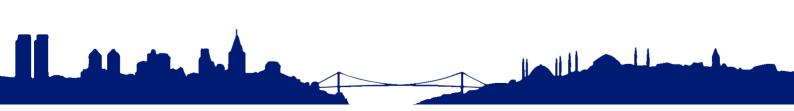


# RESEARCH REPORT

UNITED NATIONS ECONOMICAL AND SOCIAL COUNCIL (ECOSOC)

ENSURING THE PROTECTION OF THE ENVIRONMENT THROUGH WATER MANAGEMENT AND INDUSTRIAL WASTE CONTROL

ÜMMÜNAZ YANIK



Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

### **Basic Overview of the Issue**

Water management is the task of scarce water resource preparation, production, delivery and management. Water is a basic requirement for all living beings, without water, no living creature will exist. The ability to source clean water is one of the most urgent concerns in the world today. Water scarcity is defined as "the point at which the aggregate impact of all users impinges on the supply or quality of water under prevailing institutional arrangements to the extent that the demand by all sectors, including the environment, cannot be satisfied fully" by United Nations (UN). This is a particularly problematic question in the Middle East where water resources become rapidly scarce as 14 of the 20 most water-stressed countries in the world are part of the Middle East according to the UNDP State Report. The lack of water resources and poor water management has created rather significant problems that require global, immediate attention.

Water pollution has many origins. The most polluting of them are the city sewage and industrial waste discharged into the rivers. Industrial waste is characterized as waste produced by manufacturing or industrial processes. Cafeteria refuse, dirt and gravel, masonry and stone, scrap metals, litter, gasoline, solvents, pesticides, weed herbs and plants, wood and scrap lumber, and similar waste are among the forms of industrial waste produced. Industrial wastewater usually includes chemical compounds that are common and readily detectable. Many major industries have industrial effluent treatment facilities, but this is not the case for small-scale enterprises, which cannot make huge investments in pollution control equipment because their profit margin is very low. However, water pollution has devastating effects not only on humans, but also on wildlife, fish and birds. Also, contaminated water is unsafe for drinking, cultivation and manufacturing.

# **Explanation of Important Terms**

### Water distillation

A water distiller is a type of water treatment that creates contaminant-free water by turning water to vapor before it is filtered and restored to liquid state. Impurities such as microbes, heavy metals, and arsenic are removed during the evaporation cycle because they cannot transform into steam. Such pollutants are left in the boiling

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

chamber as the water changes from liquid to a gaseous state. The distiller also cools the evaporated stream, restoring it as a mineral-free, extremely pure water to its liquid state.

### Less Economically Developed Countries (LEDCs):

Countries who have less economic development and are usually known to have low standards of social services (health, education, etc. services).

#### Sanitation:

The process of cleansing water from the harmful substances in it such as but not limited to harmful bacteria.

#### Contaminate:

To disturb the purity of a substance by imposing it to a poisonous or harmful component

# **Detailed Background of the Issue**

### Water Scarcity

There are multiple causes of water scarcity in the Arab States. There is low and unpredictable runoff, strong evaporation levels and frequent droughts, both leading to poor sustainability and supply of water resources. As a consequence, Arab countries occupy 10% of the world's area, but receive just 2.1% of their average annual precipitation and most of the country is categorized as arid or semi-arid (desert), producing fewer than 250 millimeters of rainfall annually. The effects of climate change are expected to have decreased natural water resources by another 20 percent by 2030, increasing the frequency of droughts by declining precipitation, increasing demand for domestic and agricultural water as temperatures rise, and growing infiltration of seawater into coastal aquifers as sea levels rise and groundwater overexploitation persists.

Middle East's current water shortage condition is rather concerning; The Euphrates and the Tigris are drying up in Iraq. The United Arab Emirates reports their fresh water will dry up in 50 years, and the supply of Jordan is rapidly disappearing where the Dead Sea is drying up. In fact, West Bank fields are becoming deserts because the area's water scarcity is extremely severe. Furthermore, the World Water Development Report (WWDR) figures

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

show that countries such as Kuwait, Tunisia, Bahrain, Jordan, and the United Arab Emirates are experiencing severe water scarcity circumstances. More than half of the Arab countries are rated among the lowest 10 percent of the 182 countries listed in the WWDR with total annual clean water availability. According to 'Water Scarcity Challenges in the Middle East and North Africa', this has resulted in the use of almost all renewable water resources and many countries have used their non-renewable resources for agricultural manufacturing and domestic purposes. "The World Health Organization (WHO) acknowledges a global water poverty line of 1,000 m³ per capita per year; yet the World Health Organization reports that Yemen has only 120 m³ of water available per person per year, which is one of the lowest in the world. In Tunisia where the average water per citizen is below the minimum requirement, the problem is not much better.

Management of water is inseparable from protection of social, cultural, environmental and health.

### Waste Control

In almost all Arab States, advances in waste treatment are still in its early stages. Many Arab policymakers have acknowledged the challenges of waste management and want to introduce effective solutions. However, the condition is defined by a lack of clear legal standards, standards and organizational structures that operate.

There is a strong need for consistent and practical regulatory environmental mechanisms, but so far international laws have been and are being implemented without adjusting to local conditions. Due to the frequently unclearly enforced legal standards, tracking and control of waste management activities are not practical. Determining the responsibilities in implementation is insufficient. Controls are not carried out and there is no consistency with existing laws. Due to the unstable political climate in the Arab states, there will be delays in the further implementation of waste management systems, although the scale of these delays cannot be accurately established at the moment.

The Arab world relies almost entirely on its non-renewable resources. The waste resource sector is largely inadequately organized and controlled throughout the country. Many Arab countries have not yet come up with proper laws on waste and long-term plans.

### Water Borne Diseases

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

Along with the economic outcomes, there is a social threat of the industrial wastes which is the water borne diseases. Many infections may be spread through contaminated water, which is referred to as 'water-borne diseases.' There are some waterborne illnesses that raise the possibility of potential outbreaks. Cholera and Polio are two of the most dangerous waterborne diseases that have plagued mankind for decades. There are reportedly about 790 million people around the world who have no access to clean water. Improving water quality and establishing efficient water treatment services is the most successful and central form of preventing waterborne diseases. Sanitation programs can be difficult and costly to provide, especially for post-conflict nations, countries that are undergoing a crisis such as a war or countries that do not have a secure or healthy infrastructure to support these facilities. Two of the most prevalent waterborne diseases (polio and cholera) have been identified and documented in various regions, particularly in East Africa and Yemen, notably after the ongoing conflicts and wars in the Middle East and Africa. In addition to lack of treatment and vaccines, states were unable to prioritize sanitation facilities as the current state structure forced them to invest in other required factors such as military, contributing to an increase in the amount of severe cases of waterborne diseases in areas.

## Sustainable Development Goal 6

Sustainable Development Goal 6 is the goal that covers the aspect of water management as it refers to clean water and sanitation. As the aim of this SDG is to achieve a future in which contaminated water is not consumed and quality sanitation facilities provide clean water, SDG 6 needs to be taken into consideration while tackling the issue of controlling industrial waste control with the aim of water management since contaminated water sources are a major threat to the wellbeing and good health individuals.



Picture 1: Sustainable Development Goal

The improvements in sanitation facilities should generate will also contribute to this sustainable development goal as the issue at hand it parallel to it. This goal was created as so many countries were suffering from poor water management and water pollution. Since adopting this goal, nations have thrived to improve the water sanitation in their borders and

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

there were many accomplishments and improvements in terms of sanitation for a few years. As contaminated water affects the economy and sustainability of a region, this sustainable

development goal should be taken into consideration if those are wished to be achieved in

Arab States.

### Water, Sanitation and Hygiene (WASH)

Water, sanitation and hygiene, shortly known as WASH, is a collective initiative that has the aim of improving water and sanitation quality, as well as hygiene in regions where they lack. As access to clean water and sanitation was seen to be a human right by the General Assembly in 2010, this initiative thrives to improve water and sanitation quality.

#### - Water:

As the primary and most effective way of transportation of water borne diseases, water is the most essential component that should be focused upon while eliminating water borne diseases. As most of the living beings depend on water, it is extremely crucial and also vital to provide clean and accessible water for all.

#### - Sanitation:

As it was outlined in the definition of key words section, sanitation is simply defined as the process of cleansing water from the harmful substances in it such as but not limited to harmful bacteria. 2008 was declared to be the International Year for Sanitation as the water borne diseases increased their effect immensely and necessary sanitation services were of vital importance.

### - Hygiene:

The last component of the WASH initiative is hygiene. Hygiene is very essential in this process as after the sanitation of water, it can easily get contaminated once more and this situation can only be prevented if the hygiene standards of a region is increased. This is also the case with water borne diseases as they hold the possibility of reoccurring once they are eliminated. That's why the issue on hand does not only relate to water quality and sanitation, but also to hygiene.

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

Access to Clean Water

The percentage of accessibility to better water varies from country to country, several countries, particularly those located in Africa and the Arab States, do not have access to such quality water sources. This is mainly due to the disparity in the standard of their countries' water treatment systems. Less Economically Developed Countries (LEDCs) that do not have sufficient funds to build proper sanitation services suffer most while supplying their people with clean water. As stated earlier, waterborne infections are transmitted by polluted sources of water. Lower quality hygiene increases the possibility of water-borne diseases transmitting and is therefore important in avoiding their harmful effects, most importantly death.

# **Major Parties Involved**

### Morocco

In Morocco, the development of the solid waste system has taken place over the past decade, focused on public cooperation with the private sector, developing the climate and livelihood of vulnerable groups of people who make money from domestic garbage collection. Until the reform program began, there was poor management of solid waste sites in Morocco. Rivers generally flowed through towns and into the Ocean containing poisonous effluent. "Waste pickers "— men and women, adults and children trying to make a living out of what many citizens were throwing away — often worked without any safeguards to gather precious garbage scraps from unprotected dump sites.

### **UN Water**

United Nations Water is the main water quality and sanitation organization of the United Nations, making it highly important to the issue at



Picture 2: Logo of UN Water

hand. It provides extensive reports regarding the improvements towards Sustainable Development Goal 6. Because they have adequate water management and financing, their efforts as the UN's leading body are important.

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

Jordan

Located in the Syrian desert, Jordan experiences an extreme shortage of water. To exemplify, the annual removal of freshwater from Jordan is less than 10 percent of Portugal's total, given the same scale. Water costs in Jordan rose by 30% in ten years due to a severe groundwater shortage. According to WHO, Jordan has one of the world's lowest rates of water resource supply per citizen. Over the next two decades, water scarcity will become an even greater problem as the population doubles and climate change eventually makes weather more unpredictable and volatile. In fact, reports have shown that the amount of water wasted annually is estimated to be able to meet the basic needs of 2,6 million inhabitants, or more than a third of the current population of Jordan.

### The Gulf

Since the Gulf is a region known for a restricted amount of rainfall and fresh water, Gulf countries have chosen the petroleum to produce water. Consequently, the Gulf relies primarily on burning oil to distil water, which is a highly expensive and fuel-intensive process. A research on the topic suggests that Saudi Arabia itself consumes 1.5 m barrels of oil each day to hydroelectric generators, equal to Italy's annual oil demand. Likewise, Abu Dhabi requires more than half of its national energy to make drinkable water.

### Tunisia

Water shortages have been exacerbated by population growth in Tunis, the capital city of Tunisia. A 2.5 million people of Tunis experienced water shortages in 2013. However, climate change and temperature increases have also had a negative impact on the water supply, which in turn impacted agriculture.

# **Egypt**

Throughout recent years, Egypt has suffered from severe water scarcity. Uneven distribution of water, exploitation of water resources and inadequate irrigation methods are some of the country's major water safety factors. Egypt is experiencing a water shortage of about 7 billion cubic meters per year. Nevertheless, the UN is already predicting that by 2025, Egypt could run out of water.

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

#### Yemen

Water shortages have damaged the living standards of Yemen's inhabitants. Yemen has not been able to produce enough food in recent years to support its population. Thus, the consumption of contaminated water caused cholera outbreaks in Yemen. According to reports, there have been more than 10.000 cases of cholera per week which is an extreme number that threatens its citizens. Due to the economic crisis, the government of Yemen failed to pay the salaries of workers in sanitation centers which resulted in them refusing to work. In addition, due to damages on water sanitation facilities, as a result of the war, providing clean water became much more difficult for the government.

### United Arab Emirates (UAE)

The UAE is experiencing a severe decline in their available water supplies. A 2005 study by the Emirates Industrial Bank said the UAE had the world's highest per citizen water consumption. In fact, this region's water table has fallen around one meter per year for the past thirty years. At this current rate, in about fifty years, the UAE would deplete its limited freshwater resources.

### Saudi Arabia

From 170 towns and villages in the Kingdom, the government produces 12 million tons of waste each year. An average of 1.2 kg of waste per day is created by every person and resident of Saudi Arabia. Saudi Arabia has no programs to sort and recycle waste, or to dispose of waste using safe methods, and there is no organized system to deal with this kind of waste. There are no programs in Saudi Arabia for sorting and recycling waste or disposing of waste using safe methods, and there is no organized system for dealing with such waste.

# **Chronology of Important Events**

2003	UN Water is established

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

14 April 2004	The Arab Water Council (AWC) was established on 14 April 2004, as a regional non-profit organization.
2005-2010	UN-Water operates the 'Water for Life' International Decade for Action, culminating in the Sanitation Drive to 2015, a campaign to meet the 2000-2015 Millennium Development Goals' sanitation target.
December 2010	The first Arab Water Week launched in Amman, Jordan.
21 December 2010	As access to clean water and sanitation was seen to be a human right by the General Assembly.
2013	A 2.5 million people of Tunis experienced water shortages in 2013
2013	Second Arab Water Week held in Amman, Jordan with more than 500 participants.

# **Relevant International Documents**

- Water Governance in the Arab Region Managing Scarcity and Securing the Future, 2013

https://www.undp.org/content/dam/rbas/doc/Energy%20and%20Environment/Arab\_Water\_Gov\_Report\_Full\_Final\_Nov\_27.pdf

- It is a study carried out under the Water Governance Programme for Arab States, a project of the United Nations Development Programme Regional Bureau for Arab States (UNDP-

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

RBAS)

- Assessment of Climate Change Impacts on Water Resources and How to Adapt
- https://unfccc.int/sites/default/files/demuth.pdf
- It is a series of slides from the United Nations Framework Convention on Climate Change that specifically tackles with the effect of climate change on water resources.
- Water Management in Fragile Systems Building Resilience to Shocks and Protracted Crises in the Middle East and North Africa
  - https://openknowledge.worldbank.org/bitstream/handle/10986/30307/9789251306147.pdf?sequence=1&isAllowed=y
  - It is a discussion paper encouraged by World Bank and, Food and Agriculture Organization of United Nations (FAO)

# Past Attempts to Resolve the Issue

### **UN Action**

In 2003, the UN formed UN-Water to track and regulate water governance. Moreover, the Millennium Development Goals originated during the United Nations Millennium Summit in September 2000, the largest ever meeting of world leaders introduced the Millennium Declaration, a comprehensive series of time-bound goals to spread the benefits of development to the world's poorest residents. In addition, in 2005, the UN launched a programme that would last a decade— The Global Decade for Action ' Food for Life. ' Its primary objective is to encourage attempts to meet global water and water obligations by 2015. Furthermore, On 1 January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development that are accepted by world leaders in September 2015 at the UN Summit officially came into operation. Specifically, Sustainable Development Goal aims to achieve a future in which contaminated water is not consumed and quality sanitation facilities provide clean water.

## Arab League Actions

The Arab League has organized three conferences on the "Arab Water Week" to address, overcome and set up action plans for water issues in the region. The Arab region

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

has accomplished two significant water-related developments over the past few years: the creation of the 2008 Arab Water Ministerial Council (AWMC) under the League of Arab States; and the implementation of the Arab Water Policy by the AWMC to address the demands of Arab water conservation and potential sustainable development need. The AWMC's mission is to organize and promote the sharing of perspectives to tackle the problems of water shortages in the Arab States.

### The Arab Countries Cross-Continental Process

Part of the Arab League, the Arab Countries are represented as one entity in the 6th World Water Forum. The cross-continental mechanism of the Arab countries brings together all actors, and the related regional and international organizations, as well as the members of the Arab Ministerial Water Council.

### **Solution Alternatives**

### Legislation

Implementation of water regulations and approaches is essential to address this problem. It can be accomplished through the systemic restructuring of government, regulatory requirements, management tools and implementation of regulations. Water management agencies of the government need to strengthen their administration and corporate practices and encourage water services to operate properly.

### Water distillation

As reported by 'Solutions for Water Scarcity in the Middle East, the ideal solution is to conserve water with appropriate treatment so that seawater and wastewater can be utilized f or desirable purposes such as drinking water, farm and landscape irrigation and industrial pr ocesses, helping cities and countries to extend limited supplies of fresh water. Although the filtration and water distillation are important in order to obtain a reusable way for water management, they are expensive that not all of the countries are eligible to afford.

### Water conservation awareness

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

There needs to be an awareness for the water conservation. Raising awareness by any means, such as but not limited to, brochures, billboards and education given to both children and adults, would increase the public's knowledge about the effective consumption of water, and thus, will guide them to take necessary measures against waste and overuse. Raising awareness is needed in order to address the importance of sanitations while reducing the water consumption.

### Collaboration

There is a need for collaboration between industries. The collaboration requires to take growth, production, use and demand, into account and put the focus on the citizens and the environments that sustain them. Increasing the efficiency of water use in all industries on the demand side is key for effective water scarcity reduction programs. Thus, it is important to preserve and rebuild habitats that naturally absorb, process, maintain and distribute water, such as rivers, lakes, forests and soils, in order to improve the supply of decent quality water.

### Operating mutual water resources

Another problem for the Arab state is the insufficient government structures for common water resources. More than two-thirds of water resources come from outside the country and are controlled independently by the riverside countries. There is a lack of extensive international treaties for almost all mutual river basins. Some disturbance or contamination in one nation of these water resources will jeopardize the water quantity and quality of neighboring nations. Therefore, mutual water resources play a vital role in the sustainability and growth of the region by building ecological, economical partnerships and interconnections between the neighboring states.

# Sustainable Waste Management

There is a lack of sustainable waste management expertise in the region, particularly with regard to waste treatment. There are hardly any services for treating waste. Many towns require decentralized multi-purpose waste management facilities, such as small composting

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

plants per year, recycling centers for waste electrical items, bulk waste and hazardous waste, simple sorting plants to distinguish organic from recyclable materials, break recyclable materials, etc. The large cities definitely require pilot projects on an industrial scale in collaboration with foreign specialist companies to acquire practical knowledge and lay the foundations for the waste management industry.

# **Bibliography**

- "About | International Decade for Action 'Water for Life' 2005-2015." *Welcome to the United Nations*, www.un.org/waterforlifedecade/background.shtml.
- "Arab League Begins Key Baghdad Summit." *Breaking News, World News and Video from Al Jazeera*, 20 Mar. 2012,
  - www.aljazeera.com/news/middleeast/2012/03/201232713855637148.html.
- Fitch, Chris. "Will Yemen Run out of Water?" *Geographical Geographical Magazine*, geographical.co.uk/places/cities/item/753-will-yemen-run-out-of-water.
- "Industrial Waste Safe Drinking Water Foundation." *Safe Drinking Water Foundation*, 23 Dec. 2016, www.safewater.org/fact-sheets-1/2017/1/23/industrial-waste.
- Msv2016. "Waste Management in the Arab Region: Recycling on Trial." *GLOBAL*\*RECYCLING The Magazine for Business Opportunities & International Markets,

  4 Mar. 2019, global-recycling.info/archives/2620.
- ---. "Waste Management in the Arab Region: Recycling on Trial." *GLOBAL RECYCLING The Magazine for Business Opportunities & International Markets*, 4 Mar. 2019, global-recycling.info/archives/2620.
- ---. "Waste Management: Arab Countries Are Looking for Solutions." *GLOBAL RECYCLING* The Magazine for Business Opportunities & International Markets, 5 Aug. 2016,
  global-recycling.info/archives/516.
- "Official Preparatory Meetings." *Home Page*, 5.worldwaterforum.org/index.php?id=2233.
- "Safe Water Remains Scarce in Somalia, Contributing to Disease and Malnutrition." *UNICEF*| Children?s Rights & Emergency Relief Organization, 20 Mar. 2012,

  www.unicef.org/wash/somalia\_62048.html.
- Zurich Model United Nations, zumun.ch/wp-content/uploads/2016/11/ZuMUN2016\_Arab-League-Study-Guide.pdf.
- Startseite, www.vivis.de/wp-content/uploads/WM6/2016\_WM\_117-128\_Nassour.pdf.

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

UNDP - United Nations Development Programme,

www.undp.org/content/dam/rbas/doc/Energy%20and%20Environment/Arab\_Water\_Gov\_Report/Arab\_Water\_Gov\_Report\_Full\_Final\_Nov\_27.pdf.

"Waste Management Key to Regaining Public Trust in the Arab World." *World Bank*, 14 Mar. 2016, www.worldbank.org/en/news/feature/2016/03/14/waste-management-key-to-regaining-public-trust-arab-world.

"Water Scarcity in Egypt | | EcoMENA." www.ecomena.org/tag/water-scarcity-in-egypt/.

"Water Shortage Leads People to Drink from Rivers." *The New Humanitarian*, 6 Dec. 2019, www.thenewhumanitarian.org/report/70243/iraq-water-shortage-leads-people-drink-rivers.

Welcome to the United Nations,

www.un.org/waterforlifedecade/pdf/2006\_unwater\_coping\_with\_water\_scarcity\_eng.p df.

"What is a Water Distiller and How Does It Work?" *Fresh Water Systems*, 26 Dec. 2018, www.freshwatersystems.com/blogs/blog/what-is-a-water-distiller-and-how-does-it-work.

### **Useful Links**

https://www.freshwatersystems.com/blogs/blog/what-is-a-water-distiller-and-how-does-it-work

https://www.un.org/waterforlifedecade/pdf/2006\_unwater\_coping\_with\_water\_scarcity\_eng.pdf

https://www.undp.org/content/dam/rbas/doc/Energy%20and%20Environment/Arab\_Water\_G

ov\_Report/Arab\_Water\_Gov\_Report\_Full\_Final\_Nov\_27.pdf

https://global-recycling.info/archives/516

https://global-recycling.info/archives/2620

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

http://www.ecomena.org/tag/water-scarcity-in-egypt/

https://global-recycling.info/archives/2620

https://www.worldbank.org/en/news/feature/2016/03/14/waste-management-key-to-

regaining-public-trust-arab-world

https://www.vivis.de/wp-content/uploads/WM6/2016\_WM\_117-128\_Nassour.pdf

Agenda Item: Ensuring the protection of the environment through water management and industrial

waste control

Student Officer & Role: Ümmünaz Yanık- Deputy President

