

Effects of Climate Change to Balance of Power in the AOR

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Key Points

- Climate change acts as a threat multiplier in the USCENTCOM AOR.
- Increased severity of extreme weather events poses a greater direct risk to USCENTCOM operations.
- Climate change has more dangerous effect in regions where security is already at risk.
- Water resources are crucial and considered both target and objective in conflicts.
- Water scarcity is increasing the number of refugees, forming basis for VEOs recruitment.

Introduction

Climate change is the long-term change of temperature and typical weather patterns in a region. The climate of an area includes seasonal temperature and rainfall averages, and wind patterns. Approximately 74% of natural disasters between 2001 and 2018 were water related. These events included droughts and floods that resulted in over 166,000 deaths, affected over 3 B people, and caused a total economic damage of almost US \$700 B.¹ In the past, climate and climate change have had limited effects on conflicts, but the effects are expected to increase in the future.² For example, water scarcity will fuel instability in the USCENTCOM AOR. Climate change is also affecting the global economy and power balance through changing energy markets.

Background – What is changing?

Climate change is affecting the USCENTCOM AOR in multiple ways, but mostly it is causing a lack of water due to extreme heat and water overuse. In last decade, Central Asia was hit by an abnormally hot summer three years in a row. All Central Asian states suffered from 44°C (111° F) heat.³ Middle East and North Africa (MENA) are already the world's hottest, driest and most water-scarce region. By 2030, temperatures in MENA region are expected to increase more than twice the global average, which means hotter heatwaves, higher sea levels, and more severe droughts. Combined with structural fragilities, civil wars, and poverty, the impact of global warming to the region

¹ UN-Water, "2020: United Nations World Water Development Report 2020: Water and Climate Change," *UNESCO*, 2020, p. 7. <https://unesdoc.unesco.org/ark:/48223/pf0000372876.locale=en> (Accessed March 23, 2021).

² John O'Loughlin and Cullen Hendrix, "Will climate change lead to more world conflict?," *The Washington Post*, July 11, 2019 <https://www.washingtonpost.com/politics/2019/07/11/how-does-climate-change-impact-conflict-world/> (Accessed April 13, 2021).

³ Khamza Sharifzoda, "Climate Change: An Omitted Security Threat in Central Asia," *The Diplomat*, July 22, 2019 <https://thediplomat.com/2019/07/climate-change-an-omitted-security-threat-in-central-asia/> (Accessed April 9, 2021).

will be severe.⁴ The MENA area has already had almost continuous drought since 1998, which is the most severe dry stretch in 900 years according to NASA.⁵ With rainfall projected to decline 20 to 40% in a 2°C hotter world, and up to 60% in a 4°C hotter world, the region's ability to provide water to its people and economies will be severely tested. The Arabian Peninsula has the largest number of desalination plants in the world, with a current capacity of 11 M cubic meters (39 M cubic feet) per day. By 2050, experts believe the demand for water will increase by 50%. Gulf States are well aware of the repercussions of a military clash in the Gulf area on water. A serious leak from a tanker would contaminate the water that many cities on the Gulf coast rely on for desalination.⁶

Dust and sandstorms are a persistent problem in the Middle East, causing serious health issues and wearing down infrastructure. In September 2015, a giant sandstorm blanketed much of the Middle East, closing airports, causing multiple road accidents, and temporarily halting fighting in Syria and Iraq.⁷ A main factor for the increasing sandstorms is considered to be the rush to build dams across the region and divert water resources for agriculture. For example, Turkey's giant Ataturk dam on the upper reaches of the Euphrates and Ilusu dam on the Tigris are blamed for lessening water flows on the two great rivers of the region and causing a drying out of lands further south in Iraq. The region's wetlands have also been drained. In the early 1990s Saddam Hussein drained the marshes of southern Iraq with a disastrous effect, causing desertification and more dust storms.⁸ Following the construction of major dams in Turkey and Iran since the 1970, once a water-rich Iraq is facing drought, a significant drop in annual rainfall, salinity, and a decline in the level of water flowing into the country. Basra, which was once dubbed the "Venice of the Middle East" for its network of canals, is now a crumbling city. Villages disappear as a result of desertification eating into green patches of land. The movement of people from rural Iraq into urban centers causes extra strain on these already highly populated areas.⁹

Iran is highly vulnerable to the effects of climate change due to mismanagement, excessive use of water in the agriculture sector and the construction of dams on some of the nation's major rivers. The most serious environmental issue facing the country is drought. Iran has been struggling with water shortages for decades and in the last decade, around 97% of the country was experiencing drought conditions. Iranians estimate that more than 50 M people, nearly 80% of the country's total population, will be affected by potable water shortages.¹⁰ It is also estimated that agriculture and the wider economy will face US\$3.7 B in damages every year from 2015 to 2030 compared to 2010 because of climate change and lack of water.¹¹

⁴ Yasmine El-Geressi, "Climate change, water woes, and conflict concerns in the Middle East: a toxic mix," *Earthday.org*, September 8, 2020, <https://www.earthday.org/climate-change-water-woes-and-conflict-concerns-in-the-middle-east-a-toxic-mix/> (Accessed March 23, 2021).

⁵ *CBC News*, "Recent Middle East drought worst in 900 years, says NASA," Web-page, March 4, 2016, <https://www.cbc.ca/news/technology/middle-east-drought-nasa-worst-900-years-1.3475814> (Accessed March 23, 2021).

⁶ Dania Koleilat Khatib, "How water can oil the wheels in dealing with Iran," *Arab News*, August 11, 2019 <http://www.arabnews.com/node/1538706> (Accessed April 6, 2021).

⁷ Kieran Cooke, "Rise in sandstorms threatens Middle East and North Africa," *Middle East Eye*, August 28, 2017 <https://www.middleeasteye.net/opinion/rise-sandstorms-threatens-middle-east-and-north-africa> (Accessed April 1, 2021).

⁸ Peter Schwartzstein, "Iraq's Famed Marshes Are Disappearing—Again," *National Geographic*, July 9, 2015 <https://www.nationalgeographic.com/science/article/150709-iraq-marsh-arabs-middle-east-water-environment-world> (Accessed April 1, 2021).

⁹ Quentin Müller, Sebastian Castelier, "Drought, dams and dry rivers: Iraqi farmers are giving up hope," *Middle East Eye*, September 18, 2018 <https://www.middleeasteye.net/features/drought-dams-and-dry-rivers-iraqi-farmers-are-giving-hope> (Accessed April 2, 2021).

¹⁰ *Tehran Times*, "97% of Iran affected by long-term drought: expert," Web-page, February 1, 2019.

¹¹ Josh Gabbatiss, "The Carbon Brief Profile: Iran," *Carbon Brief*, February 20, 2020 <https://www.carbonbrief.org/the-carbon-briefprofile-iran> (Accessed April 12, 2021).

The Yemeni coast and island of Socotra has been hit by unprecedented weather events during the last decade. In 2015, over a period of 14 days, two tropical cyclones, Megh and Chapala, formed and traversed the Arabian Sea in nearly identical paths. These weather events triggered massive flooding in the coast of Yemen.¹² In 2018 Cyclone Mekunu pounded Yemen's island of Socotra and torrential rain and high winds lashed western Oman and eastern Yemen. Salalah, the third-largest city in Oman received over double the city's average yearly rainfall in just 24 hours. In Socotra over 40 people went missing and the only road between the Socotra's capital and most populous city of Hadiboh to the Socotra Airport was washed out. Socotra was declared a disaster zone by Yemeni government.¹³

Qatar is facing the threats of rising sea levels and a lack of potable water. The World Bank has classified Qatar (along with Bahrain) as the most vulnerable Arab country to land area loss due to sea level rise. Should sea levels rise five meters (compared to pre-industrial levels) an estimated 18% of the land and up to half of the Qatari population would be affected.¹⁴ Qatar is exhausting all renewable water reserves due to the overstressing of its aquifers and groundwater. As the government of Qatar puts focus on establishing self-sustainability and investment toward farm and livestock expansion, the already overtaxed water sources cannot sustain further agricultural growth. This has led to significant importation of water from neighboring countries.¹⁵ The Kingdom of Saudi Arabia is facing problems like Qatar. On the Red Sea coast, Saudi Arabia's second largest city of Jeddah has begun flooding yearly. Saudi Arabia is also ranked among the most water stressed countries in the world.¹⁶

The city of Alexandria in Egypt, with a population of more than five million, is sinking. Sea levels of the Mediterranean are rising and pounding Alexandria's seafront. At the same time, levels of silt build-up in the Nile Delta to the south are eating away at the city's coastal foundations. The result is that the ground level in the Alexandria area is dropping by 2 mm annually.¹⁶ Besides the concerns with a sinking city, Egypt's water-sharing disputes between Sudan, and Ethiopia have even deepened since construction completed on the Grand Ethiopian Renaissance Dam (GERD) in 2020. Egypt's inability to stop or influence the project has also become a symbol of the government's withdrawal from the Arab and African stage and reduced geopolitical significance. Cairo's hard liners view the prospect of Ethiopian control over the most populous Arab country's water and food security as "a humiliation."¹⁷ Conflict over water is intensifying and Egypt's Prime Minister Madbouly recently warned Ethiopia that "Egypt will not give up a single drop of water from its share of the Nile."¹⁸

¹² AccessScience Editors, "Tropical Cyclones Chapala and Megh (Arabian Sea, 2015)," *McGraw Hill*, 2015
<https://www.accessscience.com/content/tropical-cyclones-chapala-and-megh-arabian-sea-2015/BR1110151> (Accessed April 8, 2021).

¹³ Mohammed Mokhashaf, "Tropical storm hits Yemen's Socotra, state of emergency declared," *Reuters*, May 24, 2018
<https://www.reuters.com/article/us-yemen-security-cyclone/tropical-storm-hits-yemens-socotra-state-of-emergency-declaredidUSKCN1IP14Y> (Accessed April 12, 2021).

¹⁴ Owen Mulhern, "Sea Level Rise Projection Map – Qatar and Bahrain," *Earth.org*, September 17, 2020
https://earth.org/data_visualization/sea-level-rise-by-2100-qatar-and-bahrain/ (Accessed April 2, 2021).

¹⁵ Sayeed Mohammed, Mohamed Darwish, "Water footprint and virtual water trade in Qatar," *Desalination and Water Treatment* 66 (2017): 117–132 <file:///C:/Users/artoh/Downloads/WaterfootprintandvirtualwatertradeinQatar-Journal.pdf> (Accessed April 2, 2021).¹⁶

Mohamed Daoudi and Abdoul Jelil Niang, "Flood Risk and Vulnerability of Jeddah City, Saudi Arabia," Web-page, October 17th 2018
<https://www.intechopen.com/books/recent-advances-in-flood-risk-management/flood-risk-and-vulnerability-of-jeddah-city-saudi-arabia> (Accessed April 13, 2021).

¹⁶ Peter Schwartzstein, "If Climate Change Doesn't Sink Alexandria, Egypt's Official Incompetence Will," *TakePart*, February 26, 2016
<http://www.takepart.com/feature/2016/02/26/sea-level-rise-alexandria> (Accessed April 2, 2021).

¹⁷ Taylor Luck, "As Ethiopia fills its Nile dam, regional rivalries overflow," *The Christian Science Monitor*, February 1, 2021
<https://www.csmonitor.com/World/Middle-East/2021/0201/As-Ethiopia-fills-its-Nile-dam-regional-rivalries-overflow> (Accessed April 2, 2021).

¹⁸ Mohammed Abu Zaid, "Egypt 'will not give up a single drop of Nile water,' vows PM," *Arab News*, April 28, 2021
<https://www.arabnews.com/node/1850516/middle-east> (Accessed April 29, 2021).

Syria's 2006 drought led to a collapse in agriculture and forced many farmers to abandon their fields and migrate to urban centers. The United Nations' (UN) 2009 report stated that nearly 800,000 Syrians lost their agricultural livelihoods due to the devastation.¹⁹ Migration fueled the civil war has strained infrastructure an already burdened by the 1.5 M refugees from the Iraq War.²⁰ The situation is made even worse by the fact that water supplies are being targeted in the ongoing civil war.²¹ According to Kurdish media, about 5,000 fighters of the Syrian Democratic Forces (SDF) recently conducted a largescale operation in the Al-Hol refugee camp in Syria. Over 150 Syrians and foreigners associated with the Islamic State terrorist group were arrested, including about 20 ISIS field commanders.²² Syria was once the only nation in the Middle East that maintained self-sufficiency in food production and had even become a regional exporter. Due to combined affect of drought and war, Syria currently imports most of its wheat.²⁴

The Jordan river is riddled with pollution. Abandoned hydroelectric schemes have also altered the course of the river, with devastating consequences for Jordan that has been described by the UN as one of the most water-scarce countries on the planet. The Kingdom's per capita water availability decreased from 3,600 cubic meters (127,000 cubic feet) per year in 1946 to only 135 cubic meters (4,767 cubic feet) in 2017, which is less than 4% of that 70 years earlier. The overuse of Jordan's groundwater resources which has increased to approximately 200% of its sustainable capacity. Since 2013, Jordan's largest city, Amman, depends partly on groundwater from a transboundary fossil aquifer shared with Saudi Arabia. Increasing groundwater depletion is expected to approach the non-sustainable pumping level by the end of this century.²³

Central Asia's climate change has caused a reduction of glaciers in the mountains of Kyrgyzstan and Tajikistan. The temperature has risen by 5°C (9°F) on average during the last few decades in the region. One of the consequences of this has been an increase in both the frequency and length of droughts, which has destroyed significant portions of the affected region's crops.²⁴ According to a World Bank forecast, changing climate patterns will result in a total crop yield decrease by 30% by 2050.²⁵ Water scarcity has a chance to bring up historical tensions and fuel instability in Central Asia. Uzbekistan has been worried by Kyrgyz and Tajik hydropower projects reducing water flow to downstream area and Kazakhstan has concerns about Uzbekistan of failing to allow sufficient water to

¹⁹ *The New Humanitarian*, "Drought driving farmers to the cities," Web-page, September 2, 2009

<https://www.thenewhumanitarian.org/feature/2009/09/02/drought-driving-farmers-cities> (Accessed April 2, 2021).

²⁰ Henry Fountain, "Researchers Link Syrian Conflict to a Drought Made Worse by Climate Change," *The New York Times*, March 2, 2015

<https://www.nytimes.com/2015/03/03/science/earth/study-links-syria-conflict-to-drought-caused-by-climate-change.html> (Accessed March 23, 2021).

²¹ Tom Miles, "Syria committed war crime by bombing Damascus water supply: U.N.," *Reuters*, March 14, 2017

<https://www.reuters.com/article/us-mideast-crisis-syria-water-idUSKBN16LOW5> (Accessed April 1, 2021).

²² *Interfax*, "В лагере беженцев в Сирии арестовали свыше 150 человек, связанных с ИГ [Over 150 people associated with IS arrested in refugee camp in Syria]," Web-page, April 7, 2021 <https://www.interfax.ru/world/759971> (Accessed April 7, 2021). ²⁴ Maha El Dahan,

"War and drought produce Syria's smallest wheat crop in 30 years: U.N.," *Reuters*, October 9, 2018, <https://www.reuters.com/article/us-syria-wheat/war-and-drought-produce-syrias-smallest-wheat-crop-in-30-years-u-nidUSKCN1MJ1CW> (Accessed April 2, 2021).

²³ Deepthi Rajsekhar, Steven M. Gorelick, "Increasing drought in Jordan: Climate change and cascading Syrian land-use impacts on reducing transboundary flow," *Science Advances*, August 30, 2017 <https://advances.sciencemag.org/content/3/8/e1700581> (Accessed April 6, 2021).

²⁴ Khamza Sharifzoda, "Climate Change: An Omitted Security Threat in Central Asia," *The Diplomat*, July 22, 2019

<https://thediplomat.com/2019/07/climate-change-an-omitted-security-threat-in-central-asia/> (Accessed April 9, 2021).

²⁵ *The World Bank*, "Forecasting for Resilience: Central Asia Strengthens Climate and Weather Services," Web-page, March 23, 2018

<https://www.worldbank.org/en/news/feature/2018/03/23/forecasting-for-resilience-central-asia-strengthens-climate-and-weatherservices> (Accessed April 9, 2021).

transit via its territory.²⁶ Water disputes also exist between Kyrgyzstan and Kazakhstan.²⁷ In Uzbekistan, more than half of irrigated land has become saline. Increasing salt concentration has also resulted in the extinction of most of the available fish in the remaining parts of the shrinking Aral Sea. A similar pattern is already evident in some other water basins in Central Asia, leaving fishermen without their livelihood and local populations without the previously stable supply of fish.²⁸

Afghanistan is one of the most vulnerable countries in the world to climate change, and one of the least equipped to handle it. The good news is that Afghanistan's precipitation levels are projected to remain relatively stable through the end of the 21st century. The awareness about the effects of climate change is increasing as young Afghans have taken to the streets in Kabul demanding that attention be paid to climate change.³¹ With less winter snow has meant it is easier for the Taliban to wage war outside of its traditional fighting season. Drought and natural disasters have also further fueled insurgency and militant recruitment.³²

India has great concerns about the Brahmaputra River as it is one of the biggest and most important rivers in the region for agriculture. The river is threatened by climate change because it derives from its water from the Himalayan glaciers. China is threatening to dam the river upstream and divert its waters to parts of China that are already suffering from water scarcity. From an Indian perspective, that could be a cause for intensified conflict because the river is so essential to the survival of their country.²⁹

Russia has been considered to benefit from global warming. Russian icebreakers have been able to operate more freely in the Arctic Sea routes that are usually only navigable from July to November, when the sea ice is thin. Russia might also gain access to more resources as it is estimated that 60% of the country's oil and 90% of its natural gas, as well as deposits of nonferrous metals and gold, lie under permafrost. The amount of land under cultivation is increasing and grain production in Russia in 2020 was up 9.7% from the previous year, the second highest level after 2017. But Russia is also facing new challenges. A peat fire burned through roughly 140,000 sq. km (54,054 sq. miles) of Russia, was lost to fire in 2020. Another climate change issue is connected to northwestern Siberia craterlike holes (66 feet and depths of 100 feet) are appearing in that permafrost zone. It is estimated that by 2050 one-fifth of the infrastructure in the frozen zone, including oil and gas facilities as well as railroads, will be affected by collapsing ground.³⁰

²⁶ Martin Russell, "Water in Central Asia," *European Parliamentary Research Service*, September 2018, p. 7

[https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/625181/EPRS_BRI\(2018\)625181_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/625181/EPRS_BRI(2018)625181_EN.pdf) (Accessed April 12, 2021).

²⁷ Khamza Sharifzoda, "Climate Change: An Omitted Security Threat in Central Asia," *The Diplomat*, July 22, 2019

<https://thediplomat.com/2019/07/climate-change-an-omitted-security-threat-in-central-asia/> (Accessed April 9, 2021).

²⁸ Martin Russell, "Water in Central Asia," *European Parliamentary Research Service*, September 2018, p. 8

[https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/625181/EPRS_BRI\(2018\)625181_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/625181/EPRS_BRI(2018)625181_EN.pdf) (Accessed April 12, 2021). ³¹

Solmaz Daryani, "In Afghanistan, climate change complicates future prospects for peace," *National Geographic*, February 3, 2020
<https://www.nationalgeographic.com/science/article/afghan-struggles-to-rebuild-climate-change-complicates> (Accessed April 12, 2021).

³² Ibid.

²⁹ Rick Carp, "How the Pentagon Thinks About the Climate Crisis," *Rolling Stone*, September 23, 2019

<https://www.rollingstone.com/politics/politics-features/how-the-pentagon-thinks-about-the-climate-crisis-887832/> (Accessed April 15, 2021).

³⁰ Ko Sakai, "Siberia's warming shows climate change has no winners," *Nikkei Asia*, March 14, 2021

<https://asia.nikkei.com/Spotlight/Comment/Siberia-s-warming-shows-climate-change-has-no-winners> (Accessed April 13, 2021).

Analysis – Effects to the power structure

For many years' scientists assumed that catastrophic natural disasters drive people to pack up and leave. But a few years ago, researchers observed in flood prone regions people in Pakistan are choosing to stay.³¹ Cases of migration were due to high temperatures during the spring and winter farming season and the loss of previously productive ground uneconomical to work.³⁶ It is estimated that by 2025, 8090 M people will be exposed to water stress.

According to the UN Food and Agriculture Organization, Arab states are facing a water supply emergency, predicting that per capita resources will be halved by 2050. Unified response, modernization of irrigation techniques, and coordinated water management strategies are already a matter of urgency.³² These worsening conditions will eventually make parts of the Middle East uninhabitable. It is estimated that by 2100 the Gulf region is all but uninhabitable. As living conditions worsen, the number of climate change refugees will start to increase.³⁸ During the last decade, pressure on Jordan's freshwater resources has surged from a sudden population increase during 2011–2015 mostly due to its rapid acceptance of more than 1.3 M refugees, of which 1 M were Syrian, compared to a total Jordanian population of 10.2 M today.³³

ISIS has taken advantage of climate change impacts on economic conditions and migration. While ISIS controlled large areas across Iraq and Syria, it took control of dams that provided drinking water, electricity, and irrigation to millions along the Tigris and Euphrates rivers. ISIS also used devastation brought by climate change to attract new members in several agricultural villages in Iraq. Many impoverished farmers who had their lives and incomes devastated by a series of natural disasters were offered money, food, and other riches by ISIS recruiters to draw them into joining the ranks of the jihadist group.⁴⁰

Climate change is also affecting the global economy and power balance through oil markets as worsening global warming is already driving a global transition toward clean energy. This will leave oil producers with less resources. For example, the Chinese National Energy Administration recently announced that total wind and solar capacity additions in China in 2020 were 120 gigawatts. And China has 1,200 gigawatts of cumulative renewable energy by 2030 and plans to be carbon-neutral by 2060.³⁴

³¹ *The Guardian*, "Pakistan floods: at least 90 killed in monsoon rains," Web-page, August 25, 2020

<https://www.theguardian.com/world/2020/aug/26/pakistan-floods-at-least-90-killed-in-monsoon-rains> (Accessed April 1, 2021). ³⁶

Colin Schultz, "Climate Change Is Already Causing Mass Human Migration," *Smithsonian Magazine*, January 29, 2014

<https://www.smithsonianmag.com/smart-news/climate-change-already-causing-mass-human-migration-180949530/> (Accessed April 1, 2021).

³² *Middle East Eye*, "Arab states face water emergency, urgent action needed: UN," Web-page, April 5, 2019

<https://www.middleeasteye.net/news/arab-states-face-water-emergency-urgent-action-needed-un> (Accessed April 7, 2021). ³⁸ Bradley

Cummings, "Refugees of the 21st Century: Climate change and an uninhabitable Middle East/ North Africa," *University of Denver*, March

10, 2020 <http://duwaterlawreview.com/refugees-of-the-21st-century-climate-change-and-an-uninhabitable-middle-eastnorth-africa/> (Accessed March 23, 2021).

³³ *Worldometer*, "Jordan Population," Web-page, <https://www.worldometers.info/world-population/jordan-population/> and

Department of Statistics of Jordan, "Population and Housing Census 2015," Web-page,

http://www.dos.gov.jo/dos_home_a/main/population/census2015/Refugees/Refugees_7.6.pdf (Accessed April 7, 2021).

⁴⁰ <https://www.earthday.org/climate-change-water-woes-and-conflict-concerns-in-the-middle-east-a-toxic-mix/>

³⁴ Jason Deign, "What Is Going On With China's Crazy Clean Energy Installation Figures?," *Greentechmedia*, February 2, 2021

<https://www.greentechmedia.com/articles/read/what-is-going-on-with-chinas-crazy-clean-energy-installation-figures> (Accessed April 12, 2021).

Russian President Vladimir Putin has been keen on keeping oil price low and openly declared that an ideal oil price for his country would be US\$70. Putin seems to acknowledge, unlike his Middle Eastern OPEC partners, that oil will face market competition from renewables (and US shale) if it reaches too high a price.³⁵ While countries like Saudi Arabia have the financial capacity to adjust to the situation, unstable oil producers like Iraq who requires extraordinarily high oil prices to fund budgets, are in danger to face more instability.³⁶

Food production (like world wheat harvest) is affected by changing weather patterns that can lead to shortages. Even though specific a country might not be directly affected by climate change, most are highly vulnerable to price shocks and economic impact.

Climate change is also part of global political powerplay. President Biden's administration did not initially invite Pakistan, which is fifth most vulnerable country to climate change globally, to the Leaders' Summit on Climate in last April. The Pakistani public and government officials were annoyed over the country's exclusion from the summit, but analysts disagree over whether the move was aimed at deliberately ignoring Pakistan to put more pressure on the Afghan Taliban in Afghanistan.³⁷

Conclusion

Analysts generally agree that climate change does not directly cause armed conflict, but that it may indirectly increase the risk of conflict by intensifying existing social, economic, and environmental aspects.³⁸ Researchers have also observed that hot weather and violence go hand in hand;³⁹ and climate related environmental changes (increased flooding, salinization, droughts, or desertification) amplify drivers of migration.⁴⁰

Refugees remain a great source of recruitment for violent extremist organizations (VEO) like ISIS. With climate change increasing the number of water scarcity-based refugees, VEOs recruitment will remain strong. Water resources are becoming crucial and will be targeted more often in conflicts. ISIS is taking advantage of this and for example Saudis have been accused of weaponizing water scarcity against Houthis in Yemen, targeting areas for their proximity to fertile land and destroying water infrastructure.⁴¹

³⁵ Stepan Kravchenko and Henry Meyer, "Putin Says \$70 Crude Suits Russia Fine, Talked Oil With Trump," *Bloomberg*, November 15, 2018 <https://www.bloomberg.com/news/articles/2018-11-15/putin-says-70-oil-suits-russia-fine-won-t-commit-to-cut-output> (Accessed April 12, 2021).

³⁶ Sagatom Saha, "How climate change could exacerbate conflict in the Middle East," *Atlantic Council*, May 13, 2019 <https://www.atlanticcouncil.org/blogs/menasource/how-climate-change-could-exacerbate-conflict-in-the-middle-east/> (Accessed April 12, 2021).

³⁷ Umair Jamal, "Pakistan not invited to climate leaders' summit hosted by US president," *The Diplomat*, March 31, 2021 <https://thediplomat.com/2021/03/pakistan-not-invited-to-climate-leaders-summit-hosted-by-us-president/> (Accessed April 12, 2021).

³⁸ ICRC, "Seven things you need to know about climate change and conflict," Web-page, July 9, 2020 <https://www.icrc.org/en/document/climate-change-and-conflict> (Accessed April 13, 2021).

³⁹ Craig Anderson et al, "Temperature and aggression," *Advances in Experimental Social Psychology*, Volume 32, 2000, Pages 63-133, <https://www.sciencedirect.com/science/article/pii/S0065260100800040> (Accessed April 13, 2021).

⁴⁰ Kelly M. McFarland and Vanessa Lide, "The effects of climate change will force millions to migrate. Here's what this means for human security," *The Washington Post*, April 23, 2017 <https://www.washingtonpost.com/news/monkey-cage/wp/2017/04/23/the-effects-of-climate-change-will-force-millions-to-migrate-heres-what-this-means-for-human-security/> (Accessed April 12, 2021).

⁴¹ Lee Fang and Sharon Lerner, "Saudi Arabia denies its key role in climate change even as it prepares for the worst," *The Intercept*, September 18 2019 <https://theintercept.com/2019/09/18/saudi-arabia-aramco-oil-climate-change/> (Accessed April 13, 2021).

For the USCENTCOM, climate change acts as a threat multiplier in operations, and has direct implications for military capabilities and strength. Extreme weather events can place a substantial additional burden on the military's overall capacity to act. Increased severity of extreme weather events pose a greater direct risk to USCENTCOM operations.

Recommendations

- Include effects of climate change to operational risk assessment, such as effect of rising sea levels to military bases.
- Since the number and intensity of extreme weather conditions has increased due to climate change, be prepared to support humanitarian assistance and secure stability after natural disasters.
- Monitor targeting of the water resources in AOR.
- Monitor effects of the water situation in Iran.
- Support Iraqis in preventing VEOs taking control of water resources.