



2024 - 2025

**Model Arab League
BACKGROUND GUIDE**

Council of Environmental Affairs Ministers

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**National
Council
on US-
Arab
Relations**



Original draft by Kimberlain Williams, Chair of the Council of Environmental Affairs Ministers at the 2025 National University Model Arab League, with contributions from the dedicated staff and volunteers at the National Council on U.S.-Arab Relations

Honorable Delegates,

It is my greatest honor to welcome all of you to the Council of Environmental Affairs Ministers at the 2025 National University Model Arab League Conference! My name is Kimberlain Williams, I am a junior History major with a minor in Psychology at Converse University in Spartanburg, SC and I am beyond grateful to serve as your council chair for the coming year.

I have a history with model conferences, most recently representing the delegation of Bulgaria on the North Atlantic Council at the 2024 International Model NATO Conference and representing the nation of Egypt on the Council of Environmental Affairs Ministers at the 2024 National Model Arab League conference. This will be my second experience attending the NUMAL conference, however, I have also participated in three Southeast Regional MAL conferences held in my hometown of Spartanburg, SC, at two of which I also represented a delegation on the Environmental Council. As a veteran of this committee, it has a very special place in my heart, and I hope that all of you enjoy your experiences as much as I have.

The Environmental Council consists of many pressing environmental challenges that must be addressed with collaboration, creativity, and of course respect. At its core, this committee concerns topics that act as the cornerstones of human well-being. I expect all of you to keep this in mind as you navigate through this background guide and your personal research. I urge each of you to bring your best self to debate, keeping in mind that diplomacy is of the utmost importance in the committee room. However, it is important to remember that this is a learning conference, so always feel free to approach me or other delegations in the room with questions or concerns if they are to occur. Conference can always be an intimidating experience so take the time to encourage and become friends with your fellow delegations. You never know, they might just become your lunch buddies for the weekend or some of your greatest friends.

If you have any questions or concerns before the conference, feel welcome to reach out to me at kdwilliams003@converse.edu and I will work my hardest to resolve them. I wish you all the best in your research and I look forward to seeing you this Model Arab League season!

Sincerely,

Kimberlain Williams

Topic I: Combating wildlife trafficking and poaching to protect species populations and biodiversity.

I. Introduction

A. General Background

The Wildlife Conservation Society, a global non-governmental organization focused on protecting threatened species and regions around the world, reported that illicit wildlife trafficking is estimated to be between \$7.8 billion and \$10 billion per year. Illegal wildlife trading has been a prevalent issue on a global scale for decades, making it the fourth largest global illegal trade after narcotics, human trafficking, and counterfeit products when including the activity from unregulated fisheries and timber.¹

Illegal wildlife trafficking encompasses the selling and harvesting of wildlife and wildlife products, including but not limited to furs, plants, horns, and pelts, to be used as fashion, food, medicine, or pets for consumers. Wildlife products are trafficked from nearly every branch of life, however, there are specific products that are well known and in high demand, such as ivory from the tusks of African elephants and rhinoceros horns, which have put all five of the remaining rhinoceros species in danger of extinction. Targeting wildlife for trade greatly threatens local ecosystems and adds additional pressure onto those that are already facing detrimental human-induced effects such as deforestation, pollution, overfishing, and other forms of habitat and biodiversity destruction.

As the human population has grown and developed, so has the demand for wildlife since a multitude of nations and cultures are reliant on a lifestyle that revolves around a demand for such products. As a result of the reliance on materials made from wildlife, such as leather goods, medicines, and seafood, as well as the valuable nature of wildlife for bartering, the illegal wildlife trade can thrive with high-profit margins. High prices are paid for rare species, resulting in vulnerable animals being hunted to extinction since nature cannot keep up with the rate of human consumption. As a result of weak judicial systems, corruption, and toothless laws, the poaching of vulnerable species progresses with little to no consequence.

Furthermore, wildlife in this sense embodies more than just animal species. According to the U.S. Agency for International Development, the illegal timber industry is worth an estimated \$51 billion to \$152 billion annually.² The collection of this illegal timber makes land all the more susceptible to deforestation, floods, wildfires, and landslides, all of which can greatly hinder

¹ "Wildlife Trafficking: Why Battling This Illicit Trade Is Crucial." *ICE*, www.ice.gov/features/wildlife

² "Illegal Logging and Deforestation: Biodiversity." *U.S. Agency for International Development*, 6 June 2024, www.usaid.gov/biodiversity/illegal-logging-anddeforestation#:~:text=Worth%20an%20estimated%20%2451%E2%80%93%24152,food%2C%20health%2C%20and%20wealth.

those who rely on forests for their livelihood. Cambodia, for example, has experienced one of the highest rates of deforestation, losing about 64% of its tree cover since 2011, due to the razing of protected forests in places such as Andoung Bor between 2008 and 2017. In the Congo, wildlife decreased by more than 25% in a 3-week period due to a forest being opened to a logging company.³ Additionally, a Brazilian commission study revealed that 80% of all logging in the Amazon was illegal during the late 90s.⁴ The illegal importation of timber is a vital issue that must be handled accordingly in order to decrease the occurrence of transnational crimes committed.

Illegal, unreported, and unregulated (IUU) fishing is another form of wildlife trafficking that is globally running rampant. IUU fishing threatens the well-being of already fragile ocean ecosystems as well as disvalues the efforts of those who utilize sustainable fishing practices whether it be in commercial fisheries or for subsistence use. IUU fishing activities include failing to report catches, making false catch reports, fishing for certain species without a license or quota, conducting unauthorized transshipments, keeping fish that are protected by regulations, and fishing during closed seasons or in closed or restricted areas. Countries that utilize fishing for export income and food security are more susceptible to IUU fishing. Western Africa is a hotspot for illegal fishing, where total catches are estimated to be around 40% higher than reported catches annually. IUU fishing is estimated to accrue between \$4.2 billion to \$9.5 billion annually, making the practice a direct threat to the socio-economic stability and security of many regions of the world.⁵

B. History in the Arab World

The Middle East and North Africa region is a hotspot for transporting and shipping trafficked wildlife. Although all current Arab League states have agreed to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international agreement that aims to ensure that the trade of wildlife does not threaten the survival of any species, the terms outlined by the agreement are rarely well enforced. The lack of law enforcement prohibiting the crimes outlined by CITES has resulted in continuous breaches, greatly endangering much of the wildlife in the region.

In 2019, the Ornithological Society of the Middle East estimated that at least 1.7 million to 4.6 million birds from over 400 species were being taken or killed each year in the Arabian Peninsula, Iraq, and Iran. A large number of the birds accounted for were listed on the IUCN Red

³ “Wildlife Trafficking: Why Battling This Illicit Trade Is Crucial.” *ICE*, www.ice.gov/features/wildlife.

⁴ “Logging in the Amazon.” *WWF*, https://wwf.panda.org/discover/knowledge_hub/where_we_work/amazon/amazon_threats/other_threats/logging_amazon/.

⁵ Fisheries, NOAA. “Understanding Illegal, Unreported, and Unregulated Fishing.” *NOAA*, www.fisheries.noaa.gov/insight/understanding-illegal-unreported-and-unregulated-fishing.

List of Threatened Species. Most notable of the species was the sociable lapwing, a migratory bird species labeled as critically endangered on a global scale.⁶ Falcons are also in high demand in wealthy countries due to their use in falconry, a popular sport in the region. They are hunted and trafficked in nations with prevalent political turmoil such as Syria, Iraq, and Jordan where the actions are mostly overlooked. As a result of overhunting as well as pesticide use and habitat destruction, multiple wild falcon species are now globally endangered.

Similarly, the Arabian leopard, a species local to the Middle East, is critically endangered due to a multitude of regional factors including, urbanization, poaching, and prey depletion. These challenges have resulted in the leopard's population decreasing to an estimated 200 individuals in the recent year. The depletion of the species has led to the leopard's disappearance from some parts of the region entirely, notably in Saudi Arabia, where historically the largest portion of their population thrived. In response, the Kingdom of Saudi Arabia has placed an immense focus on leopard conservation in collaboration with the conservation group Panthera, under the guidance of Princess Reema, the Saudi Ambassador to the United States. HRH Princess Reema is a large proponent of wildlife conservation in Saudi Arabia, supporting not only the endangered Arabian leopard but combating the illegal falcon trade as well.

Owning and trading exotic creatures is another big pull to the illegal wildlife trade in the MENA region. Cheetahs specifically are prized pets to some in the United Arab Emirates and the surrounding Gulf nations, so much so that a cub can cost up to \$15,000 on the black market. Cheetahs and other exotic pets are highly valued by high-profile individuals in the Middle Eastern region since they are connected with living a lavish lifestyle. However, keeping these large animals as pets contributes to the spread of zoonotic diseases which can easily be transmitted from animals to humans. There is also the lingering threat of aggression from owning undomesticated animals.

The constant threat of illegal wildlife trafficking in the MENA region is a large threat to global security. The crimes are not only increasing the vulnerability of already endangered species but also contributing to organized crime across the region. The continued depletion of wildlife populations and habitats will only hasten the extinction of the biodiversity the planet needs to support human existence.

C. Finding a Solution to the Problem: Past, Present, and Future

As a result of wildlife trafficking being such a pressing issue, many nations have already begun to implement preventative laws accordingly. In 2017, the United Arab Emirates banned

⁶ "Millions of Wild Birds Illegally Killed or Taken in the Middle East." *Discover Wildlife*, www.discoverwildlife.com/news/millions-wild-birds-illegally-killed-taken-middle-east.

the private ownership of predatory exotic animals to preserve the lives of the exotic species. Following suit was Saudi Arabia, which in 2019 passed specific measures outlawing predatory animals including big cats and wolves. Both nations attempted to enforce the laws with fines, however, cases of individuals owning such animals as pets still persist. Other nations have also begun to implement laws that specifically combat aspects of the illegal wildlife trade, including money laundering, hunting, and forms of transport.

Although these changes are necessary for the Arab League to improve the state of trafficking moving forward, there is still much to be done in terms of country policy to ensure that all illegal and violent action against vulnerable wildlife is ceased. Courses of action could include revising conservation programs and initiatives that are already in place, such as reevaluating CITES. Evaluating existing laws can assist with discovering flaws in the language and how such laws can be revamped to become more effective in the current world dilemmas. Strengthening border control and disrupting illegal transportation networks can increase the strain on smugglers trying to transport illegal wildlife and wildlife products in the region. Promoting responsible tourism in order to minimize the negative effects of tourism on the environment is also extremely beneficial when preserving natural habitats and landscapes. The establishment of sustainable conservation methods for wildlife should be of top priority when addressing the trade in the region and should be reflected through effective, implementable legislation.

Attempting to regulate a multibillion-dollar illegal business is not a simple task. It is entirely unrealistic to assume that the illegal wildlife trade will be completely under wraps in the coming decades. However, there are gradual changes that can be made to decrease the growing impact of the syndicate. Even the smallest contributions, such as encouraging individuals to report when they notice suspicious activity can help lessen the damage done. By collectively bringing awareness and utilizing action-based solutions, the region will be in a position to substantially improve the current condition of its unique biodiversity and wildlife.

II. Questions to Consider in Your Research

- How is wildlife trafficking prevalent in the Arab world, and what species specifically are prone to poaching?
- What is the impact of wildlife trafficking and poaching in the Arab world?
- How is the illegal wildlife trade affecting socio-economic stability in the MENA region?
- What is currently being done to combat the illegal wildlife trade in the MENA region?

III. Questions a Resolution Might Answer

- What type of action needs to take place in the MENA region in order to decrease the effects of the illegal wildlife trade?
- Could conservation efforts such as nature reserves be an effective method to preserve the livelihood of endangered or commonly trafficked species?
- How are poaching and logging impacting natural landscapes? What can be done to decrease the impact of these acts on fragile environments?
- What type of legislation needs to be implemented in order to regulate the illegal wildlife trade?

IV. Additional Resources

- [Why the Middle East and North Africa Region is Crucial in the Fight Against the Illegal Wildlife Trade](#)

A Medium article written in cooperation with the WWF Wildlife Practice depicting an interview with the Associate Director of Emirates Nature-WWF, Jennifer Croes. In the interview Croes describes some of the region's goals when tackling the illegal wildlife trade.

- [Illegal Logging and Deforestation](#)

A USAID article discussing the global effects of the illegal timber industry. The article presents some examples of forestry management solutions that nations are utilizing to preserve their natural landscapes.

- [UAE Bans Keeping Wild Animals as Pets](#)

An Al Jazeera report that addresses the UAE exotic pet ban released directly after the ban's establishment in 2017. The report discusses the specifics of the exotic pet ban and explains the UAE's intentions with passing the law.

- [Helping Make Wildlife Traffickers an Endangered Species](#)

A report released by the U.S Department of Homeland Security that addresses the global economic and environmental risks of the illegal wildlife trade and excessive poaching. The report presents multiple real-life situations concerning the illegal trade as well as some solutions that are currently being implemented.

Topic II: Examining eco-friendly infrastructure development methods to decrease the strain on limited natural resources and encourage sustainable building practices.

I. Introduction to the Topic

A. General Background

The International Institute for Sustainable Development (IISD) describes sustainable infrastructure as infrastructure whose assets include preserving natural ecosystems, proving resilient to climate change, lowering carbon footprints, and optimizing the use of natural resources for developmental use. While sustainable, or green infrastructure is on the rise in many communities, most of the world still relies on resources known as gray infrastructure.⁷

Gray infrastructure pertains to the installation of seawalls, pipes, sewers, dams, water treatment plants, and other urban water management techniques that guide how water is transported from municipal establishments. Although these developments properly function, they are often unsustainable for long periods of time and economically draining to establish. Gray infrastructure also largely contributes to flooding and water pollution due to how easily the systems such as storm drains are overwhelmed.⁸ Furthermore, the popular utilization of treatment plants also lends to foul air quality. According to Conservation International, 70% of greenhouse gas emissions globally result from carbon-intensive gray infrastructure developments such as power and water treatment plants.⁹ If not thoughtfully managed soon, the use of gray infrastructure will likely become a large contributor to hastening climate change.

In 2024, it is estimated that \$94 trillion will be spent globally to establish more gray infrastructure in the next 20 years. In order to combat the growing industry, the implementation of green infrastructure, especially in both rural and urban regions, is not only a vital step in establishing effective sustainable living practices but a cheaper and more resilient method that can greatly reduce negative industrial effects on the environment. Green infrastructure utilizes natural processes such as vegetation, forests, soil, and natural environments in order to sustainably manage water, improve flood protection, and increase climate regulation.¹⁰ Additionally, green infrastructure developments are very flexible, allowing communities to utilize both gray and green infrastructure in tandem rather than rely solely on one method. For example, in Guyana, green-gray infrastructure solutions are being utilized to reduce the threat of

⁷ “What Is Sustainable Infrastructure?” *Sustainable Asset Valuation (SAVi)*, 10 Apr. 2019, www.iisd.org/savi/faq/what-is-sustainable-infrastructure-2/.

⁸ “Leaving the Gray Behind.” *EPA*, Environmental Protection Agency, 24 June 2016, www.epa.gov/sciencematters/leaving-gray-behind.

⁹ “Green-Gray Infrastructure.” *Conservation International*, www.conservation.org/projects/green-gray-infrastructure.

¹⁰ “Improving Community Resiliency with Green Infrastructure.” *EPA*, www.epa.gov/sites/default/files/2019-07/documents/regional_resilience_toolkit.pdf.

flooding along increasing shorelines due to erosion and climate change. Along with the strategic reinforcement of existing seawalls, mangrove forests are being reestablished to reduce the risk of flooding in the region. Implementing green infrastructure methods into already established systems is an affordable, realistic goal that can greatly assist global paths toward sustainability.

B. History in the Arab World

The Middle East and North Africa region is one of the most vulnerable regions on Earth to climate change. The World Economic Forum reported that the region has experienced rising temperatures at twice the global average for the past four decades, which at the current rate would result in the temperature increasing by 4°C more by the mid-twentieth century.¹¹

As climate conditions worsen, the region will have an increasingly difficult time finding the essential resources it needs to survive. In a region where limited access to water and food already causes great stress, the decrease in availability due to more frequent droughts and desertification would be detrimental. Furthermore, what freshwater access is available is reserved for agricultural practices, leaving little to spare. Still though, in Syria, where an estimated 70% of wheat crops rely on rainfall, crop yields were 80% lower in 2022 than in 2020 due to the extended dry seasons and barren, desert soil. Similarly, 90% of Iraq's rain-watered crops failed in 2022. The reduced crop yields have further resulted in the spike in food costs, driving millions into hunger and poverty.¹²

Climate change has also brought forth an age of extreme weather events, one for which many nations are in no way prepared for. In September 2023, Tropical Storm Daniel caused a devastating outcome in north-eastern Libya. The weeklong storm resulted in disastrous flooding, worsened by the collapse of two essential dams in the municipalities of Mansour and Derna. 4,345 fatalities were confirmed, an estimated 8,500 civilians were missing, and 44,862 IDPs were displaced in the wake of the horrific event.¹³ Unprecedented rainfall around the Gulf states also caused catastrophic results in Oman in April 2024. A gargantuan series of storms swamped the roads in the usually arid region, where flood waters necessitated the closing of all public establishments, and unfortunately led to the passing of 18 individuals.¹⁴

With storms of a larger caliber becoming more frequent in the MENA region, the reliable infrastructure required to combat such natural occurrences has become an urgent necessity.

¹¹ "Accelerating Public-Private Cooperation to Build a More Sustainable Future - Leaders for a Sustainable Mena." *Leaders for a Sustainable MENA*, World Economic Forum, <https://initiatives.weforum.org/leaders-for-sustainable-mena/home>.

¹² Tandon, Ayesha. "Climate Change: Intensity of Ongoing Drought in Syria, Iraq and Iran 'Not Rare Anymore.'" *Carbon Brief*, 9 Feb. 2024, www.carbonbrief.org/climate-change-intensity-of-ongoing-drought-in-syria-iraq-and-iran-not-rare-anymore/#:~:text=High%20temperatures%20caused%20by%20climate.an%20intense%20drought%20for%20years.

¹³ "Tropical Storm Daniel - Sep 2023." *ReliefWeb*, OCHA, 30 Nov. 2023, <https://reliefweb.int/disaster/fl-2023-000168-lby>.

¹⁴ Chow, Denise. "Dubai Floods: Record Rain Hits UAE, 18 Dead in Oman." *NBCNews.Com*, NBCUniversal News Group, 17 Apr. 2024, www.nbcnews.com/news/weather/heavy-rain-rare-flooding-dubai-middle-east-rcna148056.

Although some coastal states have flood protection infrastructure already in place, such as the dams implemented in Libya, many nations have little to no protective measures in place due to the past irrelevancy of such infrastructure.

The negative impact of air pollutants on the environment has also brought forth the ever-present need for a focus on renewable energy methods. The MENA region is not shy about the need for renewable energy sources, however, they have previously experienced difficulties implementing such methods due to the region's position as the highest producer of oil in the world. Although, a recent shift in focus toward affordability, maximization, and diversification efforts in the field has resulted in the region's transition from conventional towards cleaner, decarbonization methods. In 2024, the MENA region still lags behind leading nations in the shift towards renewable energy methods, however in the face of major climate pledges and recent commitments to energy efficiency, it is expected that the MENA region will continue in the shift away from traditional fossil fuels.¹⁵

C. Finding a Solution to the Problem: Past, Present, and Future

The implementation of sustainable infrastructure can greatly benefit the MENA regions resiliency to consistently changing climates. Implementing an infrastructure that works in tandem with the natural environment instead of against it has the ability to reap a multitude of unexpected benefits. For example, while natural disasters cannot be prevented, there is more reliable infrastructure that can be implemented to help manage their destruction.

A recent development that many nations in the region are undertaking is the method of flood mapping. Flood mapping is a technique in which rainfall records, satellite imagery, and radar elevation models can be analyzed in order to determine what areas are most at risk for flash flooding scares.¹⁶ The well-established coastal city of Jeddah, Saudi Arabia has undertaken this task due to an increase in flooding in areas of rapid urbanization and has provided decision-makers with the information necessary to determine where flood prevention infrastructure needs to be established to keep the projects as affordable as possible.¹⁷

With the implementation of protection infrastructure, it is important to incorporate eco-friendly methods into their development. In order to maintain the well-being of the environment,

¹⁵ Coleman, Liam. "This Is How the MENA Region Can Accelerate Its Renewable Energy Production." *World Economic Forum*, 25 Apr. 2024, <https://www.weforum.org/agenda/2024/04/renewable-energy-capacity-mena/#:~:text=MENA's%20solar%20and%20wind%20potential&text=The%20World%20Bank%20estimates%20that,50%25%20of%20global%20electricity%20consumption>.

¹⁶ "Managing the Risk of Mena's Rising Flood Problem." *JENO A*®, 15 Jan. 2024, <https://jenoa.com/en/insights/managing-the-risk-of-menas-rising-flood-problem/>.

¹⁷ Subyani, Ali M. *Flood Hazards Analysis of Jeddah City, Western Saudi Arabia*, King Abdulaziz University, 25 May 2011, www.kau.edu.sa/Files/320/Researches/62594_33620.pdf.

infrastructure must be reliable enough to assist with the problem but also preserve the natural landscapes that are already established.

Establishing green infrastructure methods is extremely beneficial in helping manage the region's complex relationship with water. While there is a lack of clean drinking water for everyday use, there is also the constant threat of devastating floods that further hinder regional progress. The use of green infrastructure includes rainwater harvesting and filtration-based practices that not only increase the efficiency of water-based systems but provide more access to clean water for drinking and irrigation farming practices, depleting the prevalence of both water and food scarcity issues. The risk of detrimental flooding can also be lowered while using these methods by slowing stormwater discharges so water reserves cannot be overflowed.

In the wake of a more environmentally conscious world, the MENA region has established its own realm of unique green infrastructure developments that have greatly boosted the region on its path towards sustainable development. The settlement of Borg Rasheed in Egypt enhanced regular courtyards by utilizing palm trees and canopies to prevent temperature surges and provide thermal comfort.¹⁸ Meanwhile, the UAE has developed Masdar City, a sustainable urban community committed to the task of creating global solutions to climate change.

Many MENA nations are utilizing creative solutions in order to better the region's well-being as best as they can, ranging from funded agricultural programs to larger architectural projects such as green buildings and sustainable logistic parks. As outlined in the both region's Vision 30 goals and the outcome of COP28, nations will continue to emphasize the importance of eco-friendly infrastructure initiatives in both urban and rural developments in the coming years, however, there is still much work to be done in the region in terms of action and policy that must be implemented in order to confirm genuine, sustainable, progress.¹⁹

II. Questions to Consider in Your Research

- What are some examples of sustainable/green infrastructure practices?
- What types of sustainable/green infrastructure practices are currently being utilized in the MENA region or in your country?
- What are perceptions towards increasing the establishment of sustainable infrastructure in the region?
- How are other nations establishing eco-friendly developments? What types of partnerships are needed to make these methods effective?

¹⁸ "Back to the Future: Heritage-Based Solutions for Climate Resilience in Mena Cities." *Cities Alliance*, 1 July 2024, www.citiesalliance.org/resources/publications/publications/back-future-heritage-based-solutions-climate-resilience-mena.

¹⁹ "UN Climate Change Conference - United Arab Emirates." *United Nations Climate Change*, 12 Jan. 2024, <https://unfccc.int/cop28>.

III. Questions a Resolution Might Answer

- How can eco-friendly infrastructure practices be effectively implemented in the MENA region?
- Considering the environmental impact of climate change in the MENA region, what type of infrastructure developments will be most necessary as changes continue in the coming decade?
- What can MENA nations do to further stress the importance of building up climate and storm resiliency in the region?
- How will sustainable infrastructure developments affect urban planning initiatives and at what point do some methods become unrealistic solutions?
- Will green infrastructure developments continue to act as reliable sustainability methods as the region's population continues to grow?

IV. Additional Resources

- [**MGI: Powering Regional Climate Action**](#)

A website established by the Saudi and Middle East Green Initiatives that explains the goals of the initiatives as well as some of the work the organization has already implemented. The website provides access to many useful statistics and programs collected and created by one of the region's most sustainable innovators.

- [**Masdar City: The City of Tomorrow**](#)

A website established by the United Arab Emirates to depict its sustainable urban development, Masdar City. The site addresses the many unique sustainable innovations the city has to offer as well as the importance of integrating eco-friendly infrastructure into modern urban developments.

- [**Green Buildings in the Middle East: A Reformation in Population Explosion**](#)

An article written by the Global Clean Cities Expo under the patronage of the United Arab Emirates Ministry of Climate Change & Environment that discusses the relevancy of green buildings in modern infrastructure developments.

- [**Flood Risk Management in the MENA Region**](#)

An article written by Dalia Loudyi and Sameh A. Kantoush that discusses how MENA nations are adapting to the increased prevalence of severe flooding in the region. The article provides examples of how nations are implementing changes to better prepare themselves for extreme natural disasters.

- **[When the Waters Rise: Managing Flood Risk in the MENA Region](#)**

An article published by the United Nations Sustainable Development Group that provides specific examples of how MENA nations are adapting to severe flooding. The article follows everyday people from rural areas in Sudan, Egypt, and Somalia who are experiencing hardship due to severe flooding. The accounts bring awareness to the impact of severe flooding on rural areas and support the implementation of flood mitigation programs in the region.

Topic III: Developing gender-sensitive policies and programs necessary to alleviate food and water insecurity for women in the MENA region.

I. Introduction to the Topic

A. General Background

The food and water insecurity crises in the Sahel and the Horn of Africa are some of the most severe and overlooked humanitarian crises in the modern age. In 2015, the African Development Bank reported that women make up approximately 50% of the overall workforce in Africa. More specifically, in the Sahel, women contribute up to 40% of agricultural production, 80% of agricultural processing, and around 70% of agricultural distribution labor regionally according to OCHA. Despite women's countless contributions to food production, unrelenting regional gender inequalities place them among the most vulnerable groups in the food insecurity crisis.²⁰

In 2023, UNICEF reported that the 12 countries most impacted by the food insecurity crisis, Afghanistan, Burkina Faso, Chad, Ethiopia, Kenya, Mali, Niger, Nigeria, Somalia, South Sudan, Sudan, and Yemen, experienced a 25% increase in severely malnourished pregnant and breastfeeding women from 2020 to 2022, resulting number of mothers experiencing malnutrition in these nations alone to reach nearly 7 million.²¹ This report represents how food insecurity among women includes negative effects beyond just hunger. Poor nutrition can lead to a multitude of further issues, including anemia, low birth weights, gestational diabetes, and poor sexual and reproductive health. The long-lasting effects of malnutrition can potentially result in severe organ damage and poor defense against disease and infections. Malnutrition in mothers creates additional risks including premature delivery, stillbirth, newborn death, and stunted development. These issues are most prevalent in rural areas, where women are more likely to be less educated and experience poverty. The number of food-insecure women in rural areas was further exacerbated during the COVID-19 pandemic, where the gender gap for food insecurity nearly doubled due to the rise of food prices.²²

²⁰ "OCHA Discussion Paper: Gendered Drivers, Risks and Impacts of Food Insecurity in the Sahel and the Horn of Africa." *OCHA*, 10 Nov. 2023, www.unocha.org/publications/report/world/ocha-discussion-paper-gendered-drivers-risks-and-impacts-food-insecurity-sahel-and-horn-africa.

²¹ "Malnutrition in Women and Girls Has Soared 25% in Crisis-Hit Countries." *World Economic Forum*, 29 Mar. 2023, www.weforum.org/agenda/2023/03/malnutrition-poverty-women-inequality-pregnancy/.

²² Kakaei, Hojatollah, et al. "Effect of Covid-19 on Food Security, Hunger, and Food Crisis." Edited by Mohammad Hadi Dehghani et al., *COVID-19 and the Sustainable Development Goals*, U.S. National Library of Medicine, 29 July 2022, www.ncbi.nlm.nih.gov/pmc/articles/PMC9335023/.

Women are also commonly left out of conversations concerning land management, forbidding those who provide the majority of their household's labor the inability to own land, limiting their ability to grow crops and earn an income. The United Nations revealed in June 2023 that less than one in five landholders globally are women despite producing up to 80% of food supplies in developing nations.²³ These discriminations result from institutional gender inequalities that are deeply integrated in some nations due to certain cultures or traditions. Discriminatory laws leave women legally unprotected, leaving young women and girls more susceptible to violence and sexual abuse.

Similarly to the responsibility of food production, women and girls are more likely to have the task of collecting water for their families than boys or men. As a result of climate change effects and poor water management, the water insecurity crisis has already reached astronomical proportions globally. The added effect of danger that comes with fetching water from potentially difficult sources puts women in an even worse situation, exposing them to the threat of attack, exhaustion, and limiting their ability to gain an education.

In poorer nations, fresh water is often collected from a single water source shared by multiple communities several miles away from women's homes. To make matters worse, many of these sources are quickly depleting due to rising temperatures, making water collecting a burdensome task for women who greatly require fresh water for the majority of their daily tasks including washing clothes, farming, bathing, and cooking. Water collected from available sources such as transboundary rivers, groundwater aquifers, and desalination plants, although fresh, can also be exposed to harmful substances and dirty environments, leading to difficult challenges when it comes to sanitation.²⁴ A UNICEF study noted that nearly 66 million people in the MENA region lack basic sanitation requirements. Poor sanitation, specifically when it comes to utilizing dirty water, greatly increases household susceptibility to illnesses such as dysentery, cholera, typhoid, polio, and intestinal worm infections.²⁵ It also contributes to the spread of antimicrobial resistance. As a result of this, children under the age of five are more than 20 times more likely to have a fatal reaction to diarrheal diseases linked to unsafe water and sanitation than violence during conflict. Even though this issue is incredibly severe, fewer than 50 nations have legislation that specifically addresses women's participation in water resource management or rural sanitation.²⁶ Without such laws, women are consistently struggling to receive proper access to the water, sanitation, and menstrual materials they require to maintain their own health and well-being.

²³ Halonen, Tarja. "Securing Women's Land Rights for Increased Gender Equality, Food Security and Economic Empowerment." *United Nations*, United Nations, 15 June 2023, www.un.org/en/un-chronicle/securing-women%E2%80%99s-land-rights-increased-gender-equality-food-security-and-economic.

²⁴ "Yemen: Women at the Center of Water, Agriculture, and Family Income." *World Bank*, World Bank Group, 23 June 2022, www.worldbank.org/en/news/feature/2022/05/10/yemen-women-at-the-center-of-water-agriculture-and-family-income.

²⁵ "Glimpse on Water and Sanitation in the MENA Region." *Fanack Water*, 22 Mar. 2023, <https://water.fanack.com/publications/glimpse-on-water-and-sanitation-in-the-mena-region/>.

²⁶ "Water and Gender: UN-Water." *UN-Water*, United Nations, www.unwater.org/water-facts/water-and-gender.

B. History in the Arab World

In the MENA region, prevalent gender inequalities pose significant barriers to sustainable development. A report made by the International Center for Agricultural Research in Dry Areas (ICARDA) explained that women own less than 5% of the agricultural land in the MENA region, greatly contributing to increasing food insecurity and restricting the necessary rights that women need for self and family survival.²⁷ Restrictive laws in the MENA region also limit women's abilities to gain credit, making it nearly impossible for the few who do have access to farmland to gain any yields financially. Without the ability to grow their own food supply, women must rely on expensive food imports that most are not financially capable to purchase a sufficient amount of. The lack of food supplies in the region has led to a significant increase in undernourishment. This has resulted in 70% of women who are of reproductive age experiencing impaired immune systems, anemia, trouble absorbing nutrients, kidney issues, slowed cardiac activity and other negative effects that horribly impact their body's development and natural processes.²⁸

Food security for women in the MENA region also greatly depends on location. Richer nations, specifically Gulf countries, tend to have lower rates of food insecurity due to their ability to afford more imports. However, strictly relying on purchased imports is not a sustainable method long term, leading many wealthy nations to look elsewhere for fertile land to build up their own food supplies. For example, in 2018, the United Arab Emirates and Uganda established a cooperative agricultural zone in Uganda where the UAE could utilize the fertile land for food production. This collaboration does not only support beneficial global partnerships but encourages a precedent that inspires self-sufficiency and production in the MENA region.²⁹

On the other hand, poverty-stricken nations often have the viable land for productive agricultural use but do not have the infrastructure necessary to utilize it. Restricting women's access to land is a large hindrance to food production in poorer, rural areas, along with limited water access and ongoing conflict. Land usage in Syria is a prime example of this considering their advantageous position for agriculture in the fertile crescent but the lack of ability to utilize it due to conflict. Furthermore, drought has caused detrimental effects in the Levant, seriously impacting regional economies by greatly limiting the agricultural sector. As a result of drought, employment in the agricultural sectors have plummeted, forcing many occupants in rural areas to migrate to urban centers to find employment. This theme has been specifically noticed in Syria

²⁷ Dages, Holly. "Cultivating Change: Women as Catalysts for Agricultural Transformation in the MENA Region." *Atlantic Council*, 29 Sept. 2023, [www.atlanticcouncil.org/blogs/menasource/n7-agriculture-middle-east-women/#:~:text=According%20to%20a%20report%20by,crops%20and%20earn%20an%20income](https://atlanticcouncil.org/blogs/menasource/n7-agriculture-middle-east-women/#:~:text=According%20to%20a%20report%20by,crops%20and%20earn%20an%20income).

²⁸ Mimoune, Nejla Ben. "Breaking the Cycle: How Can the MENA Region Tackle Food Insecurity?" *Middle East Council on Global Affairs*, 28 Feb. 2023, <https://mecouncil.org/publication/food-insecurity-in-the-middle-east-and-north-africa/>.

²⁹ Mimoune, Nejla Ben. "Breaking the Cycle: How Can the MENA Region Tackle Food Insecurity?" *Middle East Council on Global Affairs*, 28 Feb. 2023, <https://mecouncil.org/publication/food-insecurity-in-the-middle-east-and-north-africa/>.

where 1.3 million people were pushed from rural to urban areas from 2006-2010. The issue has not been well addressed, not only contributing to the lack of food availability in the nation but also contributing to social and economic instability.³⁰

Specifically in North Africa, 11% of the region's population, or 50.2 million people, are undernourished. Failure to reduce hunger in the region has been closely related to conflict. The prevalence of undernourishment is around 26% in nations that are experiencing or have recently experienced conflict while it remains close to 5% in non-conflict nations. The prevalence of conflict in the region greatly determines how much access a nation has to viable land for agriculture and food shipment and production.

Moreover, the Middle East and North Africa region is the most water-scarce region in the world, containing 15 of the 20 most water-scarce nations. Contributing factors to the region's severe water scarcity, including poor water management and population growth, precipitate challenging situations for women, who collect up to 80% of the water for their families. The World Bank reported that women and girls in the MENA region spend up to six hours a day collecting water, limiting their ability to gain an education or earn an income.³¹ Without equal access to leadership roles and education opportunities, women in the MENA region will continue to be disproportionately treated and unable to provide for themselves and their families in the necessary means.³²

C. Finding a Solution to the Problem: Past, Present, and Future

Improving living conditions for women in the MENA region revolves around two key concepts: effectiveness and efficiency. Gender-specific programs and policies can play a pivotal role in effectively improving the conditions women face in the region. Granting women access to proper education and training provides the skills necessary to problem solve and build effective, sustainable methods for development in their households, and as a result, driving improvements in development across the region. Establishing effective legal protections for women and girls also plays a vital role in development, allowing women to complete essential daily tasks, without the fear of assault or degradation.

Water-collecting, sanitization, and food production are tedious duties, taking up hours of women's days and limiting their ability to participate in other tasks. In exchange for the ability to

³⁰ Bar, Ido, and Gerald Stang. "Water and Insecurity in the Levant." *Brief Issue*, 2016, www.files.ethz.ch/isn/196770/Brief_15_Water_in_the_Levant.pdf.

³¹ "World Bank. 2009. The Status and Progress of Women in the Middle East and North Africa. © World Bank, Washington, DC.

³² "Near East and North Africa Regional Overview of Food Security and Nutrition." *Food and Agriculture Organization of the United Nations*, 2019, <https://www.fao.org/family-farming/detail/en/c/1198375/#:~:text=Updated%20estimates%20shows%20that%20the,50.2%20million%20people%20%E2%80%93%20are%20undernourished.>

gain an education, household tasks must advance from tedious to efficient. Improving water management techniques is a viable way to decrease the amount of time spent collecting water and managing crops. Techniques such as rainwater harvesting, irrigation, wastewater recycling, and reservoirs are just some examples of efficient, sustainable water management methods that can not only increase water supply but decrease the amount of time spent on daily chores.

There are also efficient ways to improve agricultural production such as utilizing techniques that require less water and planting crops that are more resistant to heat and drought. In Jordan, the World Bank has established an agricultural program that is assisting the nation in its food production and sustainability goals. The ARDI program focuses on climate-resistant, water-efficient practices that are making farming more affordable while also providing employment and training opportunities to women and girls.³³

Looking forward, the Arab world must utilize sustainable techniques in order to maintain the well-being of the region in the coming years. Investing what they are able into effective, efficient food and water sustainability practices along with education and equal rights laws will work wonders in bolstering the rights of women in the MENA region, paving the way for a stronger, more sustainable future.

II. Questions to Consider in Your Research

- What barriers are preventing women in the Arab world from proper food and water access?
- What does education look like for women in my assigned country? How does it differ from other nations?
- What are some examples of food and water sustainability practices?
- What is the region currently doing to improve food and water access for women?

III. Questions a Resolution Might Answer

- What are some laws and policies that could assist in improving the condition of women's rights in the Arab world?
- How can effective food and water sustainability practices be implemented in the MENA region?
- How can women in both rural and urban areas obtain more access to necessary sanitation, menstrual, and hygiene products?

³³ "New Crop of Climate-Smart Farmers in Jordan Will Feed Future Generations." *World Bank*, World Bank Group, 30 Nov. 2023, www.worldbank.org/en/news/feature/2023/11/30/new-crop-of-climate-smart-farmers-in-jordan-will-feed-future-generations?cid=mena_tt_mena_en_ext.

- What can governments do to improve the conditions of women who have inadequate access to food and water?
- How can managing restrictive/unfair laws against women reduce barriers to sustainable development?
- Are “GM Foods” or crops that contain GMOs a viable option for increasing food production and decreasing undernourishment in the Arab World?

IV. Additional Resources

- [Malnutrition in Women and Girls Has Soared by 25% in Crisis-Hit Countries](#)

An article released by the World Economic Forum that addresses the prevalence of malnourishment in women located in the Middle East and Africa. The article specifically addresses the effects poor nutrition has on mothers in the region and why the availability of nutritious foods is an essential aspect of increasing gender equality.

- [Why Women Are Hungrier Than Men Today](#)

An article published by the United Nations World Food Program that provides a few reasons behind why gender inequalities continue to exist in food insecurity crises. Many of the examples are prevalent issues in the MENA region in modern day.

- [Women and Girls Bear the Brunt of the Water and Sanitation Crisis](#)

This article, a collaborative piece written by UNICEF and the World Health Organization, elaborates on the hardships women around the world face by having inadequate access to water for hydration and sanitation needs.

- [Securing Women’s Land Rights for Increased Gender Equality, Food Security, and Economic Empowerment](#)

A United Nations article written by former President of Finland Tarja Halonen describes the barriers women face in gaining the right to own their own land. Halonen elaborates on why women having land access is so essential to reducing the detrimental effects of the food insecurity crisis.

- [New Crop of Climate-Smart Farmers in Jordan](#)

An article that delves into the World Bank's agriculture program based in Jordan that is working wonders in relieving women of food insecurity. The article encompasses many sustainable farming techniques and training that are helping women and girls in Jordan overcome their food difficulties.

- **Gender and Climate Security: Weaponizing Water Scarcity**

This article by Women in International Security depicts the interesting dynamic between women and water in the MENA region. It delves into the challenges in which women face while collecting water and the danger those in conflict ridden zones face on a daily basis.

Topic IV: Addressing transboundary pollution within the MENA region, including but not limited to air and water pollution.

I. Introduction to the Topic

A. General Background

As a result of the gargantuan growth of industry, the modern world is plagued with pollutants of all types, conflicting with nearly every facet of everyday life. The American Lung Association's 25th annual "State of the Air" report reveals that spikes in deadly particle pollution are the most extreme they have been in the history of the report, meaning that 131 million people, or 39% of the population, are living in areas with severely unhealthy air pollution levels in the United States.³⁴ These statistics are expected, considering the United States' position as an industry behemoth, however, globally the numbers do not improve. Around 2.1 billion people were exposed to air pollution in their own homes in 2022 due to polluting fuels and cooking technologies and 6.7 million deaths were connected back to the effects of household and ambient air pollution in 2019 alone. In the past 5 years, it is estimated that a chilling 99% of the global population lives in a region where air pollution exceeds World Health Organization guidelines, presenting a large transboundary problem that is not being dutifully managed.³⁵

Transboundary pollution, or the movement of pollutants across regional or national boundaries, has detrimental effects on environments globally. Human activity also has substantial effects on the pollutants that travel, such as water quality, resulting in hazardous toxins filling many of the world's essential water sources. In an era of extreme water stress, water pollution cannot be taken lightly. The United Nations Environmental Program reported that 40% of 75,000 bodies of water across 89 countries were severely polluted, contributing greatly to water scarcity, the prevalence of illness, and biodiversity loss in many regions across the world.³⁶ This excess of polluted water results from the fact that 44%, or 14 billion liters, of all wastewater returns to the environment untreated, directly affecting water sources and ecosystems. However, wastewater is only one of the detrimental threats to global water supplies.³⁷

³⁴ Association, American Lung. "2024 'State of the Air' Report Reveals Most 'Hazardous' Air Quality Days in 25 Years." *American Lung Association*, 24 Apr. 2024, www.lung.org/media/press-releases/sota-2024.

³⁵ "Air Pollution Data Portal." *World Health Organization*, World Health Organization, www.who.int/data/gho/data/themes/air-pollution.

³⁶ Harlin, Joakim. "Globally, 3 Billion People at Health Risk Due to Scarce Data on Water Quality." *UNEP*, 19 Mar. 2021, www.unep.org/news-and-stories/story/globally-3-billion-people-health-risk-due-scarce-data-water-quality.

³⁷ Filipenco, Daniil. "Water Pollution in the World: Major Causes and Statistics." *Developmentaid*, 28 Feb. 2024, www.developmentaid.org/news-stream/post/152754/water-pollution-in-the-world.

Plastic pollution is a large contributor to water contamination due to its common utilization in the modern world. Plastic is a cheap, versatile material often utilized in single use materials, packaging, and construction. The astronomically large use of daily plastics makes the material easy to mismanage leading to excessive pollutive results. 1 to 2 million tons of plastic enter the oceans annually risking the conditions of fragile ecosystems globally. 20% of the world's plastic is mismanaged after use, resulting in the threat of pollution, while 50% is sent straight to landfills.³⁸

Other pollutants make their way into the water via runoff. Oil, radioactive material, and pesticides are all pollutants that typically integrate themselves into water sources due to damaged infrastructure or misuse. Broken pipes can result in oil finding itself in freshwater rivers due to runoff, but the larger issue with oil results from oil spills. Spills from oil tankers and drilling rigs can be detrimental to the state of the oceans, whether large or small. Most oil spills tend to be on the smaller side, such as the thousands of spills that occur in United States waters each year, however, this does not mean that small spills are not damaging, especially if they occur in sensitive environments such as beaches or mangroves.³⁹

Radioactive pollution has similar effects to oil considering both are very challenging to clean up. Radioactive waste, such as uranium, has the potential to linger in natural environments for years, therefore it must be consistently monitored, even when disposed of correctly. Radioactive material emissions are dangerous enough on their own, but when exposed to water or the atmosphere in irregular amounts, they can result in horrendous effects on both human and marine health.⁴⁰

Pesticide and fertilizer runoff is one of the most common forms of pollution. Pesticides are commonly used in modern agriculture to cultivate and maintain the well-being of food supplies, although when not applied with caution, they can easily make their way through rainwater and irrigation pathways into open waterways. For example, the Jordan River, which travels through Jordan, the Palestinian West Bank, Israel, and southwestern Syria and empties into the Dead Sea, is becoming increasingly polluted with sewage, solid waste, and chemical contaminants from pesticides. As a result, the river is extremely unsafe to utilize for water, causing hospitalizations, extreme dehydration and even fatalities.⁴¹ This spread of dangerous

³⁸ Ritchie, Hannah, et al. "Plastic Pollution." *Our World in Data*, 28 Dec. 2023, <https://ourworldindata.org/plastic-pollution?insight=only-a-small-share-of-plastic-gets-recycled#key-insights>.

³⁹ "Oil Spills." *National Oceanic and Atmospheric Administration*, 1 Aug. 2020, www.noaa.gov/education/resource-collections/ocean-coasts/oil-spills.

⁴⁰ "Radioactive Waste." *EPA*, Environmental Protection Agency, 14 Feb. 2024, www.epa.gov/radtown/radioactive-waste#:~:text=Activities%20that%20generated%20as%20a,human%20health%20and%20the%20environment.

⁴¹ Klassen, Hannah. "Water Scarcity in the Jordan River Valley." *Ballard Brief*, Ballard Brief, 26 July 2023, <https://ballardbrief.byu.edu/issue-briefs/water-scarcity-in-the-jordan-river-valley#:~:text=Poor%20water%20quality%20can%20have,and%20uncommon%20in%20western%20countries>.

chemicals into waterways can also lead to polluted groundwater, becoming harmful to humans as well.

B. History in the Arab World

The MENA region is currently experiencing what is known as “blue asset degradation,” which revolves around the pollution of the region’s natural assets, the air, the seas, and coastlines. The economic costs of the region’s degraded assets are immense, encompassing nearly 3% of the GDP in some nations in the region. Polluted facets of life are not only reaping environmental effects, but heavily impacting social and economic factors in the Middle East and North Africa.⁴²

According to the World Bank, the average MENA resident is sick for at least 60 days of their lifetime due to exposure to severe air pollution levels. The levels of air pollution in the MENA region are some of the highest in the world in urban capitals and large cities, more than 10 times the level considered safe by the World Health Organization. These extreme air pollution levels lead to around 270,000 deaths a year due to exposure. This level of air pollutants also precipitates high costs, draining \$141 million or 2% of regional GDP annually.⁴³

These drastic numbers are due to the region’s exposure to PM2.5 particles, which are molecules that can permeate themselves from the lungs into the bloodstream. These particles often contain toxic materials, leading to the influx of poor health, including nitrates, lead, ammonia, sulfates, mineral dust, and carbon. The prevalence of PM2.5 particles in the region’s air results from the combustion of commonly used materials, such as gasoline, oil, and wood. As a result of the influx of harmful particles in the air, many MENA nations are ranked as countries most affected by air pollution, including Iraq, Bahrain, Kuwait, Egypt, the United Arab Emirates, Sudan, Qatar, and Saudi Arabia.⁴⁴

Many aspects of extreme air pollution in the Arab World also result from dust storms, which stem from the two major world hot spots for dust storms, the Sahara Desert in North Africa, and the many desert landscapes across the Middle East. Although dust storms are naturally occurring, they contribute to a plethora of health issues including bronchitis, asthma, respiratory diseases and infections, and in severe cases, lung cancer. These storms also negatively impact many aspects of infrastructure, agriculture, and transportation, causing welfare losses from dust storms to reach \$150 billion USD and 2.5% of GDP on average in the MENA

⁴² “Mena’s Polluted Skies and Seas Hurt Economies, Livelihoods.” World Bank, World Bank Group, 7 Feb. 2022, www.worldbank.org/en/news/press-release/2022/02/07/mena-s-polluted-skies-and-seas-hurt-economies-livelihoods.

⁴³ “Mena’s Polluted Skies and Seas Hurt Economies, Livelihoods.” World Bank, World Bank Group, 7 Feb. 2022, www.worldbank.org/en/news/press-release/2022/02/07/mena-s-polluted-skies-and-seas-hurt-economies-livelihoods.

⁴⁴ Smith, Matt. “Middle East Air Pollution Among Worst in the World.” AGBI, 6 Oct. 2023, www.agbi.com/analysis/sustainability/2023/10/cop28-middle-east-air-pollution-among-worst-in-the-world/.

region. Although methods are being utilized to manage dust storms such as forecasts, warnings, and developmental research, the effects of dust storms continue to be felt across the region.⁴⁵

Water pollution in the Arab world is also reaching new extremes with the excess of plastic that is being improperly disposed of. In 2023, the World Bank reported that the MENA region has the highest per capita plastic footprint, as a result of the average MENA resident releasing up to 6 kgs of plastic waste into the ocean annually, polluting both local water sources and larger bodies, such as the Mediterranean Sea. This issue has emerged as the result of the excessive utilization of single-use plastic without the proper waste management legislation to combat pollution. If the region does not collaborate to combat this growing issue, waste generation is expected to double by 2050, further worsening the problem.⁴⁶

Grouped along with air and water pollution in the MENA region's "blue economy" agenda, is coastal erosion. The region's coasts are eroding at nearly double the average global rate per year, making the MENA region the second most vulnerable area globally for coastal erosion, behind the Gulf of Mexico. The degradation of the region's coasts contributes to a plethora of negative effects on the nation's livelihoods socially, economically, and environmentally. For example, marine life that lives among the coastlines have begun to decrease, greatly impacting both natural ecosystems and the production of fisheries. Coastal erosion has also impacted the tourism sector, where beach erosion could lead to an estimated \$350,000 loss per day if conditions are not improved by 2050.⁴⁷

C. Finding a Solution to the Problem: Past, Present, and Future

Properly managing transboundary pollution consists of a multitude of methods, however the key aspect is regional cooperation. Without the cooperation of the Arab League, the region will have a challenging time establishing the proper methods to combat the growing threat of pollution-based problems. Ways to collaborate with regional organizations, such as NGOs and civil society organizations are also effective ways to support regional goals and implementable solutions. Collaborating with regional organizations and private sectors allows for more efficient implementation and the involvement of all individuals instead of solely the federal government's involvement. This type of cooperation opens the door for campaigns and other public-awareness methods.

⁴⁵ "Sand and Dust Storms in the Middle East and North Africa (MENA) Region: Sources, Costs, and Solutions." *World Bank*, World Bank Group, 19 Jan. 2020, www.worldbank.org/en/region/mena/publication/sand-and-dust-storms-in-the-middle-east-and-north-africa-mena-region-sources-costs-and-solutions#:~:text=While%20natural%20sources%20such%20as,land%20management%20can%20cause%20them.

⁴⁶ Hasegawa, Kanako, et al. "Plastic Pollution in Mena Oceans: Transboundary Problem in Need of Transboundary Solutions." *World Bank Blogs*, 12 June 2023, <https://blogs.worldbank.org/en/arabvoices/plastic-pollution-mena-oceans-transboundary-problem-need-transboundary-solutions>.

⁴⁷ "Coastal Erosion and Its Cost in the Maghreb." *World Bank Group*, <https://documents1.worldbank.org/curated/en/099094501242341370/pdf/P1705960b88de302d0b7ff0330c7f9c5582.pdf>.

Solutions combatting the pollution issue should concern regional waste management legislation, which is an essential method of decreasing damage from progressing any further. Without a format of how to properly dispose of waste, the issue will continue to develop. Solutions could include methods to enforce stricter standards for industry, which would both lessen dangerous emissions and improve solid waste management regulation.⁴⁸

Along with implementable legislation, a focus on renewable energy implementation will help the MENA region develop more reliable energy methods while moving away from the sole reliance on fossil fuels for energy. Toxic emissions, such as PM2.5 particles, can be reduced with the transition to cleaner, renewable energy sources. Establishing plastic alternatives will also help the region move towards more sustainable waste management methods. Implementing reliable market structures for recycling and developing cleaner methods of transportation could assist substantially in cleaning up the region's current conditions.⁴⁹ An example of an already implemented method to reduce air pollutants is being utilized in Iraq, the nation ranked sixth in the world for poor air quality. The country initiated a tree planting initiative that aims to plant 5 million trees throughout the country to combat desertification and improve the quality of the air. Efforts such as this are critical to improving air quality in heavily affected nations and their neighbors, who reap the negative effects of the poor air quality that surrounds them.⁵⁰

With more awareness being brought to the effects of harmful pollution, the region will be available to implement productive, sustainable methods to improve the negative effects blue asset degradation has caused the region. With the Arab world's focus on the "blue economy," the region should be able to improve both its environmental and economic thresholds with collaboration and policy adjustments.

II. Questions to Consider in Your Research

- What are the main causes of pollution (air, water, etc..) in the MENA region? How severe are the pollutants in the respective Arab League nations?
- What is a blue economy and why is this concept so important to the Arab world?
- What are some current partnerships the Arab League is involved in?
- What are some examples of pollution legislation the region already has in place?

III. Questions a Resolution Might Answer

⁴⁸ "Mena's Polluted Skies and Seas Hurt Economies, Livelihoods." *World Bank*, World Bank Group, 7 Feb. 2022, www.worldbank.org/en/news/press-release/2022/02/07/mena-s-polluted-skies-and-seas-hurt-economies-livelihoods.

⁴⁹ Hasegawa, Kanako, et al. "Plastic Pollution in Mena Oceans: Transboundary Problem in Need of Transboundary Solutions." *World Bank Blogs*, 12 June 2023, <https://www.worldbank.org/en/news/press-release/2022/02/07/mena-s-polluted-skies-and-seas-hurt-economies-livelihoods>.

⁵⁰ Crim, Benett. "The Effects of Air Pollution in Iraq." *The Borgen Project*, <https://borgenproject.org/air-pollution-in-iraq/>.

- What types of waste management policies are necessary to improve the damaging effects of pollution in the MENA region?
- In what ways can partnerships, both within the region and in collaboration with private sectors, assist in improving severe pollution levels?
- How can Arab League members continue to participate in decreasing the effects of pollution in the region if they already have waste management infrastructure in place in their nation?
- How can the Arab world spread awareness of the significance of decreasing pollutants in the region?

IV. Additional Resources

- [**MENA's Polluted Skies and Seas Impact on Economies and Livelihoods**](#)

An article published by the World Bank Group explaining the MENA region's goals concerning pollution management. The article delves into the different types of pollution that plague the region on a daily basis, providing insight into why a focus on the issue has become so severely essential.

- [**Plastic Pollution in MENA Oceans: Transboundary Problem in Need of Transboundary Solutions**](#)

A World Bank Group article addressing the high levels of plastic pollution in the MENA region. The World Bank Group dives into specifics, expressing the extent of the issue on Arab nations and what could possibly be done in the coming decades to alleviate the issue.

- [**Coastal Erosion and it's Costs in the Maghreb**](#)

This document released by the World Bank Group in collaboration with the Korea Green Growth Trust Fund and the National Oceanography Center elaborates in detail upon coastal degradation in the MENA region and how it is affecting the economy and wellbeing of the afflicted nations. Although it is lengthy, the document contains much useful information concerning the issue across the region.

- [**UNESCO Intergovernmental Hydrological Program**](#)

This UNESCO water-based program considers global solutions to relieve the water insecurity crisis. As a program dedicated to research and management, the UNESCO program site includes a strategic plan that involves methods that could be implemented globally to decrease water pollutants and increase water availability.