

Forum: Environmental Committee

Issue: Combating Environmental Damages Caused by Rapid Urbanization

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Introduction

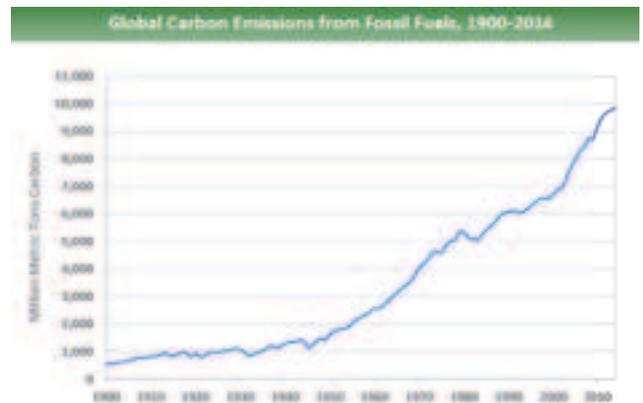
As the world's population grows and as cities expand and become more developed, one large issue that is becoming more prevalent is combating environmental damages that are caused by rapid urbanization. Urbanization is the idea of the population becoming more densely populated in cities or towns rather than in rural areas. In other words, the population in rural areas is decreasing while the population in cities is increasing. In addition, areas that were once considered "rural" or "suburban" are now growing and becoming "urban". According to the United Nations, about 50% of the world's population now lives in urban areas. By 2050, it is expected that 66% of the population will live in urban areas. This rapid urbanization has caused many negative impacts to the environment such as air and water pollution.

The concept of urbanization is pretty old as there were many ancient cities such as Uruk in the region of Mesopotamia and Eridu. These cities grew as a result of urbanization. Many tribes moved to these cities for certain factors such as fertile land and access to the Euphrates River which was good for transportation and trade. However, later they were abandoned due to environmental factors such as the overuse of land and a mysterious shift in the Euphrates River. There of course were other factors but these were the main ones.

In more recent history, people decided to move to cities for various reasons. For example, during the Industrial Revolution, many people moved to cities because of the great advances in technology. In addition, one noticeable and significant cause of urbanization is access to bodies of water. Many of the world's largest cities (e.g. New York, São Paulo, London, etc.) are near rivers or oceans since they can be used for transportation and trade with other cities around the world. Another trend or cause of urbanization is access to natural resources. Many people moved to the west coast of the United States during the Gold Rush since that was where the gold was located. A final main cause of urbanization is job opportunities. Many immigrants moved to large cities in the U.S. because of the numerous job opportunities. So these are some of the many causes for urbanization.

Even though urbanization may be beneficial in some ways, there are many environmental damages caused as a result of urbanization. One common impact is Global Warming. Global Warming is basically the increase of the average global temperature caused by human activity. When heat from the Sun enters the Earth, it bounces off the surface and goes back into space. However, some heat is trapped by greenhouse gases (such as Carbon Dioxide, etc.) in our atmosphere which keeps the planet warm. This allows for life to be sustainable on Earth. The thing is that right now humans are burning fossil fuels for electricity and this process releases more greenhouse gases into the atmosphere. Since there is a larger quantity of these greenhouse gases in the air, more heat is being trapped which is warming our planet. As a result, the ice in the poles are melting and the oceans are expanding causing sea levels to rise. As a result, in the next decades cities and some islands will be

underwater. In addition, the ocean is turning more acidic which will result in marine life dying. So Global Warming is a large threat as it poses a risk to many urban areas that are located close to the ocean. The demand for electricity will rise with urbanization which means that more Greenhouse Gases will be released into the atmosphere if we continue to use fossil fuels such as coal for energy. In addition, the use of cars will increase which will also increase carbon emissions. The graph to the right shows the increase in carbon emissions from 1900 and if the emissions continue to grow at this rate, temperatures will continue to rise causing terrible effects. The current challenge is finding a way to provide alternative energy sources so that it can meet the demand caused by urbanization.



Besides Global Warming, there are many other environmental risks and impacts caused by rapid urbanization. For example, one is air pollution which has many causes such as when cars release exhaust. This pollution does not just contribute to Global Warming but it also causes many health issues. Some of them include respiratory infections, lung damage, and lung cancer. Besides Global Warming and air pollution, there are many other environmental damages that are caused by urbanization such as waste, water pollution, animals losing their habitats, and scarcity of land and clean water.

So rapid urbanization is currently creating many environmental risks and impacts that need to be solved. By 2050, two-thirds of the population will be living in urban areas and a sustainable plan must be created that will address environmental threats and impacts such as Global Warming, air pollution, and waste.

Definition of Key Terms

Urbanization: the process in which areas that were once rural, or areas with a small population, increase in size and turn into more urban areas with a larger population. In addition, the population becomes more densely populated in urban areas instead of being spread out in rural or suburban areas.

Urban: used to describe an area that has a high population density and infrastructure. In other words, an area that has city-like characteristics.

Rural: used to describe an area with a lower population density that is generally outside of a city. Agriculture is a common trait/characteristic of rural areas. .

Fossil Fuels: fuels such as coal and petroleum that are formed through natural processes and used for energy. When burned, they release greenhouse gases such as carbon dioxide which contribute to Global Warming.

Renewable Energy: naturally occurring energy sources (such as wind, solar, hydroelectric, etc.) that don't release any emissions and are generally unlimited. They are one of the solutions to Global Warming.

Carbon Footprint: referring to the amount of carbon emitted by one individual whether it be through the consumption of electricity or driving. It is important that one lowers their carbon footprint so that the Earth can remain sustainable.

Pollution: the process of contaminating or adulterating water, soil, air, land, etc. It can occur naturally and through human activities. There are small examples such as littering and larger examples such as burning coal.

Air Quality Index: an index used to report air quality. It shows how clean or how contaminated/polluted the air is. The U.S. EPA (Environmental Protection Agency) measures the AQI for five major pollutants: particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and ground-level ozone.

Sustainability: the most popular and common definition of sustainability is from the UN Brundtland commission. It is the idea that the current needs can be met while ensuring that the future generations can also meet their own needs.

Heat Islands: According to the EPA, the term “heat island” describes urban areas that have a higher temperature than rural areas as a result of human activity.

Global Warming: The increase in the average global temperature as a result of human activity. It will cause many devastating environment and social effects in the future. In addition, Global Warming is used interchangeably with Climate Change, however, Global Warming is caused by human activity while Climate Change is the natural change in climate. Global Warming accelerates Climate Change.

Background Information

Causes of Urbanization

As mentioned earlier, urbanization is the process in which the population moves from rural areas to urban areas for various factors. In addition, areas that were once rural become urban due to an increase in population. Urbanization can be seen as far back as 5400 B.C.E. and has many causes.

One cause of urbanization is industrialization. Industrialization is the idea of shifting the focus of the economy from agriculture to non-agricultural practices such as manufacturing. In history, industrialization mainly occurred mainly in urban areas. As a result, many people were attracted to these areas for better job opportunities and the ability to work in a new and modern sector.

Another cause of urbanization is commerce. The center of commerce/trade is cities. Goods are produced in cities and then exported to other cities. Goods are also imported into cities. This can be done by sea or by plane. Cities that are close to the ocean such as New York City and Shanghai are home to large shipping ports. As a result, more

businesses moved to these areas so that their goods could easily be traded. As a result, jobs were created and more people moved to these urban areas.

A third cause of urbanization is employment opportunities. In urban areas, there are more jobs as a result of industrialization and commerce. Since there are more and better employment opportunities available, it makes sense that more people from rural areas would want to migrate to urban areas. In addition, as seen in the 1800s and 1900s, many immigrants entered the U.S. from Asia and Europe in search for better employment opportunities. So jobs were a large cause of urbanization.

A fourth cause of urbanization is social benefits. Cities tend to have more modern infrastructure and a better standard of living. In addition, better medical care and recreational facilities are accessible in the city. Also, many cities tend to have a mix of different cultures. There are also many other social benefits such as better sanitation, education, and technology in urban areas. These social benefits draw many to cities since they think they will have a better life there. However, it is important to note that these benefits generally tend to apply to cities in developed countries as in developing countries many of these social benefits are non-existent.

A final cause of urbanization is the transformation of rural areas to urban areas. When the economy grows in a rural area as a result of resources, agriculture, and/or industry, then more people will move to this area for employment and entrepreneurship opportunities. As a result, the infrastructure will be improved and better facilities will be added. Over time, the rural area will turn into a suburban area and finally an urban area.

To summarize, there are many causes of urbanization including industrialization, trade/commerce, employment opportunities, social benefits, and the transformation of rural areas to urban areas. Urbanization can be beneficial but it can also be detrimental. Below are the environmental effects of urbanization.

Environmental Effects of Urbanization

Environmental effects of urbanization include:

- Pollution
 - Air Pollution
 - Water Pollution/Contamination of Water
- Global Warming
- Habitat Destruction

Each one is described in detail below.

Air and Water Pollution

One environmental effect of urbanization is air and water pollution:

Air pollution is the process of contaminating, or releasing harmful chemicals into the air. In general, air pollutants are particulates (microscopic solids) or harmful gases that are released into the air. Some examples include carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and ground-level ozone. These pollutants all have different sources. For example, carbon monoxide is released from vehicles. Sulfur dioxide is released when fossil fuels such as coal are burned. As urbanization continues to increase, air pollution is expected to rise.

Water pollution is the process of contaminating, or releasing harmful chemicals into water (e.g. lake, river, ocean, etc.). These pollutants either remain in the water or end up on land. Some examples of water pollutants include sewage, industrial waste discharge, simple things such as plastic bottles, and other harmful chemicals. One alarming fact is that according to the National Geographic, in developing countries, “70 percent of industrial wastes are dumped untreated into waters, polluting the usable water supply.” The result of water pollution is aquatic life being poisoned or dying and less potable water. As urbanization continues, if the trend remains the same, there will be more water pollution and less potable water.

Global Warming

Another environmental damage that is caused by urbanization is Global Warming. Global Warming is the increase in the average global temperature due to human activity. When the sun’s heat enters Earth, most of it is reflected when it hit’s the surface and goes back up towards space. However, gases called greenhouse gases trap some of this heat so that life is possible on Earth. The problem is that due to human activity, more greenhouse gases are being released into the atmosphere which is allowing more heat to be trapped. As a result, the ice caps are melting and the ocean water is expanding causing sea levels to rise. In addition, weather patterns are expected to change and storms will become more severe. This will affect many crops. Also, rising sea levels will cause areas to go underwater which in turn will cause climate refugees. There are many ways that humans are releasing greenhouse gases into the atmosphere. One would be burning coal and

other fossil fuels which releases Carbon Dioxide, Sulfur Dioxide, and other greenhouse gases into the atmosphere. Also, clearing the rainforest and agriculture also significantly contribute to the rise of carbon emissions. The reason many of these carbon emitting practices are taking place is because of urbanization. For example, for electricity, coal is burned which emits greenhouse gases. Also, cars do emit a large amount of carbon. So practices caused by urbanization are contributing to Global Warming.

Habitat Destruction

Another large issue associated with urbanization is animals losing their habitat. In order for cities and infrastructure to be built, generally trees must be cleared, swamps must be drained, and other measures must be taken which end up destroying the habitats of animals. Urbanization is one of the contributing factors to habitat destruction which has left many animals without a home, endangered, or extinct. The main reason why forests are cleared is for agriculture which provides food for people living in urban areas. In addition, these areas are cleared for cities to be built. Cities also are destroying the habitats through pollution and other practices. So it is important that all nations regulate the construction of urban areas and ensure that if habitats are destroyed, that they can be rebuilt.

Main Countries and Organisations Involved

United States of America

Currently the rate of urbanization in the United States of America is rising and even as a developed country, the U.S. still causes environmental damages. For example, there is a lot of air and water pollution. In addition, the U.S. still heavily depends on fossil fuels as their primary source of energy which in turn is contributing to global warming. President Donald Trump recently pulled the U.S. out of the Paris Agreement which may have some detrimental effects. However, many cities in the U.S. are practicing good environmental practices such as by transitioning to renewable energy.

China

China is the largest country in the world in terms of population. This means that urbanization is inevitable in China. As a result, China is one of the largest emitters of air pollution which has had devastating health effects on the population. However, China is

the largest producer of hydroelectric power. They produce about 1064 terawatts of hydroelectricity annually. Renewable energy is growing in China.

India

The population living in urban areas is expected to double in the next 20 years in India. However, many urban areas are filled with urban slums. In other words, many people are moving to cities but in areas with poor infrastructure and sanitation. This will be a large challenge for India. In addition, acid rain is common in some areas due to the high amount of pollution that India produces. Also, only about 30% of electricity is produced by renewable energy. The rest is produced using fossil fuels. However, India still remains committed to the Paris Agreement which means that there is a good chance of them lowering their carbon emissions.

UN Environment Programme (UNEP)

According to their website, “The United Nations Environment Programme (UNEP) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment.”

Mission: "To provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations."

UN Development Programme

One of the main goals of the UN Development Programme is sustainability. The UNDP generally helps mainly with social development but at the same time focuses on sustainability which is really important, especially with urbanization.

Timeline of Events

5400 BCE: Eridu, one of the first cities, is founded.

4800 BCE: Uruk, another ancient city is created.

1972: The UN Conference on the Human Environment takes place in Stockholm in June.

1983: The World Commission on Environment and Development is established in December.

1987: The World Commission on Environment and Development prepares the Brundtland report for the General Assembly.

1992: The United Nations Conference on Environment and Development takes place leading to the Commission on Sustainable Development and other agreements.

1997: The General Assembly Special Session on the Environment takes place which reviews the implementation of Agenda 21.

2002: The World Summit on Sustainable Development takes place which reviews the implementation of Agenda 21.

2008: The UN announces that 50% percent of the population now lives in urban areas.

2012: The UN Conference on Sustainable Development takes place.

2016: 2016 is recorded as the hottest year on record.

Relevant UN Treaties and Events

- The **UN Conference on the Human Environment** was held in Stockholm in June of **1972**:
 - Resulted in the establishment of the **United Nations Environment Programme**

- The **World Commission on Environment and Development** was established in 1983. In 1987, for the general assembly they:
 - Prepared the **Brundtland Report**
 - Discussed **Sustainability**

- The **United Nations Conference on Environment and Development** was held in Rio de Janeiro in **1992**. It is also known as the **Earth Summit** or the **Rio Conference**:
 - Led to the creation of the **Commission on Sustainable Development**
 - Three major agreements were adopted:
 - **Rio Declaration on Environment and Development**: “a series of principles defining the rights and responsibilities of States”
 - **Agenda 21**: “a global plan of action to promote sustainable development”

- **Statement of Forest Principles:** “a set of principles to underpin the sustainable management of forests worldwide”
- Treaties opened for signature:
 - United Nations Framework on Climate Change (UNFCCC)
 - Convention on Biological Diversity
- The **General Assembly Special Session on the Environment** takes place in New York in **June** of **1997**:
 - Also known as the **Earth Summit + 5**
 - The implementation of Agenda 21 was reviewed
 - Outcome:
 - General Assembly Resolution S-19/2
 - Programme for the Further Implementation of Agenda 21
- The **World Summit on Sustainable Development** took place in **2002** in Johannesburg:
 - Also known as **Rio +10**
 - The implementation of Agenda 21 was reviewed
 - Outcome - A/CONF.199/20 + Corr. 1:
 - Johannesburg Declaration on Sustainable Development
 - Plan of Implementation
- The **UN Conference on Sustainable Development** took place in June of **2012**.
 - It was also known as **Rio +20**
 - Outcome - A/CONF.216/16 which includes “**The future we want**”
- **COP21** - A conference held in Paris in 2015 in which all nations agreed to do what they can so that the global average temperature does not increase by more than two degrees celsius.

Previous Attempts to Solve the Issue

United Nations

The United Nations has worked actively to solve the issue at hand in various ways. In the section above, relevant conferences, initiatives, and resolutions are listed which help lower and prevent the environmental damages that we are seeing. One large goal for the

United Nations is sustainability and many of their resolutions and organizations reflect this common theme. For example, COP21 ensured that the world could remain sustainable by asking countries to do what they can so that the average global temperature only rises by two degrees. Agenda 21 was created to ensure that there was sustainable development taking place. Besides this, there were many resolutions that asked for environmental protection. So the UN has done a lot to ensure a sustainable future. However, it is important to note that none of the resolutions are binding so it is up to each country to take action.

Greenpeace

Greenpeace, a NGO, has been campaigning in places such as China to reduce air pollution. Air pollution is a large problem in China and has created a lot of health issues for the citizens. Greenpeace and other NGOs are campaigning there asking that pollution levels meet WHO standards. Besides this, Greenpeace has been advocating and informing the population about other issues such as global warming, toxic chemicals, and protecting our forests.

Switching to Renewable Energy

Many countries around the world are switching their energy sources to renewable energy in order to reduce carbon emissions. Countries such as Iceland are running almost 100% on renewable energy. There are also many other countries around the world that mainly use renewable energy and will increase their usage as the years pass.

Possible Solutions

There are many solutions to solve such a complex and extensive issue. For example, to reduce the impacts of Global Warming there are a few solutions. One would be to switch to renewable energy sources for electricity. These sources can be found in abundance in nature and are clean so they won't release emissions. In addition, governments should invest in research for renewable energy so that they can be made more efficient. If the world switched to renewable energy, less air pollution would be released and the dependence on fossil fuels would no longer be needed.

Another solution would be to promote the use of public transportation instead of cars. If there are less vehicles on the road, then less carbon dioxide will be emitted into the air. In addition, if not already in place, regulations regarding air and water pollution should

be made and enforced for factories. They are some of the largest producers of both and they should be able to manage their waste without polluting. Regarding waste, governments should invest in waste management and recycling for areas with poor sanitation and waste management. Finally, governments should plan ways to preserve natural habitats when constructing new cities so that animals don't risk endangerment or extinction.

These are just some of the many solutions that can be put into practice to solve the issue at hand. However, it is important that each delegation finds solutions that fit their position and resources.

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Forum: Environmental Committee

Issue: Combatting the Plastic Pollution in Seas and Oceans

Student Officers: Veronica Sabella and Neil Kapur

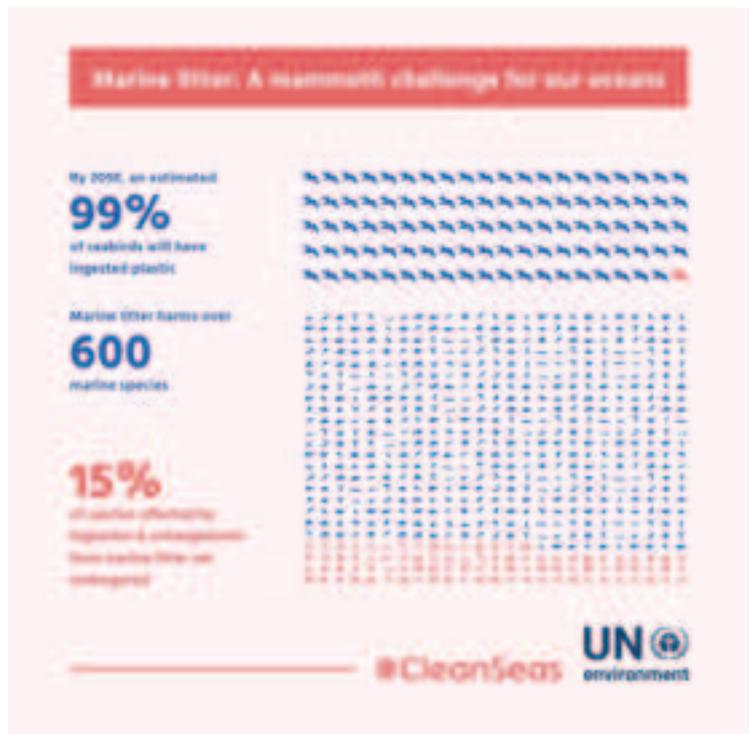
Position: Chair and Deputy Chair of the Environmental Committee

Introduction

Two thirds of the Earth's surface is water, less than a third of it is land. The population is constantly growing, putting continuous pressure in natural resources. Everyday activities provoke contamination and water pollution is only one example of the consequences of human activity. Before the Industrial Revolution took place, technology nor plastic was used, and individuals lived in harmony with their surrounding environment. When the revolution spread, so did contamination, making water pollution a primordial concern in modern societies. Almost half of water pollution is caused by activities which take place on land, such as chemical spills, industrial and agricultural runoff, and plastic dumping.

Plastic pollution is a large issue in today's society with more than 8 million tonnes of plastic eventually ending up in seas and oceans. Statistics revealed that after plastic bags and cups are used once, they are thrown out. In 2025, it is estimated that the amount of plastic which is thrown into the ocean will double. In other words, 100 bags of plastic per foot of coastline, will be thrown out each day. If this trend continues, by 2050 oceans are going to have more plastic than fish, approximately 99 per cent of

seabirds will have ingested plastic debris. It is globally acknowledged that throwing plastic waste has many consequences on marine life and the ecosystem. Reports are made, statistics are launched, however, there is still a certain absence of knowledge about the sources, quantity, accumulation, transport and fate of plastics in the oceans.



In order to achieve the Sustainable Development Goal 14: Conserve the oceans, seas and marine resources for sustainable development, this issue must be tackled. “Every second breath you take comes from ocean-produced oxygen. Without a healthy ocean we're in deep trouble; whether it's food, whether it's our climate, we have to have the integrity for the ocean, the source of life”, are the words of the UN General Assembly President Peter Thomson. In seas and oceans, more than half of the oxygen we breathe is produced, most of the carbon dioxide is absorbed, food is extracted, functions as a transportation method, and contributes with the world's economy. That is why organizations and countries are working together to raise awareness and provide solutions to the issue at hand

Definition of Key Terms

Ecosystem: A group of interconnected elements, where the interactions of certain organisms with their environment occur.

Plastic Pollution: “Accumulation in the environment of man-made plastic products to the point where they create problems for wildlife and their habitats as well as for human populations.”

Macro Debris: Plastic waste that exceeds 20 mm, including items like plastic bags. They are often found in seas and oceans, and have a serious impact on the organisms that inhabit them.

Micro Debris: Pieces of plastic with a size between 2 µm and 5 mm. Macro debris can become this kind of waste through degradation and collisions, which breaks the plastic into smaller pieces. Micro Debris is frequently known as nurdles.

Biodegradable plastics: Plastic that is naturally decomposed overtime in the environment. Overall, this type of plastic is less harmful to the environment.

Marine Biodiversity: The variety of life forms, species in seas and oceans.

Background Information

Problems with the Use of Plastic

There are so many issues associated with plastic. According to the Plastic Pollution Coalition:

- **Plastic never goes away:** Plastic is a pretty durable material that takes a very long time to decompose. In fact, it can take between 450 and 1000 years to decompose.
- **Plastic spoils our groundwater:** Plastic buried in landfills and can release toxic chemicals into groundwater which flows into lakes and rivers.
- **Plastic threatens wildlife:** Plastic can strangle, be ingested, or harm the habitat of animals.
- **Plastic piles up in the environment:** Americans throw out over 30 millions of ton of plastic per year and only 8 percent of it gets recycled. 92 percent of it ends up in landfills.
- **Plastic poisons our food chain:** Microscopic creatures such as plankton are eating microplastics and absorbing their toxins which harms the rest of the food chain.
- **Plastic affects human health:** Exposure to the chemicals leached by plastics can lead to cancers, birth defects, and other health issues.
- **Plastic costs billions to abate:** Many factors of our daily life and nature suffer because of plastic pollution. It cost a lot of money to decrease the impact of plastic pollution.

What is Plastic Pollution?

Plastic pollution is the idea of plastic accumulating in an area so that it negatively impacts the environment surrounding it. Plastic pollution is especially dangerous in oceans and is impacting them in various ways today. Basically plastic pollution is caused when someone litters or throws away plastic instead of recycling it. When plastic is not recycled, it enters landfills where it generally takes along time to degrade, or break down. In landfills, plastic releases toxins which can enter groundwater and then enter oceans or rivers. In addition, many citizens tend to litter by throwing plastic into seas and oceans or leaving them near the shore.

When this plastic enters oceans and seas, it tends to affect wildlife in many ways. For example, phytoplankton ingest plastic and since they are at the bottom of the food

chain, they tend to poison the rest since toxins are released into their body. In addition, other animals may eat this plastic and choke on it which in turn causes them to die. Besides this, toxins are released from plastic which can affect the potable water supply for both humans and animals. So in other words, plastic is disrupting marine life.

The best solution for the environment is the following: go plastic free. Even though this would be ideal for the environment, in reality, it wouldn't work. The work still depends a lot on plastic. However, we as consumers can lower our use of plastic in many ways. For example, we can use reusable or paper bags instead of plastic bags. In addition, we can use reusable water bottles instead of plastic water bottles. Besides this, we can recycle and reuse our plastic so it doesn't go to refills. Finally, we should encourage organizations to cut down on their use of plastic.

So plastic pollution is a large threat for marine life but we can cut down on our use and dependence of it.

Main Countries and Organizations Involved

Greenpeace

This organization aims to conscientize how human behaviour affects the environment, and raise awareness about current environmental issues, this is done through shocking protests. The way of conscientising is frequently criticized due to their nature. Greenpeace is of extreme importance in the issue at hand, for instance they are part of the Plastic Pollution Coalition, whose mission is to diminish plastic pollution and its toxic consequences in the environment, throughout a platform that transmits this message and provide possible solutions.

Algalita Marine Research Foundation

Funded in 1990, Algalita has been the main organization in providing research about plastic pollution and its effects on marine life and the ecosystem, since then. Educational programmes are also a seal of this organization, wanting to give a voice to the ocean. 27 years ago Charles Moore was able to evidenciate the amount of plastic in oceans, after that trip, he decided to fund the organization, and make several expeditions in order raise awareness about the magnitude of the issue. Algalita is also one of the main participants in the Plastic Pollution Coalition

Uruguay

Uruguay is a country surrounded by water. It's ports are fundamental source of finance, through paying attention and providing legislations they preserve it. Eneida de León, Minister of Housing, Territorial Planning and Environment of Uruguay explained that their goal is to discourage the use of plastic bags, with regulations, and educational programmes that explains the impact of using plastic bags in the environment. "These actions are key to achieving sustainable development. Uruguay is committed to moving forward in that direction, and the Clean Seas campaign is certainly a very valuable contribution." were the final words of the minister.

Australia

The major concern of most of the countries is to preserve fresh water, Australia instead focuses more on protecting its oceans and seas, since unique species inhabit them. Water pollution is a crucial problem there and it must be solved as soon as possible, because its fragile ecosystem can be threatened. Nevertheless combating marine pollution takes a great deal of time and finance, but Australia is compromised with the cause and is world known for all of the efforts implemented.

Sea Dumping Act, is a legislature that limits the amount waste that can be thrown in the ocean, marine environment reports are also done, and an education which encourages anti-fouling is used.

Timeline of Events

1907: Leo Hendrik Baekeland invents Bakelite which is the first fully synthetic plastic.

1959: Label warnings are added on plastic bags.

1982: UN adopts General Assembly Resolution 37/66.

1996: Plastic accounts for 80% of grocery bags.

2009: The Plastic Pollution Coalition is founded.

2009: Retail stores in California start to phase out the plastic bag.

2010: About 20 communities in the U.S. now choose to reduce or ban the use of plastic bags.

2012: San Francisco bans plastic bags. They are the first U.S city to do this.

2015: Obama tries to reduce plastic pollution by signing bans on microbeads in cosmetic products.

2017: The UN holds the Ocean Conference in New York City.

Relevant UN Treaties and Events

- Resolution 37/66. Third United Nations Conference on the Law of the Sea, 1982. Recalling previous resolutions about the topic, recognizing several states and organizations for their efforts, and suggests all states to sign and ratify the convention as soon as possible.
- Plenary meetings of the General Assembly dedicated to the commemoration of the twentieth anniversary of the opening for signature of the United Nations Convention on the Law of the Sea and the consideration of the item entitled "Oceans and the law of the sea" from 9 to 10 December 2002
- United Nations Conference held to support implementing the Sustainable Development Goal 14: Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development
- Resolution A/RES/70/235 - Oceans and the law of the sea, in 2015
- The Ocean conference, conserving marine resources and reducing plastic pollution were the outcomes of this conference in June 2017
- A/CONF.230/L.1 - Our ocean, our future: call for action, June 2017

Previous Attempts to Solve the Issue

United Nations, Greenpeace, Plastic Pollution Coalition, and Other Organizations

There has been many organizations and NGOs such as United Nations, Greenpeace, Plastic Pollution Coalition, and other organizations have launched campaigns or steps against plastic pollution. Organizations such as the Plastic Pollution Coalition work with other organizations and individuals who pledge to be plastic free.

Asking the Consumer

Many organizations such as the Plastic Pollution Coalition hold campaigns asking the average consumer to go plastic free. There are many alternatives to plastic. Some organizations such as the National Resources Defense Council even provide alternatives on their website.

Fees

Many cities are now requiring that their citizens recycle plastic and not throw them out. If they fail to comply, they will be fined. In addition, in places such as São Paulo, consumers have to pay extra to use plastic bags. Some cities such as San Francisco banned plastic bags too.

Possible Solutions

In order to solve the issue at hand, a few things can be done. The first thing would be to promote the use of alternative materials. For example, instead of using a plastic bag at the grocery store, many grocery stores can use recyclable paper bags or ask shoppers to use reusable bags. In addition, stores can charge a small fee for plastic bags so people will be incentivized to bring their own reusable bag. In addition, governments can promote recycling plastic and charge fees for people who throw out plastic. In terms of littering and pollution, the government could add signs and fees for people who litter but also hire people to pick up plastic pollution near seas. These are some simple solutions that could have a big impact.

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Forum: Environmental Committee

Issue: International Cooperation on water recycling

Student Officer: Veronica Sabella

Position: Chair of the Environmental Committee

Introduction

“Ensure availability and sustainable management of water and sanitation for all”, is one of the The Millennium Development Goals from 2015. Water is a primordial natural element that is essential for human survival and a vital component to sustain life on earth. Two thirds of the planet’s surface is water and as a matter of fact, 75 percent of the human body contains it. At first sight, water may appear as an unlimited resource, however, on the contrary, water is a finite supply. In order to preserve this fundamental component, the most reliable and safest measure to preserve it is by recycling water.

In 2015 UNICEF revealed that there are 663 million individuals lacking access to water and 2.4 billion people without access to proper sanitation. In addition, approximately 5,000 children a day are dying for reasons such as consuming dirty water or poor hygiene. Every 15 seconds one child dies because of water-related illnesses, nowadays investigations have proven that the lack of water is a key consequence of suffering the majority of diseases, such an example is cholera, which is can be caused by ingesting untreated water or with a high degree of chemicals. Patients suffering diseases related to the lack of water, occupy half of the hospitals beds available.

Health is not the only consequence of water scarcity, poverty, malnutrition, lack of education, and lack of security are other consequences. If there is not an attempt in solving the issue at hand, by 2025, 50 to 60 percent of the population will live in water stressed areas by 2050.

In other to achieve the millennium development goals, especially the ones stated previously, the United Nations is taking a highly active role. March 22nd, World's Water Day, the initiative of “World Water Assessment Programme” was launched, intending to create an example of worldwide cooperation based on the concept that water is a vital resource, and investments must be done.

Definition of Key Terms

Water recycling: Is the process where wastewater is purified in order to be used in different purposes. These method is usually employed in agriculture. To have a successful process the following steps must be performed:

- a) **Primary Treatment:** consists of simple mechanical and physical process, with the purpose of extracting half of the toxics from wastewater
- b) **Bug Farming:** biological processes used to eliminate the majority of residuals left.
- c) **Advanced Treatment and Disinfection:** According to San Antonio Water System, specialized in recycling water, this step is when: “water is filtered through sand before undergoing chemical disinfection in chlorine contact chambers, used to kill any remaining microorganisms. It is not desirable to have residual chlorine in the rivers and lakes, so chlorine is then removed using sulfur dioxide.”

Finite resource: Elements which lower concentration in comparison of its demand This is the case of potable water, when the usage is not properly controlled, and special treatments are not employed.

Renewable resource: “Natural resource which replenishes to overcome resource depletion caused by usage and consumption is the definition given in the book "Management for a Small Planet" .

Water scarcity: Absence of access to potable water, or not having enough sufficient treated water supplies for sanitation nor drinking, in a region. The water availability will play a fundamental role in this classification, as well as the demographic growth, the quantity of water consumed, and economic factors. The are two categories of water scarcity:

1. **Economic water scarcity:** Consequences of lack of investments in water infrastructure, where its population has no basic water services.

2. **Physical water scarcity:** Consumption of water is not enough compared to its demand.

Greywater: Wastewater that does not have major contaminants, extracted from household activities (sink, washing machines). It is not as blackwater (toiles) were drastical treatments must be performed.

Background Information

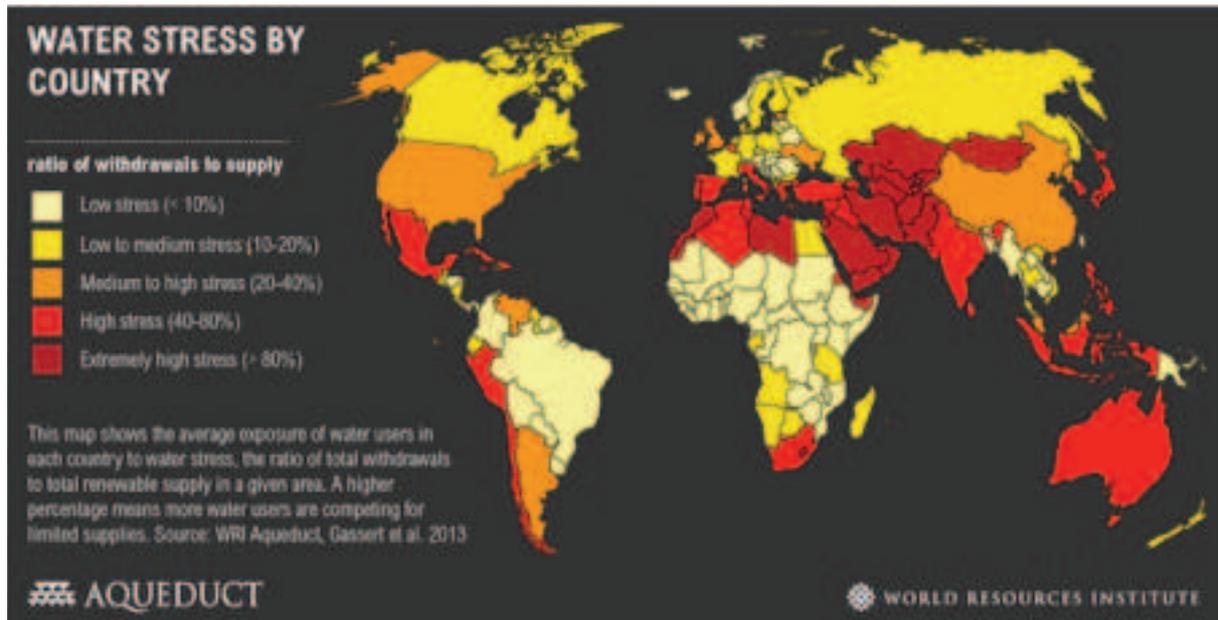
Water resources

Water distribution

The availability of water from the planet's surface is extremely complicated and uneven. 3% is the percentage of freshwater on Earth, the other 97% is saltwater located in seas and in the ocean. 69% of freshwater is located in glaciers, 30% underground, and only 1% of freshwater is accessible. The freshwater is extracted for worldwide consumption from lakes, rivers and swamps. In other words, only one percent of the water on the Earth's surface is usable by humans, and 99% of the usable quantity is situated underground. The increasing percentage of water in the ocean is alarming, and due to global warming, glaciers, with usable water are melting, and mixing with non potable water.

As it was seen before, water is not uniformly allocated, the availability of water varies in each country depending on some essential factors. Their geographic coordinates, are directly related, as it will determine the climate and their access to rivers, lakes and swamps. Economy and the lack of finance from governments to treat water adequately and to improve the country's sanitation, is another key element. In the majority of times, urban areas have superior water access in comparison to rural areas since in terms of sanitary and population, urban areas have an advantage.

In 2004, the accessibility of water was officially acknowledged as a human right. The United Nations encourages every nation to invest and face this right with the major importance and urgency that it has, in other to fulfill the millennium development goals, due to the vast amount of individuals who do not have the sufficient supply of water.



World map: the ratio of total

Renewable sources of water

Water recycling is one of the methods to save water. Greywater, as it was previously stated, through special procedures and treatments can be transformed into freshwater. Renewing water preserves a huge amount of energy, and natural environments as the extraction itself requires more energy, and modifies untouched natural landscapes, purifying procedures, transportations are also needed, generating an additional cost in terms of the capital expenditure.

Pollution is today's biggest concerns. Industry consumes 22% of water (UNWATER 2012), not only this activity degrades the environment, urban areas, fertilizers, pesticides produce pollution as well. After chemicals are used, industries throw them into rivers or other sources of potable water, contaminating the 1% of the water available for consumption. The population is growing fast, and the consumption of water is growing every year. Recycling water implies containing a vast amount of specialized technology as well as the appropriate infrastructure. International cooperation is needed in order to help Less Economically Developed Countries (LEDCs) to obtain potable water.

Utilities of recycled water

Industrial uses

When recycled water is appropriately treated, it has all the components to fulfill approximately most of the water demands. In 2016 statistics made in Europe revealed that industry is one of the main water uses, it consumes 40% of the total water use.

Furthermore the value based on eight countries put into evidence that the industrial sector is the primary water polluter.

Only 60% of the wastewater is treated in order to have less contaminants before depositing them in the environment. Water recycling can be seen as suitable option to decrease the percentage of pollution and preserve potable water for essential purposes. The uses of water in the industry are mostly in the production process, such an example is for cooling purposes, for cleaning and washing. Recycled water can perfectly be employed in those circumstances, as well as not contaminating potable water, due to the fact that treated water will be thrown.

Agricultural uses

This sector provides food supplies to individuals, being of extreme importance, although, it requires a vast amount of water resources to produce. As it was previously stated, greywater is subdued to different stages in order to become freshwater, depending on which state, in other words the level of treatment employed, determines the uses or recycled water in agriculture, nevertheless, if it is treated correctly it can be relatively limitless. The conventional uses include pasture, crop or fodder irrigation and shed or stockyard wash down.

It is scientifically proved, that recycled water include a wide range of nutrient, than potable water, such an example is the nitrogen. The use of recycled water in agriculture and landscape irrigation provides supplementary nutrients and reduces the amount of synthetic fertilizers, shortening costs as huge amount of fertilizers are not needed, and improving the products quality. Population is constantly in growth, so food supply must rise in direct proportion, further resources will be needed, recycled water can provide this demand.

Major Countries and Organizations Involved

UN-Water

UN-Water is an inter-agency entity composed of different agencies inside of the United Nations, and partners outside this organization. Created in 2003, after the World Summit on Sustainable Development, its main objective consists on supporting state's water issues, to reach the Millennium Development Goals. This agency reinforces the cooperation between different agencies, which does not only focus on water scarcity, water recycling, sanitation and hygiene, but also water-related disasters. Some of its responsibilities include the annual World Water Day, were the World Water Assessment Programme (WWAP), is launched were the resources of freshwater are monitored. Which strictly related to the fulfillment of 2030 Agenda, elaborated by the General Assembly were ensuring access to water and energy is one the main goals.

World Water Council

The World Water Council is an international multi-stakeholder platform. 1996, was the year in which this organization was established. The initiative came from recognized water specialists and various international organizations, because of the developing concern about water scarcity in numerous countries.

Build political commitment, encourage awareness, and stimulate action about water issue of all kind, in order to protect this natural resource efficiently, as well as managing , on a sustainable environment base for a beneficial survival in the planet. “Providing a platform to promote debates, exchange experience with its stakeholders”, wanting to produce an strategic vision that benefit communities, initiatives and activities are also done, whose results are targeted to their main event, the World Water Forum. This agency does not take part in the United Nations, however, it is an fervent partner in UN water.

Food and Agriculture Organisation (FAO)

Food and Agriculture Organisation is an agency of the United Nations, whose main goal is to achieve food security for all. Individuals must have access to enough treated food, to live a healthy life. In order to have sustainable management of natural resources, eliminate poverty, eradicate hunger, food, and malnutrition, including recycling water, to benefit future generations. 795 million people – one in nine – still struggles to obtain food.

Being another main objective of the 2030 Agenda, not only concerning in diminishing hunger, but cooperating with UN water. By 2050 it is estimated that the population will

considerable increase, 2.3 billion people, having to produce 70% more of its current production, having to adapt to scarce natural resources and adapting to climate change, this will be the main Challenges of global agriculture in the coming decades.

United Nations International Children's Emergency Fund (UNICEF)

United Nations International Children's Emergency Funds, is an active intergovernmental organization, which has been working for 71 years in over 190 countries and territories, defending every child and its mother's, providing education, resources, and promotes every right for children. Programmes are created to fulfill this ambitious goals, since every child deserves a chance. It essentially provides help in LEDC's, investing US\$70 in improving sanitation for children in need, and has a transcendental role in recycling water, being part of UN water.

United Nations Environment Programme (UNEP)

There is an agency from the United Nations which in charge of coordinating environmental activities, such as persuading developed countries to implement policies and practises that help to preserve natural resources, such an agency is called the United Nations Environment Programme. It was funded as a consequence of the United Nations Conference on the Human Environment (Stockholm Conference) in June 1972. Fervently working on creating awareness about water scarcity, and its importance, by promoting as well as managing renewable sources of water, being part of Ecosystem Management Aqua Republica Project, and UN water. The promotion of more appropriate ways to handle the ecosystem, in part of The 2030 Sustainable Development Agenda.

World Health Organization (WHO)

"Our goal is to build a better, healthier future for people all over the world" is the main objective of UN agency, with offices in more than 150 counties, working along with government and external partners. Such an example is the World Bank, monitoring the International Health Partnership (IHP+), organizations with the objective of tackling the world's' health issues.

Their primordial role is to coordinate and direct international health, such as combating diseases, safety, food, enough water, medicines and vaccines needed, improving the effective work of United Nations' activities Obesity. Health systems, corporate services and response and effectiveness of the corresponding services, are the areas in which this

agency operate, continuously struggling with hunger related diseases, HIV and malnutrition are some of the aspects this agency tackles. The World Health report is the responsibility of the World Health Organization.

United States

United States of America plays a major in recycling water, with its central water recycling facilities and programs in California. Specially in Western United and California, are currently suffering from the worst drought in 500 years, that is why recycling water has never been more encouraged not important. The WateReuse association California has a key roll, and engaged with the cause, constantly working with their elected officials to develop regulations that increase the water reuse and accelerates its implementation. By 2030, 17 million individuals will live with recycled water in this state. However, the Trump’s administration did not sign the Paris climate accord, which implements the framework of the United Nations Convention on Climate Change (UNFCCC), to reduce climate change.

Singapore

Providing water security is one of the principal concerns of this country, since it has limited land land. Singapore suffered from major drought, floods and water pollution throughout its history. All of this challenges produced this country to employ strategies to secure the supply of water. Nowadays it diversified their sources of water, commonly known as ‘Four National Taps’, from local Local Catchment, Imported Water principally from Malaysia, NEWater which consist of purified water, and desalinated, a process were minerals and salt are extracted from saline water.

Israel

Constant struggles in their water supplies, provoked Israel to take action on the matter. Nowadays is recognized by experts and international organization for their efforts to recycle water, in honor for of the International Water day, the UN released report, in which the country at hands was named the “world's most efficient recycled water user”.70 percent of wastewater is purified to be used in agriculture or irrigation, and 40 percent of the water consumed was produced.

Timeline of Events

Date **Description of events**

1962	The Montebello Forebay Groundwater Recharge Project, provided an alternative source of water to refill their groundwater basin
1967	First Factory to recycle water, producing 60 million litres a day
15-25 March, 1977	UN water conference
14 June, 1992	Earth summit
12 December, 2003	Lunch of the International year of freshwater
2003	UK introduced a programme to produce 40 million litres of recycled water
22 March 2005- 22 March, 2015	The start of the International decade of "Water for life"
28 July, 2010	UN's General Assembly acknowledges water and sanitation as a basic Human Right
2 July, 2012	Millennium Development Report
2013	International Year of Water cooperation
25 September, 2015	The Sustainable Development Goals 2015 were adopted
30 November - 12 December, 2015	Paris United Nations' Climate Conference (COP21)
1 January, 2016	The 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development
22 March, 2017	2017 United Nations World Water Development Report

Relevant UN Treaties and Events

- Resolution of the UN General Assembly A/RES/35/18 "Proclamation of the International Drinking Water Supply and Sanitation Decade"
- Creation UN water, 2003.
- Inauguration of the International Year of Water Cooperation of 2013.
- International Conference on Water Cooperation, August 20 to 21st of 2013.
- Budapest Water Summit, October 8 to 11th of 2013.
- International World Summit, January 19 to 22nd of 2015.

- European Protocol on Water and Health
- Global Water Summit, 19-20th April 2016
- The UN Sustainable Development Goals:
 - Goal 6: “Ensure availability and sustainable management of water and sanitation for all”
 - Goal 7: “Affordable and clean energy”
 - Goal 9: “Industry, Innovation and Infrastructure”
 - Goal 12: “Responsible consumption and production”
 - Goal 13: “Climate Action”

- Human Right On Water and sanitation Resolution: Human Rights Council A/RES/64/292.
- A/C.2/69/L.12 : Water for Life, International Decade for Action.
- World Health Assembly Resolution 64/24.
- Resolution of the UN General Assembly A/RES/67/204: —Implementation of the International Year of Water Cooperation.
- Resolution of the UN General Assembly A/64/692 —Water, peace and security: transboundary water cooperation
- Resolution of the UN General Assembly A/RES/70/169 The human rights to safe drinking water and sanitation (2015)
- Resolution of the UN General Assembly A/RES/71/222 International Decade for Action, “Water for Sustainable Development”, 2018–2028 (2016)

Previous Attempts to solve the Issue

There are several Millennium Development Goals, which make reference to the importance of water, a vast amount of organizations are currently taking action to manage it properly, and fulfill these ambitious goals. Improvements have been made, but there are still some things to be done. 91% of the global population has access to improved sources of water, with a less amount of contaminants. Regarding drinking water, 37 million people has now access, from 700 million people , it was reduced to 663 million. All this statistic fact expose a significant improvement regarding the accessibility of water, however in the issue at hand, recycling water, it has not been tackled yet.

Nevertheless, organization, programmes, legislations and foundations have been created in order to implement and provide infrastructure for recycling water. UN water, as it was previously explained is a cooperation and partnerships with agencies inside the UN, and separate entities that operate by themselves, this specialized agency provides updated reports, and activities. The Water Environment Foundation (WERF), provides other detailed reports and applies the research to possible and practical solutions. This organization worked with the Soap and Detergent Association (SDA) to collect data about recycling grey water, and the benefits it can bring. In addition, United States Environmental Protection Agency (USEPA), is one of the largest, with The National Onsite Wastewater Recycling Association (NOWRA), organizations in the U.S, that raises awareness about the uses of greywater, and how it could be implemented, educating industries all of its advantages. All of this organization specialized water resources, stimulates the efficient management of this natural element, and how it can decrease costs and preserve the environment by implementing it.

Nations took an active role in the issue as well, such an example is the cooperation between Germany, Bolivia and Mexico, frequently known as the triangle cooperation. From 2014 to 2016, it functioned, having the aim of promoting in Bolivia the reuse of recycled water for agricultural irrigation, improving and encouraging the reuse of waste water to other aspects as well. Latin America is facing drastic climate change, and the concern about the accessibility of water in a long term, is present in governments. This cooperation resulted efficient and improved Bolivia's use of water reuse, with new technologies, experts and six areas of this country implemented this method.

Possible solutions

Because of the nature of the issue and the countries involved it is complicated to provide a solution, however, there are several approaches that can be considered. Firstly it is essential to provide further information about the process and the different stages of recycling, cause it strictly related, where this recycled water is going to be employed, to the number stages it must submitted to isolate contaminants. When countries are informed, specially LEDCs needs to improve their infrastructure and the as well as update their technology. Here organizations such as the World Bank will play a fundamental role, since there are some countries where sanitation is not even present.

The collaboration of Scientists and specialized professionals, since the correct labour is needed to succeed. Recycled water can be applicable in agriculture, irrigation, industry and even the direct consumption, that is why it is important the cooperation between countries, in order to increase the usage of this method, instead of extracting potable water. Creating a training centers to explain how the labour would be, the methods that must be performed, to provide workers all the essential training and information to recycle water, is another possible solution, since engineers, and experts are crucial in the process.

Society can determine the success of this issue, raising awareness the alarming situation of water, plays a major role. Advertising campaigns can promote that water is finite resource, and if something is not done, we will run out of it . The duty of communities in general is to preserve this primordial resource for future generations. Governments should also be aware, it may not be a problem yet, due to ignorance and the continuous extraction, can provoke consequences in the long term.

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