



# THE IMPACT OF COVID-19 ON ENVIRONMENTAL SUSTAINABILITY IN IRAQ

UNITED NATIONS DEVELOPMENT PROGRAMME IN IRAQ.

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### 1. FOREWORD

This report is the fifth in a series of policy papers examining the impact of the COVID-19 pandemic on Iraq. The first paper looked at effects on fragility, while the second examined the macroeconomic consequences. The third investigated impacts on social cohesion, and the fourth assessed social protection mechanisms and their ability to address repercussions of the pandemic.

The United Nations Development Programme (UNDP) will present additional thematic policy papers in the coming months, including on the socioeconomic impact of COVID-19 on vulnerable households in Iraq. The aim of these policy documents is to offer a comprehensive overview of how the pandemic is affecting the social and economic context of Iraq. This responds to the recent call from the United Nations Secretary-General for ideas on surviving and recovering from the pandemic so that families and businesses can stay afloat, and the foundation for an inclusive recovery can be laid to ensure attainment of the Sustainable Development Goals (SDGs).

This current paper examines the impact of COVID-19 on environmental sustainability in Iraq. It is intended to inform the responses of the Government of Iraq, the United Nations system and donor partners. The methodology employed by the paper includes a review of relevant literature on environmental challenges and sustainability in Iraq, as well as key informant interviews with stakeholders from the Government at the national and local levels, civil society representatives and international partners.

The paper draws on information from both within and outside the United Nations, using the latest sources available at the time of writing. As the COVID-19 pandemic is a rapidly evolving global phenomenon, environmental circumstances for both Iraq and the wider world are likely to change rapidly.

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### 2. EXECUTIVE SUMMARY

The COVID-19 pandemic is a human health crisis that adds to our planetary health crisis. This paper investigates the direct and indirect environmental impacts in Irag, set against the existing situation of environmental sustainability in the country. Background research was carried out between December 2020 and February 2021. It included a comprehensive literature review supplemented by interviews with experts from the national Government, international organizations, donors and civil society organizations. The report finishes with a series of policy recommendations for the Iragi Government and the international community over the short and medium term to ensure that post-COVID-19 recovery plans take into account environmental sustainability priorities in Iraq.

#### The global and regional context

Achieving the SDGs relies on a healthy planet. But over the last 50 years, the biosphere—the life support system on which humanity relies has been altered to an unparalleled degree. As the 2020 UNDP *Human Development Report* notes, humankind has entered the 'Anthropocene': human influence on the planet has moved us into an entirely new geological epoch.

The COVID-19 pandemic underlines the close relationship between humans and their environment. It has also magnified many decadesold challenges in the Arab region: violence and conflict, inequality and marginalization, unemployment, poverty, human rights abuses, insufficient or absent social safety nets, poor governance, and an economic model that has not yet yielded benefits for all citizens, among others.

The astounding public health and economic impacts of the COVID-19 pandemic have obscured a range of significant direct and indirect environmental consequences. These could further exacerbate existing concerns stemming from high levels of climate vulnerability, pollution, weak

governance and ecological fragility. Many have argued, the United Nations Secretary-General among them, that the pandemic is an inflection point, and there may be an opportunity to use the crisis as a springboard to set the Arab region and the world on a more sustainable path.

## Environmental sustainability in Iraq in the run-up to the COVID-19 pandemic

Iraq was facing serious environmental challenges even before the COVID-19 pandemic. These included water scarcity, deteriorating water quality, degraded landscapes, air pollution and poor waste management. The causes of this environmental degradation are many and complex, but they stem from legacies of conflict and past decisions, weak governance and corruption, as well as the impacts of climate change and rapid, unplanned urbanization. Addressing these challenges has, to date, been hindered by fractured responsibility for environmental governance, and a lack of integrated policymaking as well as policy enforcement based on data and science, although an active and growing civil society sector is pushing environmental action up the political agenda.

#### The impact of COVID-19 on environmental sustainability in Iraq

The devastating health and economic consequences of the pandemic in Iraq have had significant implications for environmental sustainability. Direct negative environmental impacts include increased quantities of medical waste. But there have also been some positive effects, such as temporary improvements in air quality and ecosystems.

A series of indirect environmental impacts comprises reduced environmental monitoring, environmental deregulation, and the prospect of reduced funding and limited political attention for future environmental initiatives. Ultimately, these 'invisible' challenges may be far more significant than the more visible, but temporary, direct impacts of the pandemic. Further, by sparking a collapse in oil prices, the pandemic has thrust Iraq even deeper into budgetary and fiscal crisis, with potentially devastating consequences for environmentally targeted investments.

There is no environmental 'silver lining' from COVID-19. The pandemic, however, has underlined the inextricable link between the health of the planet and the health of its human population. Growing poverty and worsening socioeconomic indicators increase the vulnerability of communities to climate change, food insecurity and environmental degradation. The crisis reminds us of the urgency of rebalancing our relationship with nature, and 'building forward' better and more sustainably.

#### **Conclusions and recommendations**

COVID-19 is exacerbating Iraq's environmental fragility, which was already affected by legacies of conflict, lack of significant public sector and governance reforms, loss of development gains, and illicit activity such as illegal hunting, fishing and logging, among other factors. Building long-term resilience and supporting sustainable, equitable growth requires addressing the impacts of climate change, reducing the impact of water scarcity, easing the chronic lack of access to energy, staunching environmental pollution and correcting ineffective waste management systems.

Iraq can find an opportunity in this crisis by mainstreaming environmental sustainability in its response to the pandemic, while addressing the deep-rooted, systemic causes of environmental fragility hindering progress on the SDGs.

Over the next 6 to 12 months, Iraq should focus on mitigating pollution, improving the management of solid waste and medical waste, mainstreaming environmental sustainability into recovery planning, and securing adequate national and international resources for environmental protection.

Over the medium to long term, Iraq should work to strengthen environmental governance; encourage climate-friendly, sustainable long-term growth; support biodiversity and harness the power of nature by introducing nature-based solutions; build community resilience and foster regional cooperation.

### **3. GLOBAL AND REGIONAL CONTEXT**

# **3.1 Global and regional trends on** sustainability<sup>1</sup>

The COVID-19 pandemic is a human health crisis that overlays and exacerbates our planetary health crisis. Over the past decades, human activities have significantly altered three quarters of the Earth's land area and two thirds of oceans.<sup>2</sup> As the 2020 UNDP *Human Development Report* notes, this has led to the emergence of an entirely new geological epoch. This has been dubbed 'the Anthropocene', or 'the age of the human'.<sup>3</sup> This era is marked by the unwelcome environmental imprint that humans have collectively left on the planet: millions of tons of plastic in the oceans, concentrations of warming gases in the atmosphere that are unprecedented in the evolutionary history of modern humans, and the accelerating loss of biodiversity on land and at sea.

Over the last 50 years, the biosphere-the life support system on which humanity relies-has been altered to an unparalleled degree.<sup>4</sup> Our current economic model, where the 'growth at all costs' trajectory relies on fossil fuels and the overuse of renewable resources, threatens the health of humans and the planet itself.<sup>5</sup> Inequality has worsened, and economic growth has progressed at the expense of the sustainability of the biosphere, even though we have known of the close interdependencies between the biosphere and human well-being for decades.<sup>6</sup> The poorest and most marginalized groups in society typically bear the greatest burden of this environmental degradation in terms of greater inequality and severe environmental health challenges.<sup>7</sup> While both our future and the achievement of the SDGs rely on a healthy planet, the environmental impacts of the COVID-19 pandemic have further complicated existing challenges. Even before the pandemic, the world was off-track to meet the 17 goals and their 169 targets.<sup>8</sup>

The Arab region faces particularly acute environmental challenges: climate change, rapidly

declining freshwater in places it is needed most, sand and dust storms, air and water pollution, and poor waste management, among other threats.<sup>9</sup> The availability of freshwater is particularly concerning across the entire region: 18 of the 22 Arab States fall below the threshold of 1,000 cubic meters of renewable freshwater per person per year. Fifteen of those countries have less than half that, falling in the category of absolute freshwater scarcity, where the lack of water constrains economic growth, food security and health.<sup>10</sup> Jordan and Yemen are, by some measures, two of the most water-impoverished countries in the world.

Climate change is worsening the scarcity of key resources, such as fertile land, to devastating effect. In the decade leading up to the start of the pandemic, these 'new' challenges combined with the consequences of devastating conflicts and negligent environmental management likely pitched an even greater share of the region's population into extreme poverty—6.7 percent in 2015, up from 4 percent in 2013. It was the onlyregion of the planet to witness such a surge.<sup>11</sup>

# **3.2** The global and regional impact of COVID-19 on environmental sustainability

The astounding public health and economic impacts of the COVID-19 pandemic have obscured a range of significant environmental consequences. Some are direct, but many more indirectly affect the environment. These have inflicted tremendous damage at every level, from households to nation states.<sup>12</sup> In 2020, most countries were unprepared to deal with the economic and social consequences of a public health crisis of this magnitude. The environmental costs have. understandably. received much less attention than immediate health and financial fallout, yet the effects of the former may ultimately linger much longer.

Globally, increased medical waste and temporary reductions in some forms of air pollution have been the most conspicuous direct environmental impacts of COVID-19. Medical waste has proliferated in parks, ponds and streets, with a massive increase in the use of latex gloves, plastic screens, and disposable masks and gowns. For example, in Wuhan, China, where the viral outbreak first hit, the amount of municipal waste increased by up to 300 percent; health care-related waste rose by up to 600 percent at its peak.<sup>13</sup>

At the same time, many countries have mothballed recycling facilities for fear of viral contamination from mixed medical and household waste. This has contributed to a global reduction in recycling.<sup>14</sup> In many areas, authorities have also used vast quantities of biocides to disinfect public spaces, even though many of these initiatives are thought to be of dubious utility. The majority of these disinfectants contain harmful or corrosive chemicals, including chlorine-releasing agents, which pose potential risks to urban wildlife and waterways.<sup>15</sup>

Amid the gloom, some commentators have pointed to the reduction in greenhouse gas emissions as a 'silver lining' of the pandemic. And true enough, greenhouse gas emissions fell by 17 percent in April 2020 compared with April 2019 as a result of global lockdowns. This was accompanied by drops in traffic congestion, noise pollution and heavy particulate emissions as economies around the world shut down in an effort to slow the spread of the virus.<sup>16</sup> These headline-grabbing statistics, while positive, appear to be mere blips in the larger wave of Earth-warming emissions; the atmosphere is now holding more greenhouse gases than at any time in the last 3 million years.<sup>17</sup> There is no guarantee that these brief falls will prove sustainable, either. More negative attitudes to public transport from people worried about viral transmission in shared spaces, for instance, may far outweigh positive, but temporary, reductions in traffic congestion and associated small particulate emissions.<sup>18</sup> If China is any guide, emissions can quickly return to pre-pandemic levels. In fact, China's urban air pollution might even be worse now than it was in 2019.<sup>19</sup>

The indirect environmental impacts of the COVID-19 pandemic are harder to track than discarded masks but may prove much more significant in the long run. Governments around the world have struggled to respond to this fast-moving, multifaceted health crisis. In some countries, environmental monitoring and enforcement have been dramatically curtailed or have ceased altogether. This has created opportunities for a myriad of environmentally damaging activities, including illegal mining, land grabs, uncontrolled urban expansion and illicit dumping of waste. To pick just one example, 64 percent more forested land was cleared in the Amazon in April 2020 than in April 2019-even though the latter year had already seen the worst levels of deforestation in more than a decade.<sup>20</sup>

In several countries, governments have actively rolled back environmental regulations as a means of kickstarting stalled economies, sometimes cynically exploiting the distraction of the pandemic as a cover.<sup>21</sup> Economic recovery seems to have taken precedence over lockdown in other instances.<sup>22</sup> Globally, lockdowns and social distancing measures may have reduced progress on major new infrastructure projects, just as the pandemic has shifted attention from the slower moving and yet probably more devastating long-term disaster of climate change. Though we may never know what impact this will have in terms of reduced ambition for the implementation of the Paris Agreement, experts emphasize that every wasted moment will come at a considerable human cost.23

Government attention is not the only currency in short supply. The financial cost of COVID-19 makes for grim reading. The pandemic has upended government budgets around the world, increasing social welfare and health costs while slashing state revenues and hampering trade. Global human development, measured as a combination of education, health and living standards, is consequently set to decline this year for the first time since measurements began in 1990.<sup>24</sup> From 15.7 percent in 2010, the share of the world's population living on less than US\$1.90 a day fell to 8.2 percent in 2019. It is now projected that 2020 will have seen an additional increase to 8.8 percent.<sup>25</sup> Global energy producers, like many of the oilexporting nations in the Arab region, have been particularly hard hit by plummeting energy prices and Organization of the Petroleum Exporting Countries (OPEC)-led reductions in production.<sup>26</sup> As a result, gross domestic product (GDP) in the region is expected to fall by about \$152 billion, a 5.7 percent contraction, between 2019 and 2020.<sup>27</sup> As part of this economic hit, the equivalent of an estimated 17 million jobs were lost in 2020,<sup>28</sup> which helped push an additional 14.3 million people into poverty.<sup>29</sup> In addition to the terrible human toll, this has had a massive knock-on impact on government balance sheets: States have lost out on almost \$20 billion in indirect taxes.<sup>30</sup> Nearly every country in the region is entering 2021 with a higher debt-to-GDP burden than they did the previous year.

At the most basic level, this means that there is less money to meet more needs, even as the pandemic has magnified many decades-old challenges: violence and conflict, inequality and marginalization, unemployment, poverty, human rights abuses, insufficient or absent social safety nets, poor governance, and an economic model that has not yielded benefits for all citizens, among others.<sup>31</sup> Amid another 'lost year' and with additional short- and medium-term crises to address, investments in many dimensions of environmental management have been cancelled or postponed. This could have long-term implications for the ability of Arab economies to diversify from oil exports or transition towards renewable energy. This, in turn, could further exacerbate existing challenges stemming from high levels of climate vulnerability and ecological fragility in the region.<sup>32</sup>

#### **3.3 How to build forward better**

With vaccines now being rolled out, attention has begun to shift to post-pandemic recovery. The big question is: What sort of world should we look to rebuild? The United Nations Secretary-General argued, and many with him, that the pandemic is an inflection point, and there may be an opportunity to use the crisis as a springboard to set the world on a more sustainable path and ensure that no one is left behind, in terms of development as much as vaccine provision.<sup>33</sup>

The pandemic has, perhaps, provided a vision of a different future, and encouraged individuals to consider alternatives to how we live, work, travel, consume and communicate. It has demonstrated the power of individual agency, and underlined the importance of our personal choices for environmental protection as well as public health. It has also shown that, when circumstances demand, there is huge scope for action. Governments moved and enacted policies in February, March and April 2020 that would have seemed inconceivable just weeks before.<sup>34</sup>

The pandemic has also reinforced the importance of nature for human health. This includes the mental health benefits of access to nature, as tens of millions of locked-down city-dwellers have discovered, as well as the link between environmental degradation and the risk of zoonotic diseases, like COVID-19. As humanity expands even deeper into delicately balanced ecosystems, viruses threaten to jump from wildlife to people with ever greater frequency.<sup>35</sup> This might have been our first pandemic of the 21st century. Scientists counsel that unless we radically alter our ways, it certainly will not be the last.

The hope is that the pandemic might catalyse a 'systems shift' towards a more sustainable planet, in which we aim for well-being rather than GDP growth; invest in nature rather than destructive industries; and ensure a more equitable distribution of prosperity. From rethinking land, food and water systems, to transforming the industrial sector and reimagining cities, there is plenty of food for thought.<sup>36</sup>

Yet change is not a foregone conclusion. Around the world, governments are desperately trying to 'return to normal' without asking whether that is a desirable destination.<sup>37</sup> Vast amounts of money are being spent on economic recovery. An estimated \$9.6 trillion has been paid out in stimulus packages, equivalent to 11 percent of global annual GDP.<sup>38</sup> The Arab region has seen relatively small amounts of money devoted to economic stimulus: \$102 billion, equivalent to just 4 percent of the region's GDP.<sup>39</sup> But here, too, it seems that these investments have largely been targeted at the most established and politically connected sectors of the economy. In essence, they presuppose the return of 'business as usual', not least in how we power our societies. Having lobbied aggressively for assistance, fossil fuel companies have banked much more than their renewable energy counterparts. In simple terms, this means that cash-strapped governments are enabling greenhouse gas-emitting polluters to clamber back to their feet at taxpayer expense, even as solar, wind and other more sustainable projects clamor for help in harnessing the moment.40

# 4. ENVIRONMENTAL SUSTAINABILITY IN IRAQ BEFORE THE COVID-19 PANDEMIC

#### 4.1 Environmental challenges in Iraq

After many years of intensifying troubles and insufficient political prioritization, Iraq's environment began 2020 in poor shape.<sup>41</sup> Climate stresses and the legacy of conflict, among many other crises, have merged with population pressures, lack of efficient management and transboundary disputes to hobble much of the country's natural landscape.<sup>42</sup> From Basra in the south to Dohuk in the far north, few Iraqis have been spared the consequences. Growing poverty and worsening socioeconomic indicators increase the vulnerability of communities to climate change, food insecurity and environmental degradation, with women and youth being disproportionately affected.

Given its geographic profile-as a largely arid state with a sizeable agrarian population at the downstream end of the Tigris and Euphrates rivers-Iraq was, arguably, always going to be acutely vulnerable to climate shocks. And so it has proven. The country's mean annual temperature is rising at a rate of approximately 0.7°C per century, just as its rainfall tumbles by 1.3 to 6.2 mm per year, depending on the governorate.43 The country's all-important rivers are ebbing, in large part because of increasingly variable precipitation, while groundwater levels are falling. There's likely much worse to come. With a projected increase in mean annual temperature of up to 2°C by 2050, Irag has fallen to 150th place out of 181 countries in the Notre Dame Global Adaptation Index (ND-Gain), which measures a country's resilience and vulnerability to climate change.44 All told, these developments are expected to strike everything from Iraq's agricultural and energy sectors, to its infrastructure and human health, and even its very stability.

Water scarcity: Known as the 'land between the two rivers', Iraq, and the civilizations that preceded

it, had long been blessed with bountiful water resources. A combination of climate change, upstream dams, inefficient governance and conflict is changing all of that. In 2015, the Government was already predicting that by 2020 the country could 'hit a wall' where it would not have enough water of sufficient quality to meet its development needs.<sup>45</sup> Droughts are becoming more frequent and intense, exacting a particularly devastating toll in the north where most agriculture is rainfed. Already, insufficient or failing rains have killed livestock and cut crop yields, as in 2008 and 2009, when more than 80 percent of the country was affected by extreme drought.<sup>46</sup> Drought is expected to significantly affect future livestock production, which is already limited by feed shortages. This in turn will undercut future food security.47

The country's once mighty rivers, on which most of the population relies, are also looking increasingly meagre. With more variable rainfall both within Iraq and in upstream Iran, Syria and Turkey, water levels are dropping at eye-catching rates. The Tigris is flowing at 70 percent of historical levels and the Euphrates at 50 percent, according to the Ministry of Health and Environment, which anticipates a 50-80 percent drop off in surface water flow into Iraq between 2009 and 2025.<sup>48</sup> The decline in water levels will likely deplete the reservoirs and natural lakes on which the country partly relies to sustain itself through the rain-free summer months.

Amid this diminishing rain and surface water availability, many farmers are turning to groundwater instead, with predictable consequences. While aquifers currently account for less than 8 percent of Iraq's water use, that share is increasing rapidly as needy agricultural communities look to compensate for the lack of alternatives.<sup>49</sup> There is little enforcement of regulations on groundwater extraction, and few obstacles stand in the way of illicit wells or rampant overpumping. Despite this increasing mismatch between supply and demand, enormous quantities of water are being lost to inefficient infrastructure. Iraq's current treated water production is 6.8 million cubic meters per day, yet the amount of water reaching customers is only 2.17 million cubic meters per day. In other words, up to 68 percent of piped network supply is wasted.<sup>50</sup> More problematic still are the consequences of some of Iraq's agricultural policies. Some farmers cultivate water-intensive crops, such as rice, even at times of drought. Many others rely on variations of millennia-old flood irrigation techniques, which are wasteful, particularly as rising heat maximizes losses to evaporation. After decades of conflict, mismanagement and sanctions, many irrigation canals are leaky and barely fit for purpose, either. Collectively, Iraq's farmers consume roughly two thirds of the country's water.<sup>51</sup>

Unsurprisingly, intensifying shortages have fuelled a sharper focus on transboundary water. Over 90 percent of Iraq's surface water originates beyond its borders.<sup>52</sup> As upstream neighbours have expanded dam construction programmes in recent decades, the flows of the Tigris and Euphrates have diminished even more. Turkey's South-eastern Anatolia Development Project, for example, is one of the world's largest water and development projects. It has the potential to reduce the flow of the Tigris by more than 50 percent. For its part, Iran has dammed, diverted or depleted dozens of Tigris tributaries. Despite long-standing negotiations, cooperation within the Tigris and Euphrates basins is mostly limited to technical issues.53 This is a source of persistent tension, and the risks could grow down the line.

**Water pollution:** For all the focus on diminishing water resources from abroad, much of Iraq's water crisis boils down to domestic challenges. Even as supply has ebbed, domestic water consumption has shown few signs of slowing, with national water withdrawal rates now almost double the global average.<sup>54</sup> This demand is projected to grow as the population continues to surge.<sup>55</sup>

Not long ago, Iragis could safely bathe in the rivers, and even drink from their waters. Circumstances are very different now. Flood irrigation techniques are contributing to rates of salinity so high that some parts of southern Iraq struggle to grow certain crops.<sup>56</sup> Wastewater treatment provision has crumbled, and up to 70 percent of sewage water is discharged untreated into the Tigris and Euphrates. With surging rates of urbanization, most cities have far surpassed their capacity to service the needs of burgeoning populations. Only 14 out of 252 urban centres have wastewater treatment plants.<sup>57</sup> This all came to a head with the Basra water crisis in the summer of 2018, when at least 118,000 people were hospitalized due to waterrelated illnesses. The World Health Organization estimates that 25 percent of all Iraqi child mortality stems from preventable water-related diseases.<sup>58</sup>

#### Degraded landscapes and declining biodiversity:

Stifled by insufficient water and other woes, Iraq's natural beauty has suffered. Sand and dust storms, always a problem, are coming thicker, faster and more frequently due to drought, inadequate water management, diminished vegetation and the cultivation of already denuded fields. These storms cause further soil degradation and appear to be contributing to mushrooming respiratory disease in urban Iraq. They show few signs of slowing: Dust storm incidence increased from about 24 days per year in 1990 to 300 in 2013.<sup>59</sup> Governments in Iraq and neighbouring countries fully recognize the transboundary nature of these storms, yet regional dialogue on the subject has not been sustained beyond signing the Ankara Ministerial Declaration in 2010.60

Some of Iraq's most prized and precious scenery has been particularly hard hit. Having partially recovered from the destruction wrought by the regime of Saddam Hussein, the marshlands of southern Iraq are once again ailing because of diminished river flow. Classified as a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO),<sup>61</sup> these wetlands, which are the largest in the region, are a vital resource for birds, water buffalo and a myriad of endangered species. They have even sustained a unique culture—that of the Marsh Arabs. The ecosystem services provided by the wetlands are consistently undervalued in economic analysis and political decision-making, however.<sup>62</sup> Now, the wetlands are struggling so much that many of their traditional residents, a number of whom returned following the fall of the Hussein regime, are migrating once more. Similar issues arise with the forests of the Kurdistan Region of Iraq, which are the largest remaining tracts of woodland in the region. As with many of the country's urban parks and nature reserves, they're suffering from insufficient protection, planning and investment.<sup>63</sup>

All of this has contributed to an increasingly challenging environment for biodiversity. Only seven of the country's 82 key biodiversity areas are under some kind of protection. And while 1.54 percent of land in Iraq is technically classed as 'protected', most of this is in name only.<sup>64</sup> Pollution has led to frequent fish die-offs, and, amid periodic breakdowns in law and order, illegal hunting has proliferated. Some impoverished residents of the Euphrates and Tigris valleys have taken to shooting protected bird species, hoping to supplement their diets at a time of economic hardship. At least 31 bird species are threatened or at the point of extinction.<sup>65</sup>

**Air pollution and waste management:** Iraq struggles with mounting air quality and waste management woes. Per capita carbon dioxide emissions have been steadily rising, almost doubling between the late 1980s and 2018.<sup>66</sup> Much of this is due to rising vehicle numbers, poorly regulated industrial emissions, and intensifying dust and sandstorms.<sup>67</sup> Industry has proven particularly problematic in cities like Baghdad, with its centrally located Dora refinery, and around Basra and Kirkuk, both of which are ringed with oil fields.

Iraq also flares billions of barrels of gas into the sky from its southern oil fields, which contributes to a bizarre energy paradox, whereby the country with some of the world's largest oil and gas reserves faces chronic power shortages. Iraq burned some 632 billion cubic feet of gas in 2019, the world's second highest rate after the Russian Federation.<sup>68</sup> Flaring is intensely polluting and has been shown to worsen asthma, hypertension, some cancers and climate change.<sup>69</sup> In late 2020, one expert estimated that Iraq could generate 3.5 gigawatts of energy by harnessing just 30 to 40 percent of this flared gas. But despite a plan to move in this direction, there is little evidence of concrete steps forward.<sup>70</sup>

Iraq's waste management crisis is expanding with the country producing an estimated 31,000 tons of solid waste every day. Yet collection capacity likely totals no more than 4,000 tons per day.<sup>71</sup> This shortfall drives illicit dumping that could expose wildlife, livestock and natural landscapes to a range of dangers.<sup>72</sup> From the dumping of toxic medical waste in waterways to the contamination of the water table, myriad associated human health risks result as well.

# **4.2 Key drivers of environmental degradation in Iraq**

**Conflict:** Long-standing conflict has devastated urban areas and significant swathes of the Iraqi countryside. Southern Iraq was denuded of much of its tree cover during the Iran-Iraq war. The regime of Saddam Hussein then compounded the situation by burning most of the Basra area's palm grove plantations. The Iranian and Iraqi armies also laid so much ordnance along their shared border that it is still one of the most heavily mined places in the world. The United States Army deforested a number of areas around Baghdad after the 2003 invasion to deprive militants of potential cover.

Most recently, the conflict with the Islamic State in Iraq and the Levant (ISIL) saddled Iraq with significant environmental damage, especially in the middle and northern regions, from which much of the country has yet to recover. In adopting scorched-earth tactics, the group poisoned wells, burned orchards and mined agricultural land. Its fighters downed electrical lines, stole farm equipment and cannibalized machinery for parts.<sup>73</sup> On a grander scale, ISIL destroyed agricultural silos and blew up dams, including the barrage at Fallujah. Most notoriously, perhaps, ISIL set fire to a sulphur plant at Al-Mishraq as well as the oil wells at Qayyarah as it retreated near Mosul.<sup>74</sup> Large swathes of the country remain mined, and unexploded ordnance presents serious hazards to the lives and livelihoods of populations living in affected areas.

The impact of conflict pollution is well acknowledged by Iraqi authorities, and in 2017, Iraq tabled a resolution at the third United Nations Environment Assembly to address these issues. The resolution, on pollution mitigation and control in areas affected by armed conflict or terrorism, urges states to minimize and mitigate the health and environmental consequences.<sup>75</sup> Various United Nations entities have been working with the Government to address the toxic environmental legacy of conflict, particularly the huge quantities of conflict-linked debris in Mosul and oil spills around Kirkuk.<sup>76</sup>

A carbon-intensive economy and low renewable energy provision: As the world's third-largest oil exporter, Iraq is highly dependent on fossil fuels. The hydrocarbon sector accounts for 60 percent of domestic GDP, 99 percent of exports and more than 90 percent of central government revenue,<sup>77</sup> leaving the Iraqi State more reliant on oil exports than almost any other State in the world. Unsustainable production and consumption patterns are visible across important segments of the economy, including the energy sector. Domestically, Iraq relies heavily on fossil fuels for electricity production, which has increased in recent years due to population growth and growing electricity consumption.

Acknowledging the polluting nature of the energy sector, in 2016, Iraq's Ministry of Electricity pledged to boost energy efficiency and reduce greenhouse gas emissions.<sup>78</sup> To this end, the ministry has set a goal of producing 10 percent of Iraq's energy from renewable sources by 2028 through the development of large-scale solar, wind and biomass capabilities. Meeting the goals of five gigawatts of installed solar capacity, about one gigawatt of wind

power and 0.2 gigawatt of bioenergy by 2028 will require more than an estimated \$50 billion in investment.<sup>79</sup> As a non-Annex I signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Iraq has no legal obligation to cut emissions.<sup>80</sup>

**Weak governance and corruption:** Corruption cuts across Iraqi politics and society, and while the impact on the environment is not well documented, officials acknowledge that it exacts a heavy toll.<sup>81</sup> Insufficiently planned projects, weak monitoring, low societal participation in environmental management and a general lack of trust in government capacity have contributed to poor outcomes. According to a recent study, multidimensional corruption has prevented Iraqi governments from pursuing strategies, policies, plans and programmes to achieve human security.<sup>82</sup>

**Legacies of past decisions:** The current state of the environment in Iraq hinges to a considerable extent on the policies of past regimes. Beginning before the first Gulf War, then-President Saddam Hussein drained the marshes of southern Iraq to punish the Marsh Arabs for their opposition. In doing so, he damaged these prized wetlands in ways that may prove permanent. With women being the backbone of the Marsh Arab community, they are disproportionately affected by such legacies.<sup>83</sup>

Among a number of other misguided projects, the Saddam Hussein regime commissioned the Mosul Dam, which the United States Army Corps of Engineers has called the most dangerous dam in the world due to its defective foundation and the consequent risk of failure. Built on inappropriate terrain, despite warnings from experts at the time of construction, it is at serious risk of collapse, and threatens an ecological and human disaster. A simulation by the European Union Joint Research Centre after a United Nations mission on site concluded that if just 26 percent of the dam collapses, a wall of water 25 meters high could strike Mosul in less than two hours.<sup>84</sup> A six-month programme of repairs starting in 2016 helped avert the imminent risk of collapse, but experts say that the dam will need continual maintenance to avoid future disasters.<sup>85</sup>

**Climate change:** Though few Iraqis have escaped the impact of climate stresses, the consequences have been particularly egregious for rural communities. Dependent, for the most part, on agriculture and pastoralism, they are acutely vulnerable to extreme weather events and slow, simmering shocks, such as drought. Water shortages have hobbled millions of farmers and their dependents, as has food insecurity as crop yields wither.<sup>86</sup> The net result is that farmers, fisher people and pastoralists are increasingly struggling with poverty rates many times worse than people in urban areas.<sup>87</sup>

Urbanization: Internal migration has swollen many cities beyond their capacity to service citizens, and as life in rural Irag becomes more complicated, these movements of people will likely combine with continuing population growth to expand urban areas even more. As is often the case, the environment, notably the rivers, will likely bear much of the brunt of authorities' inability to meet needs for essential services. On paper, Iraq has at least 8 million hectares available for agricultural production, yet the amount of cultivated land seldom surpasses 4 million hectares due to soil salinity, a shortage of irrigation water in summer and the unstable political situation. More than 80 percent of Iragi farms lie on less than 10 hectares of land, leaving little financial capacity to absorb environmental shocks.88

#### **4.3 Fractured institutional landscape** for environmental governance

Responsibility for environmental issues extends across multiple Iraqi governmental bodies, including the ministries of agriculture, health and environment, municipalities, trade and water resources. Coordination between these bodies is lacking, however, and environmental compliance is relegated to the technical level within each ministry. As a result, environmental governance and the integration of science and data into policy is weak. Effective monitoring was further challenged when the Ministry of Environment was rolled into the Ministry of Health in 2015, as this diminished the space in which environmental officials could push environmental priorities. As it is, the ministry has no oversight over state enterprises, which is problematic given that these industries far outnumber their private sector counterparts and cannot be held accountable for their impact on the environment. Further complicating the institutional landscape, the 2014 oil price collapse scythed off most ministries' investment funds, leaving them with little budget beyond their salary and pension allocations.

At the international level, Iraq has continued participate in multilateral environmental to governance. It ratified the UNFCCC in 2009 and has declared an ambition to reduce greenhouse gas emissions by 14 percent by 2035. It continues to work towards climate mitigation and adaptation, with a focus on increasing resilience. Iraq currently is working with UNDP to develop its NDC.<sup>89</sup> The aim is to move towards a green economy approach that meets climate goals and facilitates a shift away from heavy reliance on fossil fuels. In partnership with UNEP, Iraq has also recently begun fleshing out a National Adaptation Plan.90 All of these processes are still in nascent stages; it is not clear how much of an impact they have had on wider government policy, particularly given extensive cuts to government budgets as a result of the pandemic and oil price crash. In September 2020, the Government demonstrated its commitment to global efforts to address dangerous climate change by voting to accede to the Paris Agreement.<sup>91</sup>

**Water sector governance:** Water governance has many stakeholders and little coordination among them. At least six ministries are responsible for different aspects of water management, and each has its own mandate, interests and policies. The State, aware of the deficit in cross-sectoral coordination, formed the Supreme Water Council in 2015 to approve strategies for transboundary and domestic water management, and to coordinate among ministries and water-related agencies.<sup>92</sup> With no provision for integrated management within the Iraqi Constitution, however, and uncertainty over the implementation of water management and sharing arrangements, tremendous challenges remain.<sup>93</sup>

Agricultural sector governance: Iraq's agriculture and food systems governance is, if anything, even more diffuse. At least 27 government organizations, including ministries, state-owned enterprises, and parliamentary and cabinet committees, have some say over food production and distribution. As in other sectors, sometimes competing interests between these bodies has stifled effective administration, with farmers experiencing the consequences.94 Farmers often suggest that inconsistent or insufficient government support can ail them as much as any environmental catastrophe. Unsurprisingly, the Ministry of Agriculture stands at the centre of this complex nexus. But with inadequate resources, limited operational capacity and a mandate restricted to agricultural production, it is often at the mercy of more powerful ministries. In recent years, depressed oil prices and considerable ISIL-related damage have merely added to its problems.<sup>95</sup>

**Civil society:** Until relatively recently, Iraqi environmental conservation and campaigning was largely the preserve of a few larger civil society organizations, like Nature Iraq, which had themselves only emerged since 2003. But as climate stresses, pollution and water crises have become more pronounced, new environmental groups have sprung up across the country, and 'green' activist networks have been forged. Among Iraqi youth, in particular, environmental awareness appears to be surging.<sup>96</sup>

These groups, both new and slightly older, have injected considerable energy into the environmental scene, leading everything from riverside rubbish collection in Mosul to organized movements against illegal waste dumping in Baghdad neighbourhoods. They have faced considerable headwinds, though. Money remains in short supply, with little charitable giving within the country for environmental causes, and strict donor requirements from outside that many of the smaller, newer organizations are unable to manage effectively. The security challenges can be daunting too. From kidnapping attempts, which Nature Iraq bird monitors have experienced in the past, to the killing of a water quality campaigner in Basra last summer, environmental civil society has struggled to insulate itself from the country's wider troubles.<sup>97</sup>

### 5. THE IMPACT OF COVID-19 ON ENVIRONMENTAL SUSTAINABILITY IN IRAQ

The first case of COVID-19 in Iraq was confirmed in Najaf on 25 February 2020.<sup>98</sup> Less than a year later, Iraq has recorded more than 600,000 confirmed cases and suffered more than 13,000 deaths, though officials acknowledge that the number of cases is likely higher.<sup>99</sup> As has occurred globally and regionally, Iraq has experienced a number of direct and indirect environmental impacts from the pandemic. Unfolding ecological and environmental threats are taking place against a background of, and interacting with, other political, societal and economic fragilities.<sup>100</sup>

#### **5.1 Direct environmental impacts**

There are many anecdotal reports of significant increases in unrecyclable plastic waste as a result of discarded personal protective equipment: latex gloves, gowns, face shields, masks and so on.<sup>101</sup> For every person hospitalized, an extra one to three kilograms of waste is produced, according to some estimates.<sup>102</sup> This has increased medical waste at a time when waste management systems were already crumbling and have been further impeded by lockdowns. Anecdotally, Iraqis report that much of this plastic waste is making its way into the country's rivers, or cropping up in vegetation, open spaces and natural depressions.<sup>103</sup>

There seem to be no available data, however, on total quantities of extra waste produced or how it has been disposed of. The concern is that this will lead to uncontrolled dumping or open burning of waste. The former risks possible secondary transmission of diseases as well as damage to ecosystems, while the latter may release harmful toxins into the environment.<sup>104</sup> Likewise, there is little available information on the extent, quantity or type of disinfectants used to spray public spaces or what this might mean in terms of localized chemical pollution. Evidence elsewhere confirms that the widespread use of disinfectants can cause local contamination.

There has been some research on the impact of lockdowns on air quality in urban areas of Iraq, particularly emissions of nitrogen dioxide, fine particulate emissions (PM2.5 and PM10) and levels of ozone in Baghdad.<sup>105</sup> These pollutants in high quantities adversely affect health and the environment. Researchers tracked temporary improvements in nitrogen dioxide levels and noise pollution in Mosul, Kirkuk and Baghdad during the lockdowns.<sup>106</sup> In Baghdad, levels of nitrogen dioxide fell by 6 percent to 20 percent. Levels of PM2.5 and PM10 dropped between 6 per cent and 8 percent compared to pre-COVID times.<sup>107</sup> These positives represent only a temporary improvement due to reduced traffic and the cessation of some industrial activities, however,

There is an inverse relationship between nitrogen dioxide and ozone, meaning that concentrations of toxic ozone at ground level tend to rise when nitrogen dioxide levels fall.<sup>108</sup> This was indeed the case in Baghdad, which saw increases in ground-level ozone from 13 percent to as much as 525 percent across different lockdowns.<sup>109</sup> The open burning of medical waste and other municipal waste is further degrading air quality at a time when respiratory problems, a core component of COVID-19, are more of a concern than ever.<sup>110</sup>

The pandemic has spotlighted available, clean freshwater as essential for sanitation, medical care and handwashing. Public health experts have frequently emphasized the importance of hygiene in protecting against viral transmission. The pandemic could end up adding to Iraq's long-standing challenges in providing sufficient, high-quality freshwater. Over the long term, increased water demand in upstream countries to meet personal hygiene needs and improve food security could negatively affect Iraq.<sup>111</sup>

#### 5.2 Indirect environmental impacts

As is the case elsewhere, the COVID-19 pandemic in Iraq is having a number of indirect environmental impacts that may ultimately prove to be more damaging than the direct, more visible, but often temporary effects listed above.

Perhaps most significant has been a near halt in local and national environmental management activities as a result of movement restrictions and budget freezes. This has reduced environmental monitoring, leading to holes in data sets and problems tracking environmental indicators.<sup>112</sup> On a number of occasions, laboratories have closed. Conservation and environmental management projects have ceased or slowed operations. Students have lost out on valuable experience, and so on. The pandemic has also interrupted environmental audit and enforcement actions by the Ministry of Health and Environment, which was a major part of the Government's environmental work prior to the pandemic.<sup>113</sup>

The pandemic may also have curtailed the formation of environmental policies, with lockdowns and travel restrictions hampering necessary stakeholder consultations and research. International travel restrictions have stemmed the flow of external support and expertise, and stymied the ability of Iraqi experts to participate in international meetings. This has reduced the 'trade in ideas' that has helped to develop Iraq's environmental management framework over the past years. At this time of crisis and change, such exchanges are arguably needed more than ever.<sup>114</sup>

Monitoring and enforcement were already insufficiently developed in Iraq's environmental management system prior to the outbreak of the pandemic.<sup>115</sup> But further interruptions to the enforcement of environmental regulations and the lack of alternatives for a population battered by economic duress have created both opportunities and motives for increased illegal and/or unsustainable activities, such as illegal fishing, poaching and land grabbing.<sup>116</sup> The

distracted, overstretched Government is less able to enforce building and zoning codes in urban and peri-urban areas, as well as numerous other environmental regulations, exposing the country and its population to new ecological threats.

From previous experience, economic hardship tends to increase illegal logging as cash-strapped people turn to wood for heating or cooking fuel. With less money at hand, fewer Iragis can afford kerosene.<sup>117</sup> And with depleted coffers, the Iraqi state has had to rein in fuel subsidies. Already, Iragi media report heightened deforestation as winter sets in. For Iraq's woodlands, this marks a grim bookend to a year in which it posted some of its largest losses yet. Further pressures have come from the ongoing conflict between the Turkish military and the Kurdistan Workers' Party (PKK) militant group, which inflicted a heavier environmental toll than ever in 2020. Between May and September alone, the conflict resulted in burning up to 300,000 acres of land in the Kurdistan Region of Iraq.<sup>118</sup>

In the Arab region at large, many news outlets are more cash-strapped as advertising revenue falls. Some newspapers appear to have reined in reporters' budgets or ditched environmental news desks altogether. Given that environmental reporting often requires travel to isolated areas, lockdowns and travel complications have proven particularly problematic in sustaining transparency around environmental challenges. There has been less media focus on industrial abuses, and less public awareness of the activities of some of the world's most polluting and extractive industries.<sup>119</sup> Such tendencies are likely also at work in Iraq.

### **5.3 Impacts on environmental institutions**

Between 2017 and 2019, macroeconomic and fiscal conditions were broadly positive for Iraq. For a period, the country enjoyed small budget surpluses, declining public debt levels in 2018 and 2019, and growing foreign currency reserves.<sup>120</sup> The draft budget for 2020 had been expected to be

the largest in history. At around \$135 billion, it was focused on rehabilitating the country's dilapidated infrastructure.<sup>121</sup> And for the first time since ISIL, Parliament had allocated an activity budget for environmental issues to the Ministry of Health and Environment.<sup>122</sup> The ministry's annual workplan included several ambitious plans to address some massive environmental challenges, such as by cleaning up conflict debris and addressing pollution.

Government finances were hard hit by the pandemic, however.<sup>123</sup> With a large portion of the world's economy shuttered in early 2020, demand for Iraqi oil fell off a cliff. To support global oil prices, Iraq took part in a coordinated reduction in production through OPEC+. This reduced output from nearly 4.8 million barrels per day in October 2019 to 3.7 million barrels per day by September 2020.<sup>124</sup> At the same time, Iraq has had to contend with the consequences of oil prices that fall well short of its budgetary needs.<sup>125</sup> Irag's monthly oil revenue collapsed 75 percent from \$6.2 billion in January 2020 to just \$1.4 billion in April 2020.126 On top of the oil price shock, the lockdowns and social distancing regulations smothered private businesses, just as social expenditures went up. The twin fiscal shocks of the cuts in oil revenue and COVID-19 are expected to lead to a contraction of 10 percent of Iraq's GDP in 2020, and a near doubling of the country's debt over three years from 44.6 percent of GDP in 2019 to 87.4 percent in 2022.<sup>127</sup>

The result is a tight fiscal squeeze for the Government, which now must borrow money from the Central Bank even to pay public sector salaries.<sup>128</sup> The institutional impact on the Ministry of Health and Environment has been significant. Already an underresourced, politically marginalized ministry with a shoestring budget, it has become even more so. Many, though not all, of the ministry's 2020 activities were cancelled or postponed.<sup>129</sup>

It is likely that investments in renewable energy and climate action policies as well as environmental activities will be delayed or cancelled as a result of the pandemic's impact on public and private budgets.<sup>130</sup> Even so, some activities have continued. After the Iraqi Parliament voted to accede to the 2015 Paris Agreement, President Salih announced in December 2020 that, despite the impact of COVID-19, Iraq would be heading into a new, greener era and was beginning the process of preparing the country's Nationally Determined Contribution. He also announced support for clean, renewable energy, and access to environmentally friendly technologies.<sup>131</sup>

A 2021 budget of \$103 billion was approved by the Cabinet in December 2020. This was almost a third less than the 2020 budget and would still incur a budget deficit of \$43 billion.<sup>132</sup> The 2021 budget includes 8 billion Iraqi dinars (\$5.48 million at current exchange rates) for environmental action, roughly the same in Iraqi dinars as allocated under the 2019 budget (8.25 billion dinars) and roughly twice what was spent on environmental matters by the Ministry of Health and Environment (4 billion dinars) in 2020, amid the various COVID-related restrictions.<sup>133</sup>

From an environmental civil society perspective, the pandemic has brought mixed fortunes. After years of growing interest, particularly among young Iraqis, campaigning and conservation groups entered 2020 with real momentum-and in some ways they've sustained it. Groups such as Save the Tigris campaign seized the opportunity to draw attention to some of the country's other sources of long-term peril, such as water pollution. Their peers across the country have also harnessed what appears to be a mounting realization that it might fall to them to safeguard the environment. The Barzan biosphere, which is arguably the country's best preserved protected area, was largely carved out and protected by the local community.<sup>134</sup> As state capacity has fallen off, however, assaults and threats against these environmental activists have continued to increase, culminating with the murder over the summer in Basra of Reham Yaqoub. She was seemingly killed by a non-state armed group that opposed her campaigns for clean water.<sup>135</sup>

# **5.4 Environment, poverty and inequality**

The direct and indirect environmental impacts of COVID-19 come on top of existing environmental challenges from the excessive extraction of natural resources and substandard waste management, as well as years of conflict and political upheaval.<sup>136</sup> Displaced communities have been particularly hard hit. Camps for refugees and internally displaced people as well as informal urban areas often have extremely limited water and tightly packed housing. This has increased vulnerability to infection and disease, and worsened poverty, which itself can create a vicious circle of vulnerability and environmental degradation.

Inequality is already a major barrier to ensuring decent health outcomes and well-being for Iragis, and if the pandemic widens social and economic inequality, even more unequal health risks will result.<sup>137</sup> Ensuring access to the environmental determinants of health-namely, clean air and water, safe sanitation and nutritious food-will provide essential protection against all health risks, not just those brought by COVID-19.138 Unequal access to safe drinking water and sanitation remains a major health issue for millions of poor people in Iraq and billions around the world,139 with particular implications for women. Given their central role in families and communities, they have a critical part to play in preparing for and adapting to imperatives for environmental sustainability and managing climate change.

The pandemic is precipitating a sharp rise in poverty. The rate of multidimensional poverty is expected to jump by as much as 50 percent, from 20 percent in 2017-2018 to 31.7 percent in 2020.<sup>140</sup> Young people, in particular, are being left behind, with youth employment rates badly lagging those of older Iraqis. Amid cascading environmental challenges and deteriorating agricultural conditions, rural youth might be the most underemployed population group. Rural farming communities in general, particularly in areas liberated from ISIL, are also struggling, and

the pandemic lockdowns and budget fallout will hurt them more than most. With even less state money, support for rural services, security and job prospects looks unlikely. In the short term, this will probably further accelerate migration to cities.

Over the long term, it is critical to deal with environmental problems such as desertification, water scarcity and environmental degradation. If left unchecked, these could further undermine the agricultural sector and imperil Iraq's food security, which could in turn fuel domestic instability.<sup>141</sup> Though the drivers of jihadism and non-state armed group recruitment are complicated, increasing poverty, resentment of the State, governmental chaos and environmental breakdown often provide ripe conditions for disorder. The resurgence of a new version of ISIL would be catastrophic for Iraq on many fronts, not least its environment.

# **5.5 Response, recovery and reconstruction**

In late December 2020, the Iraqi Government signed a preliminary deal to receive 1.5 million doses of the Pfizer-BioNTech vaccine, due to be delivered in early 2021.<sup>142</sup> Although the end of the pandemic is still a long way away, attention is beginning to turn to how to restart economic activity and foster recovery after the worst of the humanitarian phase of the crisis begins to recede. The Government is currently developing its post-COVID-19 national recovery plan.

Some commentators argue that the pandemic has given Iraqis a valuable lesson in how the country might look by 2040 or 2050, and thrown into sharp relief the need to 'reconfigure' it in line with a more economically and environmentally sustainable future.<sup>143</sup> Little Government-led action to address the direct and indirect environmental impacts of the pandemic is evident, however. Only some sporadic civil society efforts have sought to tackle COVID-19-related waste, such as by cleaning up hospital waste around Sulaymaniyah.<sup>144</sup> One significant institutional change on the horizon is a plan to split the Ministry of Health and Environment in two, setting up a self-standing Ministry of the Environment before the next election, slated for October 2021.<sup>145</sup> This would reverse a 2015 decision to cut 11 ministerial posts under former Prime Minister Haider al-Abadi.<sup>146</sup>

In October 2020, the Cabinet adopted the Iraqi Economic Reform plan<sup>147</sup> to address the budget deficit, create more fiscal space and put the federal budget on a more sustainable path. While environmental issues are not prominent in the plan, it does touch on water and waste, suggesting that service fees need to be improved for water supply and quality, and that solid waste can be converted into energy using eco-friendly technologies.<sup>148</sup>

The United Nations COVID-19 Socio-Economic Response Plan for Iraq was launched in August 2020. It includes supporting the Government to mainstream environmental sustainability across five pillars: health first, protecting people, economic response and recovery, social cohesion and community resilience, and macroeconomic response and multilateral collaboration. Annex 1 includes a summary of some of the ways that environmental issues intersect with these.

Currently, the Government is developing its COVID-19 National Recovery Plan, which makes environmental sustainability a cross-cutting issue and emphasizes the importance of a green recovery.



# 6. POLICY RECOMMENDATIONS

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The COVID-19 pandemic is a reminder of the strong connection between socioeconomic fragility and ecosystem health. Over the next months and years, there will be an understandable urgency to recover what the pandemic has taken from Iraq, boost the economy and government revenues, and create jobs. But if elements of recovery deepen Iraq's long-term environmental fragility, then this will not offer a sustainable solution but rather pose a cost deferred to future generations.

In Iraq, environmental priorities should include:

- Action on adaptation to climate change to strengthen resilience and support recovery.
- Diversification from reliance on oil and towards a sustainable energy economy that harnesses clean renewable energies.
- Improving water, waste and ecosystem management to reduce future risks.<sup>149</sup>

As plans are being formulated, it is critical that the recovery effort increase resilience to future crises by ensuring a healthy environment.<sup>150</sup> The list of priorities may be daunting, but the Government and international organizations should look to 'triage' these and define those that can be addressed over the next 12 months, and those that can be deferred to the medium to long term, from 2022 on.<sup>151</sup> For this to happen, sufficient resources will need to be made available, nationally and internationally.

### **6.1 Short-term policy recommendations**

**Mainstream environmental sustainability into recovery:** It is critical that the Government, with the support of international partners, mainstreams environmental sustainability throughout its recovery plan. There are many different ways to do this, but some particularly relevant ones include:

 Integrating solar solutions into recovery and stimulus plans to reduce energy costs and build economic resilience.

- 2. Harness nature-based solutions and waste recycling options as sources of new small and medium enterprise growth and livelihoods.
- 3. Mainstream decentralized water solutions and improved water conservation measures into recovery plans and investments; this should aim to address water access needs for regenerating livelihoods and social services such as health facilities and schools.
- Anchor special provisions in public policies to address the specific needs of displaced people and marginalized populations as groups disproportionately affected by environmental and health hazards.<sup>152</sup>

Secure international resources for environmental protection: With an extremely challenging financial outlook, the Government should prioritize efforts to secure additional international support through mechanisms such as the Green Climate Fund and the Global Environmental Fund that would support some environmental recovery work. For example, it could seek green funds for renewable energy.

- Mobilize public and private finance for debtfor-nature swaps or debt-for-climate swaps with lenders.
- 2. Encourage investments to enhance waste systems and local governance for safe management and disposal of medical and plastic waste.
- 3. Design capital injections into banks to promote the financing of climate-resilient recovery.

**Improve the management of solid and medical waste:** Even before the COVID-19 pandemic, Iraq lacked a framework for integrated solid and medical waste management. The Government should assess national waste management capacity to inform an integrated waste management system, particularly for hazardous waste. Implementing this would help reduce air and land pollution, generate decent jobs in the non-oil sector and contribute to non-renewable energy, thereby promoting sustainable production and consumption patterns.

# **6.2 Medium- to long-term policy recommendations.**

**Improve environmental governance:** A long-term structural issue is to improve the management of key natural resources in a transparent, sustainable manner. Ways to achieve this include the following:

- Foster dialogue and develop mechanisms to improve institutional cooperation at the national, governorate and municipal levels to address environmental mainstreaming across relevant policy domains.
- 2. Encourage greater civil society engagement in developing local initiatives to address environmental challenges.
- 3. Invest in the preparedness and capacities of environmental agencies.
- 4. Provide sufficient financial investment and capacity-building for environmental monitoring at the local level.
- 5. Enhance regulatory oversight at the national and municipal levels.

**Encourage climate-friendly, sustainable longterm growth:** The oil industry is a losing bet in Iraq. The pandemic provides an opportunity to double-down on the imperative to diversify away from reliance on oil revenues and promote a more sustainable, circular-economy approach. Doing this requires some bold steps:

- 1. Provide fiscal stimulus for renewable energy firms as new job-creators.
- 2. Integrate green energy conditions into fiscal stimulus to energy-intensive sectors like heavy industry, transport and construction.
- 3. Prioritize new investments in renewable energy solutions for community services for poor and displaced communities, and to power key services like water systems, communication services and waste management.
- 4. Promote a circular-economy approach that encourages reuse and recycling while

regenerating small and medium-sized enterprises and informal livelihoods.

**Bring back nature:** Nature-based solutions offer low-cost ways to generate jobs, provide clean water, improve disaster resilience and support biodiversity. Practically speaking, nature-based solutions can be integrated into recovery plans as follows:

- 1. Integrate biodiversity actions into stimulus packages for agriculture.
- Implement nature-based solutions to restore oases, marshlands and other ecosystems as a way of also restarting community livelihoods and building resilience.
- 3. Expand and support protected areas wherever possible as carbon sinks, and providers of ecosystem services and goods.

**Build community resilience:** The pandemic has powerfully demonstrated the importance of individual, community and national resilience to disasters and unforeseen shocks. The recovery plan should look to bolster multi-hazard resilience.

- Build the capacities of Iraqi institutions to deal with systemic multi-hazard risks, such as interlinked epidemics, disaster, conflict and food insecurity.
- 2. Integrate climate and disaster risks into capacity development in crisis management institutions.
- 3. Expand use of multidimensional risk assessments and early warning to inform integrated responses to climate, health and economic crises.
- Broaden use of adaptive social protection tools and weather-indexed insurance to climate proof recovered livelihoods.
- 5. Include women in decision-making, planning and implementation of all steps towards community resilience, considering their central role at the community level.

**Foster regional cooperation:** Effective cooperation and collaboration with Iraq's neighbours is crucial to stability and sustainability across the region. The Government and international partners should redouble efforts to sustain dialogue and cooperation with neighbouring riparian states on subregional approaches to water security and management, and reinforce efforts to engage neighbouring countries in dialogue and cooperation in managing the causes and consequences of dust storms.

### ANNEX 1: MAINSTREAMING THE ENVIRONMENT INTO COVID-19 RECOVERY

Excerpted from the United Nations Socio-Economic Response Plan for Iraq.<sup>153</sup>

UN framework	Environmental sustainability in crisis recovery			
Pinaro	Energy	Environment	Climate	
<b>1. Health First:</b> Protecting health services and systems during crisis	Address climate and disaster risks within health sector assessments and health system capacities and ensure safe management and disposal of expanding levels of medical and plastic waste	Safe management and disposal of medical and plastic wastes	Address climate and disaster risks within health sector assessments and health system capacities and ensure safe management and disposal of expanding levels of medical and plastic waste	
<b>2. Protecting</b> <b>People:</b> Social protection and basic services	Advice on enhancing energy subsidy policies to expand protection for those most in need, and enhance access to solar solutions for poor and IDP communities at particular risk from the pandemic and the economic crisis	Expand water access for people and ecosystems in the Socio-Ecological sites to increase resilience of people and prevent displacement/ migration and make people stick in their areas/ places. In addition, water is essential to increase species resilience at the sites	Building the resilience of people to climate risks (e.g. water management and sustainable energy) for environmental sustainability, food security, and community livelihoods	
3. Economic response & recovery: Protecting jobs, SMEs, and informal sector	Integrate solar solutions into recovery investments to help stabilize agricultural livelihoods and reduce energy costs through solar irrigation, enhance stability of electricity supply to MSMEs through decentralized solar technologies, and expand use of sustainable energy solutions for other key sectors in focus for the economic recovery	Advance nature-based solutions and waste recycling solutions as a source of new SME and informal sector livelihoods	Integrate climate resilience into national recovery plans and investments (agriculture, livelihoods, SMEs and informal sector). Support use of PDNA and Climate Impact Analysis tools in the recovery planning process	

UN framework pillars	Environmental sustainability in crisis recovery		
	Energy	Environment	Climate
4. Social cohesion and community resilience	Deploy locally tailored solar solutions for empowering community services such as schools, shelters, orphanages and CBOs	Nature-based solutions to restore oases (to support Bedouin community), marshlands, and other ecosystems as basis for restoring community livelihoods and resilience	Climate resilient agriculture for food security and community livelihoods, capacity development for national disaster/crisis agencies, and community early warning systems
5. Macroeconomic response and multilateral collaboration	Mobilize public and private finance to synergize investments under SDG 7 and accelerate use of sustainable energy for crisis recovery	Support integration of environmental solutions in new fiscal policies to emerge from the economic crisis, and explore Debt for Nature swaps to build fiscal resilience while restoring natural assets	Mobilize public and private finance to synergize climate investments with economic recovery measures, explore scope for debt for climate swaps with lenders, and help advance SDG 13 under Iraq's Vision 2030

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### **ENDNOTES**

- 1 Environmental sustainability is defined as "the responsible interaction with the environment to avoid depletion or degradation of natural resources, and allow for long term environmental quality, thereby also ensuring that future generations have the natural resources available to live an equal, if not better, way of life as current generations." United Nations World Commission on Environment and Development 1987.
- 2 WWF 2020.
- 3 UNDP 2020e.
- 4 McGlade et al. 2020.
- 5 Ibid.
- 6 UNDP 2020e.
- 7 Ibid.
- 8 Naidoo and Fisher 2020.
- 9 UNDP 2020a.
- 10 UNESCWA 2020.
- 11 Ibid.
- 12 Gardiner 2020.
- 13 UNEP 2020a.
- 14 Rume and Didar-UI Islam 2020.
- 15 Nabi et al. 2020.
- 16 Rume and Didar-UI Islam 2020.
- 17 UNDP 2020a.
- 18 Rume and Didar-UI Islam 2020.
- 19 World Economic Forum 2020.
- 20 Gardiner 2020.
- 21 For some examples, see United States: apnews.com/article/3bf753f9036e7d88f4746b1a36c1ddc4: Indonesia: news.mongabay.com/2020/04/indonesiaparliament-dpr-omnibus-bill-mining-covid19/; India: bloomberg.com/news/articles/2020-09-08/modi-overhaul-of-green-rules-sparks-fears-of-return-togrim-past; and Brazil: reuters.com/article/brazil-politics-environment/brazil-minister-calls-for-environmental-deregulation-while-public-distracted-by-covididUSL1N2D429B.
- 22 Gardiner 2020; Bloomberg 2020.
- 23 Gardiner 2020.
- 24 UNDP 2020g.
- 25 UNDESA 2020.
- 26 UNSDG 2020.
- 27 Ibid.
- 28 The calculation is made on the basis of equivalent numbers of work years lost across the population rather than an absolute number of people who have lost their jobs as a result of the pandemic.
- 29 This takes the overall number of people living in poverty in the Arab region to more than 115 million people, or 25 percent of the entire population. UNSDG 2020.
- 30 Ibid.
- 31 Ibid.
- 32 UNDP 2020a.
- 33 Guterres 2020.
- 34 Gardiner 2020.
- 35 WWF 2020.
- 36 McGlade et al. 2020.
- 37 UNDP 2020e.
- 38 UNSDG 2020.
- 39 Ibid.
- 40 Gardiner 2020.
- 41 Iraq 2019.
- 42 World Bank 2017.
- 43 Netherlands 2018.
- 44 A country's ND-GAIN index score is composed of a vulnerability score and a readiness score. Vulnerability measures a country's exposure, sensitivity and ability to adapt to the negative impacts of climate change. ND-GAIN measures overall vulnerability by considering vulnerability in six life-supporting sectors—food, water, health, ecosystem services, human habitat and infrastructure. Readiness measures a country's ability to leverage investments and convert them to adaptation actions by looking at the country's economic, governance and social readiness. See the ND-GAIN Country Index at: gain-new.crc.nd.edu/ranking.
- 45 lraq 2015.
- 46 Price 2018.
- 47 Ibid
- 48 Iraq 2016.
- 49 Alwash et al. 2018.

- 50 Ibid.
- 51 lbid.
- 52 Al-Ansari 2013.
- 53 Clingendael 2018.
- 54 USAID 2017.
- 55 Al-Ansari 2013.
- 56 World Bank 2020.
- 57 WHO 2020.
- 58 Ibid.
- 59 Netherlands 2018.
- 60 United Nations Joint Analysis and Policy Unit 2018.
- 61 Middle East Institute 2016.
- 62 Farzaa, Dunn and Whittingham 2018.
- 63 Salih, Ismail and Abd Hamid 2018.
- 64 IUCN 2020.
- 65 National Geographic 2017.
- 66 UNDP 2020h
- 67 Abdulkadhim, Hilal Md Dahlan and Rahman 2017.
- 68 Saadi 2020.
- 69 Rubin and Krauss 2020.
- 70 Saadi 2020.
- WHO 2020. 71
- 72 Ibid.
- 73 Amnesty International 2018.
- 74 Björnham et al. 2017.
- 75 United Nations Environment Assembly 2018.
- 76 UNEP 2019.
- 77 UNDP 2020b.
- 78 GFF 2019.
- 79 Berdikeeva 2019.
- 80 Hashim, Sultan et al. 2020.
- 81 Author interview.
- 82 Hassan 2020.
- 83 Minority Rights Group International 2019.
- 84 Environmental Justice Atlas 2020.
- 85 Hussein 2017.
- 86 UNDP 2020a.
- World Bank governorate poverty rate studies. See: https://www.worldbank.org/en/country/iraq/overview. 87
- 88 El Daha 2018.
- 89 Iraq is planning to submit two NDCs between 2020 and 2030.
- 90 UNEP 2020c.
- 91 Salih 2020.
- 92 JICA 2016.
- 93 Clingendael 2018.
- 94 World Bank 2020.
- 95 Ibid.
- 96 Manisera 2019.
- 97 Al Jazeera 2020, Daijiworld.com 2020.
- 98 Jebril 2020.
- 99 In Iraq, as of 13 February 2021, there were 639,438 confirmed cases of COVID-19 with 13,057 deaths. See the WHO COVID Tracker 2021 at: https://covid19.who.int/ region/emro/country/iq.
- 100 UNDP 2020c.
- 101 Author's interviews.
- 102 UNEP 2020a
- 103 Author's interview.
- 104 lbid.
- 105 Jebril 2020; Hashim, Al-Naseri et al. 2020. 106 Jebril 2020.
- 107 Hashim, Al-Naseri et al. 2020
- 108 Han et al. 2011. 109 Hashim, Al-Naseri et al. 2020
- 110 Author's interview.
- 111 United Nations 2020

- 112 Author's interview, Jebril 2020.
- 113 Author's interview.
- 114 Ibid.
- 115 Ibid.
- 116 UNDP 2020b.
- 117 Schwartzstein 2019.
- 118 Pax 2020.
- 119 Schwartzstein 2020.
- 120 UNDP 2020c.
- 121 Katona 2020.
- 122 Author's interview.
- 123 UNDP 2020c.
- 124 Y Charts, "Iraq Crude Oil Production," see: ycharts.com/indicators/iraq\_crude\_oil\_production.
- 125 Iraq's premium Basrah Light sold for a high of \$74.60 per barrel at the beginning of January 2020, only to drop to \$20.59 per barrel in April, before recovering to a range of \$40 to \$55 since May. See: oilprice.com/freewidgets/get\_oilprices\_chart/4187.
- 126 Sowell 2020.
- 127 UNDP 2020c.
- 128 Sowell 2020.
- 129 Author's interview.
- 130 UNDP 2020b.
- 131 Salih 2020.
- 132 Reuters 2020.
- 133 Author's interview.
- 134 National Geographic 2018.
- 135 Al Jazeera 2020.
- 136 UNSDG 2020.
- 137 UNDP 2020c.
- 138 Ibid.
- 139 The Lancet 2020.
- 140 UNICEF and World Bank 2020.
- 141 United Nations 2020.
- 142 Al-Monitor 2020.
- 143 Author's interview.
- 144 Ibid.
- 145 lbid.
- 146 Reuters 2015.
- 147 Iraq 2020.
- 148 Ibid.
- 149 UNEP 2020b.
- 150 lbid.
- 151 These recommendations draw heavily on the excellent suggestions made in UNSDG 2020 and United Nations 2020.
- 152 UNDP 2020c.
- 153 United Nations 2020.



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