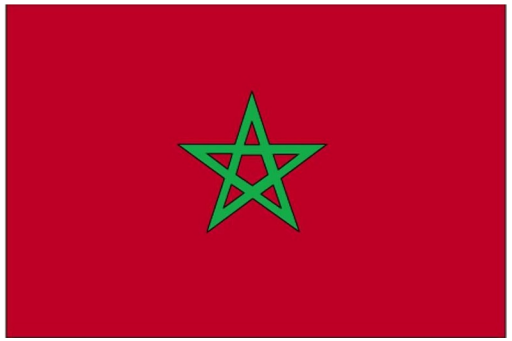


GLOBAL SCHOLARS ACHIEVING CAREER SUCCESS (GSACS)
Spring Conference: May 15, 2023

Quality of Drinking Water in Jordan and New York City

Presenters: ZAKARIYA Mohamed ELBOGHABI (Jordan-JUST)
Demi Uwechue (NYC-Guttman)
Ellis Spica (NYC-Guttman)
Julio Cortes (NYC-Guttman)

Instructors: Dr. Ji Kim – Chemistry at Guttman-CUNY;
Professor Salaheddin Abu Yahya - Chemical Eng./JUST

Team Members

Guttman CC-City University of New York (US)	
Yan Yi Chen	Demi Uwechue
Yulmy Lopez	Aaliyah Harris
Alexander Cordova	Yasmin Segato
Alannis Tacuri	Hilmi Alammari
Ellis Spica	Julio Cortes
Daniel Garcia	Salman Elkattawy
David Parker	Wilfredo Santiago

JUST- Middle East and North Africa (MENA) Region	
JUMANA IBRAHIM	ANWAR ABU HUSSEIN
HANA ABDALLAT	BATOOL ALMASHAQBEH
HEBA FAYEZ	BAYAN MALASS
MIRNA THABET	TAREQ FAHED ISSA ALHMOUD
MOHAMMAD AL DWIEK	AYA ABU ALSULQAN
MA'MONAL HADIDI	ZAKARIYA ELBOGHABI
SALEH JAMHAWI	AMEEN SIRRIYYAH
ALI EJJO	AHMAD ALYASOURI

Project Overview

- In this project we will be working with student from NYC together to explore the issue of water pollution and the quality of drinking water in different neighborhoods/ regions in Jordan and New York City, in relation to the United Nations Sustainable Development Goal #6 (Clean Water and Sanitation). We will collaborate and complete activities with international peers, conduct an experiential learning activity and finally, present our research project with our NYC team at a virtual student conference during the semester.

Overall Goal and main objectives

Overall Goal: To explore the neighborhoods issue of water pollution and the quality of drinking water in different /regions in Jordan and New York City, in relation to the United Nations Sustainable Development Goal #6 (UN SDG Goal #6: Clean Water and Sanitation).

Main Objectives:

1. Identify UN SDG 6 and learn how to introduce your selected SDG to your students
2. Share the inquiry Questions which is students will be to watching which will inform the module activities.
3. Develop the compared the comparative analysis of the UN SDG 6 assignment

Correlation with SDGs

SDG 10	By reducing inequalities in access to water and sanitation services.
SDG 6	By promoting clean water and sanitation for all.

Phases of implementation/Main activities

- Ice-Breaker Assignment
- Comparative Analysis Assignment
- Virtual meeting
- Water samples testing

Phases of implementation/Main activities

Queens, NY→

Queens, NY

- Gathered samples from across New York City, then chose a sample from Queens to run the tests on.
- Discussed common heavy metals found in water, such as lead(Pb) or hexavalent chromium(Cr^{6+}).
- Tested pH of the chosen sample: pH between 6-7.
- Tested the sample for lead, Chlorine, Iron, Copper, and nitrate. With a Watersafe® well-water test kit.
- **Test results indicated that there is no significant amount of heavy metals and other harmful materials in the water.**

Phases of implementation/Main activities

Jordan

- Week #1: Career awareness presentation, cultural background of international institution
- Week #2: Icebreakers and First introductions
- Week # 3: Literature review and target identification

- Week # 4 &5 : Comparative analysis domestic and international communication
- Week 6-8: Community based Experiential learning project.
- Today : Student conference , Career Workshop

Comparative facts/Figures between Jordan and NYC

- The NYC water sources are in the upstate reservoirs in Catskills/Delaware.

- NYC water usage (2018): 1008 million gallons NYC water usage (2020): 981 million gallons NYC water usage (2021): 979 million gallons

- Climate change causes run off which negatively impacts the water as it allows undesirable, harmful materials to enter the water flow.

- In the United States, most communities get their water from public water systems that are regulated by the Environmental Protection Agency. While communities of color and low-income communities are more likely to experience water inequality. Water contamination is a serious problem in places like Flint, Michigan.

Comparative facts/Figures between Jordan and NYC

Population: Jordan has a population of approximately 10 million, while New York City alone has a population of over 8 million.

Water Resources: Jordan is one of the most water-scarce countries in the world, while New York City has access to abundant freshwater resources from the Great Lakes and the Hudson River.

Environmental Quality: Jordan faces environmental challenges, including desertification and air pollution, while New York City has made significant strides in improving air and water quality over the past few decades.

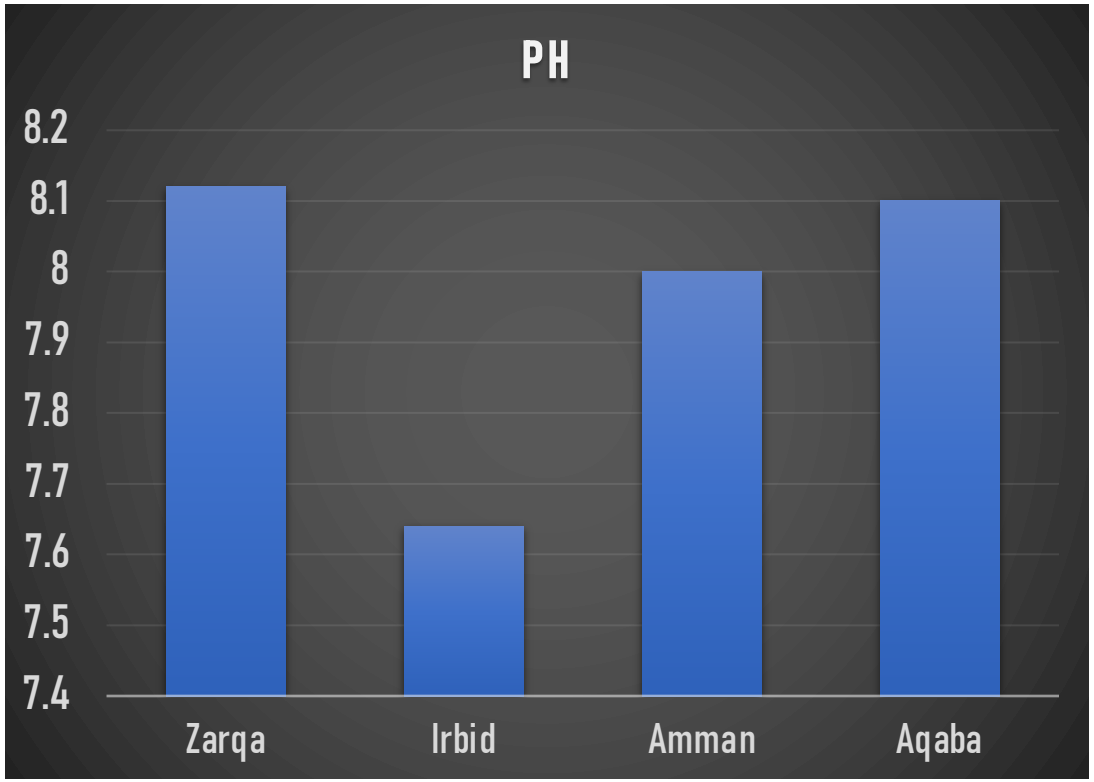
Climate: Jordan has a predominantly arid climate, while New York has a humid subtropical climate with hot summers and cold winters.

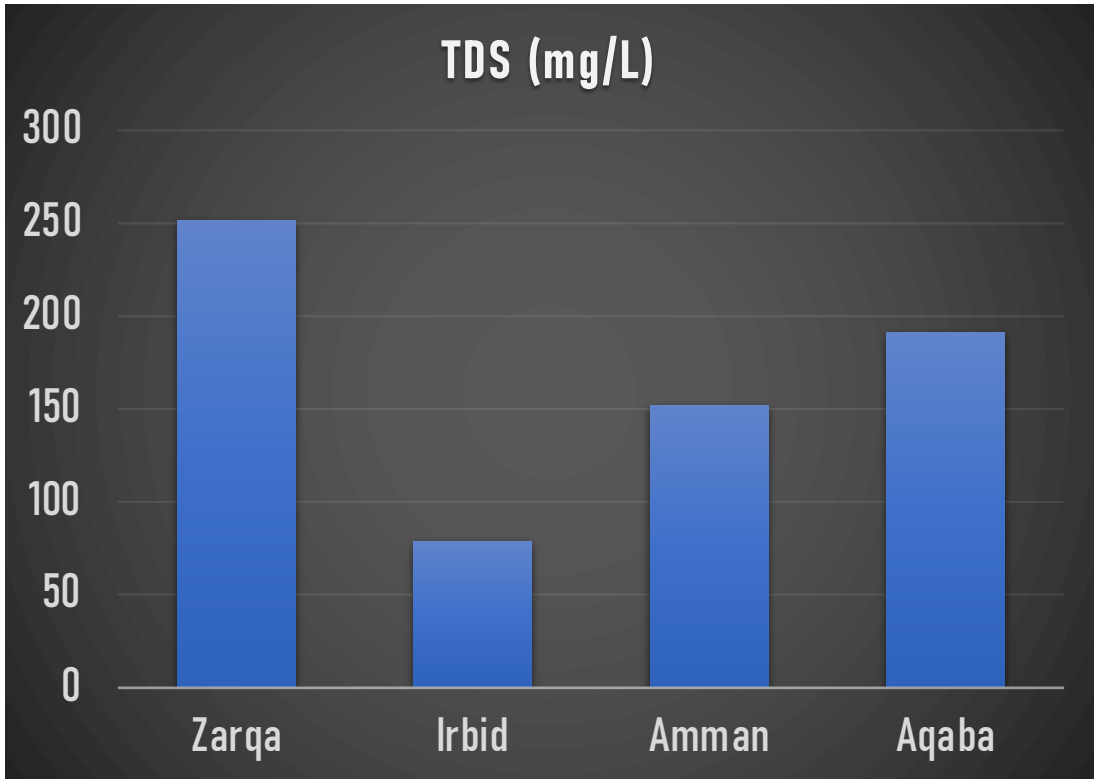
- Water Consumption: The average per capita water consumption in New York is around 200 liters per day, while in Jordan it's approximately 88 liters per day.

Water Quality Testing In Jordan

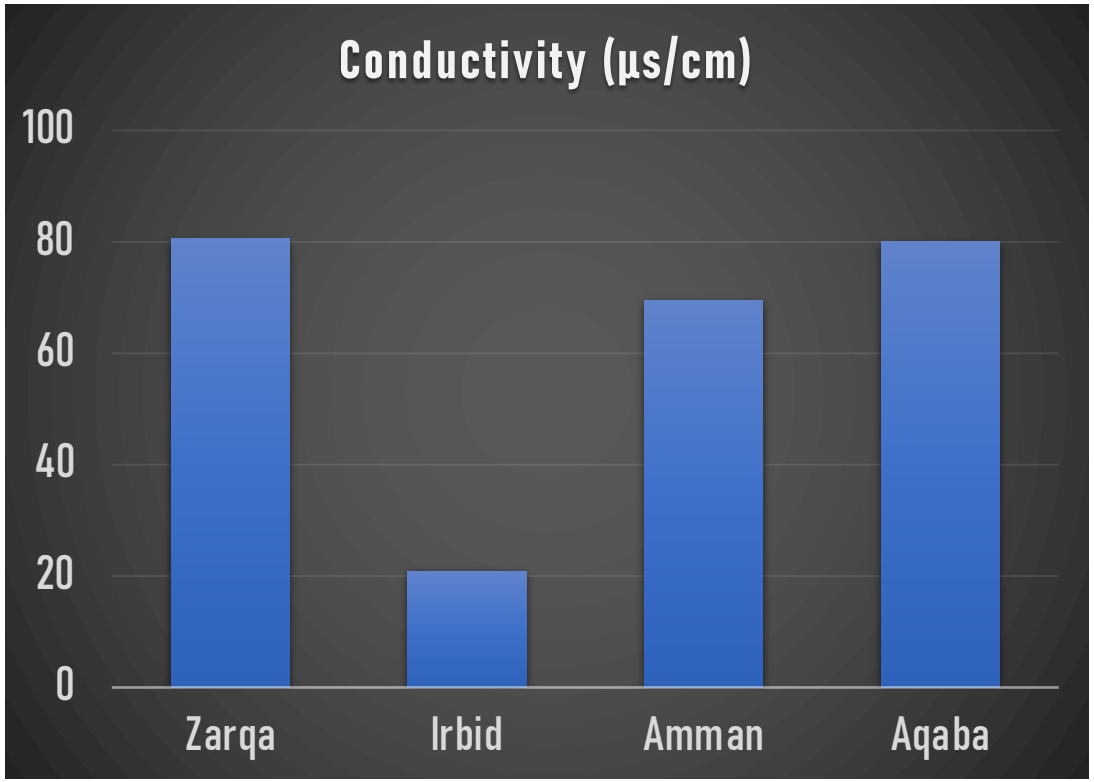
For testing water quality in Jordan, experiments were conducted in the lab for water samples to determine the content of heavy metals by the means of the Atomic Absorption Spectrophotometer

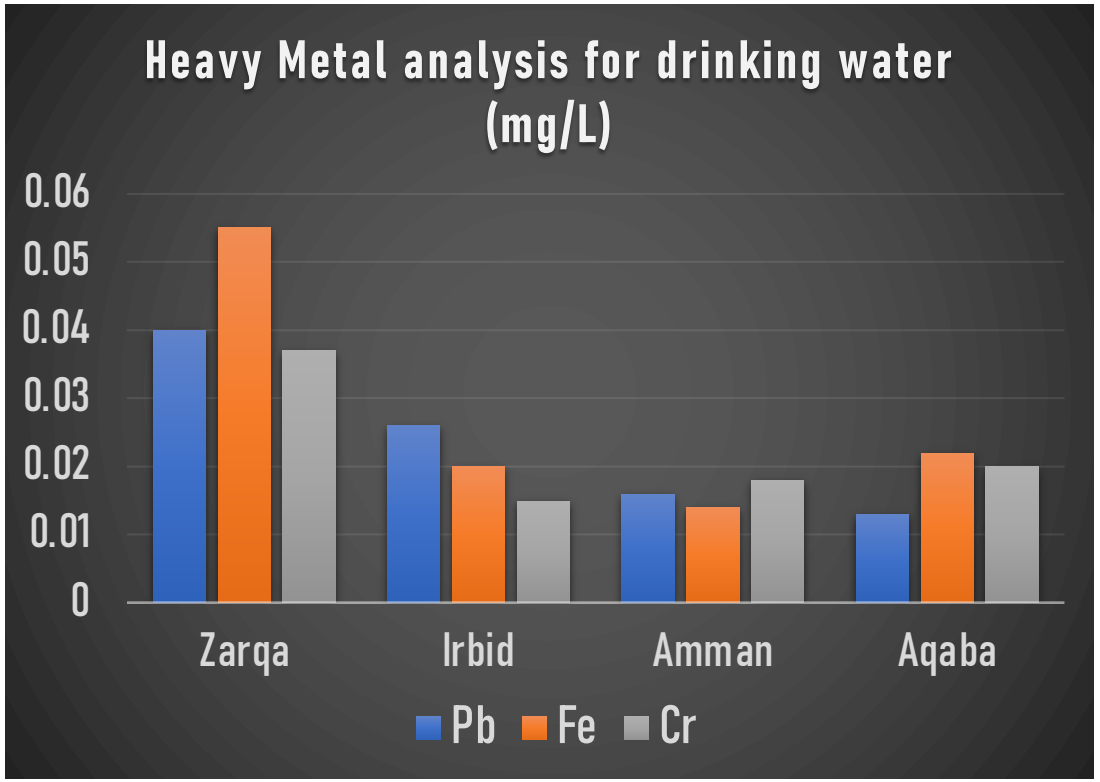
PH and TDS –Jordan





Conductivity and heavy metals – Jordan





Suggested Solutions

The water in NYC is very clean so proposed solutions would be to maintain the cleanliness of the water.

Increasing investment in water and sanitation infrastructure : we can implement more water treatment systems so that in the case of any weather event or contamination of the pipes, the water can still be clean enough to drink without any health risk.

Promoting public awareness of the importance of clean water and sanitation: at home we can add more filters to our sinks and use water pitchers with filters in them to drink the cleanest water we possibly can.

Conclusions and recommendations

- Overall, the water in NYC is very clean. We have tested the water and there is no copper and other harmful materials in the water. The pH of the drinking water is in between 6 and 7 so it is still pretty good. We should strive to make the water around the world as clean as it is here in New York City.
- PH, Conductivity, TDS, Pb, Fe and Cr were tested on four different governorates in Jordan; Amman, Zarqa, Irbid and Aqaba
- The results in Jordan showed that there are variations in water quality according to the location
- Comparing results with NYC drinking water , a remarkable difference could be seen.

- Making campaigns about water safety and banners to alert people of how important water is and how pollution is lowering chances of safe water access.
- Increased public awareness campaigns on the importance of water conservation.

Conclusions and recommendations

Collaborations between government agencies and private sector to enhance water infrastructure development

Increased investment in water infrastructure in Jordan

Further research should be conducted to identify potential barriers and challenges in implementing the suggested solutions.

Q/A

Thank you!