
Fighting A Chemical War

The Environmental
Impact of War on Iraq
and Its Neighboring
Regions

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The Middle East is undoubtedly the most troubled region in the world. War has plagued this area for several years causing devastation on many levels. One country in particular that has been hit the hardest from war is Iraq, and the surrounding countries have felt the aftermath of both Gulf Wars. The human casualties alone are the most devastating of losses for all countries involved. Families have been torn apart; livelihoods have been completely shattered. Along with the personal tragedies, there has been a tremendous impact on the economic and social structure of Iraq. It is very easy and obvious to focus on the immediate and current impacts that war can inflict on a region. However, there are several consequences of war that go under the radar of the media and the people of the region. The environmental impact of the war is one that should be examined very closely; the implications of what has happened to the country of Iraq environmentally are crucial to current and future generations of Iraqis. This research report seeks to investigate how exactly the Gulf War has affected the environment of Iraq, and also on a more broad scale, how it has affected neighboring countries. Even when the war is over and troops have completely left the area, all the environmental damage will still be there to cause future havoc on the citizens of Iraq.

It is important to note that complete details and statistics on this subject about this topic are a bit scarce due to very few people willing to openly talk to the media about the extent of the damage that was done. There have been many cases of cover-ups and resistance from government officials to discuss the environmental crisis.

To fully investigate the environmental impact, it is important to understand the background and some of the war tactics that were used on both sides of those engaging in war. It all truly started with the first Gulf War also known as "Desert Storm" in 1990. The two main forces at war were Iraq and Kuwait. Iraq was unhappy with Kuwait because they refused to forgive a monetary debt that Iraq owed them. Also, Iraq accused Kuwait of causing the financial crisis that had impacted the Middle East at the time by exceeding OPEC quotas, which in turn, drove down the prices of oil. There are several other smaller issues that fueled the fire between these two nations, but it essentially started with these two issues. Iraq decided to take military action and sent troops into Kuwait, and thus started the first Gulf War.

The second Gulf war, referred to as Operation Iraqi Freedom, started in March of 2003. The primary goal of this war was to seek and destruct weapons of mass destruction that the U.S. thought Iraq to possess. Also, it was widely suspected that Iraq was harboring and supporting Al-Qaeda. The invasion eventually led to the capture of President Saddam Hussein and the military takeover of the country. Many of the same tactics that were used in the first war were also used in this war. With the country hardly recovered from the first war, the environmental implications were vast when the second war was embarked.

The first war saw several tactics that were an enormous mess to the environment. The one most commonly used was burning of oil. During the entirety of the war, about 600 oil wells were set on fire. This was typically done by placing mines near the control and safety valves of the wells, and then detonating the mines. Along with setting the oil wells ablaze; an additional 200 oil wells, refineries, storage tanks, and other oil facilities had been blown up. It was clearly a tactic to destroy the very source of Iraq's problems with Kuwait. The environmental effects of this were a nightmare. About a 100 wells worth of oil flowed into the desert and created oil lakes. It is estimated by official Kuwaiti

sources that about six million barrels flowed through the wells when they were all on fire. It was projected that it would take 4-5 years to put out these oil fires. 210 of the oil producing wells were in the Burgan field, which is the second largest oil field in the world. There are 71 wells in the Magwa field, and 41 in the Raudhanian field. Because there is such a high concentration of oil wells in these fields, it was very difficult to put out these fires because of potential re-ignition problems. (Barnaby)

The repercussions of these oil fires on the environment were huge. Oil wells will release three fluids when set ablaze: water, gas, and crude oil.

“Kuwaiti crude oil is a light black oil, containing 2.44 percent sulphur. A burning rate of three million barrels a day amounts to the daily combustion of 430,000 tons of crude oil. This injects about 25,000 tons of smoke into the atmosphere each day, together with 10,200 tons of sulphur dioxide, 2,550 tons of nitrogen oxide, 42,840 tons of carbon monoxide, and 285,600 tons of carbon dioxide. About 600 cubic feet of methane are released per barrel of oil. Some of the oil fires are belching out thick clouds of black smoke, others white clouds of steam, and a few, burning mainly methane, have clean flames” (Barnaby)

It is quite clear that these oil fires were producing and releasing very hazardous gases into the air that the inhabitants of the area breathe. Scientists from the British Meteorological Office were sent into Kuwait to investigate the composition of the black smoke being produced by the oil well fires. The results were quite alarming.

“Jenkins and his team found that the most polluted area in the plume was 100 kilometres from Kuwait at an altitude of 2,000 metres. Here the scientists found concentrations of about 1,000 parts per billion (ppb) of sulphur dioxide, 50 ppb of nitrogen oxides, and 30,000 particles of pollution dust per cubic centimetre...Levels of sunlight are reduced almost to zero.” (Barnaby)

Another environmental disaster that was created due to war is oil spills. It is estimated that between 2.5 and 3 million barrels were purposely and accidentally spilled into the waters of the Gulf, however the numbers could be as high as four million. To understand the effects of an oil spill on the environment it is important to understand what exactly happens with an oil spill into water.

“The processes undergone by oil spilled into the sea has been described as follows: spreading and drifting, evaporation, bio-degradation, photo-chemical oxidation, sedimentation on the sea floor, absorption, penetration, and migration onto beaches. The most volatile components of the oil (mainly benzene, toluene, and xylene) soon evaporate so that the density and viscosity of the oil increases” (Barnaby)

With this being said, one can imagine that the Gulf waters are heavily polluted with contaminants after oil spills of this nature. To make matters worse, the Gulf was already heavily polluted with untreated sewage, industrial wastes, discharges from desalination plants, and previous oil spills. Because the Gulf has very little place to outflow to, it's very difficult for the oil to flush out, and therefore the Gulf will unfortunately see long-lasting impacts of this pollution. This pollution has threatened the fisheries that are contained in the Gulf. There are thousands in the Arab population that are dependent on these fisheries for their livelihood. Besides the fish life, there are other species of animals that have been negatively affected by these heavy levels of pollution, like dugongs, dolphins, green and hawksbill turtles, and several species of birds. In fact, it has been determined that over two million birds flock to the Gulf in the winter to essentially feed and breed. Within the first month after oil spills occurred due to war, over 20,000 birds were killed due to this contamination. (Barnaby)

It is predicted that the worst long-term effect of polluted waters is the ruining of oxygen-producing plants and algae located on the sea-bed, which in turn can ruin complete ecosystems. The areas along the coast contain the most sensitive ecosystems that are especially dependent on sea-grasses, coral reefs and mangroves.

It was not just the waters of the region that were affected by the Gulf War. The deserts were under huge impact as well; unfortunately it did not receive very much attention. The vast activities of the military affected the surface of the desert so much that the rates of sand storms are likely to double, as predicted by Egyptian geologist Farouk Al-Baz. (Barnaby) In turn, this could potentially create devastating sand dunes that can eat into roads and towns.

There was a large amount of “carpet-bombing” by coalition aircraft which severely impacted desert surfaces and farm land containing vegetation. The use of heavy armored vehicles and bulldozers to make trenches and anti-tank barriers also impacted these areas. Al-Baz predicts that the long-term effects of the desert damage may be more severe than damage that has been done to the Gulf waters.

The Persian Gulf War gave way to several environmental suggestions when Iraq went to war again. Birdlife International Inc. created a report documenting all possible threats to the environment if war is to be engaged. This report was distributed to Iraq, select members of the United National Security Council, and the United Nations Environment Program. As mentioned earlier, the report stated that Iraq was home to one of the major bird feeding and breeding areas in the world when winter migration takes place. Iraq is also home to many rare species of animals such as the Basra reed warbler. The degradation of these areas due to war could definitely lead to the extinction of these species and ruin migrating patterns of animals who depend on these areas during the winter. The report went on to state that since the Persian Gulf War there has also been much damage done to the marshlands in these areas, which unfortunately led to the extinction of the bandicoot rat and a subspecies of the otter. (Riyaz)

The wildlife was and is an unfortunate innocent bystander to the activities of war. As with any war, there were horrible casualties of warfare activities. However, nothing could prepare the country of Iraq for the environmental damage that was about to be done due to chemical warfare.

Another war tactic that was used in the 1991 and 2003 invasion was the use of depleted uranium (DU). Depleted uranium is the waste byproduct of the enrichment of uranium. DU was used to construct armor-piercing shells that were deployed onto enemy vehicles by the United States. The shell cuts into an army tank and combusts into a huge ball of fire. It also leaves behind a radioactive dust that has a half life of 4.5 billion years. The 1991 invasion was the first time that this specific nuclear weapon was ever used. In “Message from the Assistant Secretary of Defense for Health Affairs”, William Winkenwerder stated that there was no health risks associated with depleted uranium. (Secretary General of United Nations) However, in September of 2009, a British jury decided that it was depleted uranium exposures in 1991 that led to the eventual death of Stuart Dyson, a British veteran, in June 2008. (IRIN Humanitarian News and Analysis) Depleted uranium can enter the human body through ingestion, inhalation, or exposure to skin. It can pollute soil and water and leave a coating of radioactive dust on buildings. Even more devastating is that sandstorms and wind can carry this dust further encouraging contamination from region to region. This has a devastating effect on the health of the people of living in Iraq.

In a report put out by the United Nations entitled "Observance of Environmental Norms in the Drafting and Implementation of Agreements on Disarmament and Arms Control" The report discussed how depleted uranium firstly effect the kidneys, liver, immune system, and reproductive system. In a study conducted at the University of Tennessee entitled "*In Vitro* Immune Toxicity of Depleted Uranium: Effects on Murine Macrophages, CD4⁺ T Cells, and Gene Expression Profiles", researchers looked at the effects of depleted uranium toxicity on the immune system. In order to do this, they specifically looked the influences DU had on immune function, cytokine gene expression in macrophages and splenic CD4⁺ T cells. The results are as follows, quoted directly from the study's abstract:

"DU cytotoxicity in both cell types was concentration dependent, with macrophage apoptosis and necrosis occurring within 24 hr at 100 μ M DU exposure, whereas CD4⁺ T cells underwent cell death at 500 μ M DU exposure. Noncytotoxic concentrations for macrophages and CD4⁺ T cells were determined as 50 and 100 μ M, respectively. Lymphoproliferation analysis indicated that macrophage accessory cell function was altered with 200 μ M DU after exposure times as short as 2 hr. Microarray and real-time reverse-transcriptase polymerase chain reaction analyses revealed that DU alters gene expression patterns in both cell types. The most differentially expressed genes were related to signal transduction, such as *c-jun*, *NF- κ Bp65*, neurotrophic factors (e.g., *Mdk*), chemokine and chemokine receptors (e.g., *TECK/CCL25*), and interleukins such as *IL-10* and *IL-5*, indicating a possible involvement of DU in cancer development, autoimmune diseases, and T helper 2 polarization of T cells." (Fleming, Schultz and Sayler)

The bottom line result from these findings is that there may be a way to detect depleted uranium toxicity through molecular targets. Another result is that this may be able to help clearly map out the direct effects on the molecular mechanisms of immune system changes due to depleted uranium. These findings may have the potential to investigate what could potentially happen to Iraqi citizens in the long-term after exposures to depleted uranium.

Reports from the U.S. Department of Defense estimate that about 326, 000 pounds of depleted uranium were used against Iraqi forces, which was equivalent to 780,000 rounds. The medical problems that were witnessed in Iraq were seen heavily in the southern part of the country which was the main focal points of depleted uranium operations. In just the first year after depleted uranium was used, there were 50,000 deaths in children that occurred due to many diseases caused by depleted uranium; the most notable was leukemia. The levels were so high that even the foreign military developed many of the same diseases seen in Iraqi civilians. Recently, information has become available that reveals that the U.S. Forces have depleted uranium equipment buried in Kuwait. It was also discovered recently that U.S. and British forces are storing depleted uranium at their bases located in the Arabian Gulf. If action is not taken to rid of these sources of depleted uranium, this could further add to the environmental problem facing residential areas in the region.

In a study conducted in Basra, researchers concluded that war remnants had become the leading cause of cancer in the area. There was a sudden increase in the number of cases of leukemia reported between the years 2001 and 2008. It was shown that there were sharply increased levels of uranium in the soil of Basra. They found 10,000 becquerels per kilogram of soil, which is a dramatic increase from the levels of 60-70 becquerels per kilogram that were previously found in the soil in 1991. Eating food that is grown in this soil or even just the mere daily exposure to the soil is enough to cause health problems for the people of the region.

In a region in Iraq called Southern Demilitarized Zone, which is 11 miles north of the Kuwaiti border, Iraqi doctors have seen a sharp increase in cancer cases and birth defects in this particular

region, which was hit very hard with war pollutants during the peak of the war. Depleted uranium was especially heavily used in this region during the war. The most tragic result of depleted uranium seen in these areas has been the increased number of birth defects, many of them leading to death. "...in 1989 there were 11 per 100,000 births; in 2001 there were 116 per 100,000 births -- that even before they heard about DU, had doctors in southern Iraq making comparisons to the birth defects that followed the atomic bombings of Hiroshima and Nagasaki in WWII." (Johnson) The birth defects ranged from infants born without brains, born without sexual organs, born without spines, and having their organs outside their bodies. Cases of cancer dramatically increased in this area. The number of deaths increased from 34 in 1988 to 450 in 1998 to 603 in 2001. Specifically, cases of leukemia in children significantly increased according to hospital records of Saddam Teaching Hospital. Unfortunately, very few of these children live due to the fact that these hospitals do not have proper medicines to treat the children. (Johnson)

The city of Fallujah has seen recent spikes in the number of birth defects from the use of depleted uranium and another tactic of biological warfare, white phosphorous. White phosphorous is a chemical material commonly used in warfare for anti-personnel weaponry. Upon impact it will burst into toxic burning flakes of phosphorous. These two tactics were heavily used when U.S. forces were trying to enter Fallujah, and the effects can vividly be seen throughout the city. According to records from the Fallujah Hospital, the number of birth defects is 15 times greater than numbers seen just one year ago. Defects include nervous system anomalies, missing limbs, multiple tumors and heart problems. This statistic is absolutely staggering and a testament to the damage done by combinations of chemical warfare. Because the half life of depleted uranium is 4.5 billion years, it has officially entered the life cycle of not only Fallujah, but of the entire country of Iraq. These similar types of defects were also seen in other cities such as Baghdad, Najaf, and Babylon and these defects all started around the same time in all of these cities. However, the levels in Fallujah are the highest of these cities. The chemicals that have been used against the city have contaminated much of the water and land of Fallujah to the extent that the government has told the women of Fallujah to stop having children until it is considered safe to do so. The impacts are not only immediate but they are also in the making. It has been predicted that over 500,000 desert Iraqis will die due to chemical remnants left behind in the desert by the end of the century. If the numbers are this high for the desert regions of the country, it is frightening to think of the potential numbers for the more developed cities. (Al-Durraji and Jamail)

As briefly mentioned earlier, white phosphorous (WP) was another chemical agent used in the war which caused and is still causing much damage to the environment of Iraq. It is commonly used for illumination. The U.S. military claimed that it was used against combatants and not civilians. However, it has ended up severely impacting civilians anyways. When white phosphorous hits human skin the burns it causes are very deep and severely painful. No matter how white phosphorous is taken into the body; it can cause liver, heart and kidney damage. There are also many cases reported where it caused multiple organ failure. What is so physiologically threatening is that when white phosphorous hits bare skin, it continues to burn until it is gone...this means that it could potentially burn all the way down to the bone. The only way to prevent steady burning of this nature is to deprive the chemical of atmospheric oxygen. Early symptoms of systemic intoxication of white phosphorous include jaundice, abdominal pain, and breath having a garlic-like odor. Prolonged exposure could cause anemia, cachexia, and necrosis of the maxilla and mandible bone, which is commonly referred to as "phossy jaw". Phossy jaw includes a sequestrum forming in the bone with a yellow to brown color. It is

osteoporotic and decalcified, but it is released anywhere from weeks to months later after exposure. White phosphorous has the ability to completely destroy bones, because it is a hepatotoxin. Other symptoms and signs of WP exposure include irritation of eyes and respiratory tract, nausea, anemia, and skin and eye burns. White phosphorous has a severe effect on the mouth and nose regions of the body. Oral mucousa may become very red in color. There may be intense toothaches and excess salivation. Teeth may also become loose followed by pain and swelling of the jaw. However, in the long term, if exposure is severe and constant over a long period of time, death or fatal illness is high in probability. (<http://www.GlobalSecurity.org>)

The populations that are at the highest risk are those belonging to cities where there was intense fighting and cities that were victims of an American/British siege. This would include the cities of Fallujah, Basra, and Demilitarized Zone, just to name a few. The irony is that because the military knows of exactly where they struck and with what chemical weapon, they actually would have the best knowledge of which specific populations are most vulnerable. It is obvious that children are at the highest risk because they are just not fully aware of what to look out for and what to avoid. Furthermore, the immune system of a child is not as developed as one of an adult. Also, many children become sick because they play with the ammunition and tanks that are leftover from war and never cleaned up. It is impossible to pinpoint one vulnerable population; anyone who drinks the water, breathes the air, eats plants grown in the soil, etc. will be vulnerable.

After all the studies, research, and reports have been done...the real task at hand becomes apparent. What can be done to solve these environmental problems the country faces? Sadly, very little has been written or reported about what exactly needs to be done to eradicate these problems. Unfortunately, before anything on the ground level can be done, much needs to be handled politically and militarily first. Much focus has been placed on these aspects as opposed to environmental clean-up but it is apparent from the research that has been done that they go hand-in-hand. It is clear that there needs to be intense involvement from the United Nations, and that Iraq should be declared a country in crisis. There are several NGO's and corporations that have provided aid in whatever way is possible. The European Commission has made efforts to provide financial aid to what they consider to be vulnerable populations in Iraq. They have provided aid in all aspects of rebuilding the country, including healthcare. Overall between the years of 1992-2003, the European Commission Humanitarian Aid Office (ECHO) has provided 157 million Euros worth of aid. In terms of healthcare, ECHO's goal is to increase access to healthcare and facilitate disease surveillance. "Activities will include rehabilitation of primary health centres, provision of medical equipment and drugs, support to mother and child health, promotion of safe transfusion programmes and support to development of accurate health information systems. An estimated 1.5 million people are expected to benefit from these activities." (European Union) Contributions like these will certainly help in any kind of rebuilding that can take place. There are other certain steps that need to be taken to try to lessen the burden on the people living in Iraq. First and foremost, any and all sources of depleted uranium and white phosphorus need to be eliminated from the country. This includes all armor and warfare, tanks, ammunition, guns, debris, etc. Any remnants from warfare must be eliminated, and this includes anything that may be buried underground as well, as this severely impacts the soil. The U.S. and British military are in possession of records which show their military strategies in certain parts of the country, and this includes what chemical weapons were used where. This can be very helpful in starting the clean-up of the country. Because the United States has occupancy, it really is up to the U.S. forces to initiate efforts to clean the environment. Also, it is extremely critical for U.S. forces to educate the people of Iraq on the environmental hazards they may see around them, and also attempt to get them involved in the clean-up as much as possible. It is important to note that clean-up does not just mean removal of war

leftovers. For example, the city of Fallujah needs a complete clean-up of practically every aspect of the city, including water, sewerage, soil, and the air. Besides depleted uranium, any sources of white phosphorous need to be eliminated as well, in the same manner. The process of removing white phosphorous and depleted uranium is very tricky because it is manifested as a dust that at this point. It has probably left a coating on everything in its path. It will require very expensive, state-of-the-art equipment to detect and remove the dust.

Dr. Muhammad Tariq Durraji is the Director of the Monitoring Net of Human Rights in Iraq and also President of the Conservation Center of Environmental and Reserves in Fallujah. In 2008, he wrote a report entitled "Prohibited Weapons Crisis" where he documents statistics on Fallujah's environmental crisis and how it is impacting the state of public health in Fallujah. Based on these findings, Dr. Durraji made it quite clear what needs to be done in Fallujah. His recommendations are quoted directly from the report as follows:

1. UN agencies like WHO and UNEP should do their responsibilities toward this disaster in Fallujah depending on the mission of their agencies with this pollution.
2. US army must stop all irregular instructions like using marine's card to Fallujah people for entrance or exiting city and stop all the military actions against civilians to allow a freedom to arrive to hospital after succeed of Fallujah police to return the security in city.
3. The important of considering a Fallujah city with all 650.000 habitants are under disaster situation and as catastrophic city like Japan's cities (Hiroshima and Nagasaki) to allow of international sides to participating for clean up the city from all pollution sources and providing hospitals with all their needs as first step and to continue this steps with another Iraqi cities suffering from huge pollution.
4. The children were main victims of these pollution, therefore international community should start new campaign to help the children illnesses until return the assistance ability of Iraqi medical hospitals to treatment these cases.
5. The international community should help to return the normal life of this city to help civilians for reconstructions all the necessary needs for motivation the economy sides as second step after clean up all pollution sources and help the victims.

A very important point to note from Dr. Durraji's report is that there is a lack of international help towards a crisis that is affecting thousands of children. It will take international aid to be able to bring Iraq's health problems back to somewhat normalcy. (Al-Darraji)

There are several other internal situations that may not have directly caused these health problems but they have certainly catapulted them into further crisis. One problem that has a huge impact on these environmental problems is the failing healthcare system in Iraq. Dahr Jamail is an embedded journalist who wrote a report entitled "Iraqi Hospitals Ailing Under Occupation." Jamail discusses the impact war has had on the hospitals and how this in turn, has perpetuated many health problems. There are not many hospitals that are operational in Iraq. Of those that are operational, there is a severe shortage of equipment and medicine. This has been a result of several different things. Jamail's report revealed that many Iraqi doctors felt that it has been the U.S. military that has contributed to the lack of assistance received by healthcare professionals. International aid has been somewhat stifled since the attack of the UN office in 2003. Since the attack, security has been extra tight with very little allowance for aid into the country. Aid agencies and NGO's based in Iraq either downgraded or pulled the plug entirely on aid activities. The deputy Minister of Health of Iraq, Dr. Amer Al-Khuzai, claims that U.S. coalition forces have not provided the funds that the Ministry has requested to provide these healthcare needs. It should be noted that the Iraqi Ministry of Health is under U.S. funding. Besides financial issues, another key problem is that foreign contractors have been brought in to attempt to rebuild Iraq's healthcare facilities. The U.S. coalition authorities in Iraq will not allow any Iraqi contractors to handle any rebuilding projects. So a problem arises when foreigners are brought in to try to rebuild an infrastructure they know nothing about. Sadly, the result is stalled and unfinished projects. (Jamail)

It also seems clear that problems the Ministry is having with U.S. forces is creating a domino effect and turning into problems the Ministry is having with the Iraqi people. The Ministry of Health in Iraq has contributed to much of the ailing woes of the Iraqi people. According to Dr. Aisha Mohammad, a physician in Baghdad, they were told in their hospitals not to aid the people of Fallujah following the November siege. (Jamail)

The amount of official research that has been done on this growing problem is quite scarce given the enormous amount of people and populations that have been affected. Probably the biggest reason why research is scarce is due to security issues. First off, security is very tight in terms of who can enter and leave the city. For anyone who would want to conduct research in Fallujah, for example, it would be very difficult to even enter the city to conduct any kind of questioning and/or investigation. Secondly, the U.S. forces that are in control of parts of Iraq are VERY conscious of giving any kind of information to anybody. Deriving information mainly comes from interviews with the people themselves. The problem is that U.S. forces are suspicious of any Iraqi citizens conducting any investigation, but the Iraqi people are equally suspicious of Americans doing the very same thing. In this kind of hostile, untrustworthy atmosphere, it is difficult to conduct accurate research. There are several specific issues where intense research needs to be done. It is important to determine which cities are severely impacted by chemical warfare. This should include all the small cities, not just the major ones. Also, ALL cases of any health problems need to be reported. At the moment, it is highly unlikely that any statistic is 100% accurate. Most health statistics are provided by a hospital based on treatment in their own hospital or in their own region. However, there are thousands that have health issues that can never make it to a hospital. These are the cases that are critical to capture for analysis. Another issue that seemed to be lacking in research was if these chemicals have/had caused any kind of genetic deformation, even down to the most miniscule defect in chromosomal structure. As elaborated earlier, there has been some research done on the impact of the immune system and some level of gene

expression; it is critical to explore all levels of gene expression affecting all parts of the body. This could be the most potentially devastating impact of the Gulf Wars. If there has been any genetic damage then it could be passed down from generation to generation, eventually becoming part of the Iraqi genetic life cycle. Ideally, a team of doctors and nurses from around the world take on this research challenge. As addressed earlier, the healthcare system is downright failing at a rapid rate throughout the entire country of Iraq. There is a desperate need for research as to how the healthcare system can be fixed and what are the most efficient methods of providing healthcare to this type of population. Providing healthcare to a population that is already somewhat healthy is a huge contrast to providing healthcare to a population that predominately sick. This subject is lacking in any valid research and needs to be addressed by the international public health community. The biggest roadblock standing in the way of overcoming the healthcare crisis is beyond the subject of healthcare; it involves political and socioeconomic restructuring first.

In conclusion, it is quite apparent that the country of Iraq is in a state of crisis due to the poor state of its environment. The decade of war that has inflicted this country has impacted the wildlife, the people, the children, and potentially, future generations to come. Last year, The World Health Organization declared that Baghdad will have a health emergency if the current problems continue, and this warning also goes for the entire country. There are several ideas on how to solve the problems, however, nothing on the healthcare front can truly be accomplished until things are stable politically and there can be a steady stream of relief income into the country. It will take a global effort to help pull Iraq out of its health crisis. One can only hope that strides can be made and that future generations can be saved from chemical warfare when warfare has long ceased.

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