



TEIMUN 2021

UNFCCC COUNCIL

TOPIC A: SUSTAINABLE CORPORATE DEVELOPMENT IN THE
AFTERMATH OF THE CORONA CRISIS

Welcome Letter

Dear delegates,

We would like to welcome you all to the amazing event of The European Model United Nations 2021 conference. In the next couple of weeks or days, you will find yourself exploring and debating about the topic of sustainable development of enterprises in the aftermath of Covid-19. Most importantly, you will also discover and sharpen your soft skills whilst communicating with people that share the same interest as you. Throughout this process, you will learn new things about yourself and develop skills that you were previously unaware of. To assist you in this journey we will try our best to provide you with the necessary information to tackle the issue at hand and to guide you through the debates, however, this conference, this committee, and its debates are what you make out of it. Therefore we encourage you to read the background paper carefully and to try to do as much research as possible before the start of the conference. However, before we get into the nitty-gritty of the topic, we would like to briefly introduce ourselves, to kindly remind you that you can always contact us if you have any inquiries regarding the content of this background paper.

Naifah Uzlah

Hi, delegates! Feel free to refer to me as Naifah or Uzlah. I started my participation in Model UNs in high school, trying out diverse councils and topics along the way. Last year was supposed to be filled with my first international MUN experience, at TEIMUN's Security Council dealing with a non-traditional security topic, climate migration. Despite not being able to actually attend the conference, the preparation process has equipped me with valuable experience, skills, and insights.

My background is in International Relations, with a focus on the environmental aspect of international political economy and I'm also planning to take a course in Environmental Policy for my Masters. On the non-academic side, I spend most of my time working on advocacy projects on environmental causes. That being said, I am looking forward to witnessing substantive and diplomatic discussions between the UNFCCC delegates, especially in covering the systemic challenges of climate solutions. Here in TEIMUN, you will be contributing to the recovery of our planet—but as heavy as it sounds, I hope you will also have a fun learning experience!

Carina Antonin

Dear delegates, my name is Carina, nice to meet you all! I have participated as a

delegate in the UNSC of TEIMUN in 2019 for the very first time, and was selected for chairing in the European Council in the year 2020. The unique spirit of TEIMUN has impressed me ever since my first experience, where I caught the well-known TEIMUN fire and developed an increased interest for diplomacy and international relations.

I grew up in the world's largest hop growing area in Bavaria/Germany and spent the majority of my free time in the beautiful landscape of the alps. My strong connection with nature and the environment therefore already evolved in my childhood and continues to shape my educational development. My background is in Politics, Law and French Romance Studies. I am currently doing a masters in International Relations and Sustainable Development which complements my interests perfectly. Next to my studies, I am working as the Head of Public Affairs and Sustainable Corporate Development of an eco-friendly fashion label, which provides me with deep insights into the challenges of an enterprise aiming to maintain sustainable standards. I am driven by a strong passion for International Relations and the vision of a better and greener future for all of us. Let's make 2021 a year of change!

Dhifan Kemal Akbar

Greetings delegates! My name is Dhifan Kemal Akbar, I come from Indonesia, and I am currently studying Mechanical Engineering at the Universitas Indonesia. I was always interested in environment-related issues and I am now focussing my studies on developing environmentally friendly technology. Hence why I like to join many activities such as MUN, debates, and writing research papers since it enables me to expand my understanding of current environmental issues and to try out my ideas.

Having coached a professional delegation team in my university as well as having participated in many MUNs, I've seen how MUNs are more than just simulations, caucuses and resolution papers. They will give you an experience that does not only make you discover your hidden talents, but also allow you to meet people who share the same interest as you, giving you the opportunity to pursue the brightest projects in the future. It can also lead to achievements you never knew were possible. So, don't hesitate to get involved as it will be my highest pleasure to assist you in this unique endeavor.

It is our utmost priority to ensure that your experience here is memorable and we hope to deliver you an experience that lasts a lifetime. We look forward to meeting all of you very soon!

Sincerely,

Carina Antonin, Naifah Uzlah, Dhifan Kemal Akbar
(antonincarina@gmail.com, naifah.uzlah@ui.ac.id, dhifan.akbar16@gmail.com)

The Chairs of the United Nations Framework Convention on Climate Change
The European International Model United Nations 2021

Introduction

The Covid-19 pandemic has upended the world economy like few events in human history. It has forced countries to impose strict restrictions on economic activities, close borders, limit movement, shorten working hours, and much more. The result has been a struggling economy and unprecedented levels of government stimulus. Now that countries are slowly opening up their borders and stimulating economic activities, a sustainable transition in corporate development is more important than ever.

Corporate processes, especially fossil fuel producers, are estimated to account for 71% of global CO₂ emissions, making sectoral restructuring a necessary component of any meaningful climate change response.¹ Yet, countries face different environmental and economic challenges. Especially developing countries, which provide the majority of lower-tier suppliers,² are affected by severe consequences of lacking environmental standards for their workers and their natural habitats.

To guarantee a green future for upcoming generations, companies now must pursue ambitious cornerstones in terms of a sustainable, climate friendly development. Different stakeholders, like NGOs and the media, have to play a more active role by putting pressure on national governments and multinational organisations in order to implement framing conditions and binding law for a durable corporate development in the long run.

In times of crisis, multinational cooperation is getting relevant more than ever to start

¹ Refer to: The Carbon Majors Database CDP Carbon Majors Report 2017. 100 fossil fuel producers and nearly 1 trillion tonnes of greenhouse gas. P.8. emissions<https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf>

² Refer to: A more sustainable supply chain. Veronica H. Villena and Dennis A. Gioia. Harvard Business Review. March-April 2020 Magazine Issue. <https://hbr.org/2020/03/a-more-sustainable-supply-chain>.

into a new decade - a decade, where the most important decisions for the survival of our planet earth will be made!

Problem Specification Topic 1

The sustainable development of enterprises is becoming more and more relevant in regard to the massive CO₂ footprint the industrial sector is leaving on our planet. From sampling to production to delivery, supply chains in many enterprises are contributing massively to an enormous high CO₂ footprint for the enterprise itself, but also for the emission balance sheet of the nation states. Besides CO₂ reducing supply chains, companies do hold great potential in their corporate structures, e.g. their capacity to invest in a more eco-friendly building, to promote sustainable offices and to improve in terms of transparency.

Many countries still do not set strict regulations for the reduction of carbon emissions in enterprises, which is also due to the fact that governments are reluctant to place sustainable development as a priority in their agenda. The Paris Climate Agreement has failed in setting strict regulations, as countries are free to set goals in accordance to their own standards and will not face any sanctions even if they do not reach their own set goals.³

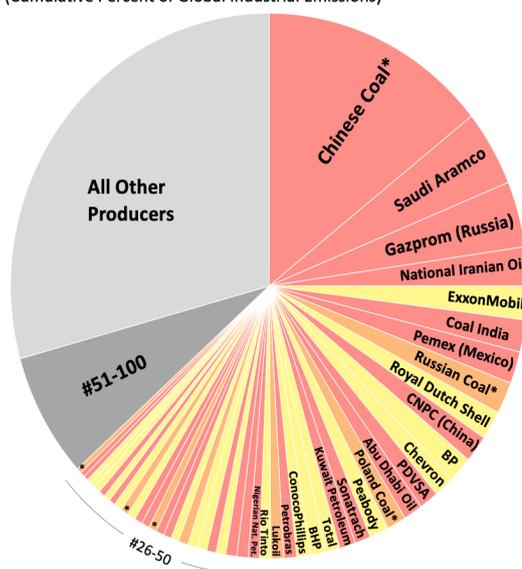
Non-profit initiatives like the organization "Leaders for Climate Action" are counteracting this issue by setting up their own initiative for climate action.⁴ They are connecting international entrepreneurs, who are self-reliantly pushing forward the reduction and compensation of greenhouse gas emissions in their own companies. However even though this is a great initiative, there is definitely space for further improvements given the potential that lies in the development of international law, and the creation of more international initiatives that incorporate some sort of benefit programme for the companies that are already reducing and compensating their own CO₂ emissions. Especially the post-COVID 19 recovery of companies holds great potential for a more sustainable development in regard to the 17 Sustainable Development Goals of the United Nations.

³ Refer to: Frondel, Manuel. Globales Preisabkommen für Treibhausgase: ein Weg zu effektivem Klimaschutz? 11th April 2019. P. 167. Embedded in: Bardt, H.; Schaefer, T.; Frondel, M. et al. Instrumente der Klimapolitik: effiziente Steuerung oder verfehlte Staatseingriffe? Wirtschaftsdienst 99, 163-180 (2019). doi.org/10.1007/s10273-019-2415-y.

⁴ Refer to: <https://lfca.earth/>.

The environmental costs caused by enterprises that are not integrating the Sustainable Development Goals of the United Nations within their overall business strategy and are unable to meet the goals of the Paris Climate Agreement, are distributed unequally, inflicting harm to both the lives of humans and animals. In addition, CO2 intensive industries are worsening the greenhouse gas effect and are therefore causing great damages to our natural environment. Moreover, the pandemic has introduced significant challenges to the global economy, which will need to be addressed with substantial changes to the system.

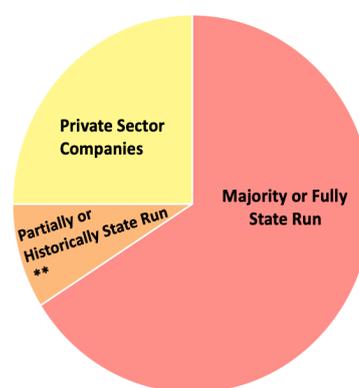
Largest Greenhouse Gas Producers 1988-2015
(Cumulative Percent of Global Industrial Emissions)



* National output combined into one entry

** Denotes when single country output is combined but includes public and private sector companies & companies privatized during the period of record

State Ownership in the Top 50



25 Corporate & State entities produced over half of global industrial emissions since 1988

"Of the 635 GtCO₂e of operational and product GHG emissions from the 100 active fossil fuel producers, 32% is public investor owned, 9% is private investor-owned, and 59% is state-owned."

Source: CDP Carbon Majors Report 2017

QARMA_s

1. How can the different stakeholders (states, enterprises, NGOs, and investors, etc.) get involved in developing a more sustainable economy that implements sustainable offices and business practices?
2. What initiatives could be made to support the interest of the stakeholders while still maintaining a low-carbon competition on the market, especially in adjusting to the impacts of the pandemic?
3. What standards should be required in terms of corporate supply chains in order to guarantee a sustainable recovery after Covid-19 — including the cycle of production (cradle-to-cradle principle), waste management and distribution?
4. What could be the appropriate policies that must be modified? What parameters should be used when creating and implementing new policies or

practices?

Explanatory Section per QARMA

QARMA 1: How can the different stakeholders (states, enterprises, NGOs, and investors, etc.) get involved in developing a more sustainable economy that implements sustainable offices and business practices?

History or Background of the Problem

To start off, the COVID-19 pandemic has shaken the global economy and has impacted many enterprises big or small. People are forced to stay inside their houses and quarantine themselves to prevent the disease from transmitting and spreading. This has led to a significant downfall in economic activities and forces enterprises to shift their practices to an online format (for those who are able to), in contrast, enterprises that are not able to adapt to the new circumstances are forced to decrease productivity.⁵ Because of this, many lives have been turned upside down impacting welfare, health, and people's employment status. However, there is one sector that seems to be benefiting from the transition of enterprises to an online format and that is the environment. A recent study by researchers from the University of Dhaka claimed that the shift of enterprise practices to an online format had improved many aspects of the environment in different cities across the world.⁶ Some examples include but are not limited to reduced greenhouse gas (GHGs) emissions which sets into motion a virtuous cycle of environmental improvements. This is because a reduction in GHGs will reduce water waste which in turn decreases the amount of water pollution. Likewise noise pollution is reduced and pressures on tourist destinations are eased due to a reduction in air travel. All of these changes assist with the restoration of the ecological system, and reduce the impact to climate change as a whole.⁷ A more thorough elaboration can be found in the illustration next to this paragraph, where one can see that the air quality in eight of the largest cities in the world has dropped significantly during the pandemic.

⁵ Donthu, Naveen, and Anders Gustafsson. 2020. "Effects Of COVID-19 On Business And Research". *Journal Of Business Research* 117: 284-289. doi:10.1016/j.jbusres.2020.06.008.

⁶ Rume, Tanjena, and S.M. Didar-UI Islam. 2020. "Environmental Effects Of COVID-19 Pandemic And Potential Strategies Of Sustainability". *Heliyon* 6 (9): e04965. doi:10.1016/j.heliyon.2020.e04965.

⁷ Ibid.



Figure 2. AQ Comparison in Major Cities Before and On Pandemic⁸

Taking into account the positive impact of the enterprise's decision to go online on the environment, it inspires many environmentalists and stakeholders to reconstruct their strategy to implement better sustainable business practices post-crisis to ensure sustainability which can aid greatly in the long run.

Recent Development

In an online meeting held by the Oxford Climate Society, the UN Climate Change Executive Secretariat Patricia Espinosa stressed the importance of a multilateral approach to addressing climate change, particularly in times of this crisis (COVID-19 pandemic).⁹ She argued that the current condition is the perfect time to reconstruct better business strategies in order to aid enterprises for post-crisis recovery and maintain sustainability onwards. She also argued that the best way out is to have solutions that aim to strengthen policies that promote green growth, protect biodiversity, and embrace renewable energy. However when crafting a solution or action plan, existing guidelines such as the Paris agreement need to be followed.¹⁰

To aid those aims, goals, and ground ideas, the UN Climate Change held an online event named 'June Momentum' that offered opportunities for different stakeholders such as non-state-actors, non-governmental organization, and many others to

⁸ Buchholz, Katharina. 2021. "Infographic: Major Cities Around The World See Improvements In Air Quality". Statista Infographics. <https://www.statista.com/chart/21424/no2-concentration-selected-cities/>.

⁹ Anon. 2021. Unfccc.Int. <https://unfccc.int/news/an-economic-recovery-that-builds-a-greener-future>.

¹⁰ Ibid.

exchange views, share information in regards to policies, science or technology that could potentially aid the post-recovery, and many more.¹¹ Fortunately for them, the international community already has the Paris Agreement which was used to set the benchmark of their discussion. In addition, their discussion was also aided by each country's submissions in regards to their national climate action plans, or NDCs. With those two combined sets of crucial information, stakeholders do not need to make policies from scratch and can instead build upon the previous benchmark. The outcome of the discussion resulted in rejecting the idea of a “back to normal” scenario and instead adopted a new concept dubbed as “build forward” with policies that promote green growth, protect biodiversity, and embrace renewable energy. Delegates could use this as the benchmark for the discussion in the council.

At the same time, a campaign named ‘Race to Zero’ was launched with the aim of mobilizing leadership and support from businesses, cities, regions, and investors who are collaborating and working to create a resilient system and zero-emission action plan for business practices.¹² This campaign also partners with various businesses, organizations, and initiatives to better aid their surroundings and assist in creating green energy sources while simultaneously creating new job opportunities.

While it may seem that there are already a lot of initiatives that are being organised there is still a lot to discuss and debate. Delegates could read ‘Platform for Redesign 2020 COVID-19 and Climate Change’. In addition, it is also recommended that delegates read a conclusion of an online meeting on October the 1st 2020, that was attended by the Ministry of the Environment from member states across the world and several other stakeholders’ representatives.¹³ Delegates may analyse key values and shift them into crafting the solutions which can be tabled on the conference day.

Relevant Actors

Now that the underlying problem is covered, the next part will talk about the stakeholders and their associated roles. Some crucial and possible partners on which the delegate can rely on to foster cooperation are UN organizations such as the United Nations Environment Programme, the United Nations Development Programme, the United Nations on Human Settlement, the United Nations

¹¹ Anon. 2021. Unfccc.Int. <https://unfccc.int/news/supporting-green-recovery-through-deployment-of-climate-technologies>.

¹² Ibid.

¹³ Anon. 2021. Unfccc.Int. https://unfccc.int/sites/default/files/resource/Japan-2020100_PCCB_Platform%20for%20Redesign%202020.pdf

Conference on Trade and Development, and many others.¹⁴ However, beyond the United Nations itself and member states governments, there are other persistent and innovative parties that can contribute in the implementation of sustainable business practices post-crisis recovery. These stakeholders may be useful to look into for future collaboration despite the fact that these parties are not directly working towards post-crisis recovery plans. Nonetheless they interact with enterprises creating awareness on climate related policies and building trust between different parties. Below are some non-UN stakeholders that are relevant to this topic.

International Development Community

Referred to international and regional development banks such as but not limited to International Fund for Agriculture Development (IFAD), Nordic Development Fund (NDF), Organization for Economic Cooperation and Development (OECD), and many others.¹⁵ These multifaceted organisations traditionally work with finance and development ministries in middle- and low-income nations to provide various development loans and grants, while simultaneously offering assistance in the form of technology services, expertise, and advice.¹⁶ These parties have steadily mainstreamed climate change into their development work plans to better play their role in financing and transfer facilities and programmes in the countries who needed it the most.¹⁷

Non-Governmental Organization and Civil Society Organization

Includes but not limited to Environmental Defence Fund (NGO), Geneva Association (Knowledge Based Think Tanks), and World Business Council for Sustainable Development (WBCSD).¹⁸ These parties have been increasingly active and engaging in a variety of activities and aspects of post-crisis recovery in enterprises respectively depending on their mandate and functions. Some include the ability to influence policy, advocacy, raising awareness, assisting in the implementation of business practices, communication, building capacity, and encouraging the involvement of local government participation in their community-based solutions for laying better regulations in regards to

¹⁴ 2021. Unfccc.Int. <https://unfccc.int/topics/science/resources/partners-and-relevant-organizations-0>.

¹⁵ Ibid.

¹⁶ "About The OECD - OECD". 2021. Oecd.Org. <http://www.oecd.org/about/>.

¹⁷ Ibid.

¹⁸ 2021. Unfccc.Int. <https://unfccc.int/process/parties-non-party-stakeholders/non-party-stakeholders/admitted-ngos/list-of-admitted-ngos>.

green business practices.¹⁹

Scientific Community and Academia

The United Nations Framework Convention on Climate Change plays a huge role in coordinating international scientific groups. UNFCCC along with other UN-related bodies such as but not limited to the Intergovernmental Panel on Climate Change (IPCC) and allies have connected scientists and academia around the globe to conduct joint research.²⁰ The outcome of the collaboration usually results in a much concrete framework in a form of guide books. Beyond the internationally coordinated research however, numerous academia communities, research labs, and international engineering associations have engineered and innovated dedicated programmes to environment related activities, or in this case sustainable business practices.

Of course there are more other stakeholders such as investors, suppliers, distribution companies, and more on which the delegate can utilize their potential when crafting a solution. Bear in mind that a system on which an enterprise runs is very complex and usually is very wide, but they are one long interdependent system. So if one part of it changes, delegates can expect that other parts will too.

International Approach

Global corporations urge that net-zero emissions are included in their plans for post-crisis recovery strategy. About 155 giant enterprises that are London and New York based have signed a statement urging governments around the world to align their COVID-19 economic aid and recovery efforts with the latest climate science.²¹ They argued that policies should be renewed with considering resilience measures on enterprises and a more inclusive regulations to support efforts from different stakeholder to maintain global temperature rise within the 1.5°C.²²

Governments across the globe are preparing trillions of dollars in funds to assist the recovery of their economy while simultaneously preparing to submit an enhanced national climate plan under the Paris Agreement.²³ A study from Oxford University claimed that the aforementioned enterprises are committed to integrating their

¹⁹ Ibid.

²⁰ 2021. Unfccc.Int. <https://unfccc.int/topics/science/workstreams/cooperation-with-the-ipcc>.

²¹ 2021. Unfccc.Int. <https://unfccc.int/news/global-corporations-urge-net-zero-emissions-recovery-from-covid-19>.

²² Ibid.

²³ Anon. 2021. Unfccc.Int. <https://unfccc.int/news/support-grows-for-a-better-recovery-from-covid-19>.

business practices with science-based emissions reduction targets and green economy principles.²⁴ With the new strategy, they are hoping that their business practices could minimise future global emergencies from emerging.

In addition, the United Nations Framework on Convention on Climate Change also has its own funding mechanism which is the Green Climate Fund. It's mandated to make an ambitious contribution to respond to climate change action plans and goals. It heavily focuses towards helping developing countries and vulnerable societies to adapt to the unavoidable impacts of climate change.

QARMA 2: What initiatives could be made to support the interest of the stakeholders while still maintaining a low-carbon competition on the market, especially in adjusting to the impacts of the pandemic?

Background of the Problem

Most economic stakeholders uphold similar purposes in the current capitalistic and neoliberal system, which are to accumulate capital and accelerate economic growth. In the attempts to achieve these purposes, economic actors are often engaged in activities that have the capacity to negatively impact the environment. Primarily, global greenhouse gas emissions have increased significantly since fossil fuel started becoming an important commodity in the international market, which could be traced back to the past half-century. Fossil fuel consumption has increased around eight-fold since 1950, and roughly doubled since 1980,²⁵ which in consequence has also increased the amount of global CO₂ emissions.

In addition to international trade and investments on fossil fuel, enterprises around the globe have also conducted their businesses through unsustainable practices. To provide products for their customers while ensuring the maximum accumulation of profit, it has been very common for corporations to acquire their factors of production regardless of the environmental side effects. Many cases of deforestation and irresponsible land uses are related to industrial activities. In addition, supply chains have become increasingly globalized due to globalization, therefore emitting more carbon footprint from international distribution. Amplified by the issue of waste as produced by both corporations and consumers, the current economic scheme commonly referred to as "business-as-usual" (BAU) has been deemed no longer

²⁴ Ibid.

²⁵ Hannah Ritchie and Max Roser. "Fossil Fuels: Global fossil fuel consumption". Our World in Data. 2017. <https://ourworldindata.org/fossil-fuels>

applicable.²⁶

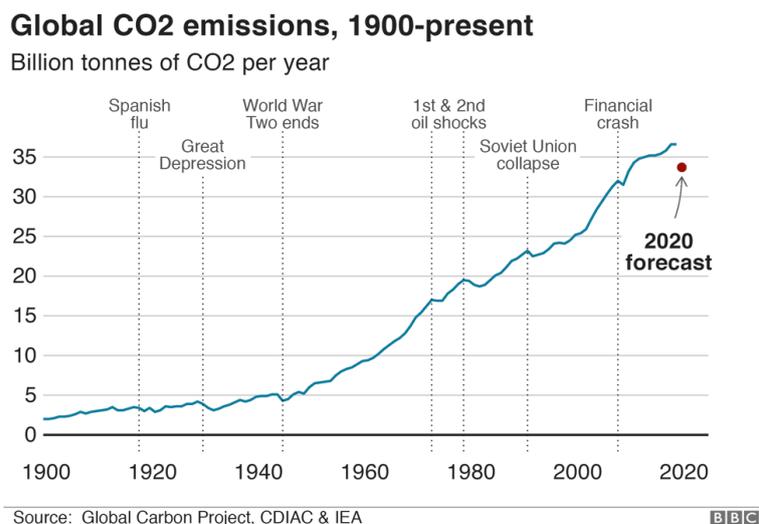


Figure 3. Increase in Global Emissions Over Decades²⁷

As the pandemic destabilizes the economy, efforts of preventing the acceleration of climate change have mostly been put to halt in order to save the disturbed market.²⁸ Meanwhile, the impacts of climate change would not wait until the economy is back to its former state, and enterprises are potentially facing worse challenges in the long term as the result of this condition. Hence, to ensure the fulfillment of the stakeholders' interests without neglecting the environment, new initiatives must be formulated.

Recent Development

In the past few years, several initiatives aimed to reduce the global greenhouse gas emissions have been taken, especially at the governmental or regulatory level. Common policies that have been developed are cap-and-trade and carbon taxation schemes. Cap-and-trade or emission trading provides a mechanism to control pollutions by stipulating allowable quantities of emissions, and by establishing a "market" in which a limited number of emissions allowance are allocated.²⁹ On the other hand, carbon tax is a direct regulatory mechanism where governments impose

²⁶ Environmental and Energy Institute (EESI). "Key Climate Facts", in Climate Change Fact Sheet (2006): p. 1.

²⁷ Matt McGrath. "Climate change and coronavirus: Five charts about the biggest carbon crash", BBC. May 6, 2020. <https://www.bbc.com/news/science-environment-52485712>

²⁸ Beate Trankmann. "The growing urgency of shifting to a low carbon economy", United Nations Development Programme (UNDP). May 29, 2020. <https://www.undp.org/content/undp/en/home/blog/2020/the-growing-urgency-of-shifting-to-a-low-carbon-economy.html>

²⁹ Lawrence H. Goulder and Andrew R. Schein, "Carbon Taxes versus Cap and Trade: A Critical Review", Climate Change Economics, Vol. 4, No. 3 (2013): p. 3.

tax on the carbon emissions that industries emit. These schemes of calculating the cost of carbon—known as carbon pricing—thus offer incentives for industries to reduce emissions.

It has been argued that carbon tax and emissions trading could be burdening the economy and poorer households, since it potentially increases the financial responsibility of corporations and consequently increases the costs of products.³⁰ Another perspective views carbon pricing schemes as environmentally effective and economically cost-effective, and it may even be considered as necessary to reduce emissions.³¹ However, complementary policies are required because these schemes are not sufficient to solve the systemic problem of carbon emissions. As the global economy has been heavily impacted by the pandemic, innovative and complementary climate policies are projected to be more favorable in the near future.³²

Complementary to regulatory initiatives, especially to tax credit schemes for corporations that emit less carbon wastes, numerous private actors have started to adjust their behavior to become more climate-friendly. These changes of behavior encompass a lot of aspects of their business, especially the production cycle and infrastructure in which the usage of energy plays a prominent role. Various kinds of incentives have been provided by governments to welcome businesses into the market of renewable energy, such as awards for the production and usage of renewable energy, investment tax credits and loan guarantees, among others.³³ Countries that have been dependent on the fossil fuel industry, and are the biggest contributors in global emissions, hold the important roles of initiating an energy transition where both the environment and the economy could reap benefits. Although some corporations have taken their part in this change, many others are still struggling to adapt with the pandemic and are actively choosing to keep conducting their unsustainable practices.

Technological initiatives have also been proposed, such as carbon capture and storage (CCS), a process of capturing waste carbon dioxide and transporting it to be

³⁰ Kevin A. Hassett, Aparna Mathur, & Gilbert A. Metcalf, "The Incidence of a U.S. Carbon Tax: A Lifetime and Regional Analysis", NBER Working Paper, No. 13554 (2007): p. 2.

³¹ Robert N. Stavins, "Carbon Taxes vs. Cap and Trade: Theory and Practice", Harvard Project on Climate Agreements, No. 6 (2019): p. 19, 21.

³² Rolando Fuentes, et al. "COVID-19 and Climate Change: A Tale of Two Global Problems", Sustainability, Vol.12, No. 20 (2020): p. 5. <http://dx.doi.org/10.3390/su12208560>

³³ Green Rhino Energy. "Incentive Schemes for Renewable Energy", 2016. Last accessed on April 3, 2021. <http://www.greenrhinoenergy.com/renewable/context/incentives.php>

stored where the emissions will not enter the atmosphere. Despite it being a hypothetical solution to global emissions, this initiative has also been regarded as inefficient since the process requires considerably more energy, and there is not enough proof for it to be an effective strategy. Other ambitious technological solutions are currently investigated by the Centre for Climate Repair (CCR), such as the process of “re-freezing” the poles to reflect radiation back into space, and “greening” the ocean with plant matter and algae to absorb more CO₂.³⁴ While these ideas are still being developed and are often warned as ineffective, states and corporations are expected to jump on the bandwagon of becoming more aware about their environmental impact and how the current condition of the planet could affect their interests.

Relevant Actors

Most notable stakeholders that would be impacted by changes in the market are states, corporations, and investors. As part of the international market, most states depend on trades and investments in order to fulfil their roles as the provider of public goods and services. Governments have the capacity to shape the market through regulations, which in this case could be in accordance with the agenda of solving the climate crisis. However, the private sector also holds a big prominence in creating a low-carbon market.

Corporations, both domestic and multinational or transnational, are the main drivers of the market-based economic system and therefore they pose a significant role in addressing economic-driven climate change. As has been explained in the previous sections above, most activities conducted by corporations directly impact the environment, and vice versa. Hence, initiatives regarding a low-carbon market should be hugely related to the role of corporations, and they must also include feasible mechanisms for corporations to partake in.

Along with corporations, **investors** are also an important actor in the modern economy. Most popular forms of capital flows nowadays are those that involve extractive industries such as fossil fuel companies and other carbon-emitting corporations. Governments often opt for unsustainable economic policies in order to attract investors, therefore initiatives to improve the environmental impact of the international market should also consider the

³⁴ Mark Newton. “Re-Freezing the Poles and Ocean Greening: New Lab Explores Radical Climate Change Solutions”, RESET, 2019. Last accessed on April 4, 2021. <https://en.reset.org/blog/re-freezing-poles-and-ocean-greening-new-lab-explores-radical-climate-change-solutions-05222019>

participation of investors.

International Approach

During the process of formulating the Paris Climate Agreement, voices of the private actors have also been recorded to strengthen the collaboration between states and other stakeholders. More than 800 of the largest listed companies around the world are in favor of a legally-binding international action to achieve global net-zero emissions.³⁵ Among the demands from these corporations are mechanisms for a global implementation of carbon pricing, a clear framework of public-private partnerships, and a leverage for private sector finance to build adaptive capacity to climate change.

Coalitions between private actors to tackle the climate crisis have also been formed, notably the RE100 initiative which brings together the world's most influential businesses to drive the initiation of energy transition. This initiative advocates for changes in both local and global levels by addressing the market and policy barriers that have been preventing companies to utilize renewable energy and to reduce their carbon footprint.³⁶

QARMA 3: What standards should be required in terms of corporate supply chains in order to guarantee a sustainable recovery after Covid-19 – including the cycle of production (cradle-to-cradle principle), waste management and distribution?

History or Background of the Problem

In many industries, the challenges to sustainability are external and dependent on suppliers across the supply chain. On average, 90% of companies' impact on the environment results from the activities of corporate supply chains.³⁷

In order to understand the severe issues that supply chains are causing for human wellbeing and for the environment today, we must take a step back into history and look at how the shift from a local and regional supply evolved into a global system. Prior to the industrial revolution in Europe and the United States, supply chains were

³⁵ CDP Worldwide. "Business and the Paris Agreement", in CDP Policy Briefing: Corporate Support for a Global Agreement on Climate Change, p. 1.

³⁶ Refer to: RE100. "About us". 2021. <https://www.there100.org/about-us>

³⁷ Refer to: Supply Chains cause 90% of companies' environmental impacts. How can they be improved? André Gonçalves. 19th March 2019. <https://youmatter.world/en/sustainability-supply-chain-27935/>.

allocated by geographical location and typically restricted to regions.³⁸

With the installation of railroads, transportation over long distances became faster and easier and also cheaper. Nevertheless the transportation of goods was limited to country borders. By the beginning of the 19th century, rudimentary hand trucks and other technologies revolutionized transportation again.³⁹

During World War II, logistics and efficient supply chains became crucial for military organizations, especially the development of pallets and storage systems played an important role in the emerging supply systems.⁴⁰

Today, multinational companies are exporting goods all over the world. The WORLD TRADE ORGANISATION (WTO) is responsible for regulating the international trading market with the rules of trade between nations. Their overall goal is to maintain common standards and guarantee the fluctuation of goods amongst international corporations and nation states.⁴¹

The WTO agreements have been ratified in 164 national parliaments since 29 July 2016. The multilateral organization plays a major role in coordinating international supply of goods, the analytics of the pandemic shock towards the global economy and the recovery of the world economy after Covid-19.⁴²

Supply chains in a post-covid world are facing different challenges: After the supply shock that started in China in February 2020 and the following demand shock that happened when the global economy shut down exposed many vulnerabilities in the production strategies and supply chains of firms. Temporary trade restrictions and shortages of pharmaceuticals, critical medical supplies, and other products highlighted the weaknesses of global supply chains. The consequence? Those developments, combined with the U.S.-China trade war, have triggered a rise in economic nationalism. Manufacturers worldwide are going to experience greater political and competitive pressures with the consequence of increasing their domestic production, grow employment in their home countries, and most

³⁸ Refer to: The history and evolution of the global supply chain. Blume Global. www.blumeglobal.com/learning/history-of-supply-chain/.

³⁹ Refer to: *ibid.*

⁴⁰ Refer to: *ibid.*

⁴¹ Refer to: WORLD TRADE ORGANIZATION. The WTO. https://www.wto.org/english/thewto_e/thewto_e.htm.

⁴² Refer to: WORLD TRADE ORGANIZATION. Global Supply Chains in the Pandemic. 08 December, 2020. https://www.wto.org/english/res_e/reser_e/06_nitya_pandalai_nayar_presentation.pdf

importantly, reduce or even eliminate their dependence on sources that are perceived as risky. Enterprises have to rethink their use of lean manufacturing strategies that involve minimizing the amount of inventory held in their global supply chains.⁴³

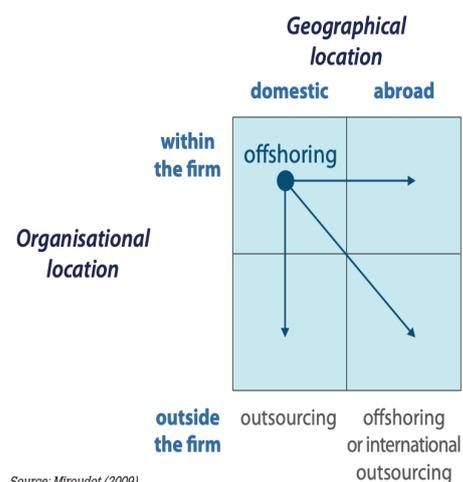
This poses the overall question, how supply chains are going to look like in the future?

One of the biggest challenges for companies will be to make their supply chains more resilient and independent without weakening their competitiveness. To meet that challenge, managers have to identify certain vulnerabilities of their supply chains and take a number of steps to reduce these risks.⁴⁴

Recent Development

Corporate offshoring and outsourcing of production: One of the biggest changes in the global supply system has been the explosion of manufacturing in Asia. China, Japan and Korea have become major suppliers and exporters of goods for western industries.⁴⁵ Companies are no longer producing in house themselves, but buy products or services from external vendors. This phenomenon is also called outsourcing. These activities most often happen in combination with offshoring, which means that corporate production activities are geographically relocated from the firm's domestic country to a lower-cost foreign country.⁴⁶

Figure 3.1: Movement of activities in offshoring and outsourcing



Modern supply chains are therefore involving a lot of different actors that are allocated in different countries. In the 21st century, a rising number of multinational corporations (MNC) have pledged to work only with suppliers that incorporate social

⁴³ Refer to: Harvard Business Review. Global Supply Chains in a Post-Pandemic World. September 2020. <https://hbr.org/2020/09/global-supply-chains-in-a-post-pandemic-world>.

⁴⁴ Refer to: *ibid.*

⁴⁵ Refer to: *ibid.*

⁴⁶ Refer to: Park, Albert; Nayvar, Gaurav. Low, Patrick. Supply Chain Perspectives and Issues. A Literature Review. World Trade Organization. Lausanne, Switzerland. Supply chains and offshoring. p.56.

and environmental standards. These MNCs typically expect their first-tier suppliers to comply with these standards and in return to ask for compliance from their lower-tier suppliers. The overall aim is to create a supply network that ensures a flowing chain of sustainability practices.⁴⁷

The reality is, that these ambitious goals are most likely to be missed out. First-tier suppliers are struggling with sustainability issues themselves and do not have capacities to monitor their suppliers sustainability practices.⁴⁸

The worst affected part in the supply chains are therefore the people working as the lower-tier suppliers. They are not well known in the international context and receive relatively little attention and pressure from the media, NGOs and other stakeholders. Not only are their working conditions rarely regulated (due to chronic overtime demands for example), they also do not have sustainability expertise or resources. Frequently, these lower-tier suppliers are allocated in countries where environmental regulations are non-existent or not enforced at all.⁴⁹

The consequences are severe: people involved in the supply chain are often suffering from worse working conditions, while the environment is suffering from the disposal of toxic waste, a missing environmental management and a non-existent waste program.⁵⁰

The issue of intense production and less capacities for sustainable practices is cyclic itself. Companies are pressured to exceed 60-hour workweek limits and environmental standards in order to be able to withstand the competitive pressure on the market. If companies won't fulfil their customers' demands of products in time, customers will find another company that will satisfy their needs.⁵¹

One of the most important issues to tackle at global supply chains is a country's waste management. An estimated amount of more than 8.3 billion tonnes of plastic has been produced since the early 1950s. About 60% of that plastic has ended up in either a landfill or the natural environment, like the world's oceans.⁵²

⁴⁷ Refer to: Villena, Veronica H.; Gioia, Dennis A. A more sustainable supply chain. Harvard Business Review. March-April 2020 Magazine Issue. <https://hbr.org/2020/03/a-more-sustainable-supply-chain>.

⁴⁸ Refer to: Villena, Veronica H.; Gioia, Dennis A. A more sustainable supply chain. Harvard Business Review. March-April 2020 Magazine Issue. <https://hbr.org/2020/03/a-more-sustainable-supply-chain>.

⁴⁹ Refer to: *ibid.*

⁵⁰ Refer to: *ibid.*

⁵¹ Refer to: *ibid.*

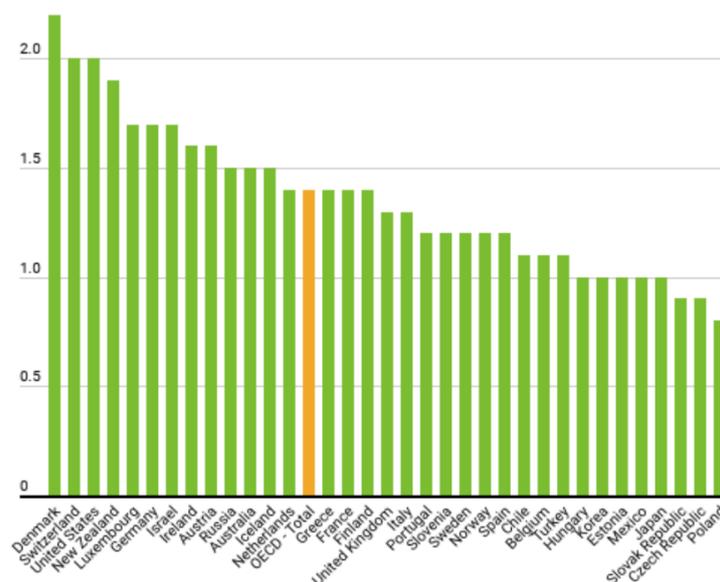
⁵² Refer to: Beat plastic pollution. UNEP. <https://www.unep.org/interactive/beat-plastic-pollution/>.

Higher-income countries like the United States, Denmark, and New Zealand are well known to produce at least twice as much waste per capita in comparison to developing countries. On top, people who earn higher salaries do not only consume more goods in general, but they also use up a higher concentration of packaged and complex durable goods like cars, appliances, and electronic equipment. The average waste in middle- and high-income countries therefore consists of inorganic materials, notably paper and plastic.⁵³

What a waste

The average waste generated per person among OECD countries in 2014 was 1.4 kg every day, which is just over 3 lbs.

(Solid Waste Generation: KG/Person/Day)



Sources: OECD Environmental Statistics

Image: blogs.imf.org/2020/01/31/waste-woes-in-the-world/

Higher-income states also do outsource waste processing by exporting tons of plastic waste into developing countries. For years, countries like Germany have been transporting plastic waste across the borders to foreign countries in order to simply get rid of plastic waste. According to the motto: Out of sight - out of mind? In 2020, an estimated 986,000 tonnes of plastic waste were transported across German borders, referring to the Federal Association of the German Waste Management,

⁵³ Refer to: Waste woes in the world. January 31, 2020. IMFBlog. <https://blogs.imf.org/2020/01/31/waste-woes-in-the-world/>.

Water and Raw Materials Industry (BDE). This is 10 percent less than in the previous year, but corresponds to almost one sixth of all plastic waste collected within Germany.⁵⁴

German plastic waste is mainly exported to the following countries:

- Malaysia ranges in first place, with around 151,000 tons shipped there in 2020.
- The Second place goes to the Netherlands with just under 142,000 tons of plastic waste.
- The third place is taken by exports to Turkey: In 2020, the country doubled plastic waste imports to 132,000 tons in one year.
- Poland, Hong Kong, Austria and Indonesia also play a major role as buyers with about 50,000 tons each.⁵⁵

The export of plastic waste poses massive challenges for the importing countries. Especially developing island nations with a high rate of tourism are strongly affected by this global waste problem. The scarcity of land (the critical resource for landfilling) and rising sea levels due to global warming are highly worsening these countries' waste disposal problems.



Source: www.statista.com/chart/18229/biggest-exporters-of-plastic-waste-and-scrap/.

⁵⁴ Refer to: Handelsblatt Today. The plastic trail: How Germany's recycling ends up in Malaysians dumps. 2019. [www.handelsblatt.com/english/politics/the-plastic-trail-how-germanys-recycling-ends-up-in-malaysian-dumps-/24037020.html?ticket=ST-1556973-0BhuulfchaNHblUiEx6x-ap1.](https://www.handelsblatt.com/english/politics/the-plastic-trail-how-germanys-recycling-ends-up-in-malaysian-dumps-/24037020.html?ticket=ST-1556973-0BhuulfchaNHblUiEx6x-ap1.;); Nabu. Export von Plastikabfällen. <https://www.nabu.de/umwelt-und-ressourcen/abfall-und-recycling/26205.html>.

⁵⁵ Refer to: Nabu. Export von Plastikabfällen. <https://www.nabu.de/umwelt-und-ressourcen/abfall-und-recycling/26205.html>.

Recycling as one of the most important actions to tackle climate change. One of the most important, sustainable corporate developments therefore is the reuse of resources and materials. Through the process of recycling, materials are converted into new products which reduces the need to consume any new natural resources. On the contrary: if used materials are not recycled, intensive mining and forestry is required in order to gain fresh, raw material from the earth. Recycling therefore helps to conserve important raw materials and protects the natural habitats of our planet earth.⁵⁶

The benefits of recycling materials are immense: next to saving natural resources, using recycled and industry-ready materials in the manufacturing process uses much less energy in comparison to the production of new products from raw materials. Recycling reduces massive greenhouse gas emissions which benefits the tackling of climate change immensely. Last but not least, recycling plastic waste for example also helps to clean up our oceans or landfills, which reduces the pollution of our ecosystems enormously.

The Cradle to Cradle (C2C) principle for sure is amongst the most innovative and promising procedures of the time. It means seeing garbage as an eternal resource that can be reused over and over again, in a cyclical way (as opposed to the current linear system that can be better described as a Cradle to Grave system).⁵⁷

Challenges of the Future

Recent developments show that some companies are already reacting to the massive abuse of our ecosystems and the workers involved.

The challenges of tomorrow? Consumers and businesses need to get more and more sensitized for the importance of an ethical way of sourcing and manufacturing goods and the possibilities of recycling.⁵⁸ The environmental aspects and the workers' rights have been denied way too long, and violations are still not getting sanctioned strictly enough.

⁵⁶ Refer to: Nottinghamshire - Why Recycling is so important. Veolia.
<https://www.veolia.co.uk/nottinghamshire/recycling/recycle-nottinghamshire/why-recycling-important#:~:text=Recycling%20reduces%20the%20need%20for,helps%20to%20tackle%20climate%20change.>

⁵⁷ Refer to: Cradle to Cradle. Sustainability Guide. European Regional Development Fund.
<https://sustainabilityguide.eu/methods/cradle-to-cradle/>.

⁵⁸ Refer to: The history and evolution of the global supply chain. Blume Global.
www.blumeglobal.com/learning/history-of-supply-chain/.

Supply chain managers need effective risk management to deal with unexpected occurrences, such as customs and tariffs, natural disasters or issues with global transport.⁵⁹

Nowadays, supply chains are evolving towards a more data-driven, network-driven and collaborative supply chain ecosystem that aims to drive real value and growth for all participants. Artificial Intelligence and machine learning will play an important role in future order management.⁶⁰

Relevant Actors

Multinational companies are demanded to implement sustainable cornerstones to pursue the goals of the Paris Climate Agreement and to maintain a relevant actor and competitor on the global trading market.

NGOs like the “Leaders for Climate Action” can encourage companies to reduce their CO2 footprint and to implement sustainable standards in their corporate philosophy.⁶¹ Through international campaigns, they can inspire companies to join the initiative and put pressure on national governments in order to support companies with local subventions.

National governments are required to develop binding law and a sustainable strategy for companies, like a rewarding and sanctuary system for example.

Multilateral organisations like the WTO and the United Nations are now more than ever in charge to guarantee an effective transition into a new, sustainable corporate culture. The WTO is central to achieving the 2030 Agenda for Sustainable Development and the UN Sustainable Development Goals (SDGs), which set targets to be achieved by 2030 in areas such as poverty reduction, health, education and the environment.

International Approach

A number of the 17 Sustainable Development Goals (SDGs) already refer to responsible production patterns, as well as inclusive and sustainable economic growth, employment and decent work for all.⁶² Now it is the time for enterprises to implement these goals into corporate company philosophies by actively pushing

⁵⁹ Refer to: *ibid.*

⁶⁰ Refer to: *ibid.*

⁶¹ Refer to: Leaders for Climate Action. <https://lfca.earth/>.

⁶² Refer to: The 17 Sustainable Development Goals. <https://sdgs.un.org/goals>.

forward CO2 reducing measures and sustainable standards.

The Paris Agreement on Climate Change is already signed by 196 Parties and plays a significant role for businesses in tackling climate change, including the reduction of greenhouse gas emissions and improving environmental performances.⁶³

In the context of achieving the 2030 Agenda for Sustainable Development, the need for joint action becomes even more important, in particular shedding a light at the role of the private sector.⁶⁴

QARMA 4: What could be the appropriate policies that must be modified? What parameters should be used when creating and implementing new policies or practices?

History or Background of the Problem

The most relevant and the most influential international tools under the United Nations Framework Convention on Climate Change is the Paris Agreement. It has been the reference whenever the international community wants to craft new regulations and solutions, it strictly acts as the underlying principle that touches the scope of climate change mitigation, adaptation, and finance. Applied effectively in 2016, the agreement was crafted and passed by 196 states at the 21st Conference of the Parties of the UNFCCC in Le Bourget, France.⁶⁵ As of now, 191 members of the UNFCCC are signatories to the agreement and following the recent news, USA has re-joined their signatory to the agreement.⁶⁶

All in all, the Paris Agreement sets a major goal to the world, and every commitment/action plan/new regulation that has been or will be crafted needs to refer back to this agreement, in order to ensure that their goal is aligned and commensurate with its overall principles. Ultimately, the Paris Agreement aims to limit the increase in the average global temperature to 1.5°C, slowing global

⁶³ Refer to: UNFCCC. The Paris Agreement. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.; Organisation for Economic Co-operation and Development (OECD) With contributions from ILO, IMF and World Bank Group. PROMOTING SUSTAINABLE GLOBAL SUPPLY CHAINS: INTERNATIONAL STANDARDS, DUE DILIGENCE AND GRIEVANCE MECHANISMS. Paper presented at the 2nd Meeting of the G20 Employment Working Group. Hamburg, 2017.

⁶⁴ Refer to: *ibid*.

⁶⁵ Sutter, John D .; Berlinger, Joshua (12 December 2015). "Final draft climate agreement officially accepted in Paris". CNN. Cable News Network, Turner Broadcasting System, Inc.

⁶⁶ "US Makes Official Return To Paris Climate Pact". 2021. The Guardian.

<https://www.theguardian.com/environment/2021/feb/19/us-official-return-paris-climate-pact>.

warming, and reducing its impact on the climate as a whole.⁶⁷ Its guidelines usually targeted enterprises, recommending them to implement greener business practices, setting regulations in regards to pollution, assisting them in achieving a balance between their growth and the environmental impact, and many more. Some values from the Paris Agreement can be translated into an action plan that aims to implement capacity building measures for parties in order to improve resilience, encourage adaptation to the current dynamic climate conditions, and maintain optimum finance flows.

In order to make sure that all member states who are a signatory comply with the regulations, each member state is required to hand in a report on their contribution to mitigate global warming and reduce climate change. Of course, there is always something that can be added to ensure the compliance of multiple member states and strengthen cooperation in times of crisis.

Since it is one of the most influential and powerful tools in the United Nations Framework Convention on Climate Change, it is imperative that the delegates talk and debate about it, whether it's to start off the debate to grasp the underlying principle of the problem, or to cross check that solutions in the council are in line with the aforementioned international goals.

Recent Development

The Paris Agreement is the first-ever universal, global climate change agreement, adopted at the Paris climate conference (COP21) in December 2015.⁶⁸ Ever since then, different climate summits have been held in order to unite different stakeholders, such as states, companies and NGOs, to discuss the urgency of climate change and to come up with concrete plans for the implementation of the Paris Climate Goals.⁶⁹ However, the Paris Climate Agreement (PCA) still has many weaknesses. For example, developing countries should only make small effort contributions within the agreement, but as China still claims to be a developing country, carbon emission goals are not applicable on countries in the state of 'development'. However, China has long viewed clean energy as its big opportunity to finally dominate a global technology sector and is now taking effort to become a

⁶⁷ Walsh, Brian, Philippe Ciais, Ivan A. Janssens, Josep Peñuelas, Keywan Riahi, Felicjan Rydzak, Detlef P. van Vuuren, and Michael Obersteiner. 2017. "Pathways For Balancing CO2 Emissions And Sinks". *Nature Communications* 8 (1). doi:10.1038/ncomms14856.

⁶⁸ Refer to: Climate Action. European Commission. Paris Agreement. https://ec.europa.eu/clima/policies/international/negotiations/paris_en

⁶⁹ Refer to: United Nations. Climate Action Summit 2019. <https://www.un.org/en/climatechange/2019-climate-action-summit>.

world leader in renewable energy.⁷⁰

Furthermore, the PCA is not legally binding for signatory states. If a signatory ratifies the treaty, it officially agrees to hold itself responsible to meet its targets and incorporate it into national laws.⁷¹ But if the signatory state does not meet the own-set goals, there won't be any sanctions for the state itself, which makes the PCA not quite a "sharp sword" when it comes to tackling climate change.⁷²

As introduced earlier, the WTO plays a significant role in framing the international trading system, but also plays an important role in the achievement of the UN's Agenda 2030 for Sustainable Development. The organization collaborates closely with the UN's Department for Economic and Social Affairs in monitoring progress in attaining the Sustainable Development Goals (SDGs). Annually, the WTO reports its efforts to achieve trade-specific targets in the SDGs to the UN's High-level Political Forum (HLPF). The HLPF is the UN's main means of reviewing the 2030 Agenda for Sustainable Development and allows all UN members and specialised agencies to meet annually to evaluate progress on achieving the SDGs.⁷³

Relevant Actors

Contingent to the previous QARMAs, climate policies should involve all of the prominent stakeholders, especially those with regulatory functions. International and regional institutions should be the ones at the forefront of policy formulation, however national and local governments should also propose their domestic considerations to enhance the applicability of the policies.

Non-state actors should also be involved in the policymaking process. NGOs and think tanks could provide valuable insights from the perspective of science and the society. Meanwhile, the private sector's involvement would be useful for ensuring that the climate policies will go hand in hand with the economy.

International Approach

Modifications of climate policies have been an integral part of the UNFCCC for the past few decades. With the evaluations from the Kyoto Protocol and other former

⁷⁰ Refer to: 3 Things Americans should know about China in the Paris Climate Agreement. 2017. www.americanprogress.org/issues/green/news/2017/02/09/414850/3-things-americans-should-know-about-china-in-the-paris-climate-agreement/.

⁷¹ Refer to: Pros and Cons of the Paris Climate Change Agreement for America. healthyhumanlife.com/blogs/news/paris-agreement-pros-and-cons.

⁷² Refer to: Frondel. Globales Preisabkommen für Treibhausgase. 11 April 2019. S. 167.

⁷³ Refer to: The WTO and the Sustainable Development Goals. World Trade Organization. https://www.wto.org/english/thewto_e/coher_e/sdgs_e/sdgs_e.htm.

agreements, the Paris Agreement and its related documents have been formulated with several alterations. The Kyoto Protokoll excluded developing states from the carbon emission goals in general.⁷⁴ Unlike the Kyoto Protocol, which established top-down legally binding emission reduction targets as well as penalties for noncompliance only for developed nations, the Paris Agreement requires that all countries—rich, poor, developed, and developing—contribute in reducing greenhouse gas emissions and limiting the rise of global temperature.⁷⁵ The Paris Agreement has also been based on scientific parameters, and it provides differentiations of implementable solutions for diverse conditions of countries. However, this characteristic of the agreement has also introduced new challenges, particularly the exploitation of the agreement’s flexibility as shown by the inadequate proposals of nationally-determined contributions (NDCs).

Further Research

Donthu, Naveen, and Anders Gustafsson. 2020. "Effects Of COVID-19 On Business And Research". *Journal Of Business Research* 117: 284-289. doi:10.1016/j.jbusres.2020.06.008.

Rume, Tanjena, and S.M. Didar-UI Islam. 2020. "Environmental Effects Of COVID-19 Pandemic And Potential Strategies Of Sustainability". *Heliyon* 6 (9): e04965. doi:10.1016/j.heliyon.2020.e04965.

Walsh, Brian, Philippe Ciais, Ivan A. Janssens, Josep Peñuelas, Keywan Riahi, Felicjan Ryzak, Detlef P. van Vuuren, and Michael Obersteiner. 2017. "Pathways For Balancing CO2 Emissions And Sinks". *Nature Communications* 8 (1). doi:10.1038/ncomms14856.

Voigt, Christina and Felipe Ferreira. "Differentiation in the Paris Agreement", in *Climate Law*, Vol. 6, No. 1-2 (2016): p. 58–74. <https://doi.org/10.1163/18786561-00601004>.

Organisation for Economic Co-operation and Development (OECD). With

⁷⁴ Refer to: Umweltbundesamt. Klimarahmenkonvention der Vereinten Nationen. www.umweltbundesamt.de/themen/klima-energie/internationale-eu-klimapolitik/klimarahmenkonvention-der-vereinten-nationen-unfccc.

⁷⁵ Melissa Denchak. "Paris Climate Agreement: Everything You Need to Know", Natural Resources Defense Council (NRDC). February 19, 2021. <https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know>

contributions from ILO, IMF and World Bank Group. PROMOTING SUSTAINABLE GLOBAL SUPPLY CHAINS: INTERNATIONAL STANDARDS, DUE DILIGENCE AND GRIEVANCE MECHANISMS. Paper presented at the 2nd Meeting of the G20 Employment Working Group. Hamburg, 2017.

UNFCCC. Paris Agreement.

https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf.

Bibliography

Anon. "About The OECD - OECD". 2021. Oecd.Org. <http://www.oecd.org/about/>.

Anon. "The Paris Agreement: Frequently Asked Questions". 2021. United Nations Sustainable Development. <https://www.un.org/sustainabledevelopment/blog/2016/09/the-paris-agreement-faqs/>.

Anon. "US Makes Official Return To Paris Climate Pact". 2021. The Guardian. <https://www.theguardian.com/environment/2021/feb/19/us-official-return-paris-climate-pact>.

Anon. 2021. Unfccc.Int. <https://unfccc.int/news/an-economic-recovery-that-builds-a-greener-future>.

Anon. 2021. Unfccc.Int. <https://unfccc.int/news/global-corporations-urge-net-zero-emissions-recovery-from-covid-19>.

Anon. 2021. Unfccc.Int. <https://unfccc.int/news/supporting-green-recovery-through-deployment-of-climate-technologies>.

Anon. 2021. Unfccc.Int. <https://unfccc.int/news/support-grows-for-a-better-recovery-from-covid-19>.

Anon. 2021. Unfccc.Int. <https://unfccc.int/process/parties-non-party-stakeholders/non-party-stakeholders/admitted-ngos/list-of-admitted-ngos>.

Anon. 2021. Unfccc.Int. https://unfccc.int/sites/default/files/resource/Japan-2020100_PCCB_Platform%20for%20Redesign%202020.pdf.

Anon. 2021. Unfccc.Int. <https://unfccc.int/topics/science/resources/partners-and-relevant-organizations-0>.

Anon. 2021. Unfccc.Int. <https://unfccc.int/topics/science/workstreams/cooperation-with-the-ipcc>.

Buchholz, Katharina. 2021. "Infographic: Major Cities Around The World See Improvements In Air Quality". Statista Infographics.
<https://www.statista.com/chart/21424/no2-concentration-selected-cities/>.

CDP Worldwide. "Business and the Paris Agreement", in CDP Policy Briefing: Corporate Support for a Global Agreement on Climate Change.

Cradle to Cradle. Sustainability Guide. European Regional Development Fund.
<https://sustainabilityguide.eu/methods/cradle-to-cradle/>.

Denchak, Melissa. "Paris Climate Agreement: Everything You Need to Know", Natural Resources Defense Council (NRDC). February 19, 2021.
<https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know>

Donthu, Naveen, and Anders Gustafsson. 2020. "Effects Of COVID-19 On Business And Research". Journal Of Business Research 117: 284-289.
doi:10.1016/j.jbusres.2020.06.008.

Environmental and Energy Institute (EESI). "Key Climate Facts", in Climate Change Fact Sheet (2006).

Fuentes, Rolando, Marzio Galeotti, Alessandro Lanza, and Baltasar Manzano. "COVID-19 and Climate Change: A Tale of Two Global Problems", in Sustainability, Vol.12, No. 20 (2020): p. 1-14.
<http://dx.doi.org/10.3390/su12208560>.

Fronzel. Globales Preisabkommen für Treibhausgase. 11 April 2019.

Gonçalves, André. Supply Chains cause 90% of companies' environmental impacts. How can they be improved? March 19th, 2019. You matter.
<https://youmatter.world/en/sustainability-supply-chain-27935/>.

Goulder, Lawrence H. and Andrew R. Schein, "Carbon Taxes versus Cap and Trade: A Critical Review", *Climate Change Economics*, Vol. 4, No. 3 (2013): p. 1-28.

Green Rhino Energy. "Incentive Schemes for Renewable Energy", 2016. Last accessed on April 3, 2021.
<http://www.greenrhinoenergy.com/renewable/context/incentives.php>

Hassett, Kevin A., Aparna Mathur, & Gilbert A. Metcalf, "The Incidence of a U.S. Carbon Tax: A Lifetime and Regional Analysis", NBER Working Paper, No. 13554 (2007).

Leaders for Climate Action. <https://lfca.earth/>.

McGrath, Matt. "Climate change and coronavirus: Five charts about the biggest carbon crash", BBC. May 6, 2020. <https://www.bbc.com/news/science-environment-52485712>

Newton, Mark. "Re-Freezing the Poles and Ocean Greening: New Lab Explores Radical Climate Change Solutions", RESET, 2019. Last accessed on April 4, 2021. <https://en.reset.org/blog/re-freezing-poles-and-ocean-greening-new-lab-explores-radical-climate-change-solutions-05222019>

Nottinghamshire - Why Recycling is so important. Veolia.
<https://www.veolia.co.uk/nottinghamshire/recycling/recycle-nottinghamshire/why-recycling-important#:~:text=Recycling%20reduces%20the%20need%20for,helps%20to%20tackle%20climate%20change.>

Online, Abac. 2021. "Asia-Pacific Financial Forum (APFF) | APEC Business Advisory Council". [Www2.Abaonline.Org. https://www2.abaonline.org/page-content/22613276/Asia-Pacific%20Financial%20Forum#about-apff.](https://www2.abaonline.org/page-content/22613276/Asia-Pacific%20Financial%20Forum#about-apff)

Organisation for Economic Co-operation and Development (OECD). With contributions from ILO, IMF and World Bank Group. PROMOTING SUSTAINABLE GLOBAL SUPPLY CHAINS: INTERNATIONAL STANDARDS, DUE DILIGENCE AND GRIEVANCE MECHANISMS. Paper presented at the 2nd Meeting of the G20 Employment Working Group. Hamburg, 2017.

Park, Albert; Nayvar, Gaurav. Low, Patrick. Supply Chain Perspectives and Issues. A Literature Review. World Trade Organization. Lausanne, Switzerland. Supply chains and offshoring. p.56.

Pros and Cons of the Paris Climate Change Agreement for America.
healthyhumanlife.com/blogs/news/paris-agreement-pros-and-cons.

RE100. "About us". 2021. RE100 Climate Group. <https://www.there100.org/about-us>.

Ritchie, Hannah and Max Roser. "Fossil Fuels: Global fossil fuel consumption". Our World in Data. 2017. <https://ourworldindata.org/fossil-fuels>

Rume, Tanjena, and S.M. Didar-UI Islam. 2020. "Environmental Effects Of COVID-19 Pandemic And Potential Strategies Of Sustainability". Heliyon 6 (9): e04965. doi:10.1016/j.heliyon.2020.e04965.

Stavins, Robert N. "Carbon Taxes vs. Cap and Trade: Theory and Practice", Harvard Project on Climate Agreements, No. 6 (2019).

Sutter, John D .; Berlinger, Joshua (12 December 2015). "Final draft climate agreement officially accepted in Paris". CNN. Cable News Network, Turner Broadcasting System, Inc.

The history and evolution of the global supply chain. Blume Global.
www.blumeglobal.com/learning/history-of-supply-chain/.

The 17 Sustainable Development Goals. <https://sdgs.un.org/goals>.

The WTO and the Sustainable Development Goals. World Trade Organization.
https://www.wto.org/english/thewto_e/coher_e/sdgs_e/sdgs_e.htm.

Trankmann, Beate. "The growing urgency of shifting to a low carbon economy", United Nations Development Programme (UNDP). May 29, 2020.
<https://www.undp.org/content/undp/en/home/blog/2020/the-growing-urgency-of-shifting-to-a-low-carbon-economy.html>

Umweltbundesamt. Klimarahmenkonvention der Vereinten Nationen.
www.umweltbundesamt.de/themen/klima-energie/internationale-eu-klimapolitik/klimarahmenkonvention-der-vereinten-nationen-unfccc.

UNEP. Beat plastic pollution. <https://www.unep.org/interactive/beat-plastic-pollution/>.

United Nations. Climate Action Summit.
<https://www.un.org/en/climatechange/2019-climate-action-summit>.

Walsh, Brian, Philippe Ciais, Ivan A. Janssens, Josep Peñuelas, Keywan Riahi, Felicjan Rydzak, Detlef P. van Vuuren, and Michael Obersteiner. 2017. "Pathways For Balancing CO2 Emissions And Sinks". *Nature Communications* 8 (1). doi:10.1038/ncomms14856.

Villena, Veronica H.; Gioia, Dennis A. A more sustainable supply chain. *Harvard Business Review*. March-April 2020 Magazine Issue.
<https://hbr.org/2020/03/a-more-sustainable-supply-chain>.

WORLD TRADE ORGANIZATION. Global Supply Chains in the Pandemic. 08 December, 2020.
https://www.wto.org/english/res_e/reser_e/06_nitya_pandalai_nayar_presentation.pdf

3 Things Americans should know about China in the Paris Climate Agreement. 2017. www.americanprogress.org/issues/green/news/2017/02/09/414850/3-things-americans-should-know-about-china-in-the-paris-climate-agreement/.