

Forum:*Environment Commission*

Issue: *Addressing the issue of industrial and household waste on the rise of global emissions.*
Student Officer: *Ghena Dabbas*

Position: *Chair*

1. **Introduction**

Virtually all residents, organizations, and other bodies around the world generate some type of waste. Many different types of waste are generated, including municipal solid waste, agricultural and animal waste, medical waste, radioactive waste, hazardous waste, and much more. The amount of waste produced is influenced by economic activity, consumption, and population growth. Developed societies, such as the United States, generally produce large amounts of municipal solid waste and commercial and industrial wastes.

Generally, waste generation, in most cases, represents inefficient use of materials. Tracking trends in quantity, composition, and effects of these materials provides us insight into the efficiency with which the nation uses materials and resources and provides a means to better understand the effects of wastes on human health and ecological condition.

After the industrial revolution, technology, manufacturing and science all began rapidly increasing, and continue to grow even today. Before the industrial revolution, industries remained small, and their primary pollutant was smoke. The industries had limited production, which meant pollution was minor. It was not until companies turned into huge plants and industries that the harmful effects of pollution became known.

 While there are many different types of pollution, industrial pollution refers to explicitly to any contamination caused by industrial activities. Industrial pollution is a big issue because most pollution is caused by some industry, making it the most significant form of pollution on the planet. The effects of industrial air pollution are vast, causing water contamination, a release of toxins into soil and the air, and it is the cause of some of the most significant environmental disasters of all time.

1. **Definition of Key Terms**

Municipal Solid Waste

 Wastes made up of common, everyday items that are thrown away and improperly placed by the public. Municipal solid waste usually refers to empty bottles, product packaging, damaged furniture, clothing, cans, newspapers, batteries and electronics.

Agricultural and Animal Waste

 Waste as a result of different agricultural related activities such as raising animals or growing crops. Examples of agricultural waste would be grape vines, date palm fronds and vegetables.

Medical Waste:

 Highly dangerous and infectious waste that is produced at medical facilities such as hospitals, clinics, blood banks etc. Medical waste can include needles, syringes, toxins, plasters and different, unidentifiable substances.

 Radioactive Waste:

Waste consisting of radioactive materials, which are materials that exert radiation energy in multiple different forms that can cause serious damage. This type of waste is usually generated from research facilities and nuclear power plants.

Consumption:

 The act of using up a certain type of resource.

Waste Generation:

 The weight of different materials that are thrown away and have entered the waste stream before being reclaimed and recycled.

 Ecological Condition:

The state of different living organisms in our environment related to their physical, biological and chemical characteristics.

Industrial Revolution:

 A period of time that took place during the during the late 1700’s and early 1800’s that allowed major industrial changes to occur. Industrial changes such as the creation of many different machines, devices, and more.

1. **General Overview – Background information**

What is Industrial Waste?

Industrial waste is defined as different materials that have been produced and manufactured by several companies and factories, that are no longer of any use and are thrown away into waste piles. This type of waste has been existent ever since the beginning and end of the industrial revolution, (hence the given name ‘*industrial waste’)* As time went by and industrial waste began to pile up, people began to observe differences in the materials that are considered waste. Differences include their characteristics, properties, the type of industry they were generated from, and the amount of environmental damage they create. All these factors led to the segregation of these materials, separating them into categories that best fit their description.

The different categories of Industrial Waste:

Different categories of industrial waste have been produced and established. When stating that people began to separate industrial waste based on different factors such as the industry it generated from, they are referring to the four main industries out there, which are the primary, secondary, tertiary and quaternary industry. All four of these industries withhold the millions of jobs out there today. The primary industry refers jobs relating to anything agricultural, such as farming, mining, or forestry. The secondary industry refers to the jobs have to do with manufacturing. Specifically manufacturing those natural resources and turning them into useful products that would be sold around the world. The tertiary industry refers to any jobs that benefits the economy; whether it’s a doctor or a teacher, it benefits the economy at the end of the day. Lastly, the quaternary industry is the sector that deals with sciences. Such as research, experimentation, investigations, and more.

Looking at the four sections of the industry, people were able to categorize industrial waste in order to make the process of understanding the harms of it, and studying it as a subject a much easier task. Nowadays, we have different types of waste such as medical waste, agricultural and animal waste, hazardous waste, radioactive waste, municipal solid waste etc. For example, agricultural and animal waste is generated from the primary sector, which is a different sector than medical waste, which was generated from the tertiary sector. Therefore, industrial waste was broken down into different categories.

When industrial waste was broken down and categorized, the type of industry the material was generated from was not the only factor they made sure to pay attention to. They also kept an eye on a very important factor, which would be the characteristics of the material. All wastes are similar yet different at the same time. Some might contain a different level of toxicity, reactivity, flammability (the ability to ignite suddenly) and simply differ in form. (Solid waste, liquid waste, and pollution in the form of gas.)

What role did the Industrial Revolution play in creating and developing this issue?

 The Industrial Revolution was the start of it all. There is no denying the fact that even before the industrial revolution there was pollution. However, before the industrial revolution, factories were small and did not have these highly developed machines, which made their primary pollutant to be smoke. It was affecting the environment, but since there was only a little bit of smoke, there was not a lot of worrying about the planet. However, after the industrial revolution, more machines were created, more ways of producing items were created, which created new forms of waste, and bigger amounts of it as well.

 It originally begun in Britain, and as Britain began to develop, it spread to other countries where they joined in on the development, and eventually, the entire world was changing all at the same time. There was a major increase in population at the time of the industrial revolution. This increased the living standards all around the world, which led to the depletion and reduction in natural resources which caused an issue for many. Not to mention, with more factories and more machinery, people were burning fossil fuels like never before. In fact, by the 1700’s, there was approximately 2.5 million tons of coal mined. By the 1800’s, 10 million tons of coal was mined and burned. In just 100 years, it increased by almost 8 million tons. 61 years later, a bit more than half of the period of time where the industrial revolution occurred, 57 million tons of coal was mined and burned. This number is increasing on the daily, alongside the other amount of wastes that are being produced.

What are the causes of Industrial Waste?

Industrial waste is disposed in large quantities every single day. This creates a huge buildup of waste which is seen as hard to get rid of in a completely safe manner. That is why most waste (solid and liquid) either ends up in empty lands, on the side of roads, or in a body of water… Dumping it wherever is considered the ‘easy way out.’ Yes, it is known that with our rapidly developing and unpredictable world, it is very hard, almost impossible to control the amount of industrial waste produced globally. However, what we can do is to make sure that this waste is deposited and gotten rid of in a safe manner, which will not pose threats to our environment in the future. Acting upon this issue is unfortunately not as spoken about or encouraged by, which is why there is a lack of knowledge and action on the issue itself.

To begin, there is a lack of effective policies globally. Many industries have been able to bypass and ignore different policies regarding pollution simply because the laws are either invalid, or just not enforced or concentrated on by those who implement the laws. As a result, industrial waste has, and is still to this day piling up and being deposited in unsafe and improper areas which is now affecting our environment in many ways. Another reason would be the incredibly large number of factories, companies, and other industries. These thousands and thousands of industries are producing incredibly large and concerning amounts of industrial waste every single day, all at the same time. In addition to the fact that these industries do not follow the inefficient policies set, the amount of industrial waste produced is massive and hard to believe.

What are the harms of Industrial Waste on the environment?

The harms of industrial waste are many; almost too many to count. For instance, it creates massive water pollution. Due to the fact that a lot of industries do not dispose their waste properly, they quite often end up in the nearest body of water. In addition to the fact that some companies and factories use bodies of water in order to operate and experiment on. During the process of experimenting on water, the water will be exposed to multiple different chemical substances, heavy metals, and radioactive waste. Once the industry believes that the water taken has served it’s purpose, they tend to pour it back into the source where it originated from… The body of water. This causes the chemicals to spread, which not only affects the ecological condition by turning the water acidic, but will harm us humans as well since famers use that water for farming, which will affect the food we eat. When industries directly dump their waste into the body of water, this will harm the marine life incredibly since there is a chance that the plastic or any other type of waste will be accidentally eaten by the animal. These possess multiple harms on the marine life, which will eventually lead to the extinction of certain animals and will in the end disrupt the food chain.

Another side effect of industrial waste and pollution on the environment would be soil pollution. It is the result of land degradation, which often most occurs when a new building wants to be built, or when the land is needed for whatever cause. The chemical which are as a result of these industrial activities, in addition to the industries dumping their waste on empty land poisonous the soil beneath and kills local vegetation. Not only does it harm the environment, but it also creates chronic health concerns for those who do work with soils, such as those who work in the primary sector of the industry. In addition to us humans, who eat the potentially poisonous food that came as a result of poisoned soil and vegetation.

Similar to soil and water pollution, air pollution possesses the very same threats, if not worse to humans and to all animals. When fossil fuels are burnt, it produces a highly toxic gas called Carbon Monoxide. This compound is highly dangerous and should not be inhaled by anyone since it removes the oxygen in the blood and denies the heart, brain and other very important organs in the human body. Due to the large amounts of fossil fuels brunt which emit large amount of CO (Carbon Monoxide) Humans and animals are inhaling large amounts of this compound, which is terrifying since it can overcome the human body in several minutes without any type of warning, can cause loss of consciousness and suffocation, and can even lead to automatic death. Same thing goes with the animals. Plants however remain unaffected by this compound, since it immediately oxidizes to CO2 (Carbon Dioxide) which helps with photosynthesis. This however, does not mean that plants are unaffected. They simply are being affected through the other forms of pollution.

1. **Major Parties Involved and Their Views**

USA:

The Unites States currently dominates the list of most countries that produce industrial waste, having produced at least 236 million tons of municipal solid waste alone last year. In addition to all other types of waste being produced, the USA produces a quarter of the worlds waste entirely. According to the United Nations and multiple other environmental organizations and agencies, it is estimated that the Unites States’ number of industrial waste produced entirely each year goes as high as 7.6 billion tons. From 2005-2010, Nevada was declared as America’s “Most Wasteful State.” Where most waste would end up in empty landfills without being recycled or reused. Other states that have been put on the list as well would be Michigan, New Mexico, Washington, Oregon, and Wisconsin, who followed not too far behind. Taking a deeper look and observing the waste generation, the US currently recycles only about 30% of it’s waste, even though the EPA mentioned that almost 75% is indeed recyclable. Looking at different products specifically, household items such as aluminum and plastic, hardly 1% of each is recycled. Previous research shows that most industrial waste in the United States is paper and carboard, in addition to the 25 million plastic water bottles that are thrown by Americans every passing hour. The country did set some goals in order to reduce waste by 2030, but nothing very effective has been done yet in order to achieve such a goal.

**China**:

According to the World Bank, by 2030, China will produce approximately 533 million tons of industrial waste. China, being the most populated country with 1,376,745,728 million people, the living standards and demands are increasing rapidly. Consumption of packaged foods continues to increase by 10.8 percent, which means more products and food containers of several different materials will continue to increase, thus creating more and more industrial waste. In fact, China’s waste problem has become such a severe and terrifying issue that is now beginning to affect surrounding countries such as Japan, India, Russia, North Korea, etc. According to China’s Statistical Yearbook, there are  2,801,143 factories in China, all producing global emissions at once as they continue to create and develop new products. China currently leads the world with most global carbon emissions, having 6.5 metric tons, spreading in China and outside of it as well. However, unlike a lot of countries, China has decided to act. In January of 2018, China created the “National Sword” Policy which banned the import of most plastics and other materials, which is very slowly, decreasing the industrial waste rate.

**Kuwait:**

An increase in the amount of generated industrial waste has been noticed in the country of Kuwait. Kuwait is one of the richest countries, yet it also among the highest of waste generation per capita, globally. Annually, more than 2 million tons of municipal solid waste is produced in the small Arab country, as high living standards and economic growth has been the most dominant reason behind their heavily polluted country. The waste generation In Kuwait has been an estimated of 1.4-1.5 kg per day. Kuwait’s waste disposal method is landfill burial, which is severely impacting the country’s soil and health. Despite being a small country, they do have a lot of landfills, meaning that they do have a lot of waste. For example, more than 500 tons of waste was dumped onto the Sulaibiyah landfill site each day from 1980 to 2000 having it’s area be only 3 square km. Jleeb AI Shuyoukh, which is the largest landfill in the country, with a 6 square kilometer area received more than 2500 tons per day of household and industrial waste between 1970 and 1993. Many of Kuwait’s landfills were forced to close due to improper waste disposals and public concerns relating to health issues. Not to mention, a lot of global emissions were being exerted which caused, and still is causing, severe damage to the country’s environment.

**Sweden:**

Sweden produces the same amount of household and industrial waste as most European countries. However, less than 1% of this waste ends up in landfills. This astonishing achievement is due to multiple reasons, such as the 32 ‘Waste to Waste’ power plants that have been set up across the country, which destroys over two million tons of trash each year, which is almost 50% of the country’s produced waste entirely. These machines have been in operation for years now, making Sweden one of the cleanest, most waste free countries. In fact, Sweden has been importing trash from other countries in order to keep these machines going, which goes to show that there is little to no trash to be recycled in the country.

**The International Solid Waste Association (ISWA) :**

The International Solid Waste Association (ISWA) is a non-profit, non-governmental organization (NGO) who made it clear that they envision a world without one bit of waste, whatever type it is. Their goal is to promote and develop sustainable and long-term waste management methods around the world, which they achieve by multiple ways, such as supporting and promoting developing and emerging economies, research, training and education, promoting the best, most appropriate and most eco-friendly technologies and practices, and a lot more. They believe that waste should be reused and reduced to its extent, then should be recycled, treated or disposed in an appropriate way. They are currently working with multiple countries around the world in order to make their goal a reality.

1. **Timeline of Events**

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| **Date** | **Description of event** |
| 3000 BC1297 1300 1700’s Early 1800’s1848 Late 1800’s Early 1900’s 1930’s 1939 19401956 1970 1972 19902000 2002 2008 Early 2019 | The first landfills to be recorded were found in Knossos, Crete. Legislation was passed in Britain which ordered households to keep the front of the house waste-free and clear from rubbish. The legislation was finally put into motion and ‘rakers’ were being employed in London to remove waste. The Industrial Revolution begun in Britain, increasing it’s waste problem. The Industrial Revolution spreads out to other countries, increasing the waste rates all around the world. The ‘Public Health Act’ began waste regulation, where households were obliged to keep their waste in a ‘movable container’ This lead to the invention of the dumpster. Large amounts of Municipal Solid Waste is recorded, leading to new technological approaches towards solving the issue. Compaction trucks and garbage grinders begin to develop in certain areas around the world. The first ever dumpster/ garbage can is introduced in the United States of America. The second World War begins. Waste consisting of packaging material increased by 67% as a result of the War. This is mainly due because consumerism (the interest of consumers) began to spread. The ‘Clean Air Act’ is passed in Britain, which replaced heating a house with solid fuel to heating a house with gas and electricity. The International Solid Waste Association (ISWA) is founded in Switzerland. The United Nations conference on Human Environment is held where waste management ideas were developed. The amount of global municipal solid waste reaches 1.3 billion metric tons. The United States Environmental Protection Agency declares a link between global warming and waste, stating that reducing garbage cuts down greenhouse gas emissions. Total solid waste reaches 12 billion tons, having 11 billion tons being industrial waste, and 1.6 billion tons being municipal solid waste. A study shows that 389 million tons of municipal solid waste was produced in the United States during that year. It is announced that global warming is now posing a life or death situation on us all, and that we have just a bit over a decade to get climate change under control.  |
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1. UN Involvement, Relevant Resolutions, Treaties and Events:

In attempt to solve the issue, the UN has taken action and held multiple conferences, wrote several resolutions and created treaties. Even though there were many ways the UN interfered, the most effective ways they participated in in order to help solve the issue would be the following:

**Prohibition of the dumping of radioactive wastes, 12th of January, 2010 (A/RES/64/391)**

This was a resolution debated in the General Assembly, it included nine clauses where it specifically focused on the prevention of dumping radioactive waste in improper places. Solutions mentioned would be keeping an extra eye on what nuclear weapons are being used, where they’re being used and how they’re being used and discarded, asking all member states to take appropriate measures when discarding radioactive waste, in addition to mentioning the Conference of Disarmament (a forum established by the international community to negotiate arms control and disarmament agreements) and the idea of having them add extra efforts to discuss radioactive waste and the harms of it in their reports.

**Traffic in and disposal, control and transboundary movements of toxic and dangerous products and wastes, 22nd of December, 1989 (A/RES/44/26)**

This was a resolution debated in the General Assembly, it included four clauses where it specifically tackles the issue of toxic waste and how it should be handled. This resolution stresses on the urgency to develop and re enforce the rules of the international law as early as possibly can since the issue is clearly getting out of hand and increasing at a rapid rate. (clause 1) It also includes a solution, (clause 4) in which it asks for the Basel Conference to further discuss statistics and possible solutions to the issue of hazardous and toxic waste as a result of rapid urbanization and development.

**United Nations Conference on Environment and Development (UNCED)**

 A conference, (Other name, ‘Earth Summit’) that was held by the United Nations in Rio de Janerio, Brazil, during the 3rd to the 14th of June, 1992. This conference was held with the aim of developing the world’s economy through industries and businesses, at the same time protecting the environment. This conference was the largest gathering of world leaders, as it had 117 heads of state and representatives from 178 nations attending. Through this conference, they were able to agree on multiple documents, but the two most important ones would be ‘The Convention on Biological Diversity’ and ‘The United Nations Framework Convention on Climate Change,’ documents.

1. Evaluation of Previous Attempts to Resolve the Issue

Both resolutions mentioned above were put into motion alongside multiple other resolutions, and helped with the reducing of the issue. For example, in the resolution of ‘Prohibition of the dumping of radioactive wastes,’ Clause 8 talks about the need for other member states who have not yet joined the Safety of Fuel Management Convention, which was an agreement between states that deals with radioactive waste and discusses effective ways to reduce and manage the amount of industrial waste that is being produced by countries and industries. Ever since then, more statistics and reports on the issue that helps the United Nations and other surrounding organizations understand the issue of industrial waste, and radioactive waste in general have been written and published. Not to mention, in the resolution of ‘Traffic in, and disposal, control and transboundary movements of toxic and dangerous products and wastes’ a clause that tackles the hazardous wastes section of the resolution, mentions the establishment of a convention held at Basel, Switzerland. Later on, this convention did occur where the executive director of the United Nations Environment Programmed, and it was labelled as the Control of Transboundary Movements of Hazardous Wastes and their Disposal, or ‘Basel Convention’ for short is the most comprehensive global environmental treaty on hazardous and other wastes. The Basel convention has been developed in the year of 1989 and still is going on today. Their ways and methods of treating industrial waste (specifically hazardous waste) have been rather debatable, as it includes importing hazardous waste from one country to country.

The United Nations Conference on Environment and Development (UNCED) as stated previously in the report, there were two main documents that were a result of this conference. Through this conference, Agenda 21 was formed. Agenda 21 is a global partnership which is a plan of the United Nations in order to conserve our environment. It is an agenda of around 300 pages and it includes goals for the year of 2030. ‘21’ is referring to the twentieth century, so until this day, the agenda is still in motion. The agenda was discussed during the conference, but was only put to motion just three years ago in 2015, so there hasn’t been much done yet.

In conclusion, yes, there has been previous attempts in order to resolve the issue, yet as we look at the severity level of the issue today, there needs to be multiple more, effective ways and attempts in order to reduce the issue in the long-term, which is something that the previous attempts only solved to a certain extent.

1. Possible Solutions

There are many possible solutions to consider in order to solve this everlasting, rapidly increasing issue. Some of the most effective and long-term solutions may include the following:

 The proper selection of where the industry would be located and the proper treatment of the industrial waste produced in these industries. Construction workers should be more attentive to the selected site where they would like to build a future company or factory. Currently, little to no construction workers pay attention to factors that will affect the environment when planning and selecting a site for which the future industry will be built. The multiple factors that aren’t payed attention to but should be would be the type of land, the surrounding environment such as if there are any wildlife or habitat or even civilization nearby because the mining, drilling and harmful gases that are produced in the process of the functioning of the industry all plays a huge role in damaging our environment and putting lots of civilians’ life at risk. Therefore, when there is more thought into where the site selection, the global emissions emerged and the waste produced will not affect the environment to the extent that it is today. As for the proper treatment of waste, in order to reduce the effects the industrial waste has on the environment, there should be appropriate and adequate treatments developed and produced through many ways such as technology, and simply waste management methods in order to reduce the amount of waste being disposed in landfills.

 Another solution to this issue would be the process of ‘rebuilding through planting.’ This method has been barely put into motion, and it is the process of rebuilding destroyed habitats due to land degradation and soil pollution from the industrial waste. The process of rebuilding habitats would be through multiple ways, beginning with intense research on what landfill is currently being of no use to major industries, and then extracting all the waste that has been dumped into that landfill (based on which country is going through with this action, preferably member states since this method should be stressed upon by the United Nations) and import that waste to countries who take part in accepting waste from other countries in order to keep their businesses flowing such as Sweden. This way, new habitats would be built which will not only provide animals with more shelter thus reducing the risk of extinction and will also purify the air from toxins and global emissions at the same time producing more oxygen, but will also reduce the amount of waste in heavily polluted countries.

1. Guiding Questions
2. What are the different types of industrial waste?
3. What are examples of industrial waste?
4. How is industrial waste handled today?
5. What countries produce the most industrial waste?
6. What countries have done something to prevent industrial waste?
7. What anti-waste organizations are there?
8. How effective are the strategies used by the anti-waste organizations in solving this issue?
9. What will happen if industrial waste continues to increase at the same rate it is today?
10. What can be done in order to reduce the amount of industrial waste produced by industries?
11. What can be done about the already produced waste that is currently harming our planet?
12. Appendices and useful links

<https://www.safewater.org/fact-sheets-1/2017/1/23/industrial-waste>

<https://www.southernwasteandrecycling.com/blog/2015/08/characterizing-the-different-types-of-industrial-waste/>

<https://mcfenvironmental.com/services/>

<https://www.conserve-energy-future.com/causes-effects-of-industrial-pollution.php>

<https://www.nationalgeographic.com/environment/global-warming/toxic-waste/>

<https://blog.ucsusa.org/aaron-huertas/dear-humans-industry-is-causing-global-warming-not-your-activities-697>

<https://www.climate-policy-watcher.org/global-temperatures/the-warming-effects-of-the-industrial-revolution.html>

<https://byjus.com/chemistry/waste/>

1. Contact Info

To all delegates that may have any further questions or inquiries please do not hesitate to contact me through:

Email: ghena\_dabbas@abs.edu.jo

Notes:

* Ariel size 11
* Paragraphs begin with indentation
* Section headings must be in **this color** and **bold** in Arial font size 14
* Sub headings size 12 and **this color**
* The research report should be between 3,500 and 5000 words
* 0.5 line spacing
* Save as .docx format
* Every picture included in the report must contain captions, describe the picture or diagram in a (Arial size 9, bold and italicized)
* Same Border as one used on this document
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