

# National and International Efforts to Confront Environmental Changes in Iraq: A Survey

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## Abstract

*This study focuses on the environmental changes that have occurred in Iraq and disrupted its ecological balance, rendering it a deteriorating environment. These changes have manifested themselves clearly in the form of drought, desertification, pollution, and rising temperatures. This has necessitated concerted national and international efforts to address these changes and save Iraq and its environment from the effects of these environmental changes on Iraqi society, the deteriorating Iraqi economy, and the fragile political and security situation. The study is based on the hypothesis that "the national and international efforts made to address environmental changes in Iraq are not commensurate with the magnitude of the changes sweeping Iraq". The study proves its hypothesis by relying on the systems analysis approach. The study aims to investigate the efforts being made to address environmental changes in Iraq. The most prominent findings of the study are the existence of timid national and international efforts to address environmental changes in Iraq that are not commensurate with the magnitude of the environmental changes in Iraq.*

**Keywords:** Environment, Environmental Changes, Iraq, Desertification, Drought, Pollution, Civil Society Organizations.

## INTRODUCTION

The changes sweeping the Earth have found their way to Iraq, and Iraq has had its share of these changes. The Land of the Two Rivers, the Land of Mesopotamia, this part of the world that had its geographical diversity from mountainous areas, alluvial plains, desert plateaus, and unique geographical areas represented by the marshes that are described as the Garden of Eden, the land of the hanging gardens, and this country that is considered part of the Fertile Crescent has been swept by desertification and drought. Large parts of this country have turned into barren land, and temperatures have begun to reach 55 degrees Celsius in the summer.

A country whose environment has become dilapidated due to global environmental changes that have affected this country more than others due to wrong environmental practices in the country, whether at the state level or at the people's level and even at the international level, and these changes appeared more evident in Iraq than in any other country, as the United States. Iraq has given signs of the beginning of an era of boiling in the world. Iraq has begun to die and its civilization is threatened with collapse, just like ancient civilizations. This requires real efforts by the Iraqi state, the international community, and civil society inside Iraq.

## Study Objectives

To clarify the manifestations of environmental changes sweeping Iraq

To investigate the efforts being made to address environmental changes in Iraq

## Research Problem

The research problem stems from a central question: Are there efforts to contain or adapt to environmental changes in Iraq? Several sub-questions arise from this question, as follows:

Are there efforts being made by Iraq at the official and unofficial levels to address environmental changes?

Is there a role for the international community in addressing environmental changes in Iraq?

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How do Iraqi civil society organizations contribute to addressing environmental changes in Iraq?

## **Hypothesis**

The national and international efforts made to address environmental changes in Iraq are not commensurate with the magnitude of the environmental changes sweeping Iraq.

## **Methodology**

The systems analysis approach was used based on the existence of the three elements (inputs, outputs, and feedback). The inputs were the environmental changes sweeping Iraq, the outputs were the international and national efforts to address environmental changes in Iraq, and the feedback was the extent of the effectiveness of these national and international efforts in influencing environmental changes in Iraq negatively

or positively.

## **Structure**

This research is divided into two chapters in addition to the introduction and conclusion. The first chapter deals with the manifestations of environmental changes in Iraq, and the second chapter deals with the efforts made to address environmental changes in Iraq.

## **Chapter One : Manifestations of Environmental Changes in Iraq**

Environmental changes in Iraq have taken on diverse and multifaceted forms as a result of a combination of natural, political, and human factors that have either reinforced or intertwined with each other, giving these changes a multiplied impact on life and society in Iraq. Among the most prominent of these manifestations, the following can be identified:

### **Rising Temperatures**

Rising temperatures are one of the most tangible manifestations of environmental changes in Iraq. According to a 2019 report by the United Nations Development Program, Iraq has suffered an average temperature increase of 1.5 degrees Celsius over the past decade, which increases the risk of Iraqis being exposed to sunburn, heat stress, and soil exposure to increasing drought and desertification, as well as lowering water flow levels in rivers and lakes and reducing the availability of freshwater for drinking, agriculture, and industry (1).

In 2023, the Iraqi Meteorological Organization announced that temperatures in Iraq exceeded 50 degrees Celsius in 13 Iraqi governorates. In Karbala, Najaf, Maysan, Qadisiyah, and Wasit, temperatures exceeded 51 degrees Celsius, while Baghdad, Diyala, Anbar, Nasiriyah, and Muthanna recorded 50 degrees Celsius. Basra exceeded 52 degrees Celsius, making summer temperatures in Iraq in recent years exceed the 50-degree Celsius threshold, turning summer in Iraq into a nightmare for Iraqis, especially with power outages and water shortages (2).

Rising temperatures have not been limited to the summer season only, as temperatures have begun to rise above their natural averages even in the winter season compared to the past decades. On January 6, 2024, the minimum temperature was recorded at 11 degrees Celsius (3) and on the same day and month in 2023, the maximum temperature was recorded at 15 degrees Celsius and the minimum at 9 degrees Celsius (4) while in 1991 On January 6, the maximum temperature reached 9 degrees Celsius and in 2000 the minimum temperature was recorded at -4 degrees Celsius (5). By a simple calculation, the difference between the two averages appears to be around 15 degrees Celsius for the minimum temperature, which is a very dangerous matter; It threatens the environmental structures that depend on each other according to non-extreme sequential climates.

In another more obvious observation, we notice that as the years have passed from the nineties of the last century to this day, winter temperatures have risen to the point that the feeling of the cold of winter has become unnoticeable to Iraqis.

## **Drought**

Drought is one of the environmental disasters that Iraq is exposed to, and it is increasing day by day. It is known in Iraq that 90% of the annual rainfall in Iraq falls between November and April, and the other six months are very hot and dry in the summer. These climatic characteristics, characterized by scarcity of rainfall and high temperatures, can be used to consider most parts of Iraq as desert areas where soil and plants lose their moisture due to the rapid rate of evaporation. Climate changes that the world, including Iraq, is witnessing have made matters worse. Between 2007 and 2010, drought affected large areas of Iraq, as Iraq suffered severe drought during these years that destroyed its agricultural production. It became difficult to cultivate some major crops such as dates and rice. The decline in the Euphrates River level also affected fishing and the deterioration of the marshes and the disruption of the ecological balance in Iraq (6).

According to a report issued by the United Nations on November 13, 2022, Iraq in 2021 witnessed its second driest season in forty years due to the record decline in rainfall, as water flows in the Tigris and Euphrates rivers, which provide up to 98% of Iraq's surface water, decreased by 30-40% (7). It is expected that Iraq's water resources will decline from 79 billion cubic meters in 1970 to 65 billion cubic meters in 2010 to 55 billion cubic meters in 2040; This is due to climate changes, as well as the projects established on the Tigris and Euphrates rivers by Turkey and Iran (8).

Among the manifestations of drought that have become clearly visible in recent years, the drying up of Lake Sawa in Muthanna in 2022, as well as the drying up of Lake Habbaniyah, as the drought seasons that hit Iraq have affected Lake Habbaniyah with drought, (9), as well as the drying up of the marshes.

Field reports from the work team of a field survey project supervised by the FAO in cooperation with the Iraqi Ministry of Agriculture and with the support of the European Union indicate that the marshes are witnessing the hottest heat wave in (40) years, as Raysan Mohsen, a member of the project work team, stated on July 7, 2023 that the situation in the Chibaish marshes, it is very difficult, as the level of the Euphrates River reached only 56 cm, and in the marshes from 0-30 cm, with a very dangerous rate of dryness, and approximately 70% of the marshes are devoid of water, and this is according to the Marshlands and Wetlands Recovery Center. Iraqi Ministry of Water Resources(10).

## **Desertification**

Desertification is one of the most complex environmental problems that Iraq has been suffering from for a long time. Many natural and human factors come together to create it, the first of which are environmental, economic, social, and civilizational consequences, the most prominent of which are the loss of productive agricultural land, the movement of sand dunes, and the formation of severe dust storms that lead to air pollution. The southern parts of Iraq are witnessing the most severe waves of desertification, as active sand dunes have begun to appear in this region, threatening agricultural and urban lands. Wind erosion also plays a very important role in its spread, and sand dunes are one of the clearest manifestations of desertification in southern Iraq (11).

Among the most prominent causes of desertification in Iraq are the following: The large shortage in the quantities of water reaching the Tigris and Euphrates rivers as a result of the construction of giant dams on the sources of the Tigris and Euphrates rivers in Turkey and Iran.

The movement of tanks, military equipment, and various types, sizes, and destructive capabilities of ammunition during military operations for five decades (1980-2024) during which the land of Iraq was a direct theater of war operations. (12).

Overgrazing, which is one of the main causes of desertification. Vast areas in the Al-Batha' area and the Souq Al-Shuyukh district in Dhi Qar Governorate have turned into desert areas after they were once considered important natural pastures.

Resorting to wrong agricultural methods, which leads to land degradation; As a result of the depletion of the basic soil components, its content of organic matter decreases with a weak soil structure and a decrease in its permeability. (13)

The increase in the rates of dust storms in most summer months. During the recent years, an increase in the number of dust storms has been noticed, reaching 120 dust storms annually in 2016. (14) The most severe dust storms that Iraq has witnessed in the past two decades is the dust storm on May 17, 2022 (15).

## **Pollution**

The Iraqi environment is currently one of the most polluted environments on a global level. Iraq today faces an environmental problem that affects all levels of life, and its impact is not limited to the current generations only, but its effects will extend to affect future generations. Poor planning, irregular population growth, leakage of pollutants from industrial facilities, the cessation of work in wastewater treatment plants, and the leaving of waste without sanitary landfill ([16]. In addition, the arrival of wastewater carrying decomposed organic materials resulting from human and food waste to surface or groundwater, either by direct discharge into water or by leakage, where a small percentage of wastewater in Iraq is treated, amounting to (549 million m<sup>3</sup>/year), while the remaining and larger quantity is discharged into rivers, especially the Tigris and Euphrates rivers (17). All these behaviors or practices have become a danger to the lives of Iraqis and seriously threaten the future of future generations. Many studies indicate a high level of pollutants in the Tigris River, in addition to the high concentration of dissolved salts, and these reports confirm that the water of this river has become unsuitable for human and animal use (18). It is interesting that hospitals in Iraq have become a very dangerous source of water pollution. Out of a total of 126 hospitals in Iraq, only 25 hospitals have water treatment plants, while the rest do not have any form of water disposal or treatment in a healthy way, as 31 hospitals discharge their water into the Tigris River and 25 hospitals discharge their water into the Euphrates River and 8 into the Diyala River and 24 of them in the Shatt al-Arab. The Iraqi Ministry of Health also confirms that there are untreated solids ranging from 250-300 tons that are discharged into Iraqi rivers daily (19).

In addition to air pollution in Iraq, which is due to many reasons, the most important of which are means of transport, including cars, the numbers of which have increased greatly, buses, trucks, motorcycles, trains, and airplanes. Statistics indicate that 70% of air pollution in Iraq is due to means of transport; This is due to traffic congestion and the lack of strict emission standards, as most means of transport rely on fossil fuels such as diesel and gasoline, which release air-polluting carbon dioxide (20).

As the most dangerous type of pollution in Iraq is the radioactive pollution.

Iraq has been subjected to various types of pollution, but the most dangerous is radioactive pollution, the consequences of which we are still living with today. The first instance of radioactive pollution in Iraq occurred in 1981 when the Israeli Air Force bombed the Tammuz nuclear complex on the outskirts of the Iraqi capital, Baghdad. However, the necessary measures were taken to prevent a radioactive catastrophe. The second instance was in 1986 when the Chernobyl reactor exploded in Ukraine, and the radiation reached the northern regions of Iraq. The most recent and significant pollution incident occurred during the second and third Gulf Wars in 1991 and 2003, the effects of which are still felt today(21).

## **The Use of Depleted Uranium Weapons**

During the 1991 Gulf War and the 2003 military operations to occupy Iraq, US and British forces used depleted uranium munitions in densely populated areas, particularly in southern Iraq. This resulted in the contamination of the region with radioactive elements. The United States used depleted uranium weapons extensively to destroy Iraqi army tanks and military equipment as they withdrew from Kuwait. The US and its allies' military offensive lasted for 46 days, from January 17, 1991, to March 4, 1991, in densely populated cities and regions in southern Iraq, such as Basra, Nasiriya, and Diwaniya. This exposed the residents of these cities to the risks of pollution from various radioactive sources.(22)

Radioactive pollution is also caused by the widespread presence of landmines and war remnants in almost every region of Iraq. This is a result of the wars and internal conflicts that Iraq has endured, which have ravaged the

environment and disrupted its ecological balance. Most Iraqi governorates are contaminated with radiation due to the widespread presence of landmines. For instance, in Basra, the total percentage of land contaminated by landmines and war remnants is 11.13% of the governorate's total area, which is a significant proportion(23).

Researchers confirm that the radiation emitted from depleted uranium weapons contributes to environmental destruction and increases the greenhouse gas emissions that the planet suffers from. It also leads to increased desertification, reduced rainfall, and severe drought, which causes further suffering for living beings.(24) Some researchers may be right in saying that many of the environmental changes in Iraq were primarily caused by the use of weapons of mass destruction and radioactive elements in the wars waged by the international coalition forces against it over the past three decades.

## **Chapter Two: Efforts to Address Environmental Changes in Iraq**

### **National Efforts**

National efforts have included a set of initiatives presented by most of Iraq's political decision-making institutions, such as the Presidency, the Council of Ministers, and the Ministry of Environment. One of the most important of these initiatives is the (Nationally Determined Contributions (INDC) document towards the new climate change agreement). This agreement includes Iraq's national contribution within the framework of the United Nations Framework Convention on Climate Change and Iraq's vision for cooperation with the international community in the field of mitigating emissions and adapting to the effects of climate change on Iraqi soil. This document comes in response to the invitation of the Conference of the Parties at its 19th session. The Climate Change Center of the Ministry of Environment is the national body responsible for the national and regional and international coordination process to implement this national document. One of the most important goals of this document is to reduce emissions from 2020 to 2035.(25)

This document includes a set of promising projects that fall within the scope of all sectors, whether they are industry, agriculture, electricity, oil, gas, transportation, housing, or waste. These projects adopt the principle of using clean and renewable energy, as well as implementing a strategic project to capture and store carbon dioxide in geological formations and work on investing the associated gas with the production of crude oil and improving the specifications of oil products to meet international standards. This is done by establishing advanced refineries, developing and rehabilitating existing refineries, working on setting national standards and specifications for importing vehicles and other equipment, and ensuring that they do not exceed global emissions. It also aims to promote the production and use of environmentally friendly building materials and local products.(26)

The document stressed that these contributions do not constitute a mandatory commitment for Iraq, but rather a voluntary national contribution to demonstrate the measures that have been taken and what Iraq needs from internal support and stability to achieve an actual contribution from the international community to stabilize the high rates of carbon dioxide emissions in line with its development plans and national interests.(27).

Among the government activities in the field of reducing environmental changes: (the first national communication of the year 2015-2016), which proposed (19) projects to mitigate emissions related to renewable energy, energy efficiency, waste and agriculture. These projects primarily take into consideration changing the quality of fuel used and introducing natural gas into the national electricity and energy production system (28).

It seems, up to this moment, that the Ministry of Environment is content with the role of monitoring, warning, and holding conferences and deals without having a plan of action, or a strategy to implement, so that the work of the Ministry of Environment in Iraq can be described as primitive work. In a country like Iraq, the activities of the Ministry of Environment must be tangible by the citizen. The Iraqi citizen does not feel the presence of the Ministry of Environment in his daily life. Therefore, the Ministry of Environment must have influence over other ministries that the Iraqi citizen can see and become an active part of them instead of being a burden.

Among the national initiatives is the Mesopotamian Recovery Project to confront climate change in Iraq, which was launched by the Iraqi President Barham Salih and adopted by the Council of Ministers headed by Mustafa Al-Kadhimi in 2021. The project included a comprehensive road plan. The project vision confirms that - in

order to ensure the success of this project - there must be a solid national effort in which all parts of the state participate to enable all relevant ministries to design and implement a series of policies and laws, which requires the establishment of new specialized institutions tasked with addressing issues related to climate change in particular, this project combines state spending with financing from green funds, private capital markets and international donors. In its early stages, this project focuses on Iraq and placing Iraq at the heart of regional change. Iraq then takes this project into consideration and coordinates with the intention of integrating Iraq with regional initiatives related to the economy and climate adaptation in other stages. This project includes (9) projects of the Garden of Eden Program, the Green Gardens and Natural Reserves Program, the Mesopotamian Water Management Program, the Sanitation Program (River Cleansing), the Shatt al-Arab Bridge/Dam, the Traditional Building and Energy Efficiency Program, the Associated Gas Capture Program, the Waste-to-Energy Program, and the Green Energy Program (29). All of these efforts mentioned fall within the official national efforts to address environmental changes.

The existence of plans, initiatives and programs to contain environmental changes within Iraq does not mean that there are real government efforts that address or are proportionate to the extent of environmental degradation that is devastating Iraq at all levels. The efforts that were presented are below the level of ambition, and do not meet the needs of countries that suffer more than others in the field of environmental degradation. Even national interest in the issue of environmental degradation is more a response to international pressures than a response to local needs and requirements for environmental rehabilitation in Iraq.

But we must not forget the magnitude of the obstacles facing the adoption and implementation of ambitious projects in the environmental field, including the preoccupation of successive governments with restoring control of the deteriorating conditions in the country after 2003 and normalizing the security and political conditions after rounds of bitter confrontation with armed organizations that seriously threatened the unity and stability of Iraq, such as the confrontation with Al-Qaeda and ISIS organizations, which seized nearly a third of Iraq's area, and its most important cities in Anbar, Tikrit, Mosul, and large parts of Kirkuk.

In addition to the fact that financial and administrative corruption is one of the most important pillars of the disruption of environmental projects, the money allocated to revitalize the environment goes into the pockets of the corrupt. Under governments that rely on political quotas to choose their candidates, the unqualified and uninterested become the leaders in work in specialized ministries such as the Ministry of Environment by virtue of political balances. Because of this, the ministries lose their ability to work as specialized institutions and become merely flabby government formations filled with employees without real jobs, and this falls under administrative corruption. All environmental rehabilitation projects face these two obstacles: administrative and financial corruption. Iraq also suffers from political corruption. The political decision-maker is preoccupied with political and security concerns, political balances, and electoral issues, but it is not concerned with caring for future generations, and how to secure a safe environment for them.

This is how in this country interacts with the results of successive wars and their disasters, and the legacy of the previous regime to create for us a reality that places concern for the environment and its issues at low levels on the scale of governmental and societal concerns (30).

Despite these timid initiatives, there is a glimmer of hope for the efforts undertaken by the Abbasid and Hussein Shrines - and these efforts fall within the unofficial national initiatives - on the issue of farms located inside the Karbala desert, which have begun to reap the fruits of their efforts since 2017, such as the Fadak Farms project, which is considered one of the most important projects. The strategy adopted by the Hussein Shrine, which is located on the western side of the city of Karbala. Work on this farm began in 2016 with an area estimated at (2000) dunums, but the area actually occupied by agriculture is estimated at (750) dunums.(31). It is worth noting that these farms were built on areas of war waste in which the land was combed and cleaned. These farms and existing projects give hope for the future of the environment in Iraq and to save Iraq's environment and environmental deterioration, but it should not be limited to one governorate only. One project in every Iraqi governorate is possible. To contribute to reducing the effects of environmental changes and reducing the rate of desertification and pollution inside Iraq.

## **International Efforts**

The international community contributes to providing assistance to Iraq regarding the environmental changes taking place and their effects. Because Iraq lacks expertise, funding, and technologies, and from this logic, the Iraqi government sought to unify its efforts and request assistance from the United Nations and its specialized agencies, so international organizations with their various specializations became active in Iraq.

In this regard, the United Nations participates in addressing the effects of climate change and mitigating their severity, in addition to peacekeeping operations. There is an environmental team led by the Environment, Energy and Climate Change Program of the United Nations Development Programme, which works with government institutions in the field of water resources, agriculture, health, and the environment. UNESCO also provides support to Iraq by validating and updating basic data and information on groundwater resources, improving the government's coping capacity, and evaluating knowledge tools for sound and effective groundwater management (32).

The Food and Agriculture Organization of the United Nations (FAO) in Iraq warned of the serious repercussions of environmental deterioration in Iraq and in the marshes region in particular. In 2022, the organization submitted an urgent appeal to support buffalo breeders and protect the ecosystem in Chibayish. The organization, with support from the European Union and coordination with the Iraqi Ministry of Agriculture, provided emergency support to more than (5,000) farmers and breeders of various types of livestock, and the representative of the FAO in Iraq, Dr. (Salah Al-Haj Hassan) that FAO "is making continuous efforts in Iraq, with national and international partners, to address the negative effects of climate change and water scarcity and confront the challenges facing the marshes" (33).

The United Nations Development Program seeks to contribute to the efforts made; To rehabilitate the environment and development in Iraq by addressing the root causes and taking critical steps; To mitigate the risks of environmental degradation and climate change in Iraq, by building capacities and providing technical support to ministries and institutions directly related to the Iraqi government, local authorities, and regional authorities to be able to fulfill its legal, policy and regulatory obligations and to enhance environmental sustainability and reduce the effects of climate change in Iraq (34). In 2003, the United Nations Development Program supported an operation to remove (19) debris to clear the navigation channels in the port of Umm Qasr under a debris removal and salvage contract worth (20) million US dollars, funded by the Oil for Food Program (35).

The United Nations Environment Program has also been active in Iraq since 2003, as the program established a project to collect data on environmental problems in Iraq and the environmental impact of the conflict in Iraq. During 2005, the United Nations Environment Program managed the assessment of (5) polluted industrial sites in Iraq by Iraqi experts from the Ministry of Environment, the program trained (300) Iraqi experts in technical training to support and develop an Iraqi program; to evaluate and remediate contaminated sites, the program also provided legal and technical assistance in drafting Iraqi environmental law. Among other activities, the United Nations Environment Program and the World Health Organization established an environmental information center within the Ministry of the Environment, which can provide a central repository for basic data and information about the environment (36).

International efforts often collide once again with political, administrative and financial corruption. The projects and initiatives presented by them can go in vain. International organizations do not spend their efforts and donor funds on projects in countries that suffer from tense political and security conditions and whose institutions are plagued by manifestations of corruption in its various forms and levels.

## **The Role of Civil Society Organizations**

In 2003, signs of the emergence of environmental civil society organizations in Iraq, which were few at the time, began, and most of them were linked to addressing the problems that the country inherited from the previous regime, especially with regard to the files of the disappeared, the destitute, the imprisoned, and the displaced, in a way that can be described as a major process of relief for the historical oppression of large sectors

of the Iraqi people. For a recent period, civil society organizations remained locked into this role and far from thinking about other issues, such as environmental advocacy, which until this moment is still considered an intellectual luxury. Therefore, environmental entities disappeared without replacing an alternative, such as the Iraqi Greenpeace organization, which was registered by the Ministry of Planning in accordance with the regulations of the temporary occupation authority as the first. An environmental civil society organization after its registration was refused in 1997 by the Ministry of the Interior during the era of the previous regime on the pretext of objection to receiving funding from abroad (37).

But after the drought that struck Iraq in 2008, there became an urgent need for the presence of civil society organizations in Iraq, and these organizations began to be formed on two foundations: the slow response to environmental challenges in Iraq and the increase in funding opportunities based on donors' interest in a file that has become vital.

The General Secretariat of the Council of Ministers states that the number of officially registered non-governmental entities granted work permits is approximately 5,000 organizations, in addition to 100 branches of foreign organizations. As a result of the lack of an updated official list of the names of environmental civil society organizations, the Iraqi researcher (Safaa Khalaf) conducted a survey through which he concluded that the number of civil society organizations specialized in the environment in Iraq is (185) officially registered environmental organizations, in addition to (12) demining organizations (2) Some of them are active in southern Iraq, according to the database of the Department of Non-Governmental Organizations between 2011 and 2018, and (79) of these organizations are active in agriculture, water, and organizations concerned with environmental mobilization, and there are (96) environmentally-oriented non-governmental organizations whose applications for establishment were rejected or It was deleted from official records, in addition to the presence of (223) non-governmental organizations specialized in the environment in the Kurdistan Region, registered with the Department of Non-Governmental Organizations of the Kurdistan Regional Government. Based on this the percentage of registered environmental organizations out of the total number of public civil society organizations announced is (2.02%), and this indicates the slow response by civil society to confront the environmental challenges facing Iraq (38).

Examples of active civil society organizations in Iraq include:

**Nature Iraq Organization:** It is one of the non-governmental organizations registered in Iraq. It was established in 2004 and registered in Iraq. It depends on the United Nations Environment Programme, and it is also a nominated member of the World Council; To protect birds, the organization aims to: raise the capabilities of government institutions to protect the environment and create and develop a database on environmental situations facing Iraq. And spreading environmental awareness among Iraqi society groups also attracting global attention to the challenges facing the Iraqi environment and promoting the responsible use of environmental components and respect for Iraqi natural resources (39).

**Hamat Dijlah Organization:** This organization works to attract volunteer groups of young people; In order to preserve the environment and water in (16) Iraqi governorates, it aims to enhance the protection of rivers and marshes, overfishing, and sustainable development that are related to international goals, reducing global warming and climate change, reducing pollution, encouraging renewable energy, and reviving popular heritage.

**Green Climate Organization:** This organization is run by environmental experts and also includes academics from Iraqi universities. This organization aims to preserve biological diversity in Iraq and combat the dangers of the death of rare animals in Iraq through awareness programs for the local population in the marshland area (40).

Civil society organizations cooperate with international institutions in implementing environmental projects, collecting data, raising awareness, holding workshops, and entering into training centers with these international institutions. Civil society organizations always work with local experts and academics to gain the trust of donors and ensure positive results, although there are few civil society organizations active in the field of the



environment, they have significant experience regarding the effects of environmental changes, and this experience can be decisive in supporting government efforts (41).

Many environmental activists are also active on social media sites, who use social media sites as platforms for environmental education and awareness and organize afforestation and cleaning campaigns for the banks of the Tigris River in Baghdad Governorate and other governorates in Iraq. It is noted that civil society efforts in environmental issues always intersect with political, sectarian, and tribal divisions within Iraq, making it difficult for civil society organizations to obtain support and funding, whether at the national or international level, and restricting mobilization and mobilization processes within these organizations.

## **CONCLUSION**

The changes that are sweeping the world and for which the international community is trying to find solutions will become a state that is always described as a fragile state politically, economically and security-wise, like Iraq is in the heart of the storm of environmental change from both the natural and political aspects. Iraq is witnessing unprecedented changes in its usual climate, becoming more extreme in the different seasons. For the first time, severe storms appear in it, as we see in other places in the world. It is also witnessing unprecedented torrential rains, as happened in the winter and spring of the current year 2024, in addition to a rise in summer temperatures of It makes Iraq one of the hottest regions in the world. These extreme phenomena are nothing but early warning bells for what will be the case in the coming years. Therefore, government programs must be aware of such dangerous possibilities and be prepared to deal with them by allocating more funds in the annual budgets to reduce the negative effects to environmental changes in the future, giving more space and attention to issues of the environment and environmental development, and integrating them into the activities of the various ministries and institutions of the Iraqi state, to prepare a society that understands environmental problems and is ready to provide aid and assistance to government programs devoted to this subject, as well as creating a security environment in order for international organizations to carry out their environmental activities inside Iraq without restriction. The same applies to civil society organizations.

## **RESULTS**

The presence of timid national and international efforts to confront environmental changes in Iraq. These efforts are not commensurate with the magnitude of environmental changes in Iraq.

Administrative, financial and political corruption controls the timid environmental activities and projects inside Iraq.

The Ministry of Environment lacks control and authority over the rest of the ministries inside Iraq.

The security situation mainly restricts international community organizations, and sectarian and tribal divisions restrict the efforts of civil society organizations inside Iraq.

## **Recommendations**

Activating environmental monitoring by all state institutions, especially the Ministry of Environment.

Establish deterrent laws for wrongful environmental practices, and work to implement these laws.

Develop a real strategy to plant Iraq's governorates with oak and eucalyptus trees; Because these trees tolerate high temperatures, and to act as buffers for dust storms that hit Iraq in the summer.

Activating the role of religious authority in Iraq to raise awareness and educate about the environmental aspect, especially since the population of Iraq most affected by environmental changes are the residents of southern Iraq, and at the same time they are among the most affected by the religious leaders in Najaf. Due to the lack of confidence of the Iraqi citizen in the political decision maker, and his confidence in the religious leaders in Iraq, especially in Najaf Al-Ashraf.

Perhaps what we need in Iraq is the awakening of political will and sincerity of political intentions. To contain environmental changes in Iraq.

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