COMMISSION GUIDE

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1. Presidents' Letter

Dear delegates,

It is an honour to have you in the United Nations Environment Program (UNEP); we are María José Salgado and Juan Pablo Hernández, 11th grade students at the Colegio Colombo Británico. As your presidents for the UNEP Committee on this occasion, we are pleased to extend a warm welcome to this Commission and to the 17th version of the CCBMUN Model. It is a great pleasure for us to have you as delegates in our Committee, guaranteeing the possibility of guiding you through the learning process in this event of great magnitude and importance in the social and academic development of any student.

The Model United Nations is a great passion of the two of us; even though our process has been different as a result of our different positions and journeys, our commitment to this Commission is the same. UNEP is probably the first model for many of you, and we truly understand your position; we have all had our first time in a model and, although it is very exciting, it can also be a somewhat intimidating experience, so we want to tell you that we will be at your disposal at all times to guide and support you. In return, we want to receive the best commitment to the commission and the debate from you.

Keep in mind, delegates, that you are the ones to drive the debate forward, so we want you to know that you must be very well prepared. We want you to come prepared and with an open mind, since we do not want you to be nervous or stressed during the Model. Lastly, we want to tell you that this is not just a three-day event, it is also one for you to explore and discover your skills, face your fears and to have fun.

Yours sincerely,

María José Salgado
Juan Pablo Hernández
UNEP Presidents – CCBMUN XVII

2. Commission Information

i. History

The United Nations Environmental Programme, or UNEP for short, is a commission dedicated to investigating and solving all world-wide environmental problems the planet is facing day to day. The UNEP commission has been a crucial part of the United Nations, being one of the few that fully takes into account the planet above any other human actions. The UN commission of UNEP dates all the way back to 1972, the year in which it was established. Its establishment took place in Nairobi, the capital of Kenya, during the Stockholm Conference. Since its foundation, the commission of UNEP has continued to work towards preserving the environment. Among its tasks, the Commission is continuously helping developing nations adapt and implement environmentally-friendly policies and practices. Furthermore, the Commission has continuously striven to promote the sustainable use of the world's natural resources, in order to achieve a clear and stable balance.

Thanks to the establishment of the UNEP commission, the world has continuously worked towards an environmentally-friendly society.

ii. Structure

UNEP's structure is composed of numerous parts, all of which play a key role in the Commission's development. The structure of the Commission follows the common organization of a type of hierarchy when it comes to administrators and the secretariat.

Firstly, the group of **Executive Office**, is composed of:

- Acting Executive Director
- Deputy Executive Director
- Acting Chief of Staff

Besides the Executive Office, the other positions similarly important are:

- Governance Affairs Office / Secretariat of Governing Bodies
- Secretariat of the Environment Management Group
- Assistant Secretary General
- Chief Scientist
- Evaluation Office

Executive Office branch:

- Communication Division
- Economy Division
- Ecosystem Division
- Law Division
- Science Division

Executive Office and Environment Management Group branch:

- Policy and Programme Division
- Corporate Services Division

Executive Office and Secretariat of Governing Bodies branch:

- Africa Office
- Asia and the Pacific Office
- Europe Office
- Latin America and the Caribbean Office
- North America Office
- West Asia Office

Each individual Region Office has its own corresponding sub-offices based on territorial location.

Multilateral Environmental Agreements Structure (branch):

- Africa Office
- Europe Office
- Ecosystems Division
- Science Division
- Secretariat of the Multilateral Fund for the Implementation of Montreal Protocol (MLF)
- Secretariat of the Convention on Biological Diversity (CBD)
- Secretariat of the Basel Rotterdam and Stockholm (BRS) Conventions
- Secretariat of the Convention on International Trade in Endangered Species (CITES)
- Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Secretariat of the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer (Ozone Secretariat)
- Secretariat of the Minamata Convention on Mercury

Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) branch:

- Secretariat of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA)
- Secretariat of the Agreement on the Conservation of Gorillas and their Habitats
- Secretariat of the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS)
- Secretariat of the Agreement on the Conservation of Populations of European Bats (EUROBATS)

Each of the roles presented above are a key aspect of the United Nations Environmental Programme as a whole. The Commission aims to solve all of the world's environmental problems, which means it has to dedicate an entire subdivision to ecosystem maintenance. Furthermore, UNEP has dedicated divisions for economy, law and most importantly, science, ensuring that all decisions made are taken under strict and fair supervision, without harming a country's economy or socioeconomic organization. In general, the structural organization of UNEP allows the Commission to view a problem from all the necessary points of view in order to reach a solution that benefits countries and organizations alike, all whilst primarily helping the environment.

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3. Simulation: *Waste Management in Developing Countries*

i. History/Context

Human activities create waste, and the way this waste is handled, stored, collected and disposed can pose risks to the environment and to public health. The management of solid waste is an important concern in developing countries, where solid waste management infrastructure and services are far from achieving basic standards in terms of hygiene, efficient collection and disposal.

(Image 1: Waste Management Hierarchy) [check bibliography]

Management of solid waste is one of the major challenges worldwide. Inadequate collection, recycling or treatment and uncontrolled disposal of waste in dumps lead to severe hazards, such as health risks and environmental pollution. This situation is especially serious in developing countries where inadequate waste disposal can be very dangerous for environment and human health.

The current situation of waste management regarding developing countries being affected by a lack of a waste disposal system and developed countries is primarily character by: difficulties in evaluating and choosing the most appropriate solution with respect to the specific operating conditions; inadequate service coverage; operational inefficiencies of services; limited utilization of recycling activities; inadequate management of non-industrial hazardous waste; and inadequate landfill disposal. Moreover, developing and emergency conditions are characterized by difficulties in evaluating and choosing the most appropriate solution with respect to the specific operating conditions.

The typical municipal solid waste stream will contain general waste (organic and recyclable), special waste (household hazardous, medical, and industrial waste), and construction and demolition waste.

Most adverse environmental impacts from solid waste management are rooted in inadequate or incomplete collection and recovery of recyclable or reusable waste, as well as co-disposal of hazardous waste (hazardous waste is mixed up with th solid waste). Impacts are also due to inappropriate sitting, design, operation, or maintenance of dumps and landfills. In fact, improper waste management activities can:

- Increase disease transmission or otherwise threaten public health. Rotting organic materials pose great public health risks, including serving as breeding grounds for disease vectors. Waste handlers and waste pickers are especially vulnerable and may also become vectors, contracting and transmitting diseases when human or animal excreta or medical wastes are in the waste stream. Risks of poisoning, cancer, birth defects, and other ailments are also high.

(Image 2: Waste overflow in Belize) [check bibliography]

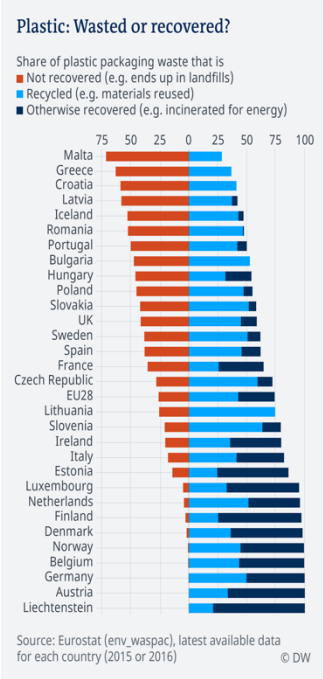
- Contaminate ground and surface water. Solid waste streams can bleed toxic materials and pathogenic organisms into the leachate (the liquid that drains out) of dumps and landfills. If the landfill is unlined, this runoff can contaminate ground or surface water, depending on the drainage system and the composition of the underlying soils. Many toxic materials, once placed in the general solid waste stream, can be treated or removed only with expensive advanced technologies. Even after organic and biological elements are treated, the final product remains harmful.

- Create greenhouse gas emissions and other air pollutants. When organic waste is disposed of in deep dumps or landfills, it undergoes anaerobic degradation and becomes a significant source of methane, a gas with 21 times the effect of carbon dioxide in trapping heat in the atmosphere. Garbage is often burned in residential areas and in landfills to reduce volume and uncover metals. Burning creates thick smoke that contains carbon monoxide, soot and nitrogen oxides, all of which are hazardous to human health and degrade urban air quality.

A lack of waste management activities can increase disease transmission, and create such a thing as the Great Pacific Garbage Patch. Public health and hygiene are two factors that require effective waste management systems which some countries do not or cannot afford to have.

ii. Current Situation

Waste disposal is still a major issue in both developed and developing countries which do not have the technology for managing their waste. Developed countries sometimes



(Image 4: Plastic recycled chart) [Check Bibliography]

have poor waste management processes, and cannot recycle or dispose of all the waste they produce. Hence, the "last resort" of some developed countries is to dump this waste on developing countries, which is creating a major impact on their environment. There is an on-growing concern about the repercussions of these actions by developed countries. The reason this happens is because it is cheaper to send waste on other countries for recycling than to do it themselves. Much of the plastic and electronic waste produced in developed countries is sent to developing ones for recycling. Some countries that "dump" their waste on other countries are the USA and Japan. However, this makes quite an environmental impact on developed countries, whose waste management system is not working as a consequence of this overload. It also adds to the greenhouse gas effect, as fuel is needed to transport this waste around the world.

https://theconversation.com/europes-electronic-waste-has-become-africas-burden-17123

Nowadays, developing countries don't have the capacity to build new technologies or systems to control waste management from scratch. It is a great challenge for many countries, mainly due to the fact that the "generation of waste" is increasing. This means that more and more countries are producing more and more waste. Minor changes have been made such as the 3-colour-bins, but the culture and the habit of not caring just keeps winning. For example, forums have been organized in Latin America to help with the situation, yet action is not always taken by civilians.

(Image 3: WM system in Austria) [check bibliography]

Although this situation is a challenge for many, some European countries are starting to manage their waste more successfully. Some countries have taken an outstanding lead in the business of waste disposal. Many of these countries make a major opportunity out of waste, making this "terrifying unrideable nightmare" (UNFCCC, 2017) part of its country's economy through the

creation of waste recycling businesses. Germany, Belgium, and Austria are some examples of countries using new technologies for the management of waste.

Germany created distinct systems, such as the policy to ban traditional garbage dumps and to replace them with a much more sophisticated process, that is now used throughout the European Union. By 2022, they also aim to have decommissioned their remaining landfills and implement plans to utilize all the waste that is created and the energy produced by it.

Austria has fungal enzymes in PET recycling; the enzymes break down waste into its monomer building blocks, which can then be converted back into more high-value polymers. By using bio-engineered fungal enzymes, the recycling of PET plastic can be done “naturally”, without the production of any new by-products. Fewer new production materials having to be made using petroleum, and 100 percent of the material is recycled.

Belgium uses the process/cycle of reuse, reduce, and recycle, with the help of compost to cooperate the reduction of waste in all areas. Belgium uses waste as a compost or organic fertilizers whenever it is treated in licensed biological treatment. Even though, this might be an amazing opportunity, many nations don’t treat waste as it should be treated: carefully.

(Image 5: Waste disposal) [Check Bibliography]

In conclusion, the lack of waste management not only affects the waste-producing countries, but also countries all around the world. Waste management is not only an issue for the environment, biodiversity, and human health; this problem has grown to

the point of making it an issue in the security of countries and in relations between nations. Everyone is affected by the issue of waste management and the repercussions that come with the inadequate disposal of waste. Air pollution, water pollution, land disturbance, and landfills lead to environmental degradation, affecting ecosystems and human health across the world.

iii. Key points of the debate

- Each situation in which waste management is presented.
- The problem developing countries have in the management of internal waste.
- The causes of lack of waste-management and waste overflow.
- The effects that the lack of waste management brings to the environment.
- Environmental considerations that necessary to manage waste efficiently.
- Problem of waste dumping from developed to developing nations.
- Possible solutions for the lack of waste management in the globe.

iv. Participating Organisms

- SANDEC (Department of Sanitation, Water and Solid Waste for Development).
- UNICEF
- WHO
- World Bank
- SDG (Sustainable Development Goals)
- Human Rights Watch
- OECD (Organisation for Economic Co-operation and Development)

v. Guiding Questions

1. How is your country controlling its waste production and disposal? Does your country have a system that values waste management?
2. What are the specific problems that developing countries face with their waste management?
3. Is your country being affected by the lack of waste management from different nations other than itself?
4. Is your country in need of aid with waste management? If so, why? Is your country in the process of development?

5. Is your country an example of good waste management to other nations? What are some of the good practices that could be adopted by other countries?

6. What are some solutions your country proposes to achieve a more efficient waste management system in all countries?

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4. Topic 1: *Environmental repercussions of overexploitation of natural resources in developing countries*

i. History/Context

The overexploitation of natural resources has been a world-wide problem since the beginnings of civilization, and it still hasn't been solved. Overexploitation refers to the **damaging** and **excessive** use of both renewable and non-renewable natural resources by countries. Logically, overexploitation affects non-renewable resources such as coal, oil and natural gas to a much greater scale, simply because once they are entirely consumed, they disappear forever. However, renewable resources are still vulnerable to overuse, as their exploitation tends to damage ecosystems and the environment in general. For example, the overutilization of resources such as water or wood tends to damage rivers and forests respectively which, in consequence, leads to the destruction of ecosystems (in the form of deforestation and water scarcity), which further affects the environment, affecting animals and causing more problems. Overexploitation of natural resources has never been and never will be good, as it is basically the unintentional and inefficient utilization of the planet's resources, which society is consuming at a faster rate than can be regenerated (for renewable resources).

(Image 1: Deforestation in Myanmar) [Check Bibliography]

The main problem regarding overexploitation is based primarily on the fact that some countries lose the ability to make use of their own resources, simply to fulfill the needs of other highly-populated and developed countries. Generally, affected countries are those who possess lots of natural resources such as Congo, Venezuela, South Africa, Myanmar, and Colombia but do not have the strongest of economies or influence to make the most out of them. Because of this, other countries, which are more developed and wealthier, such as the United States of America, China, India and the United Kingdom (to name a few) tend to import and take from these developing countries in exchange for little monetary compensation. The main problem is that the countries

being deprived of their resources tend to neglect their own needs by exporting their own resources at low costs. Examples of this situation include the oil industry in Venezuela and Russia's overexploitation of said resource. Venezuela exports most of its oil, leaving almost nothing for itself, hurting the country's economic growth potential. Russia buys this cheap oil from Venezuela.

(Image 2: Water Scarcity in Colombia) [Check Bibliography]

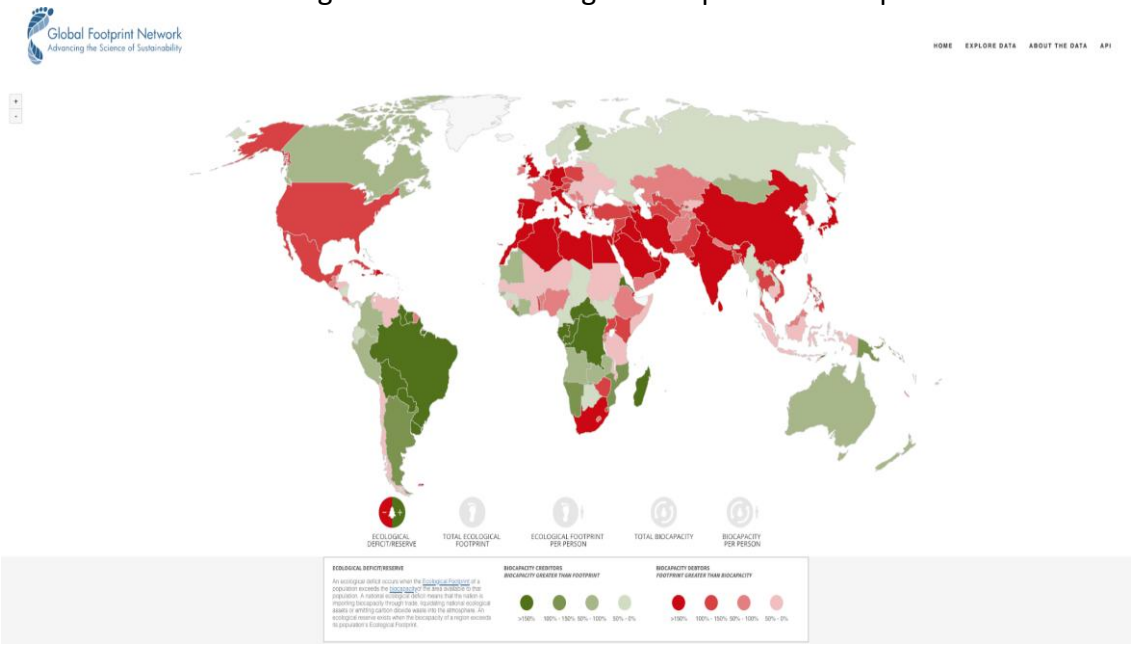
Countries can undertake overexploitation for numerous reasons, however, the most common one relates to economic growth. Highly populated and developed countries require many resources in order to keep up with the country's consumption rate. However, it is crucial to note that, more often than not, these countries (for example, China, USA and Britain) do not need the large amounts of resources they consume. Furthermore, if said countries had used their own resources efficiently, with environmental conservation as a priority, then overexploitation wouldn't be a problem. The scarcity of natural resources is continuously rising, bringing along numerous consequences countries can't afford to face, or won't be able to resolve if they do occur.

ii. Current Situation

Natural Resources are constantly being exploited by developed and highly-populated countries, claiming that they have found a reliable way to utilize coal, natural gas, oil, wood, water and biomass in order to maximize economic growth and scientific/technological development, as well as to satisfy their ever-growing population. However, studies from different organizations, such as the Global Footprint Network[1] and Earth Overshoot Day,[2] show that claims from such countries are not always what they seem. As of 2019, the Global Footprint Network continued to calculate each country's overall **Global Ecological Footprint** in a worldwide study [3]. Here, it is clear that these claims are not as truthful or efficient as they try to appear. Note that

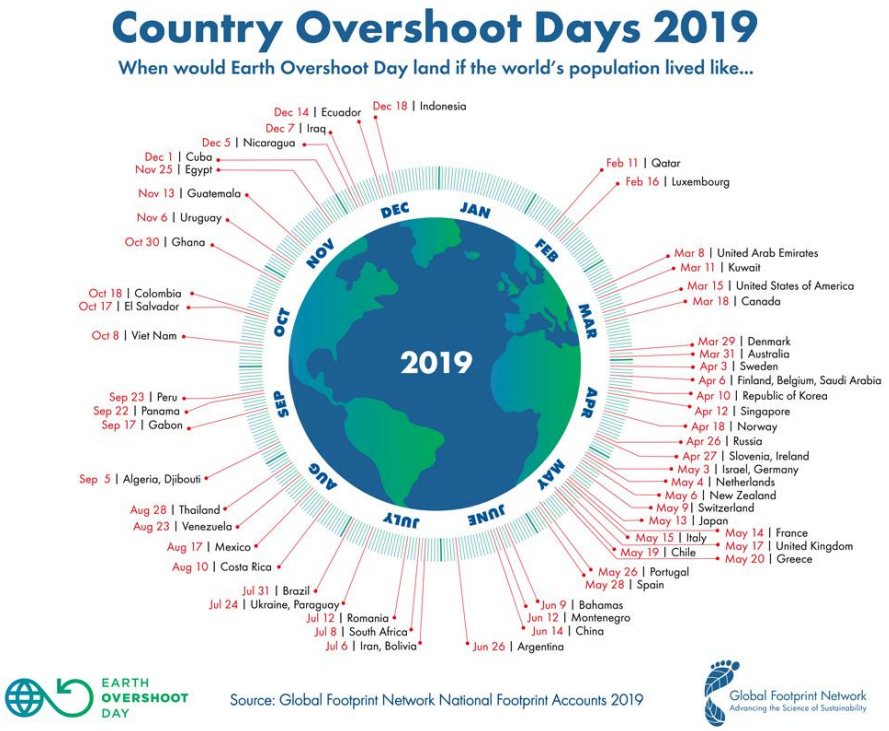
the Ecological Footprint value measures the amount society consumes/exploits and compares it to the overall bio-capacity. Basically, countries should aim to consume/exploit the same amount of bio-capacity they possess. However, this certainly is not the case in the previously-mentioned countries.

Firstly, as of 2019, China has the biggest Ecological Footprint of the world, coming in at a large 5,200,000,000 Global Hectares. This number is far too large when compared to other more environmentally friendly countries, such as Denmark with 38,900,000. One may argue that this is due to China's size and population, similar to the USA's 2,610,000,000 and India's 1,550,000,000. Despite this, it is clear that the large Ecological Footprint is mostly due to irresponsible resource consumption and exploitation, as these countries have shown high carbon and ecological footprints for the past decades.



(Image 4: Ecological Footprint by country vs Biocapacity) [Check Bibliography]

Another way to show the current overexploitation problems is through the Earth Overshoot Day. This is a study[4] which compares consumption and exploitation rates of natural resources with the speed at which earth can replace the spent resources (in the case of renewable ones). **The Overshoot Day** marks the day of the year 2019 in which a country's consumption rate will overuse the planet's natural resources. For the year 2019, the Overshoot Day for the United States of America, United Kingdom and China are March 15th, May 17th and July 14th respectively. This shows that between these three over-consumer countries, earth's resources wouldn't last half a year (assuming that all countries consumed to the same extent as they do). A serious problem regarding this overexploitation is the fact that earth's resources are estimated to run out in the next couple of decades. This process seems to be accelerated by these highly populated, developed countries, which means that they, in fact, have a critical effect on the environment.



(Image 3: The overshoot days for all countries that apply) [Check Bibliography]

Although all of this is very worrying, the worst effect of this overexploitation is the repercussions suffered by developing countries. As one may expect, these developing countries don't contribute much to the total Ecological Consumption, as they tend to utilize far fewer natural resources to undertake any given project or development, mainly because they lack the wealth of other countries. The problem comes when wealthy and more developed countries come and take the developing countries' natural resources. The mass exportation of resources such as oil, coal, gold, silver, copper, wood, and even water, really hinders the developing countries' progress. Furthermore, by damaging the planet's environment, everyone is affected, even if certain countries do not contribute to this mass consumption.

Nowadays, it is clear that the whole world is facing the consequences of overexploitation, even if they aren't the ones damaging these resources. Here is where the Sustainable Consumption Goals and Environmental Impact Assessment come in. These factors are what will determine how long Earth's resources will last if consumption is reduced and improved upon. Consumption Goals are already practised in many nations worldwide. Countries such as New Zealand and Sweden have a much smaller Ecological Footprint, simply because they consume what they **need** not what they **want**. Furthermore, these countries consume less than the overall bio-capacity the country has, which results in them helping the environment by sustainably consuming resources. This relates to the main problems China and the USA face. These countries have high populations and large territories, both of which have to be satisfied with the use of natural resources. However, it is entirely possible that these countries focus more

on environmental maintenance and protection rather than economic growth. Highly developed countries such as these have both the monetary resources and technology i to greatly reduce the country's consumption rates, whilst still maintaining a stable economy.

These factors all lead to the other point regarding the major consequences of imminent overexploitation: as previously mentioned, highly developed countries tend to overexploit natural resources to grow economically and technologically. Nevertheless, these countries, along with every other country on the planet, will face the full consequences of overused resources. If exploitation of these resources isn't managed, they will eventually run out, which will lead to an economic crisis, which is exactly what these developed countries are trying to avoid. So, by overexploiting natural resources, these countries are actually leading themselves into scarcity, in which no country will be able to take advantage of any resource, affecting **everyone**.

All of these were just problems faced by countries themselves. Overexploitation will also cause some expected effects on the environment. Firstly, many ecosystems and habitats will continue to be destroyed, as countries continuously extract the resource required, with economic growth in mind. Overexploitation leads to habitat loss and that leads to species extinction. This means that certain developed countries can cause species from other developing countries to become extinct, by depriving that country of a habitat through the extraction of natural resources. This is seen mostly in the destruction of forests and the pollution of bodies of water, both of which are environmental problems known to take a toll on wildlife.

If countries are willing enough to decide to stop consuming on such a large scale, then Earth's resources may stand a chance. Nonetheless, change must arrive fast, because at this rate, within the next few decades, underprivileged countries will continue to be affected by the overconsumption and overexploitation of their resources by developed countries. Only by putting aside techno-economic growth and focusing on protecting the environment and fair resource distribution, will Earth's resources last long enough in order to find reliable solutions and reach sustainable goals.

iii. Key points of the debate

- The victim countries in this ongoing exploitation. How other countries take from them to satisfy their large economies and consumption rates.
- The validity of mass-consumption as an excuse for resource overexploitation.
- The self-claimed benefits stated by developed countries brought by overexploiting natural resources.
- The imminent consequences this problem may arise if a solution is not found urgently.
- The unequal and uncontrolled use of natural resources by highly-populated and developed countries when compared to developing ones.

- The overall ecological footprint and ecological consumption a country has, which may be justified by different principles.

iv. Participating Organisms

- UNEP (United Nations Environment Programme)
- UNDP (United Nation Development Programme)
- NRDC (Natural Resources Defense Council; non-profit org.)
- NRCS (Natural Resources Conservation Services; Agency
- UNFPA (United Nations Population Fund)

v. Guiding Questions

1. Is your country highly-populated or underpopulated? How does this affect resource distribution throughout your nation?
2. Does your country have all of the necessary resources, both natural and non-natural, to sustain its entire population?
3. What is your country's position towards overexploitation? Does it practice it?
4. Does your nation sell its natural resources to other countries, leaving its population without the resources they need?
5. Is your country giving financial aid to countries suffering resource scarcity?
6. Does your country have any policies or schemes to manage resource overexploitation and to avoid permanent damage to the environment?
7. What is your country doing to ensure that the world's resources are not overexploited?
8. How big is your country's carbon footprint? Has it been increasing or decreasing?

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5. Topic 2: *Climate Change Adaptation in sub-Saharan Africa*

i. History/Context

"Climate change is a change in the usual weather found in a place. This could be a change in how much rain a place usually gets in a year. Or it could be a change in a place's usual temperature for a month or season. Climate change is also a change in Earth's climate. This could be a change in Earth's usual temperature. Or it could be a change in where rain and snow usually fall on Earth. Weather can change in just a few hours. Climate takes hundreds or even millions of years to change."

-NASA

Most of the world's population has finally made the following consensus: climate change is a reality, an issue we are living with that needs our immediate attention. Future generations from all socio-economic backgrounds will be affected by the consequences of climate change, even if we managed to totally cut ozone-harming substance outflows today, since substances such as carbon dioxide stay in the air for a whole century.

Today, the climate's ozone-depleting substance fixations have surpassed the Earth's normal scope of the last 650,000 years. Researchers accept that an average temperature increase of 2º C or higher would lead to extreme consequences. It is now generally accepted around the world that we need to make significant changes to the way in which we live. The globe's most deprived populations are now starting to experience the ill-effects of the impacts of environmental change. Ironically, the nations that endure the most hardship are also the nations that are the least responsible for environmental change, as they do not produce so many greenhouse gases. On top of this, these nations are the least prepared to adapt to the effects that climate change creates.

Developing nations are most negatively influenced by environmental change, and have minimal ability to adjust or adapt to these changes. Less developed countries suffer more from the consequences of developed countries' actions, such as greenhouse gas emissions caused by industrialization and production, or methane production due to agriculture. For this reason, sub-Saharan Africa is on the border of climate collapse.

While aiming to accomplish the objectives stated in the 2030 Agenda for Sustainable Development and Paris Agreement, climate change environmental repercussions lead to changes which are hindering these objectives of financial development across Africa's

mainland. Given that temperatures in Africa are rising, and are set to rise quicker than the worldwide norm during the 21st Century, support for environmental change adjustment over the mainland is urgent.

(Image 2: Climate Change impacts in Africa) [Check Bibliography]

ii. Current Situation

Mainland Africa is especially defenceless against the negative impacts of environmental change. The Intergovernmental Panel on Climate Change (IPCC) states in its Fourth Assessment Report, the following: "aggravated by the interaction of 'multiple stresses'... and low adaptive capacity including atmosphere circumstance in Sub Saharan Africa." According to both the UNFCCC and the IPCC, sub-Saharan Africa is helpless towards its multiple stresses of climate variability and extremes (floods and droughts). Such stresses make sub-Saharan Africa unable to cope with other negative effects of climate change, essentially agricultural, cattle, and health problems.

Some of the changes that sub-Saharan Africa are facing are: changes in agriculture and food security; water stress; ecosystem degradation; and health risks. All these problems weaken the ability of a country to adapt to climate change. For example, the IPCC claims that adjustment processes currently being made by African ranchers are inadequate to be able to face future environmental change. Also, agricultural production and food security are likely to be severely damaged.

Many African nations depend intensely on farming for local jobs and for their GDP (gross domestic product). Alarmingly, numerous territories in sub-Saharan Africa are already experiencing agricultural difficulties because of the semi-dry conditions. The changing atmosphere will only make things worse, affecting the growing seasons and, therefore, food security, leading to a higher likelihood of famine in the future.

(Image 4: Agriculture in Africa) [Check Bibliography]

Water deficiency is one of the most significant ways in which environmental change adversely influences human survival. The IPCC has predicted that environmental change will aggravate water distress in territories that are already prone to water deficiencies. Additionally, this will put various nations in danger of water scarcity, despite the fact that they may not have water issues at the moment. About one quarter of Africa's populace experiences high water stress. Environmental change is likely to cause adjustments in precipitation (rain) “Drought affected areas in sub-Saharan Africa could expand by 60-90 million hectares, with dry land zones suffering huge losses by 2060” (IPCC, 2017). The sub-Saharan Africa region is particularly in danger of desertification, where agricultural land gradually changes to desert.

Environmental changes affect biological systems in a negative way which, in turn, adversely affects the jobs of numerous Africans. The IPCC reports that detectable changes are now happening in a variety of African biological systems at a faster rate than anticipated. An overwhelming reliance on biomass (plant or animal material used for energy production) adds to sub-Saharan Africa's environment instability. For example, the dependence on a wood-based culture leads to deforestation. This quickens the degradation brought by environmental change. Mountain biological systems are also being affected; vanishing ice caps will decrease water accessibility to neighbouring networks.

While certain territories in Africa will encounter serious water deficiencies because of environmental change, other areas will become progressively threatened by flooding. The IPCC predicts that some land by waterfronts may become totally immersed, whilst

lakes and streams will be affected as environmental change modifies precipitation patterns. Both freshwater floods and ocean water immersion affects sanitation and the accessibility of consumable water.

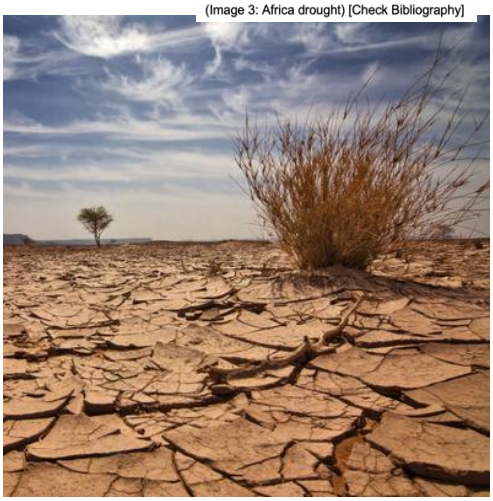
(Image 5: African flooded crops) [Check Bibliography]

Changes in marine biological systems will, likewise, add to the powerlessness of numerous African nations in the face of environmental change. In Africa, highly productive ecosystems such as mangroves, estuaries, deltas, and coral reefs, which form the basis of important economic activities such as tourism and fisheries, are located in the coastal zone. Harm to coral reefs, for example, as an outcome of rising temperatures and fermentation of the sea, could decrease the fish supply. Fish are a fundamental source of nourishment and income for many waterfront African nations. Biological systems, for example, mangroves secure against land disintegration, and their destruction would leave the land unprotected. Rising ocean levels may likewise add to flooding.

(Image 6: Water Stress in African countries) [Check Bibliography]

Studies have demonstrated that sub-Saharan Africa is the only region in the world that has become poorer in this generation. "*In sub-Saharan Africa, per capita GDP is now less than it was in 1974, having declined over 11 percent. In 1970, one in ten poor citizens in the world lived in Africa; by 2000, the number was closer to one in two. That trend translates into 360 million poor Africans in 2000, compared to 140 million in 1975*" (National Bureau of Economic Research) This deterioration is due to many factors including: reduced food security; diminished genuine riches; absence of monetary development; poor instruction as a consequence of unwanted environmental change. The amount of investment in these nations has declined significantly, meaning that governments cannot improve education, health or agricultural practices and industry – all essential to tackle climate change.

Governments and national institutions in African nations are often unable to respond to climate change problems such as environment degeneration, dry spells and floods. There is little access to education and innovation that could tackle these changes. For instance, "Africa has been described as the world's great laggard in technological advances in the area of agriculture" (IPCC, 2017), and subsequently numerous nations experience increased environmental change helplessness because of wasteful water system innovations, (incorrect planning of methodologies for adaptation).


(Image 3: Africa drought) [Check Bibliography]

Nations must have the ability and capacity to adjust and adapt to the impacts of environmental change. Adjustment includes both reacting to the negative effects of environmental change and modifying current behaviour. In this specific situation, reacting suggests recognizing the impacts of climatic change, while modifying comprises of making changes so as to adapt to the climatic changes. A nation's ability is its capacity or potential to produce a reaction and make the essential changes. Studies recommend that establishments, learning, and innovation are critical factors in the ability to adjust. Learning and comprehension of climate change vulnerabilities are essential if nations are to be able to prepare for the future. Comprehensive data must be collected about the issue, in order to make adequate plans for the future.

iii. Key points of the debate

- Climate change issues currently affecting sub-Saharan countries.
- Increased poverty and lack of investment in sub-Saharan countries.
- The effect that the lack of climate change adaptation is having on sub-Saharan countries.
- Responsibility of developed countries for the climate change problems in sub-Saharan Africa.
- Possible solutions for the lack of capacity for climate change adaptation in sub-Saharan Africa.

iv. Participating Organisms

- UNEP (United Nations Environmental Programme)
- UNDP (United Nations Development Programme)
- UNFCCC (United Nations Framework Convention on Climate Change)
- IPCC (Intergovernmental Panel on Climate Change)
- FAO (Food and Agriculture Organisation)
- CCAFS (Climate Change, Agriculture, and Food Security)

v. Guiding Questions

1. What climate change problems, if any, is your country facing at the moment or in the future?
2. In what ways, if any, is your country preparing for future climate change problems it may face?

3. How is sub-Saharan Africa being affected by the recent climate variability and change?
4. In what ways, if any, is your country helping sub-Saharan Africa adapt to the threat of climate change?
5. What are some solutions your nation proposes that would make the adaptation process viable for Africa?

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