

Forum: General Assembly 2nd Committee

Issue: The question of preparing for extreme weather conditions

Student Officer: Ms. Heta Huhmar

Position: Chair of the General Assembly 2

Introduction

Extreme weather events and conditions are not new as phenomena, in fact they have ravaged the Earth for centuries. However, in recent years they have started to become a serious issue after the escalation of global warming. Global warming has been developing for almost 200 years but its effects have been visible for fifty years and its development has only hastened during the last two decades. This is due to increased amount of greenhouse gas emissions from human activity that contribute to global warming.¹ There are also other external reasons for global warming, such as changes in solar radiation, that occur naturally and are completely normal meaning that humans cannot interfere with them.² With the increasing amount of human activity global warming will progress at more rapid pace in the future and this will increase the amount of extreme weather conditions and make them stronger, which poses an even bigger threat to the Earth in the future.

During the last ten years extreme weather events have become increasingly common. These events have destroyed infrastructures of nations (an excellent example would be Puerto Rico, that was left in a chaos after the Irma hurricane in the summer of 2017) and taken millions of lives because no adequate help has been able to be given due to the unexpected strength of the event.³ Especially the year of 2017 has been a cluster of extreme weather events that have left parts of the USA, and many South American and Caribbean

¹ <http://www.un.org/sustainabledevelopment/climate-change-2/>

² https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch9s9-1.html

³ <http://www.un.org/apps/news/story.asp?NewsID=57720#.WhT2n6Nh2fU>

nations with enormous damages.⁴ If nothing will be done to prepare people for them and aid victims of these events, the natural catastrophes will continue to take more human lives and bring down more infrastructures. In the worst case these events will not stay as events: they will become the norm rather than a curiosity, and will also do more harm as they hit the same areas more than once. Effective and fast solutions to combat the current climate change and rebuild lost habitations are needed.

Definition of Key Terms

Global warming

Global warming is the proper term for the phenomenon of last two centuries: increased average temperatures near the surface of the Earth.⁵ Global warming is relevant to the topic of extreme weather conditions because it increases the risk of extreme weather events.

Climate change

Climate change means simply changes in climate. In today's world these usually include rising sea levels, melting glaciers, and accelerating ice melt in Antarctica and South Pole. It also includes the global warming but should not be confused with it, because the two are not synonyms.⁶ Climate change is relevant to the topic of extreme weather conditions because it, as well as global warming, increases the risk of extreme weather events.

Extreme weather event

When there is a weather event that is very different from the usual weather pattern, it is called an extreme weather event.⁷ These include, for example extreme heat events and extreme droughts.

⁴ <http://www.un.org/apps/news/story.asp?NewsID=57963#.WhVDA6Nh2fU>

⁵ <https://www.britannica.com/science/global-warming>

⁶ <https://climate.nasa.gov/faq/>

⁷

http://www.bbc.co.uk/schools/gcsebitesize/geography/weather_climate/extreme_weather_rev3.html

Extreme weather pattern/extreme weather conditions

If unusual weather events occur continuously for a certain amount of time, they will form an extreme weather pattern which means that that area there will suffer from extreme weather conditions.⁸

El Niño

Unusually warm ocean temperatures in the Equatorial Pacific area. It has major consequences on weather around the globe, most importantly increasing rainfall in South America, which causes destructive floods. During this time the West Pacific area suffers from droughts and bushfires. Warmer ocean temperatures can also increase the likelihood of hurricanes forming. Can cause variations in climate from one month up to one year.⁹ El Niño is relevant to the topic of extreme weather conditions because due to warming temperatures extreme weather events are more likely to occur.

La Niña

The opposite of El Niño, unusually cold temperatures in the Equatorial Pacific area. Its effects are opposite to the El Niño effects meaning that La Niña causes abnormally wet climate in Western side of the Pacific (Oceania and parts of Asia) and droughts in Southern side of Pacific (South America and Western USA). As El Niño this can also cause variations in climate from one month up to one year.¹⁰ This is relevant to the topic of extreme weather conditions since it is a reversed El Niño.

Greenhouse effect

The greenhouse effect happens when atmosphere absorbs the sunlight it gets, radiates it back to the Earth and heats up our planet. Small water- and greenhouse gas molecules then radiate the heat back. This a completely normal process and beneficial for our planet.¹¹ Greenhouse effect is relevant to the topic of extreme weather conditions because it should not be confused with the human-induced enhanced greenhouse effect.

⁸ IBID

⁹ https://www.pmel.noaa.gov/el_nino/what-is-el-nino

¹⁰ https://www.pmel.noaa.gov/el_nino/what-is-la-nina

¹¹ <https://earthobservatory.nasa.gov/Features/GlobalWarming/page2.php>

Enhanced greenhouse effect

Contrary to Earth's greenhouse effect, enhanced greenhouse effect is a human-induced phenomenon. This means that humans have artificially raised the greenhouse gas concentration in the atmosphere by burning fossil fuels and cutting down carbon-absorbing forests. Due to a raise in the carbon levels of the world, this causes the global average temperature to rise as well¹² and results in global warming.

Industrial revolution

Industrial revolution began in the late 18th century Great Britain, but the industrial era began in early 19th century. Industrialisation means the change from agrarian (farming) society to an industrial and manufacturing society.¹³ Industrial revolution is relevant to the topic of extreme weather conditions, because it is the reason behind the start of global warming.

Background

The current bout of climate change is only one of many that have happened during the lifetime of the Earth, in fact the climate has changed over almost every single timescale.¹⁴ However, due to the said human activity this climate change has had the most severe impact on the planet. Because of it the Earth's temperature has risen and this has caused a bigger number of extreme weather events that have been much stronger than earlier.¹⁵ Current climate change started already in the 19th century when global industrial revolution began. Many factories ran by burning fossil fuels and this created a new source of emissions that started the global warming. Even though industrialisation began almost 200 years ago, first signs of global warming only started to occur in the 1950's. It has started to get more rapid in the last two decades, because in addition to the Earth's normal greenhouse effect, people have started a human-induced greenhouse effect. This is because of cutting down carbon-absorbing forests adds the load of carbon that contributes to the global warming.¹⁶ Global warming has caused a 0.85 Celsius degree raise in the global average temperature

¹² IBID

¹³ <https://www.britannica.com/event/Industrial-Revolution>

¹⁴ <https://www.britannica.com/science/global-warming>

¹⁵ <http://nca2014.globalchange.gov/highlights/report-findings/extreme-weather>

¹⁶ IBID

during the 200 years of industrialisation and even though it does not sound like a lot, it alone has caused extreme heat events four times more than before the beginning of industrialisation.

It has been predicted that the mean temperature will rise at least another three degrees or even more in the future if the amount of emissions is not reduced significantly. It will also make the weather harder to predict, more volatile, and more dangerous than before.¹⁷ Two or three degrees have even more severe consequences on the planet Earth: as well as making natural catastrophes worse, it will also cause intense droughts. That leads to scarce drinking water that will be a huge public health and safety threat in the form of diseases, disorder in the society, and out-of-control wildfires. In some other areas it will raise water levels which lead to floods that will ruin people's homes and property. It will also increase the air humidity, which leads to mold infestations and unhealthy air. It also increases the risk of water- and foodborne illness epidemics and disease-carrying insects, like mosquitos and fleas. According to some experts global warming poses the biggest modern global health threat.¹⁸ It has also been reported that when our food crops do not know how to adjust themselves to extreme weather, they generate more chemicals and are dangerous to consume,¹⁹ and loss of land is expected which includes a risk of worldwide famine.²⁰

Key member states and NGOs

The United States of America

The second biggest emitter of greenhouse gas emissions in the world and have the most responsibility to lower their emissions, because historically USA has emitted more than China, since China's industrial growth has only just begun²¹. USA's actions pose a serious

¹⁷

<https://www.theguardian.com/environment/2015/apr/27/extreme-weather-already-on-increase-due-to-climate-change-study-finds>

¹⁸ <https://www.nrdc.org/stories/are-effects-global-warming-really-bad>

¹⁹

<https://www.scientificamerican.com/article/extreme-weather-may-raise-toxin-levels-in-food-scientists-warn/>

²⁰ <https://thinkprogress.org/extreme-weather-is-the-new-climate-reality-b1d571798527/>

²¹

<https://insideclimatenews.org/news/28022017/chinas-co2-reduction-clean-energy-trump-us>

threat to emission reduction, because the current president Donald Trump claims that climate change and global warming do not exist and this is why he wants USA to leave the Paris Agreement in 2020, the earliest date possible. If it happens, it will be a major setback for the entire process of reducing carbon emissions and stopping global warming. Another reason as to why President Trump is against using sustainable fuels is that they are more expensive to use than regular fuels.

China

Due to fast growing population and a big industry sector, China is the biggest greenhouse gas emission emitter in the world. China has made progress in lowering emission amounts in last years by making structural changes in its industrial sector, decarbonisation of the electricity sector, and changing consumption habits²². Recent global financial crisis has also decreased the industry of exported goods.

Indonesia

Fourth of the worst top ten greenhouse gas emitters due to deforestation.²¹ In 2015 Indonesia was one of the five countries that had had most weather catastrophes during twenty years.²³

Brazil

Brazil is the third biggest greenhouse gas emitter in the world due to deforestation. Brazil is also in risk of natural catastrophes because of its geographical location.²² In addition to this there are some areas of very poor infrastructure in Brazil, such as the favelas in the capital Rio De Janeiro.

India

²² IBID

²³ <http://www.unisdr.org/archive/46793>

India is responsible for sixth biggest amount of greenhouse gas emissions in the world.²⁴ It is also the 6th most vulnerable country to experience extreme weather events because of having a huge amount of big factories that use fossil fuels as sources of energy and emit a lot of greenhouse gases, and India is also densely populated. In addition to this, it is part of such climate area that has much more polarised weather events than for example European countries.

Morocco

Became the leader country of the Arab countries in the Paris conference. Morocco has also pledged to decrease their greenhouse gas emissions by 13% by 2030. They have also stated that with UN help this percentage could be even greater.²⁵

Mexico

The first developing country to submit a pledge to the UN in which they agree to try to reduce their emissions by 22% percent by 2030.²⁶

World Meteorological Organization (WMO)

WMO is an intergovernmental organization under the United Nations. Its members are all of the 192 member states and territories of the UN. WMO releases annual reports on global climate and its change. Its data provides better understanding about extreme weather events to general public.²⁷

United Nations Environment Programme (UNEP)

²⁴

<https://www.theguardian.com/environment/2011/apr/21/countries-responsible-climate-change>

²⁵

<https://www.theguardian.com/environment/ng-interactive/2015/oct/16/which-countries-are-doing-the-most-to-stop-dangerous-global-warming>

²⁶ IBID

²⁷ <https://public.wmo.int/en/about-us/vision-and-mission>

UNEP is a global environmental authority under UN. Its job is to ensure global environmental agenda is followed and environmental things are taken into account when UN is making decisions. UNEP consists of UN Environment Assembly, committee of permanent representatives, and major groups and stakeholders. UNEP does annual reporting as well as WMO. They have made many initiatives for better environment's sake. ²⁸

United Nations Development Programme (UNDP)

UNDP is a global development network under UN. Their mission is to advocate change and ensure more countries have resources, knowledge, and experience to make their citizens' lives better. UNDP has also its own annual report that offers new measurement tools and innovative analysis. ²⁹

Timeline of Events

1830's - Industrialisation begins and this creates a new source of emissions that starts the formation of our current global warming.

1972 - There are droughts in Africa and it leads to a famine. This spreads worldwide fear of climate change.

1974 - Droughts have continued since 1972 and serious concerns about climate change start to evoke. Journalists think a new ice age is coming, but scientists do not agree.

1977 - Scientists come to the conclusion that coming is a global warming, not a global cooling.

1979 - US National Academy of Sciences report says that it is highly credible that doubling CO₂ will bring an increase of 1.5-4.5 Celsius degrees in the global average temperature

1983 - US National Academy of Sciences reports about greenhouse gas emissions start to spark conversation in politics. This leads to conflicts because some claim that if global warming was real, USA would need to seriously reconsider their industry and energy sectors and this would lead to money loss. It also means new energy source to replace fossil fuels

²⁸ <http://web.unep.org/about/who-we-are/overview>

²⁹ <http://www.undp.org/content/undp/en/home/about-us/faqs.html#undp>

needs to start to be used. Nuclear power is one option but there are many that are against it, because it can be potentially hazardous to humans.

1988 - Intergovernmental Panel on Climate Change (IPCC) is established

1995 - IPCC's second report mentions a clear human-caused greenhouse effect warming, and that serious warming is most likely coming in the following century

1998 - The year is historically warm one due to a "Super El Niño"

2001 - IPCC's third report clearly states that a global warming is very likely to come and that it will have very damaging effects. There is a meeting in Bonn where most countries (however not USA) develop ways to achieve Kyoto Protocol targets

2007 - IPCC's fourth report says the serious effects of warming have become evident and that reducing emissions would be far less costly than dealing with the damages it causes

2012 - Some controversially seen studies find that recent extreme weather events were made worse by global warming

2015 - Nearly all nations vow to set targets for their greenhouse gas cuts and report their progress. Mean temperature has risen to 14.8 Celsius degrees, which is warmest in thousands of years.³⁰

December 2015 - Paris Agreement is drafted

2016 - Paris Agreement is signed

2017 - US President Trump delivers an official notice to the UN that USA will withdraw from the agreement in 2020. Hurricanes Irma, Harvey, and Maria affect many Caribbean islands and parts of USA. 2017 is the warmest year in record.³¹

UN Involvement, Relevant Resolutions, Treaties and Events

³⁰ The entire timeline up to this point is from <https://history.aip.org/climate/timeline.htm>

³¹ http://news.xinhuanet.com/english/2017-11/06/c_136732449.htm

- United Nations Framework Convention on Climate Change (UNFCCC)

(Main goal is to prevent so called dangerous human interference with climate system. Entered into force in March 1994 and has been signed or ratified by all UN member states.)³²

- Kyoto Protocol,

(Main goal is to make developed countries understand they responsible for the global warming happening, ie. developed countries have to know their responsibility to be able to work towards doing better. Signed in December 1997 and put into action in February 2005. Kyoto Protocol has been signed by all UN member states except Andorra, USA, Canada, and South Sudan.)³³

- Paris (Climate) Agreement ‘

(Main goal is to make the world unite to combat climate change and keep the year rise of temperatures in a maximum of two degrees. Agreement signed in April of 2016. Has been signed or ratified by 171 UN member states.)³⁴

- UNDP’s Sustainable Development Goals (SDGs)

(Main seventeen goals are to develop the world by 2030 so much that it is possible to offer everyone everything on Earth a safety living environment. Created in Rio+20 conference in June 2012. It includes all UN member states.)³⁵

Possible Solutions

Unfortunately there are no direct solutions to end extreme weather events entirely because there will be some even without the additional threat that global warming causes. However,

32 http://unfccc.int/essential_background/convention/items/6036.php

33 http://unfccc.int/kyoto_protocol/items/2830.php

34 http://unfccc.int/paris_agreement/items/9485.php

35 <https://sustainabledevelopment.un.org/?menu=1300>

human activity makes these events far more intense and occur more regularly, and thus combating global warming will also lessen the occurrence of extreme weather events and lower the severity of extreme weather conditions overall.

Getting monetary crisis aid without it being tied to nation's GDP

As has been seen with many Caribbean nations in 2017 crises, a nation's GDP may be high on paper but in reality they will still need monetary aid to recover and rebuild in cases of extreme weather events. This is why monetary aid in crisis situation should not be given according to a nation's GDP but rather the issue should be approached multidimensionally taking into account the personal circumstances of each affected country, (eg. if it has only recently risen to be a middle-income country and because of this has no finances to start recovering on its own).³⁶ This is why it would be better to use for example GPI (Genuine Progress Indicator), ISEW (Index of Sustainable Economic Welfare), or HDI (Human Developmental Index) when measuring which country should receive monetary crisis aid, because this seemingly high GDP that still does not mean the country is economically prosperous is usually due to disparities in country's wealth and the fact that GDP does not measure things that happen outside the country's money economy.

International cooperation to lower carbon emissions

It is crucial that nations co-operate to lower carbon emissions. This is the only single thing that can be done to slow down global warming. Countries with high amounts greenhouse gas emissions, like China and the United States, should be especially committed to following the Paris Agreement, since emissions anywhere affect people everywhere in the world.³⁷ It is crucial to make these fuels cheap enough to be used in countries with big population and poor economy.

Education to show people how their world will change if they do not do anything in their own lives to combat this issue ³⁸

³⁶ <http://www.un.org/apps/news/story.asp?NewsID=57720#.WiDxYKNh29Z>

³⁷ <http://www.un.org/sustainabledevelopment/climate-change-2/>

³⁸ <http://www.un.org/apps/news/story.asp?NewsID=55564#.WiJWXKNh29Z>

People's lifestyle is another factor that has the most impact on global warming. This is why it would be very important that people learned about how their current choices affect the world in ten, twenty or fifty years. It might work as an eye-opener for some people.

Inventing new crops that would stand the conditions on Earth

To ensure there will be no worldwide famine, it would be important to attempt inventing crops that would stand the changing conditions on Earth and most importantly would not build toxins like current crops.³⁹

Building shelters in places where extreme weather events are likely to occur

It is crucial that there are existing shelters when an extreme weather event hits an area, because in the chaos nobody can build a shelter or another safe spot for thousands of people quickly and reliably enough for it to offer real safety.

Work towards achieving better infrastructure in places that are currently lacking in infrastructure, such as slums and favelas

Making worldwide infrastructure better will decrease the risk of complete annihilation of, for example, an entire village when an extreme weather event occurs there.

Bibliography

<http://www.un.org/apps/news/story.asp?NewsID=57720#.WhT2n6Nh2fU>

<http://www.un.org/sustainabledevelopment/climate-change-2/>

³⁹ <https://climate.nasa.gov/news/1067/building-a-better-soybean-for-a-hot-dry-hungry-world/>

<http://www.unisdr.org/archive/46793>

<https://www.scientificamerican.com/article/extreme-weather-may-raise-toxin-levels-in-food-scientists-warn/>

http://news.xinhuanet.com/english/2017-11/06/c_136732449.htm

<http://www.un.org/apps/news/story.asp?NewsID=55564#.WhVAYaNh2fU>

<http://www.un.org/apps/news/story.asp?NewsID=57963#.WhVDA6Nh2fU>

https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch9s9-1.html

<https://thinkprogress.org/extreme-weather-is-the-new-climate-reality-b1d571798527/>

<https://www.pmel.noaa.gov/elnino/what-is-el-nino>

<https://www.pmel.noaa.gov/elnino/what-is-la-nina>

http://www.bbc.co.uk/schools/gcsebitesize/geography/weather_climate/extreme_weather_rev3.shtml

<http://nca2014.globalchange.gov/highlights/report-findings/extreme-weather>

<https://www.britannica.com/science/global-warming>

<https://climate.nasa.gov/faq/>

<https://www.britannica.com/event/Industrial-Revolution>

<https://www.theguardian.com/environment/2011/apr/21/countries-responsible-climate-change>

<https://earthobservatory.nasa.gov/Features/GlobalWarming/page2.php>

<https://www.theguardian.com/environment/2015/apr/27/extreme-weather-already-on-increase-due-to-climate-change-study-finds>

<https://www.nrdc.org/stories/are-effects-global-warming-really-bad>

<https://insideclimatenews.org/news/28022017/chinas-co2-reduction-clean-energy-trump-us>

<https://history.aip.org/climate/timeline.htm>

<https://climate.nasa.gov/news/1067/building-a-better-soybean-for-a-hot-dry-hungry-world/>

<https://climate.nasa.gov/>

<https://public.wmo.int/en/about-us/vision-and-mission>

<https://www.theguardian.com/environment/ng-interactive/2015/oct/16/which-countries-are-doin>

[g-the-most-to-stop-dangerous-global-warming](#)

<http://web.unep.org/about/who-we-are/overview>

<http://www.undp.org/content/undp/en/home/about-us/faqs.html#undp>

http://unfccc.int/kyoto_protocol/items/2830.php

http://unfccc.int/essential_background/convention/items/6036.php