

## Iraq climate change

Water-related challenges are at the forefront of Iraq's environmental problems. Models predict that precipitation will decrease by 9% and mean annual temperatures will increase by 2°C by 2050.<sup>4</sup> The flow of the Tigris and Euphrates rivers, which provide 98% of Iraq's surface water, has decreased by 30-40% in the past 40 years.<sup>5</sup> The water resources of these two rivers are also shared with neighboring countries. Iraq's water supplies have significantly decreased over time due to dam construction from upstream nations.<sup>6</sup>

In 2019 Iraq contributed 0.5% to global carbon emissions.<sup>7</sup> Iraq's energy sector and fugitive emissions account for three-fourths of the nation's emissions.<sup>7</sup> Specifically, Iraq's oil and gas sectors produced 9% of global methane emissions in 2019, a portion of which is from gas flares.<sup>2</sup> The waste, industrial, and agriculture sectors are the other sectors contributing to Iraq's greenhouse gas emissions.

Iraq produced an Intended Nationally Determined Contribution (INDC), which is a set of policies and goals for how Iraq can address climate change. Iraq wants to reduce emissions by 15% by 2035, with a specific focus on lowering their methane emissions.<sup>8</sup> Iraq ratified the Paris Treaty in 2021 and committed to specific actions to reduce methane emissions in the oil and gas sector, which are coordinated by a newly established inter-ministerial national task force on methane emissions.<sup>9</sup>

Iraq is ecologically vulnerable to climate change due to a variety of interconnected reasons. Iraq is in a dry region of the world and it can be divided into three areas: the arid deserts of the south, the semi-arid alluvial plains, and the mountainous northern region.<sup>7</sup> Along with its arid land, Iraq has faced political turmoil, poor management of scarce resources, and the degradation of key ecosystems.<sup>10</sup>

As water levels fall, increasing salinity of the water supply has become a concern in southern Iraq, especially in Basra.<sup>22</sup>

Climate change has intensified extreme weather events, particularly droughts and floods. Decreased rainfall and increasing temperatures are the main drivers of drought. Iraq's drought problem has only deepened, with 2018 and 2021 being the first and second driest recorded years, respectively.<sup>16</sup>

The Mesopotamian Marshes in southern Iraq, an ecosystem important to animals and humans alike, has deteriorated due to anthropogenic factors and climate change. After the draining of the marshes, the marsh ecosystem has become much more susceptible to impacts such as water shortages, heat waves, and drought.<sup>6</sup> Sea level rise and water salinization combined with long dry periods have deteriorated the marshes. As of 2023, the Center for Restoration of Iraqi Marshes and Wetlands at the Ministry for Water Resources estimates that 70% of the marshes are devoid of water.<sup>23</sup>

Additionally, the relationship between climate change and regional conflict dynamics in Iraq negatively impacts livelihoods. The combination of weak governance, scarce natural resources, and conflict poses unique challenges to the livelihoods of the Iraqi people; for instance, resource scarcity that leads to in-community tension or weak governance leading to mismanagement of water.

Iraq's economy is extremely dependent on oil, which makes the nation more at risk to market volatility; Iraq's agricultural sector accounts for approximately 5% of the nation's GDP and is the source of livelihood for about 25% of the population; Iraq's largest food-producing industries, agriculture, livestock husbandry, and fishing, have all been negatively affected by the effects of climate change; With reduced precipitation and scarce water, desertification, and soil degradation, both livelihoods and food security are put at risk.

In 1992, during the Gulf War, Saddam Hussein ordered the draining of the Mesopotamian Marshes of southern Iraq to punish the Marsh Arabs for revolting during the 1991 Iraqi uprising against his government. Over 90% of the marshes was lost during Hussein's rule, which has intensified the effects of climate change; The draining led to the internal displacement of over 200,000 Ma'dan (Marsh Arabs) over the 1990s; The Marsh Arabs endured a government-backed campaign of violence which countries such as the United States have deemed to be an act of ecocide or ethnic cleansing;

USAID, a United States governmental agency investing in foreign development, has put in 150 million dollars to improve water quality, access and handling; The United Nations, alongside the government of Iraq, the United States and international donors created the Funding Facility for Stabilization (FFS) with over 1.4 billion dollars allocated for restoring essential services;

Media plays a huge role in the dissemination of information throughout Iraq, expanding the conversation worldwide. Outlets such as Al-Jazeera English have published documentary films on the ongoing water crisis, as well as peace building series: Climate Change in Iraq, which aims to engage with youth;

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