

Committee: Sustainable Communities

Issue: Helping coastal cities and small Island States to be more resilient against rising ocean levels and climate disasters.

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« It is the small islands [and coastal cities] that are among the most endangered territories due to climate change »

<https://mrmondialisation.org/la-survie-des-petites-iles-en-question/>



https://www.google.com/amp/s/www.ohmymag.com/amp/ville/rechauffement-climatique-ces-grandes-villes-menacees-par-l-a-montee-des-eaux_art90878.html?source=images

At FerMUN, six committees focus on the Sustainable Development Goals (SDGs), following the guidelines of the High Level Political Forum.

The HLPF is the main United Nations platform on sustainable development and it has a central role in the follow-up and review of the 2030 Agenda and of the Sustainable Development Goals at global level.

Thus, each year, the HLPF focuses on six SDGs surrounding a common theme.

At FerMUN 2019, through discussions with Mr. Bouabid (Representative of the Director General on the United Nations SDGs at WIPO), we decided to follow the priorities chosen by the HLPF, and to have six committees treating one SDG each.

Our committee treats goal 11, which focuses on sustainable cities and communities .

Introduction

During these last few years, global warming impacts have greatly increased : glacial and ice cap melting, floods, hurricanes, and rising sea level. This causes hundreds of islands to be endangered in all the oceans. According to French researchers, between ten to twenty thousand islands are going to either be engulfed by the water or destroyed by cyclones within the next hundred years. Indonesia and Philippines will be among the most affected countries but other big coastal cities may also be affected, including Miami, New York, Tokyo or Amsterdam. It should be noted that the water levels have been increasing since 20 years and the researchers of the University of Copenhagen announced that in 2100 the ocean would have risen by one meter. Unfortunately, it won't only be a small part of the earth that will be affected; more than 50% of the human population lives near the ocean. This means that more than half of humanity is exposed to the ocean's rising, to storms or even to the complete disappearing of the coastline under the water.

This debate is crucial to find concrete solutions in order to sustainably protect the insular states and the coastal cities from the alarming consequences of global warming which is in agreement with the **11th goal of the sustainable development** which is put in place with the United Nations' Organisation for the next 15 years.

Definition of Key-Terms

Rising sea level : The increase of the oceans' level due to its dilation caused by global warming and the glacial melting ; its speed is considered to be a little above 3 millimeters a year.

Natural disaster: natural phenomenon often meteorological which generates heavy natural and human outcome such as dryness, storms and floods. Since the last 20 years, numerous cases reveal that the majority of the natural disasters are linked to global warming.

Climate change: climatic warming caused by a mass of greenhouse gases of human origins in the ozone layer which provokes the increase of the oceans' level, the melting of the ice floes, and the imbalance of concerned ecosystems.

Resilience: the capacity of opposing a force and stopping it from expressing itself.

Insular State: Countries in which the territory is composed of at least one island away from the rest of the continent such as : the Marshall islands, Hawaii and Japan.

Coastline: terrestrial land located on the outskirts of the ocean.

Coastalisation : an important concentration of human population and activities on the coastline.

Dilation: the increase of the oceans' level due to the rise of the temperature.

Dyke: a construction made on the seashore in order to protect the coastline from floods or from the erosion of the coasts.

Polder: artificial soil impressed on the sea due to dykes in which its level is inferior to the level of the sea ; it is made by the dewatering of swamps or lakes.

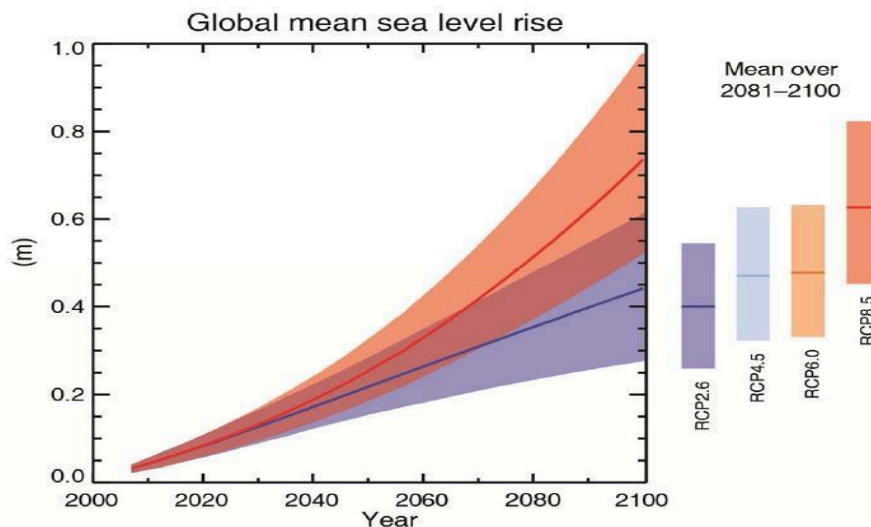
Overview

The state of places

The coastlines have greatly evolved since the 20th century; activities have been developed, urbanisation has been done, humans have settled: it is the coastalisation.

Today, the coastline regroups about two thirds of the entire population and its density is on average five times higher than anywhere else on the planet. The rapid development of the coastal cities and of the insular states makes their population more and more vulnerable to the rise of the sea level.

In fact, oceans' level has gradually increased since 1993, its speed is now at over 3 millimetres a year.



(<http://miamiseaerise.com/sea-rise-science/>)

Also, natural disasters worsen the vulnerability of the islands and of the coastal islands: the climatic disasters. These natural phenomena have always existed and are not directly caused by humans. However our actions have a considerable impact on the frequency of the disasters, along with the disasters' intensity and the importance of the destructions and of the number of victims.

The following natural disasters are considered the deadliest ones from 2017:

- The Irma hurricane: the most powerful hurricane from the Atlantic since 2005.
- Floods in South of Asia: on August 2017, about 1 200 people have lost their lives due to the strong storms in Bangladesh, Nepal and India.

- Dryness of Africa: dryness in South of Africa lasted about 19 months which threatened agriculture and caused millions of people severe water privation.
- The heat wave in India and in Pakistan had temperatures reaching 53.5°C in May. This heat wave has caused more than 3 700 deaths in these two countries.

Non-negligible causes

A common cause : global warming

Since the industrial revolution, the concentration in greenhouse gases in the atmosphere has led to the increase of temperature. The temperature has increased by about 0.85°C on average on the earth surface. Global warming is responsible for two phenomenons which contribute to the rise of the sea level :

- **Thermal expansion:** under the effect of the rise of the temperature, the water of the seas dilates and occupies more space
- **The melting of ice and ice caps:** when melting, the earthly ice pours its water into oceans

Moreover, climate changes greatly increases the natural risks and disasters: the rise of the sea level, the increase of the temperature of the air and of the water reinforces the **intensity of winds**. They also disturb the cycle of water; the water evaporates in greater quantity which causes long periods of dryness and then harshly comes back, creating severe floods.

Economic inequalities

Natural disasters often reveal inequalities. The population from the least developed countries are a lot more vulnerable and less prepared to face natural disasters. The human losses from these countries are heavier than the losses from developed countries; this difference is explained by an economic development being on halt and by the infrastructures from poorer countries being more damaged (antique dykes, or housings constructed in zones with a high risk). All of this is due to a lack of means or due to carelessness.

Furthermore, the lack of coordination between local and national authorities worsens the situation: the national authorities leave most of the work for the local authorities because of serious economic issues which increases the inequalities of development between cities due to. This leaves the poorest population more vulnerable to natural disasters.

“The people who are living in poor countries are 5 times more at risk of being moved due to natural disasters than people from rich countries”, according to the international NGO of fight against poverty OXFAM”

<https://www.bioaddict.fr/article/les-plus-pauvres-sont-cinq-fois-plus-victimes-des-deplacements-climatiques-a5776p1.html>

Heavy consequences

Consequences on the population

According to a report from the United Nations Organisations, around 400 natural disasters happen every year. Since June 2017, on average **41 million people** have been affected by violent rain and floods.

Storms and tsunamis threaten around **one quarter of the population**. Today, more than **150 million people** live in areas that will be submerged by the end of the century.

High economical consequences

The office of the United Nations for the reduction of the risk of disasters estimates a total price between 250 and 300 billion dollars per year.



(<http://miamiseaerise.com/sea-rise-science/>)

In Japan, the earthquake and tsunami that hit the city of Tohoku in 2011 costed more than 80 billion dollars.

Permanent physical losses

Some disasters are responsible for making people **long term victims** : in countries that are less developed the destruction of health infrastructures, of transport and of communication results in sanitary problems (such as diarrheal illnesses due to a lack of drinkable water and of sanitation network.) These problems have appeared after a natural disaster which still impact islands today such as Haïti.

A reason for all of these problems is a lack of help and exchange from the most

developed states to the most vulnerable states. With promises not always being held, infrastructures are not reconstructed and a lot of the habitations remain incomplete. In 2004, the South of Asia was hit by a tsunami and it only received one third of the money that was promised by the International Community. The United Nations' Organisation underlines a lack of financing in the rebuilding of housings and other infrastructures (only 35% of the promised money was given for the rebuilding of local industries after this natural disaster.)

In addition to all this, financial aid often creates tensions within the country due to the population not being helped the same way due to their needs being different. These different treatments are the cause of social disparities and aggression towards recipients who are receiving more help from the NGO. For example, after the earthquake which happened in Haiti in 2010, the help coming from the United States was not beneficial for government or the Haitian company but it was beneficial for American companies that were in the island.

Social consequences : migration and conflicts

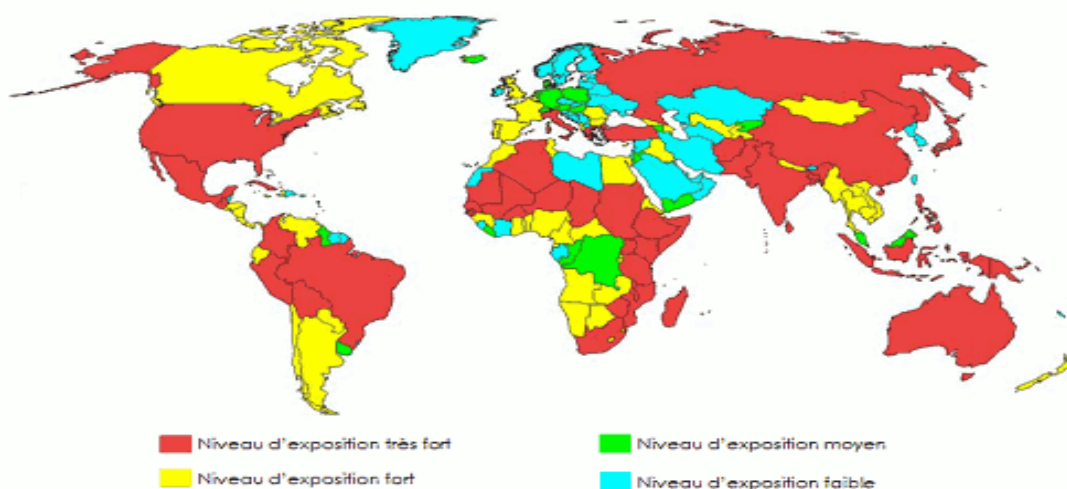
The population exposed to the risks of natural disasters and the rise of the sea level are forced to migrate to another country where they will feel safer. We can see two types of migration:

- **intern migration:** the affected population from the coastline moves towards the center of the country
- **international migration:** the affected population will move to another country located on a continent.

According to the United Nations' Organisation, the number of climate refugees will rise up to 250 million in 2050. Unfortunately, this migration phenomena is the cause of numerous conflicts between migratory regions; they will accept the immigrants because they are trying to economically compete with other regions and they expect the new population to help them. This competition then causes new ethnic tensions within the country itself.

Concerned countries and organisations

Lands that are in grave danger



1. **Asia** is the continent that is the most affected by natural disasters with 3,7 billion affected people which includes 138 thousand deaths caused by the Nargis of Birmany cyclone in 2008. Among the 5 most affected countries in the world, four of these countries are located in Asia :

- **China**, has been victim of 441 disasters, has started programs of preparation for natural disasters (building emergency shelters, anti-seismic plans...),
- **India**, which was affected in 288 disasters, this country is with China among the countries the most threatened by natural disasters ; progress in terms of prevention are only a little effective,
- **Philippines and Indonesia** are among the first archipelagos at risk of being submerged; they are putting in place a cartography system which will help collect information on the cover and the use of soil and the vulnerability of one population.

2. **The United-States** has suffered around 472 natural disasters and is among the most threatened countries due to the rise of the sea level. The cities that run the greatest risks are:

- **Miami** : The issue here is the implication of the migrating population of the city built under the level of the sea which is irretrievable. No matter what measures are taken, this city will be completely submerged by the end of the century despite the implantation of dykes.
- **New York** : If nothing is done to reduce the impact of global warming, the city will no longer be habitable by 2085.

Lands that take action

The Fiji islands

These islands from the Pacific have put in place **RapidPro**, a tool of information developed by the UNICEF which allows the NDMO (Fiji National Disaster Management Office) to collect information directly on the telephone of one person for the preparation and the rescue during a disaster and to send them to different authorities.

Netherlands

Close to two thirds of the Netherlands population are vulnerable to the rise of the sea level and the floods. To face these issues, the state has taken charge of the construction of numerous infrastructures that are able to fight against the rise of the water such as dykes, polder or even floodgates. The high effectiveness of these constructions are known worldwide.

Japan

In this archipelago which suffers around 20% of the world's earthquakes alone, the precaution system for natural disasters is summarised in three essential points: a fast analysis of an upcoming danger, an automatic alert and the systematic evacuation of the population. The earthquake of Kobe in 1995 in which the human losses were very heavy, the Japanese authorities had reinforced the earthquakes' standards and the severity of financial

penalties inflicted on promoters who do not respect them. The Japanese seismographs were installed on the coast and in the depth of the ocean. Beacons were spread in the Pacific Ocean to evaluate the risk of a tsunami appearing, it also evaluates its height and the time it is estimated to happen. Thanks to the J-alert system developed in 2007, the population can be warned a few minutes before an earthquake which will give them time to protect themselves.

Organisations in action

UNICEF

"One child out of four lives in a country that is touched by [...] a natural disaster."

Plenty are forced to leave their homes due to a tsunami, an earthquake or a hurricane. The UNICEF collects money and organises partnerships to be able to help these children and their families to have access as fast as possible to drinkable water, proper food, educational and sanitary services in order to prevent waterborne illnesses.



<https://www.unicef.fr/article/nepal-3-mois-apres-le-seisme-les-enfants-sont-toujours-en-danger>

ICRC (International Committee of the Red Cross)

This organisation, which is known on a global scale, gives a humanitarian and financial aid to people from countries affected by any type of disasters since 150 years. In 2004 for example, the ICRC has mobilised a humanitarian, material, and technical aid in order to help the islands of Aceh and of Sri Lanka which had been hit by a tsunami at this time. Among the emergency operations that had been put in place in the islands of the Pacific Ocean, this organisation has taken care of 10 000 patients with the help of volunteering doctors and with the access of drinkable water after the cleaning of 3000 wells that had been contaminated by salt water and rubble.

UN-HABITAT

In 2010, the cooperation by the ICRC and UN-HABITAT have put in place the tool « **QSAND** » which allows :

- governments, humanitarian associations and local donors to understand the result of their work in areas that are fragile due to natural disasters,
- to identify solutions that seem to be more effective,
- To create a base of solid knowledge when it comes to the construction of lasting habitations and make these constructions complete and accessible to all the people after a natural disaster.

Possible solutions

With the rapid development of the coastal cities, it is becoming urgent to adapt ourselves to the rising level of water by:

- stopping all constructions near weakened areas,
- changing the infrastructures in the coastal regions and making them more resistant (reinforce by dykes),
- making the grounds more stable to avoid having them crumble (reinforce the foundations),
- installing centers of protection against natural disasters near the concerned area.

It will be important to set up a plan of action for each disaster generalised in all the countries and insular state. In China, the government offers an equal access to the rescue services in cities and country-sides. Its earthquake observation system allows the rapid prevention of natural disasters. Finally, the country has put in place the earthquake alert along with numerous installations to face disasters.

For the developing countries that are affected, help from outside countries are essential to help them rapidly rebuild themselves. Partnerships between national authorities and insurance companies need to be improved in order to finance heavy consequences made by disasters for the disadvantaged population that have no economic cover.

Informing the population of a state is equally important in order to allow them to grow awareness of the risk that they are in by moving into coastal areas which are attractive but highly exposed to the risk of the rising water level and natural disasters.

Conclusion

While waiting for the different governments to find a global solution in order to reduce the consumption of greenhouse gases, it is essential to find solutions for those who are under the highest risk of natural disasters and rising of the sea level. These natural disasters affect all the countries. However, its effects are greater on disadvantaged areas even though they are the least responsible for natural disasters. It is essential to concentrate on the protection of this vulnerable population in the coastal cities and the islands by assuring sensibilisation, prevention, equal aid and an increase in exchange between local and national authorities but also between rich States and those in development. All this should be done without forgetting to take into account the new issues that appear such as mass migration due to internal and external conflicts.

Bibliography :

A few information on the 11th goal: <https://sustainabledevelopment.un.org/sdg11>

The program ACP-UE of prevention of natural disasters are an example of the type protection that has been put in place in zones weakened by natural disasters (which can help you find your way to finding solutions):

<https://www.gfdrr.org/sites/default/files/publication/activity-report-acp-eu-ndrr-2015-2016-fr.pdf>

Here are a few sites that explain the dangers and the cities that will be the most affected by the rising water :

<https://www.theguardian.com/cities/2016/oct/14/global-sea-levels-rising-fast-cities-most-at-risk-flooding-un-habitat>

<https://www.union-habitat.org/actualites/comment-prevenir-les-risques-et-catastrophes-naturelles>

<https://www.notre-planete.info/actualites/3924-augmentation-niveau-mer-rechauffement-climatique>

A small preview of what will become of the most known cities that are invaded by water :

<https://info.arte.tv/fr/avantapres-ces-sept-metropoles-menacees-par-la-montee-des-eaux>

This video explains the overall consequences that will happen if the all the ice caps were to melt :

<https://www.bing.com/videos/search?q=what+if+all+the+ice+melted+bil&view=detail&mid=4AC45610FDAC290F50FE4AC45610FDAC290F50FE&FORM=VIRE>

Simulation of rising of sea level:

<http://www.brgm.fr/video/simulation-numerique-montee-eaux-boucholeurs-tempete-xynthia-2010>

A report on the rising water: <https://www.youtube.com/watch?v=klP9Ueci7mI>

Natural disasters and global warming: <https://www.youtube.com/watch?v=aIXnOKXO5k8>

A few solutions concerning the rising of water **(but do not forget to be creative, if these solutions actually work, we would not be talking about this issue today) :**

<https://www.aquashell.fr/protection-contre-inondations/?cn-reloaded=1>

<http://www.banquemonddiale.org/fr/results/2013/04/12/managing-disaster-risks-resilient-development>