instance, Saudi Arabia is the biggest oil exporter of the world. It offers more than 12% of the aggregate sum of oil in the world [49]. In its economy, half of the GDP and 70% of the commodity income are connected with oil sectors [50]. For Saudi Arabia as well as numerous different nations in the Middle East Area, slicing emission and changing to environmentally friendly power may be a hard strike on their economies. Hence, they will likewise require help from created nations to assist them for certain new business sectors, fundings to change to another economy simpler, or depend less on non-renewable energy sources.

After all, developed nations are really doing ineffectively at adequately giving, not even adequate, fundings to help different nations out of this emergency that is mostly brought about without anyone else. There are still much more developed nations can do, and they ought to do.

Climate Change Adaptation focuses on short term effects, while Climate Change Mitigation considers the future conditions more. However, either one requires the entire world to work together and help each other. For underdeveloped countries who are in urgent need of adaptation, there should be more developed countries that are willing to help. For countries that heavily rely on Fossil fuel industries, there should be more policies or fundings that helps them transform. Climate change is a vital issue, and only when the entire world is working together can we solve the problem.

4. Conclusion

To strengthen the governance of the global commons like climate change and pandemic disease, the international legal and institutional system should be ruled by mandatory treaties, and the weakness of the structure should be reformed. Besides, more financial aid is supposed to be raised for developing countries. It is also efficient to sign regional treaties, and create new institutions as preparation for new challenges in the future.

Reference

- [1] *5 reasons the world needs WHO, to fight the COVID-19 pandemic.* (2020, April 9). UN News. <https://news.un.org/en/story/2020/04/1061412>
- [2] *devex.com.* (2020, August 5). Devex. <https://www.devex.com/news/opinion-5-ways-to-reform-the-world-health-organization-97843>
- [3] *Funding.* (2021). World Health Organization. <https://www.who.int/about/funding>
- [4] *WHO and the future of disease control programmes.* (2013, February 2). Public Health. https://www.who.int/neglected_diseases/WHO_future_of_disease_control_prgrs.pdf
- [5] *devex.com.* (2017, May 15). Devex.Com. <https://www.devex.com/news/5-ways-to-boost-cooperation-in-global-health-90222>
- [6] *Hathaway, O.* (2020, December 11). *COVID-19 and International Law Series: Reforming the World Health Organization.* Just Security. <https://www.justsecurity.org/73793/covid-19-and-international-law-series-reforming-the-world-health-organization/>
- [7] *"COVAX Explained."* Gavi, the Vaccine Alliance, www.gavi.org/vaccineswork/covax-explained.
- [8] *"Covid-19: Gavi Steps up Response to Pandemic."* Gavi, the Vaccine Alliance, www.gavi.org/news/media-room/covid-19-gavi-steps-response-pandemic.
- [9] *"Beyond COVAX: The Importance of Public-Private Partnerships for Covid-19 Vaccine Delivery to Developing Countries."* Beyond COVAX: The Importance of Public-Private Partnerships for Covid-19 Vaccine Delivery to Developing Countries | Center for Strategic and International Studies, 10 Jan. 2022, www.csis.org/analysis/beyond-covax-importance-public-private-partnerships-covid-19-vaccine-delivery-developing.
- [10] *"Coronavirus Disease (COVID-19): Vaccine Access and Allocation."* World Health Organization, World Health Organization, [www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-\(covid-19\)-vaccine-access-and-allocation](http://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-(covid-19)-vaccine-access-and-allocation).
- [11] *"Launch of Gavi's COVAX Commitment - United States Department of State."* U.S. Department of State, U.S. Department of State, 16 Apr. 2021, www.state.gov/launch-of-gavis-covax-commitment/.
- [12] *Ducharme, Jamie.* "What Went Wrong with COVAX, the Global Vaccine Hub." *Time*, Time, 9 Sept. 2021, time.com/6096172/covax-vaccines-what-went-wrong/.
- [13] *"COVAX."* World Health Organization, World Health Organization, www.who.int/initiatives/act-accelerator/covax.
- [14] *United Nations.* (n.d.). *United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992.* United Nations. Retrieved December 25, 2021, from <https://www.un.org/en/conferences/environment/rio1992>
- [15] *Council on Foreign Relations.* (n.d.). *Global climate agreements: Successes and failures.* Council on Foreign Relations. Retrieved December 25, 2021, from <https://www.cfr.org/backgrounder/paris-global-climate-change-agreements>

- [16] Council on Foreign Relations. (n.d.). *Timeline: Un climate talks*. Council on Foreign Relations. Retrieved December 25, 2021, from <https://www.cfr.org/timeline/un-climate-talks>
- [17] Nordhaus, W. (2021, November 5). *The climate club*. Foreign Affairs. Retrieved December 25, 2021, from <https://www.foreignaffairs.com/articles/united-states/2020-04-10/climate-club>
- [18] Council on Foreign Relations. (n.d.). *Global climate agreements: Successes and failures*. Council on Foreign Relations. Retrieved December 25, 2021, from <https://www.cfr.org/backgrounder/paris-global-climate-change-agreements#chapter-title-0-3>
- [19] Cable News Network. (2021, March 18). *Kyoto Protocol Fast Facts*. CNN. Retrieved December 25, 2021, from <https://edition.cnn.com/2013/07/26/world/kyoto-protocol-fast-facts/index.html>
- [20] Council on Foreign Relations. (n.d.). *The debate over Greenhouse Gas Cap-and-Trade*. Council on Foreign Relations. Retrieved December 25, 2021, from <https://www.cfr.org/backgrounder/debate-over-greenhouse-gas-cap-and-trade>
- [21] Greshko, M. (2021, May 3). *Current climate pledges aren't enough to stop severe warming*. Science. Retrieved December 25, 2021, from <https://www.nationalgeographic.com/science/article/paris-agreement-climate-change-usa-nicaragua-policy-environment>
- [22] Reflecting on COP26: What were the key outcomes? The Law Society. (n.d.). Retrieved December 25, 2021, from <https://www.lawsociety.org.uk/topics/climate-change/reflecting-on-cop26-what-were-the-key-outcomes>
- [23] Second Review of the Adequacy of Article 4.2 (A) and (B) of the Convention. Unfccc.int. (n.d.). Retrieved December 25, 2021, from <https://unfccc.int/process-and-meetings/the-convention/history-of-the-convention/second-review-of-the-adequacy-of-article-42-a-and-b-of-the-convention>
- [24] Luke Kemp PhD Candidate in International Relations and Environmental Policy. (2021, December 22). *Votes, not vetoes: A new way to cut a United Nations Climate deal*. The Conversation. Retrieved December 25, 2021, from <https://theconversation.com/votes-not-vetoes-a-new-way-to-cut-a-united-nations-climate-deal-24288>
- [25] United Nations. (n.d.). *United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992*. United Nations. Retrieved December 25, 2021, from <https://www.un.org/en/conferences/environment/rio1992>
- [26] Intergovernmental Panel on Climate Change, *Climate Change: The 1990 and 1992 IPCC Assessments: IPCC First Assessment Report Overview and Policymaker Summaries and 1992 IPCC Supplement*, 1992.
- [27] UNFCCC. (n.d.). Retrieved December 25, 2021, from <https://unfccc.int/resource/docs/2011/cop17/eng/04r01.pdf>
- [28] Swann, L. K. & T. (n.d.). *Part I: Our flawed fortune: Should we persist with the UN climate negotiations?* Youthpolicy.org. Retrieved December 25, 2021, from <https://www.youthpolicy.org/blog/sustainability/1-should-we-persist-with-unfccc/>
- [29] Kemp, L. (n.d.). *Votes not vetoes: A new way to cut a UN climate deal and create momentum on Climate Change*. Youthpolicy.org. Retrieved December 25, 2021, from <https://www.youthpolicy.org/blog/sustainability/unfccc-voting/>
- [30] *What reforms does the UNFCCC expert review process need to prevent the Paris Agreement from failing? - GHG and Carbon Accounting, Auditing, Management & Training: Greenhouse Gas Management Institute*. GHG and Carbon Accounting, Auditing, Management & Training | Greenhouse Gas Management Institute. (2019, May 22). Retrieved December 25, 2021, from <https://ghginstitute.org/2019/05/22/what-reforms-does-the-unfccc-expert-review-process-need-to-prevent-the-paris-agreement-from-failing/>
- [31] Intergovernmental Panel on Climate Change. (1992) *Climate Change: The 1990 and 1992 IPCC Assessments: IPCC First Assessment Report Overview and Policymaker Summaries and 1992 IPCC Supplement*,
- [32] Cambridge Dictionary, "Climate Migrant." <https://dictionary.cambridge.org/dictionary/english/climate-migrant>.
- [33] World Meteorological Organization. (2020) *Disaster-Related Displacement in a Changing Climate*. <https://public.wmo.int/en/resources/bulletin/disaster-related-displacement-changing-climate>.
- [34] NASA (2021) *The Effects of Climate Change*. <https://climate.nasa.gov/effects/>.
- [35] World Bank (2021) *Groundswell Report*. <https://www.worldbank.org/en/news/press-release/2021/09/13/climate-change-could-force-216-million-people-to-migrate-within-their-own-countries-by-2050>.
- [36] Institute for Economics and Peace (2020) *Ecological Threat Register* <https://www.economicsandpeace.org/wp-content/uploads/2020/09/Ecological-Threat-Register-Press-Release-27.08-FINAL.pdf>.
- [37] Eirik Christophersen (2020) *A Few Countries Take Responsibility for Most of the World's Refugees*. <https://www.nrc.no/shorthand/fr/a-few-countries-take-responsibility-for-most-of-the-worlds-refugees/index.html>.
- [38] Tetsuji Ida (2021) *Climate Refugees – the World's Forgotten Victims*. World Economic Forum, <https://www.weforum.org/agenda/2021/06/climate-refugees-the-world-s-forgotten-victims/>.
- [39] Lombrana, Laura Millan. Bloomberg.com, Bloomberg, <https://www.bloomberg.com/news/articles/2021-07-07/climate-change-linked-to-5-million-deaths-a-year-new-study-shows>.
- [40] "Climate Change." World Health Organization, World Health Organization, 7 Dec. 2010, <https://www.who.int/heli/risks/climate/climatechange/en/>.

- [41] "Climate Change Adaptation and Mitigation." NASA, NASA, 23 Aug. 2021, <https://climate.nasa.gov/solutions/adaptation-mitigation/>.
- [42] "Step up Climate Change Adaptation or Face Serious Human and Economic Damage – UN Report." UN Environment, <https://www.unep.org/news-and-stories/press-release/step-climate-change-adaptation-or-face-serious-human-and-economic>.
- [43] "'One Day We'll Disappear': Tuvalu's Sinking Islands | Eleanor Ainge Roy." *The Guardian*. *Guardian News and Media*, May 16, 2019. <https://www.theguardian.com/global-development/2019/may/16/one-day-disappear-tuvalu-sinking-islands-rising-seas-climate-change>.
- [44] "GDP (Current US\$) - Tuvalu." *Data*. Accessed December 24, 2021. <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=TV>.
- [45] Khadka, Navin Singh. "Climate Change: Low-Income Countries 'Can't Keep Up' with Impacts." *BBC News*, *BBC*, 7 Aug. 2021, <https://www.bbc.com/news/world-58080083>.
- [46] "The National Academies Presents: What You Need to Know about Energy." *Fossil Fuels* -, <http://needtoknow.nas.edu/energy/energy-sources/fossil-fuels/>.
- [47] Kumar, Hemanth, et al. "Must-Know Facts about Fossil Fuels: Production, Consumption and Climate Change Trends." *Offshore Technology*, 8 Feb. 2021, <https://www.offshore-technology.com/features/must-know-facts-about-fossil-fuels/>.
- [48] Staff, BCC Research Reference. "Fossil Fuel Electric Power Generation: Global Markets to 2023." *Fossil Fuel Electric Power Generation Market Size & Research Report*. Accessed December 24, 2021. <https://www.bccresearch.com/market-research/energy-and-resources/fossil-fuel-electric-power-generation-global-markets.html>
- [49] Carpenter, J. William. "The Biggest Oil Producers in the Middle East." *Investopedia*. *Investopedia*, May 19, 2021. <https://www.investopedia.com/articles/investing/101515/biggest-oil-producers-middle-east.asp>.
- [50] "Saudi Arabia." *OPEC*. Accessed December 24, 2021. https://www.opec.org/opec_web/en/about_us/169.htm.