

Surf City XIX

Huntington Beach High School

UNEP

Topic A: *Desertification of the Sahel*

Topic B: *Mercury Contamination*



Welcome Letter

Dear Delegates,

On behalf of the Huntington Beach High School Model United Nations Program, we would like to welcome you to our Surf City XIX advanced conference!

Our annual Surf City conference upholds the principles and intended purpose of the United Nations. Delegates can expect to partake in a professional, well-run debate that simulates the very issues that those at the United Nations discuss every day. Both novel and traditional ideas will be shared, challenged, and improved.

It is our hope that all delegates will receive the opportunity to enhance their research, public speaking, and communication skills as they explore the intricacies of global concerns through various perspectives, some of which may be very different from their own. We hope their experiences here give them new insight and values that they can apply outside of the realm of Model UN for the betterment of the world community.

Please do not hesitate to approach our Secretariat or Staff Members with any questions or concerns that you may have throughout the day. We wish the best to all our participants and hope that they may share a fulfilling experience with us!

Enjoy the conference!

Sincerely,



Zach Bernstein
Secretary General



Vivian Bui
Secretary General



Lauren Le
Secretary General



Alison Miu-Martinez
Secretary General

Meet The Dais

Taylor Lang

Hello delegates! My name is Taylor Lang and I am a senior here at Huntington Beach High School! At HBHS, I am a Senior Teacher for a class of MUN freshmen, Varsity Dance Team Captain, CSF President, NHS member and so much more! Through my MUN experience, I have become really passionate about environmental issues and injustices, which is inspiring me to pursue a career in environmental policy. Beyond the academic sphere, I love watching movies (specifically Marvel and Star Wars), listening to Phoebe Bridgers and Taylor Swift, being a competitive dancer, and hanging out with my co-chairs, Mia and Ava! I can't wait to meet you all in committee and hear your innovative solutions! Great luck and happy researching!

Mia Seleno

Hi everyone! My name is Mia Seleno and I am also a senior at Huntington Beach High School. I am involved in several clubs here on campus, a member of NHS, and a dancer. From starting MUN my freshman year, I never could have imagined how much confidence I would gain in public speaking, the passion I would grow for world issues, specifically environmental justice, and all the friends I would make along the way. Without MUN, I can't imagine how different I would be as a person, because it is more than just a public speaking class, but a place where I have discovered my true interests and beliefs. In my free time, I like to crochet, listen to several different genres of music, watch TV shows (my top 3 favorites being American Horror Story, Atypical, and Stranger Things), and reading books, with my favorite of which are Perks of Being a Wallflower and Song of Achilles, both of which make me cry uncontrollably with every read! One thing I wish I could do in life is to see The Smashing Pumpkins, Nirvana, and Sonic Youth in concert. I might even be willing to sell my soul for it. I am beyond excited to chair this committee and I cannot wait to see what amazing ideas you all bring to the table. Best of luck everyone!

Ava de Courcy

Hi everyone! My name is Ava de Courcy and I am a junior here at Huntington Beach Highschool. I am a competitive dancer, a co-founder of the HBHS Human Trafficking Awareness Club, and an artist. Personally, I believe MUN is one of the best classes you can take throughout your education career (and no, I was not paid to say this). Being a naturally opinionated and outspoken person, this class has taught me the value of having research and evidence to effectively get a point across. Learning about world issues and current events is also, I believe, so vital for becoming a well-rounded person. Outside of MUN, I love reading books that make you cry really hard at the end, practicing playing my favorite songs on bass, making playlists for my friends, and watching obscure movies. A fun fact about myself is that my music taste is my entire personality—do with that information what you will. I can't wait to meet you all in committee, and I will definitely want to see your Spotify Wrapped when it's over!

All Papers are due on **JANUARY 30, 2022** by 11:59pm to
surfcitymun.unep@gmail.com

Topic A: Desertification of the Sahel

Background

Before 1970, the Sahel, the region directly below the Saharan desert, experienced adequate rainfall and was home to lush vegetation. This thriving landmass supported animals such as elephants, crocodiles, and giraffes, animals that could no longer be sustained due to the region's current conditions that are worsening as a result of extreme drought. From 1968 to 1993, the whole of West Africa experienced a brutal drought. With a rainfall deficit of 15-20% compared to average levels, and a 25-50% deficit during the following wet period, the negative effects of the drought were extensive to more than five million kilometers of West Africa. As the drought continued north, the Sahel was bound to experience the detriments. Once a semi-arid zone, the Sahel's soil was severely degraded over the long period of drought; species fully adapted to aridity were unable to survive, leaving dried-out areas with no vegetation throughout the region.¹ Without these essential sources of vegetation, the soil quality perished along with them.

This change in the atmosphere would have occurred regardless of human action. The issue seems to be that the transition between atmospheric conditions did not align with orbital timescales across North Africa. The desertification of the Sahel can be explained by a change in the Earth's orbital pattern roughly 8,000 years ago, also known as Africa's green shift, in which the tilt of the earth moved from 24.1 degrees to 23.5 degrees in which it sits today.² Over time, the Sahel and other regions, such as the Sahara that were full of vegetation, quickly became exposed to periodic sessions of aridity and humidity. The African Humid Period, when the Sahel and Sahara were rich with plant and animal life, came to an end very quickly because of a shift in the planet's orbit that dramatically increased solar radiation in the earth's northern hemisphere, causing the shift from humid to dry climate conditions to materialize much too quickly in Northern Africa, the effects of which have now trickled down to the Sahel and Western Africa.³

Archeologists have uncovered useful information by taking sediment cores and pollen records in several locations within the Sahel region and the Sahara Desert. They discovered that wherever pastoralists, which were sheep and cattle farmers, settled, there was a transformation in biodiversity in the long run. Seeing as pastoralists were keen to give into agricultural addiction and allow for their sheep and cattle to overgraze the grasses, these constant activities fueled by human action furthermore reduced the air's moisture content.⁴ Desire for land and resources is one of the root causes for the desertification of the Sahel. With the region already in a vulnerable, arid state because of the green shift, degradation of the land occurred 30-35 times faster than the normal rate.⁵ Ultimately, anthropogenic climate change is what caused the Green Sahel to become dry and barren, and because of exponential population growth and rapid rates of land degradation, creating a collaboration between natural and human factors led the Sahel region, Northern and Western Africa from a lush region, to the driest and lifeless in the world. In turn, the transition from humid to dry climate in the Sahel region caused such a devastating change that the land could not sustain itself.

As of now, drylands, which include deserts, grasslands, and rangelands, occupy 41.3% of the earth's surface. 2.1 billion people across the world call these areas home, and 1.5 billion rely on the degrading desert land to live. With the Sahara being the world's largest desert and having expanded by 10% in the last century, it is only expected to continue its exponential growth patterns. Threatening $\frac{2}{3}$ of all land in Africa, the spread of the Saharan desert must be protected

by the Sahel region, which has seen active recovery through the process of regreening.⁶ It is not only occurring naturally because of historical warming and cooling patterns, but has extreme amounts of progress initiated by Sahelians and the trees that they are growing. These valuable trees, such as the Shea and Neem, Egyptian Balsam, African mahogany, and several others are conditioning the air in their nature, a vital resource for urban areas facing manmade air pollution.⁷ Not only this, but they are giving back to the once barren and nutrient-deprived soil. Though there is progress, the worries of the desertification of the Sahel region have not diminished. To preserve the Sahel and limit the spread of the Sahara, human action is required to replenish the damage done by pastoralist actions of the past.

The environmental crisis has manifested itself into conflict as seen with the country of Mali as over 300,000 people have fled their homes due to increased violence. With small agriculture plots with crops supported primarily by rainfall, around 75% of Mali's citizens rely on the agricultural sector for their income and food supply. Because of this reliance on agriculture plots, when conflicts such as the civil strife in 2012 caused by Tuareg rebels and Mali civilians had to seek refuge in other vulnerable communities, they did not have supportable land for their practices and livestock. Even when they were able to return home in 2013, they were faced with the effects of land degradation and drought, which then led to more displacement as they moved to seek arable land. Land pressures have created the farmer-herder conflict that spreads across central Mali, northern Burkina Faso, and Nigeria, which have allowed for the rise of militant Islamist groups who are able to target those affected by land degradation and the farmer-herder conflict. With religious, ethnic, and lifestyle differences, the primarily Muslim group of Fulani Herdsmen and the Christian farmers conflict overland usage, and the Herdsmen finding that they come second to the farmers.⁸ Changes in environmental patterns have caused the nomadic herdsman to change their grazing pattern, now encroaching onto the limited land usable for farmers; even expanding across borders as the search for usable land continues. Other factors include that Central and Western Africa has increased by 40% in the past 20 years, leading to cropland usage to now cover around 25% of the area's land surface, leading herdsman to participate in more illegal activities as they graze in national parks and other protected areas. While laws and policies are implemented in these nations to combat the conflict, the laws are often abandoned as the land-use decisions are made when farmers and pastoralists are not present, meaning they are prohibiting land that is already in use.⁹ With the increasing environmental changes in the Sahel, conflicts associated with limited land use must be tackled to allow for the safe development of these rapidly growing populations.

United Nations Involvement

Recognizing the severe negative effects brought by the desertification of the Sahel due to climate change, the UN has taken many actions to strive for change. In 1994, the United Nations Convention to Combat Desertification (UNCCD) was initiated for the development of sustainable land management in drylands, including arid, semi-arid, and dry sub-humid areas. This legally binding international agreement included 197 parties. Under Article 21 of the UNCCD, the Global Mechanism was established to assist countries to implement the Convention through help with financial resource mobilization. To support these goals, the FLEUVE Project was implemented through the Global Mechanism from 2014 to 2019. This project had goals to strengthen the capacities of communities to help boost investments in land restoration and create employment opportunities for green jobs.¹⁰ It was successful in implementing micro-investments in 23 communities between Burkina Faso, Chad, Niger, and Senegal for capacity building.

Recently through the UNCCD, on December 21, 2020, the UN passed A/RES/67/211, “Implementation of the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa,”¹¹ urging member states to take immediate action to combat land degradation, and calling on the UNCCD to mobilize adequate financial resources for doing so.

In 2007, the Great Green Wall Initiative was launched by the African Union, a plan for planting an 8,000 km “wall” of fertile land spanning the length of the Sahel region.¹² Currently around 15% underway, this initiative has goals to restore 100 million hectares of degraded land in the region, remove 250 million tons of carbon from the atmosphere, and create 10 million green jobs by 2030. This addresses the desertification crisis itself as well as its effects on surrounding communities as it grows new fertile land, creates climate resilience, advances food security, and increases economic opportunities for populations in the region. From when it was initiated in 2007 to 2018, the GGW restored around 20 million hectares of land, created over 350,000 jobs, and generated about 90 million USD in revenues.¹³ Overall, the initiative covers 15 of the 17 Sustainable Development Goals.¹⁴ With climate change being one of the main forces for drought, land degradation, and desertification, the United Nations Framework Convention on Climate Change founded the Green Climate Fund in 2010.¹⁵ This fund works to support developing countries raise their Nationally Determined Contributions, an element from the 2015 Paris Agreement on climate change mitigation. Through a four-part approach, the GCF works to achieve goals in four major areas of sustainable development: environment, energy, and industry; human security, livelihoods, and well-being; and land use, forests, and ecosystems. The GCF establishes country-led planning and programming, catalyzes climate innovation, de-risks investments toward mobilized financing, and mainstreams climate risks and investment opportunities to align financing with sustainable development. Partnering with the International Fund for Agricultural Development, the GCF created an investment program known as the Great Green Wall Umbrella Programme in 2020 to support Sahelian Governments establish and develop the GGW.¹⁶

Case Study: Lake Chad

Lake Chad, once serving as the main body of water to the West African people, specifically in the western border of Chad and northeast Nigeria, reaps the effects of climate change, unsustainable population growth, and improper irrigation, leading to a decrease by 95% from original size.¹⁷ Serving as the heart of the Sahelian region, the changes inflicted by climate change on the water levels of this lake has had vast effects. The body of water, once stretching 8% of Africa’s landmass, is now being called an “ecological catastrophe” by the Food and Agriculture Organization, with predictions that the lake will be gone by the end of the century.

Prior to the desertification of Lake Chad, the agricultural sector flourished, there was limited conflict between farmers and herders, and there were over 20,000 commercial fish sellers who benefited from the diverse fish populations found in the lake. The desertification process began in the 1970s and 1980s where a series of long term droughts plagued the Sahel, leading to a split in the lake in 1972, to which the northern part dried up entirely in 1986.¹⁸ While there is no single cause for the shrinking of Lake Chad, contributions to its demise include unsustainable human use, including the mass pumping of water for irrigation and introduction of invasive plant species that now cover over half of the lake, rapid population growth, natural fluctuations, and increased drought and rising temperatures related to climate change.

Lake Chad was the largest water reservoir in the Sahel, spanning an area approximately the size of Israel, or 26,000 square kilometers. The lake is vital to preserving biodiversity in the region as it is home to over 120 species of fish and 372 species of birds.¹⁹ Crops that used to flourish in the sandy areas surrounding the lake included potatoes, onions, groundnuts, and millets, and traditional farming practices benefited from the water source by using canoes to harvest. Harvest is continuing to decrease as sorghum, which used to benefit off of the black cotton soil surrounding the lake, decreased in yield from 3.28 million tones in the 1960s to 1.8 million tones in 2010. With 95% of farming practices being based on traditional and rainfed techniques, the decrease in rainfall is directly targeting the agricultural sector that the majority of the countries heavily rely on.²⁰ In reaction to the shrinking lake, fish production has seen a 60% decline with the extinction of commercially important fish species (the Nile Perch and Labeo) that already went extinct in the 1980s.²¹ The decrease in the food supply has caused the displacement of over 2 million people in search of the necessary resources once provided by the lake.²² With the desertification of the Sahelian region, specifically Lake Chad that serves as the agricultural basis for around 30 million people, the desertification spans farther than just an environmental issue.

The environmental implication of the desertification of Lake Chad has sparked conflict as seen with the rise of Cameroonian-Nigerian tensions and the presence of Boko Haram. The Darak village as the Cameroonian and Nigerian people dispute over who owns the territory, with the debate being heightened because of its necessity to water. Additionally, the use of dams can create environmental warfare as the creation of the Tiga and Chalawa dams increased conflict between the upstream communities in Nigeria versus those downstream in Niger.²³ The decrease of reliance on agriculture has allowed terrorist organizations to thrive as they prey on the financially unstable. With the desertification of the Lake Chad Basin, terrorist organizations, primarily Boko Haram, have been able to gain control of the disparate region and force upwards of 2.8 million people out of their homes, with 1.7 million of them being children. The link between the desertification of this region and the rise of terrorism is clearly seen as 7 million out of 9 million in need of humanitarian aid in the Lake Chad Basin is from Nigeria.²⁴

In terms of restoring the lake, the Lake Chad Basin Commission was established in 1964, with members including Chad, Nigeria, Niger, and Cameroon, with the addition of the Central African Republic in 1994 with the goals of limiting the further depletion of the lake and providing security to the people who rely on these lakes. Plans to do so include the construction of 60 miles of canals to direct the uphill stream of water from the Congo River to the Chari River, which would then lead to refilling Lake Chad; however, a project like this would require regional consensus and unacquired funding. The need for regional consensus was seen as the rainy period in the 1990s had the opportunity to restore the lake. However, the countries relying on the lake took action constructing dams on the rivers that led into the lake and diverted those feeders away, while ignoring agreements and consultations with the LCBC. An example of such dams includes the Chari-Logone system that should provide more than 80% of the lake's water, which was affected when Chad in the 1970s constructed the dams on the Logone diverted 1/3 of its water. Accounting for the hardships due to regional consensus, this body also focuses on educating those in the region on how to cope with the changing environment by introducing more efficient water-utilization techniques, new grazing areas, and more sustainable fishing practices.

An example of a proposed project includes the Transaqua canal, a USD 50 billion plan for a 2,400-kilometer canal from the Congo River Basin to Lake Chad that was originally presented in the 1970s, however, was recently discussed again in 2016 as Powerchina signed a memorandum of understanding with the LCBC, displaying their interest in funding the project.

However, the main concern with this project is that majority of the construction would take place in the Democratic Republic of Congo and the Central African Republic, to which neither of them are riparian of the Lake Chad Basin. With the LCBC at the International Conference on Lake Chad in 2018, stating the Transaqua canal as their preferred option for replenishing, the only main actor against it is the DRC as they fear it would damage the Congo Basin, create political issues among the Congo Basin countries because of new water allocation, and fears that Congo Basin countries have not been participating in the decision making of the canal that would affect their water supply.²⁵ With the lack of regional consensus and fear of gaining funding from the private sector, the Transaqua canal has yet to make any progress and serves as the perfect example of the struggles related to replenishing the lake.

Efforts to combat the dire situation are unproductive because of a severe lack of underfunding, an example being that the 2016 Humanitarian Response Plan for Nigeria only received 28% of desired funding.²⁶ Additionally the Food and Agriculture Organization (FAO) recognizes the impact on food supply with the implementation of the FAO Lake Chad Basin Crisis Response Strategy (2017-2019) framework which introduced a twin-track approach with aspirations of increasing food production and catering to the nutrition needs, as well as promoting resilience against the inevitable changes.²⁷ With the LCBC countries consistently being ranked the lowest in the UNDP Human Development Index, the preservation of Lake Chad and the mitigation against the effects of desertification is necessary to allow for the development of this region.

Questions to Consider

1. What can be done to address the economic impacts associated with the change in industries related with the desertification of the Sahel?
2. How can new practices be introduced into the region in order to cope with the effects of desertification?
3. What government action can be exerted to create a protection surrounding the state of regreening in the Sahel region?
4. How can a resource as vital as food be secured in times of extreme drought and what can be done in preparation?
5. Considering human impact on climate change and therefore rapid desertification, what environmental policies or plans can be passed to alleviate this?
6. How can long-term plans, such as the GGW, be strengthened and hastened to accommodate the growing threats associated with desertification?

Endnotes

1. <https://en.wikipedia.org/wiki/Sahel>
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3. https://www.researchgate.net/publication/273451422_End_of_the_African_Humid_Period
4. <https://www.nature.com/articles/s41467-018-06321-y>
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7. <https://knowledge.unccd.int/knowledge-products-and-pillars/unccd-science-policy-weblog/why-sahel-might-be-most-resilient-place>
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25. <https://reliefweb.int/report/democratic-republic-congo/transaqua-lake-chad-and-congo-basin-call-cautious-action>
26. <https://knowledge.unccd.int/publications/drought-desertification-and-regreening-sahel>
27. <https://www.unep.org/news-and-stories/story/tale-disappearing-lake>

Topic B: Mercury Contamination

Background

Mercury (Hg), a highly dangerous neurotoxin, can be found contaminating air, water, sediment, animal, and plant life worldwide. It can be emitted from natural resources, such as volcanoes, geothermal springs, geologic deposits, and the ocean, or human-related resources, such as coal combustion, waste incineration, industrial uses, and mining.¹ About 30% of mercury in the atmosphere is from natural sources, and 70% is from human resources.² Anthropogenic emissions are not decreasing, despite regulatory efforts, as emissions from 2015 were about 20% higher than those seen in 2010.³ Human-related activities have more than doubled the atmosphere's natural amounts of mercury in the last 150 years, with around 2,220 tons emitted worldwide each year, leading to a 450% increase in mercury concentrations in the atmosphere above natural levels.⁴

Mercury contamination is incredibly dangerous because of its persistence in the environment. It bioaccumulates, meaning the substance is absorbed faster than it is secreted, causing rapid build-up in the tissues of plants and animals. Therefore, aquatic plants and animals can have up to 130,000 times higher concentrations of mercury contamination in their tissues than in their surrounding waters. Mercury also biomagnifies, meaning it has higher concentrations at increasingly higher levels in the food chain, beginning with algae and plankton.⁵ The toxin concentrates in predators that eat animals contaminated with mercury, and its toxic effects compound as it travels through the food chain. For example, species of fish that contain high levels of mercury are larger predators, such as swordfish, king mackerel, and bigeye tuna.⁶ Mercury is never truly removed from the environment, but it only circulates through the atmosphere and in waters, and eventually deposits under soils or sediments, until it is disrupted and cycles throughout the environment again.⁷ Due to bioaccumulation in fish, the US Food and Drug Administration (FDA) recommends that pregnant women and children limit their consumption of fish that naturally contain high levels of mercury and limit the fish consumed to that of locally caught fish.

Mercury contamination does not only affect oceanic food chains but can threaten wildlife through airborne mercury pollution. In 2006, songbirds living in Dome Island, located on Lake George in New York, were found by researchers to contain higher levels of mercury than any other upland forest songbird population. Even spiders of the area were found to have raised levels in 2011. The main cause of this environmental pollution is the atmospheric deposition of mercury from coal-fired power plants. When mercury is emitted from its source, pollution that drifts into the atmosphere falls back to Earth through rain, snow, and dry particles. Through this cycle, mercury can contaminate all parts of the food web.

The most dangerous form of mercury is methylmercury, which is formed when inorganic or elemental mercury transforms with aquatic microbial activity. Poisoning through methylmercury created the disaster in Minamata Bay, Japan in the 1950s. This highly toxic form of mercury is caused by environmental pollution, biotransforming when bacteria reacts with mercury found in water, soil, or plants. Minamata saw poisoning in those who ingested fish and shellfish from waters contaminated by the chemical plant Chisso Company. Local cats who consumed the fish from these waters began to die first. Next, people whose main food source was fish began to be affected, with over 2,000 deaths from this methylmercury poisoning, which was coined as “Minamata disease” in 1956. Symptoms include blindness, cerebral palsy,

deafness, growth problems, impaired mental functioning, impaired lung function, and microcephaly.⁸ Methylmercury can cross placental barriers and blood-brain barriers, accumulating in the kidneys, and potentially the fetuses of pregnant women, making fetuses, pregnant women, and young children the most vulnerable.⁹ Mercury poisoning was found in Japan again along the Agano River in 1965, known as Niigata Minamata disease, or the Second Minamata disease. Once again, industrial waste led to the bioaccumulation of mercury in fish and shellfish. To begin ridding the environment of this toxic contaminant and prevent future generations from suffering through these poisoning disasters, they passed the Water Pollution Control Act in 1970 and the Uniform National Effluent Standards were enforced in 1971. These required companies' proper treatment and disposal of effluent, or liquid waste discharge. They enforced stricter laws on the allowed amounts of mercury to be found in waters, along with higher detectability standards. The Basic Law for Environmental Pollution Control was passed, stating that environmental water quality standards for total mercury should be less than 0.0005/l.¹⁰ Not only did this disaster spark the need for change in Japan, but it led to international action toward protecting human health from mercury contamination, such as through the UN Minamata Convention on Mercury.¹¹

Another form of mercury contamination is through organomercury, a fungicide used as a seed protectant. In 1971, Iraq experienced the Poisoned Grain Disaster, an outbreak of mercury poisoning caused by seeds that had been treated with organomercury.¹² After struggling through severe drought in the 1960s, the country had a major drop in wheat yields and feared famine. Seeking international help, Iraq contracted Mexico with new seed shipments. In order to prevent spoiling due to humid conditions during transit, the wheat seeds were treated with a cost-effective mercury-based fungicide.¹³ Although Iraqi farmers were instructed not to consume the treated seeds directly, miscommunications due to language barriers and therefore inability to read labels led to the disregard for this safety precaution. The seeds were fed to livestock and flour made from their grain was baked into bread. The outbreak of mercury poisoning that ensued led to 459 deaths and thousands of exposures.¹⁴

It is vital to note how mercury contamination disproportionately affects those in urban and poverty-stricken areas for a multitude of reasons. Regions such as South American and Sub-Saharan Africa contribute to around 38% of mercury emissions, solely based on small-scale and artisanal mining, as the mining industry attracts vulnerable communities because of expected quick economic return and exploitation done by large mining companies and international corporations. One reason is that impoverished communities are often the group plagued to living in environmentally damaged areas; seen in how when observing mercury leaves in soils around current and historical mining communities in Madre de Dios, Peru.¹⁵ Because of the economic security provided through illegal artisanal gold mining, increased population growth and mining led to even more mercury infiltration and exposure to the indigenous and non-indigenous communities in the surrounding area. Similarly, the Guizhou Province in China and their mining deposits are responsible for 60% of mercury in China and are rarely limited because the regulatory actions fail to reject illegal mining processes, therefore, go unenforced.¹⁶ Considering that the anthropogenic emissions of mercury are continuously increasing, regulations must not only been implemented but followed through to assure environmental protection and the health of those prone to mercury-related illnesses from exposure.

United Nations Involvement

Through the UN Environment Programme and its other branches, the United Nations has addressed mercury contamination by increasing provisions, research, and monitoring systems. To start, the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal, which was put into force in May 1992 and now has 189 parties.¹⁷ The main focus of these conventions is to prevent the movement of hazardous waste, with an emphasis on assuring that hazardous waste is not harmfully transferred from developed to developing countries.¹⁸ In the Basel Convention, mercury is categorized as hazardous waste, meaning “environmentally sound management” which means controlling mercury waste to limit human health and environmental impacts. Additionally, Article 12 promotes a protocol that would serve to create accountability for the harms associated with moving hazardous waste across borders.¹⁹

The main document associated with mercury pollution is the UN Environment Programme’s Minamata Convention on Mercury, appropriately named after the mercury crisis in Minamata, Japan. It took three years of negotiation, when finally on January 19th, 2013, it was adopted by over 140 delegates; to which it now has 123 members.²⁰ In 2017, the Conference of Parties (COP1) for this convention met in Geneva. Some requirements under the Minamata Convention include controlling mercury air emissions from coal-power plants, reducing mercury in everyday appliances, enforcing safer storage and disposal when trading mercury, and improving public awareness on issues associated with mercury contamination.

Prior to the Minamata Convention, the Global Mercury Partnership was created in 2005 and is divided into seven sectors to reduce the use and emissions of mercury on a global scale. The Global Mercury Partnership has over 190 members and serves to create a multi-sectoral and multi-stakeholder platform to develop immediate solutions to combat the dangers associated with mercury contamination. Monitoring is done at an international, regional, and local level in order to accurately survey mercury levels in the air and human systems on a voluntary basis. Additionally, the Global Mercury Partnership serves to uphold the Minamata Convention and assure that it is effectively implemented. To share information, the Global Mercury Partnership utilizes UN developed technology including the Global Mercury Supply, Trade and Demand Report, Mercury Inventory Toolkit, and the Global Mercury Assessment.²¹

The Sustainable Development Goals (SDGs) of 2015-2030 also link to the goals under the Minamata Convention, specifically with goals 1,2,7, and 14.²² With SDG 1 being to end poverty in all forms, it addresses how mercury contamination has inequitable effects on those facing poverty due to high-risk occupations, poor living conditions, and the lack of education provided about the damaging effects of mercury contamination; which leads to the UNEP and its partners introducing healthier alternatives and addressing the socio-economic issues leading to the increased risk. Food insecurity with association with fish is addressed in Sustainable Development Goals 2 and 14 as mercury bioaccumulates, with even harsher effects on pregnant women and children, to which the UNDP finds it vital to decrease mercury use and promote its safe disposal to assure that it does not become infiltrated into the food system. With the second main source of human-related emissions of mercury coming from energy generation by fossil fuel, sustainable development goal 7 relates to reducing mercury emissions by promoting clean energy and adding provisions to reduce the harmful effects of power generation. The Global Mercury Assessment was first produced in 2002 — with additional reports produced in 2003, 2008, and 2013 — under the mandate request from the Governing Council of the UN Environment Assembly to report research on mercury-related issues and serve as the research basis for the Minamata Convention.²³ The basis of these reports is addressing mercury levels in the air and water, as well as its relations to human populations. With increasing development and

rapid population growth, the control of mercury is a necessary topic for the United Nations and its various programs.

Case Study: Grassy Narrows

The Grassy Narrows First Nation in Ontario, Canada, also known as the Asubpeeschoseewagong Netum Anishinabek, is home to the indigenous Anishinaabe people. In the 1960s and early '70s, a chemical plant at the Reed Paper Mill just upstream of the Grassy Narrows dumped ten tons or 9,000 kilograms of mercury into the English-Wabigoon River.²⁴ Soon after, the fish within the river, of great cultural value to the people of Grassy Narrows First Nation, were contaminated head to tail with toxic mercury. Ingestion of mercury is bad in itself, but the transformation of mercury when it enters the water is a different story. When in contact with water, mercury converts into methylmercury, which is a pungent neurotoxin that threatens human health. With methylmercury in fish and the water supply that was once deemed so clean that you could drink straight from the flowing river, the English-Wabigoon was now an extreme concern to the health of the native people.

Much like a chronic illness, the ingestion of mercury causes lasting effects, as it never leaves the body, but bioaccumulates, passing down from one generation to the next through the womb, specifically the placenta.²⁵ In 2016, a review was conducted on the state of contamination within the fish, and it was stated that the fish in the English-Wabigoon are the most contaminated in all of Ontario. Such potent mercury content within the fish that the Anishinaabe people rely on for sustenance and survival has the ability to cause mercury poisoning, memory loss, headaches, tremors, and several other life-altering symptoms. Darwin Fobister, a 22-year-old man living in Grassy Narrows is just one example of the 90% of people in the region with some level of mercury poisoning. Because of such high ingestion of mercury, Darwin is facing the complications of impaired speech, having difficulty speaking, and learning disabilities. At such a young age, these problems are far from natural. In a 2018 report conducted by Donna Mergler, an environmental health expert discovered that of the 90% of people diagnosed with mercury poisoning in Grassy Narrows, they will experience neuropsychological disorder and health problems six times more likely than a person without mercury poisoning. With the knowledge that mercury contamination passes on through generations, it is inevitable that almost all children of Grassy Narrows will be faced with life-altering illnesses at a very early stage within their lives.

Despite such an apparent effect on the Anishinaabe people, there has been extreme neglect towards the situation. June 27th, 2020 marked 3 years from when the government in Ontario gave its promise to decontaminate the river, yet since then, there has been no compensation to the people. 85 million Canadian dollars were even committed in 2017 to clean up Grassy Narrows and the English-Wabigoon river, yet the initiation has yet to begin. Judy Da Silva, the Environmental Health Coordinator of Grassy Narrows First Nation holds her frustrations, in confessing that "the money's not going into our impacts. It goes into an industry that's trying to clean the river. And then with the mercury home, it's going to go toward building the building and having staff to keep the place running" and she questions, "the compensation is what?"²⁶ Out of anger for this inaction, the people of Grassy Narrows came together on March 27th, 2021 in a virtual meeting held by Standing Up For Racial Justice (SURJ) to raise funds for the upcoming River Run, which started in 2010 and has taken place every year until the pandemic. This online rally to Free Grassy was packed with over 200 people and pinpointed focus on what the Anishinaabe people wanted most, compensation.

Even after such an uprising from the public, there is a reluctance in the government to take action, which can be accredited to the injustices that came along with past colonization. This willful neglect from the government reveals the true nature of environmental racism that has left the Anishinaabe suffering incurable illness for a long time. Dating back to the '80s, environmental racism relates to a wide variety of scenarios, such as the blatant disrespect shown in landfills, coal-fired plants, and hazardous waste dumps in areas where Natives, African Americans, and Hispanics were living. Organizations in Canada, such as Ecojustice, have expressed concern for the evident environmental racism that is everywhere.²⁷ The Anishinaabe people have picked up on the specifics of the government's inaction, and have rightfully attributed it to environmental racism. This lack of compensation caused by underlying prejudices has shown in establishments such as the Mercury Disability Board, brought to Grassy in 1986 under a court settlement. As an organization promising to provide healthcare and assistance to those suffering from mercury poisoning, little action was taken to reach a satisfactory conclusion. As for other organizations, an important one being a Mercury Care Home, organized by the government, was intended to be a healthcare center based around a group of diverse individuals, but rather became constraining to those involved. A total of 14% of people in Grassy received financial compensation at all, but a little bit is not always enough.²⁸

Going so far as to deny the facts that mercury poisoning is not a threat in Grassy, the government of Ontario has shown that an issue of this sort is not of their concern, a narrative that would most likely shift completely if it was centered around a non-indigenous community. As Grassy Narrows members continue to fight for the recovery of their river, the source of survival, they are fighting for the next generation, so that they will never have to experience such hate and neglect from a government that is supposed to give unconditional support to all of its people. The youth, with knowledge of this injustice, have taken matters into their own hands, and have held rallies annually ever since 2012 in hopes of finally receiving compensation for themselves, their parents, grandparents, and friends. People across Canada and other countries have joined the Anishinaabe people in their fight, because of the importance that indigenous tribes hold to the Earth and the cultural significance that each tribe has. Until the government hears the cries of the Anishinaabe and the rest of the world to clean out the toxic, once beautiful English-Wabigoon river, the 94% of Grassy Narrows First Nation members will continue to suffer without compensation for their incurable sufferings.²⁹

Questions to Consider

1. How do socioeconomic factors play into mercury contamination and its harmful effects on the rural and urban poor?
2. What can be done to promote the safe storage and disposal of mercury waste? How can we prevent it from getting into waterways?
3. Considering that disrespect of indigenous peoples is a huge factor in the lack of action in a place like Grassy Narrows, how can prejudice be eliminated in order to protect the health and wellbeing of whole communities facing mercury contamination?
4. As Arctic ice is melting with the rise of global warming, toxic chemicals, the most prevalent being mercury, are entering the ocean and the air. What can be done to protect the native communities and animals that rely on the consumption of fish to live?
5. What policies can be implemented and enforced on regulating companies' dangerous waste disposal practices?
6. How can regulations concerning labeling and seller/buyer communications be altered to account for language barriers and illiteracy to ensure the safe usage of products that may contain mercury?

Endnotes

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