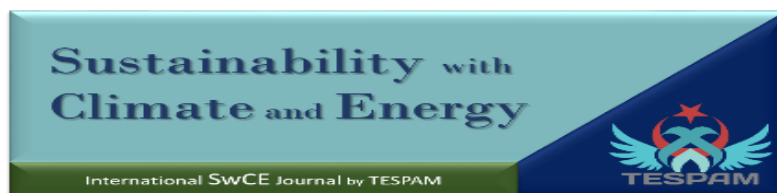


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RESEARCH ARTICLE

NEGATIVE ENVIRONMENTAL IMPACTS OF THE POLITICAL CONFLICTS IN SYRIA AND THE EASTERN MEDITERRANEAN REGION

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Abstract

There are various sources for the usage of weapons in Syria. Remnants of all the missiles, bombs, shells, bullets and other varieties of weapons and ammunition can be found all around the country. People scavenge these left-overs to find anything that can be used or sold for money; these people are in direct contact to whatever is used during the conflict. In addition, these people carry the agents they acquired from the left-overs of the war. The soil, underground waters, above ground water bodies, and the air all took their shares from the pollution generated by the war. The next generations will see the aftermath of these contaminations in their water, in their food, in their livelihoods, and in their very own bodies.

Keywords: Political Conflicts, Syria, Negative Environmental Impacts

Introduction

When we go back to the year 2011, before the conflict's start, the Syrian Arab Republic produced around 400,000 barrels of crude oil daily - naphtha, jet kerosene, diesel fuel, and fuel oil were produced in the country. Deir-ez-Zor and Hasakah fields produced oil and Hama fields produced natural gas. Homs and Baniyas were the destinations of crude hydrocarbons to be refined [12]. Then, as the struggle got immense, extensive attacks against hydrocarbon facilities took place in many occurrences in Syria. Infrastructure was destroyed in cities and towns resulting in a massive amount of rubble, as shown in the photo below. Industrial areas also took their share from the damage. All these events put Syria years back from what she was.

Afterwards, the mass exodus of Syrians gave the burden of environmental stress to the neighbouring countries of the war-torn state. The Syrian War cannot exclude the effects of global climate change and the heavy problems it brings to the area. The long-lasting drought in the Eastern Mediterranean catchment gave birth to its own socio-economic consequences accelerated by the wrong environmental and agricultural policies of the Syrian government; such as, people leaving their villages to seek wealthier lives in the cities. Then, the drought that stretched between 2006 and 2010 led to the rebellion of 2011 which then caused dire immigrations, skirmishes and terrorist acts [3], [11]

Remarking that, citing these environmental causes does not turn a blind eye on the matters that lasted for many generations, of course. The Levant collects many languages, religions

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and sects; the water scarcity and the political instability do not help any stabilization attempts in the region [10].

CLIMATE CHANGE AND CURRENT POLLUTION IN SYRIA

Climate Change in Syria

Initially, meteorological and maritime registers demonstrate that droughts became more frequent, temperature of the sea surface rose, evaporation rate and temperatures augmented, and winter precipitation lowered in the coastal Levant area. These climatic states are serious for the current and future generations. Population growth and lack of management put further stress on the water bodies also cause environmental worsening [8].

Throughout the ages in the Middle East, it is a historically known phenomenon that the available water is scarce. To lessen the future consequences of this, an effective water management strategy is essential, of course it is not only for Syria but for all the nations in the area. As Syrians flee their homeland, their vacuum causes other water related problems, also, where Syrians relocate abroad the influx of new people bring further stress to the water resources in the new abodes [9].

When the whole struggle is over and Syrian refugees once again populate their own country a keen water policy needs to be implemented. This new policy will need to focus on the growing population, climate change, altered precipitation routines, a renewed approach to farming, and animal husbandry. Once the limited resource of water is put into an upright use in a canny way the stability of the region will become more powerful. Sustainable water management for above ground and underground waters is indispensable. Irrigation of fields will need to be done in a scientifically modern and efficient method. Choice of crops to be grown is required to be reviewed for the best possible outcomes both for financial and water-concerned paths. Water regulations should be implemented [7], [8].

The drought caused crop failures and the people in the country could not support themselves anymore, thousands of farmers left their land to seek a life in urban areas. Almost 9/10 of water was used in agriculture. Water overuse caused salinization of soil. About 3/4 of the farmers lost all of their crop that caused 800,000 farmers to lose their source of revenue; which resulted in 1 million people to be left in food scarcity. The displaced farmers flocked to the cities raising joblessness rates and poverty even further. Moving people diverted the water problems from one area to new ones bringing more stress to their new destinations [1 [2]]. The graphs below show the aftermath of droughts and civil war: famine! Syria is one of the countries that experience calamitous food insecurities. Half of the households in the country suffer from food shortages. Most of the top 10 countries listed below faced or are still living through civil unrest and internal struggles [4], [6].

The water supply and water treatment infrastructures in Syria are outdated. With the internal struggles, the facilities became run down, insufficient and damaged. Groundwater has been excessively used for irrigation, effects of climate change are faced as desertification, and pollution in response to failed infrastructure, and lack of sanitation due scarce water are some major water-related problems. The failure of infrastructure (impaired or demolished) halts

storage, treatment, distribution, and disposal of water. There is much stress on the aquifers due to overuse of these sources of water, as urban water pipes ceased to work. The UN-Habitat Thematic Paper on Environment and Climate Resilience summarized the problem as “Droughts, less rain and higher temperatures leading to increasing water scarcity, land degradation, desertification, and forest fires are some of the stressors that impact both rural and urban Syria with accelerating effects.” It is also worth noting that the damages on the dams in the country are in the range of billions of US\$ [10], [5], [2].

Migration is possible when it is available as well. The graphs above display immigration rates changing as the temperature varies. The poorer portion of the world cannot access means of transportation (just like people in Yemen or Somalia) and necessary means to immigrate to safer countries. Whereas, citizens of middle income countries have a higher chance of making their way to their destination goal. People often immigrate to countries within 1,000 km from where they currently live [2], [3]. The infographics explain why Syrian refugees take shelter in Jordan, Lebanon, and Türkiye; also, it is important knowing that the wealthier class of Syrians took refuge in more distant countries.

As a result, the Syrian exodus to neighbouring countries and Europe followed. According to Republic of Türkiye Ministry of Interior Directorate General of Migration Management approximately 3.6 million Syrians live in Türkiye [9], [4].

Current Pollution in Syria

The failed infrastructure and all the debris in the near-demolished Syrian cities are the offspring of the current struggle. This conflict causes pollution in the area and the residents suffer from this havoc. Hazardous chemicals, crude oil and other forms of hydrocarbon are spilled and scattered throughout the conflicted areas. Sewers and water structures are hit, people cannot easily reach safe drinking water. Basic sanitation is at risk. Houses are bombed and many are left homeless with addition to millions of tons of debris all around the country. Human waste, household waste, hospital waste, and industrial waste accumulate at the moment since the infrastructure has totally collapsed. Diseases have emerged. Pollutants harm the people living nearby the contaminated areas. When the exodus ends and people of Syria return to their homes this contamination above and under the ground will cause harm to them, as well [7]. A ceasefire will be a new beginning, however, there will be many problems awaiting to be solved. The deterring economy, ripples of the so-called Arab Spring, long-lasting droughts, and availability and easiness to access to fresh waters can be put into the roster of causes of the Syrian crisis. Noting that, the harshening of the climate took a key part in the worsening of the economy in the country [8]. Yet, it is not possible to reduce the causes to one single entry. Uncontrollably and hastily urbanizing Syria faced new challenges environmentally. The shortage of potable water is the main problem. Municipal waste grew. Garbage collection became problematic. Lack of properly working sewage systems brought another problem: discharge of human wastes to the environment. Sanitary and environmental hygiene deteriorated [1], [2]. The collapsed municipal services gave a scene as it can be seen in the photo above. The garbage is piling up and there is no reason why it would not give birth to communicable diseases. Leakages from these piles pollute all components of the environment. Medical wastes are also found in these wild garbage areas. Lack of sanitation causes loss of citizens.

People started refining their own oil products from crude oil. They make shift structures pollute their surroundings. Those primitive refineries harm the people working in them and all the people living around the facilities. Air, water, and soil are all in danger of this form of pollution.

In a study for make shift refineries it was found that more than 300 groups of such facilities hosted thousands of primitive set ups. As people learned how to operate these installations the number grew exponentially. Of course, health-safety-environment concerns are not sought. Exploding machinery and barrels harm corpal unity of the workers are residents nearby. Even children were employed in these facilities as a cheap labour source. When the workers confessed they earned around \$15 in a day and they also added that were aware of what they did was carcinogenic. Benzene, carbon monoxide, carbon dioxide, hydrogen sulphide, polycyclic aromatic hydrocarbons, sulfuric acid, toluene, xylenes are among the hazardous and poisonous compounds that are formed in the refining processes [11], [12]

The image below shows the aftermath of the attacks to the refinery in Homs. All hydrocarbon structures are key elements and strategic holdings of the power controlling the area. The Syrian regime, armed groups, the US-led Coalition, and the Russian Air Force all took part in attacks to pipelines, refineries and other strategic locations.

CONCLUSION

Climates and shifts in climatic conditions shaped history in many cases causing conflicts, migrations, battles, and chaos. In Syria, weapons were introduced into the clash. Farming communities flocked into the cities when their crops failed. Additionally, they could not make a living from animal husbandry. These failures in return bring a vacuum effect when a huge population leaves their abode and their former society. The failed state in Somalia saw a Balkanization period and many pirating activities in her coastal waters after years of drought. Sudan frequently suffers from harsh droughts which gives birth to further instability in the area and in 2011, a new country was carved from it, South Sudan, which also had her own civil war between 2013 and 2020. Syria is an addition to list of examples.

There is a diversion between scientists whether global climate change actually causes armed struggles [3]. Yet, it is obvious that global climate change contributes to the building up of the problem. The de facto internal fragmentation of the State of Syria generated a vacuum where notorious groups wanted to fill in. Terrorist attacks to civilians and military personnel at home and across the borders continued.

Resettling Syrian refugees would not only require new houses. Sanitary infrastructure needs to be rebuilt, also, it is also essential that the contamination from years-long pollution is treated. Water mismanagement which caused an economic drawback that then turned into internal migrations and an international crisis has its roots in global climate change and anthropogenic causes. Food shortages followed. Unemployment grew. These all added up to a political havoc. Climate simulations foresee a worse scenario to arrive in the coming decades, and alarmingly, locally and internationally water management issues should be prioritized and measures should be brought into global agenda as soon as possible to avoid recurring failures and human tragedies [8]

All in all, after eliminating the internal struggle in Syria and getting rid of all the separatist and terrorist groups, the people of Syria need to rebuild their country. New and improved infrastructure is essential. An effective water management policy and a sustainable approach to all natural resources are essentially required. A wealthier and peaceful Syria will see a prosperous future as long as the people living in Syria are nonviolent towards each other and the neighbouring states.

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Ethics Committee Permission

Ethics committee permission is not required for this study. No research has been conducted on any living creature (human and animal). The article belongs to the field of literature.

Deconfliction Statement

The author of the article declares that there is no conflict of financial interest between him and any institution, organization, person related to this study.

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