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Challenges of Environmental Governance in Iraq and Strategies for Its Strengthening Based on Sustainable Development Standards

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ABSTRACT

Environmental governance in Iraq, as one of the principal foundations for achieving sustainable development, faces numerous structural, legal, institutional, and security-related challenges that have generated significant negative impacts on public health, natural resources, and the country's social stability. The central issue of this study is why Iraq's environmental governance system, despite the existence of legal frameworks and international commitments, remains incapable of effectively protecting the environment, and how this system can be strengthened in accordance with sustainable development standards. Using a descriptive–analytical method, the author concludes that the weakness of environmental governance in Iraq is not merely the result of insufficient legislation, but also stems from factors such as political instability, weak institutional capacities, fragmented authority, lack of transparency and public participation, and the incompatibility of national policies with international sustainable development standards. Accordingly, strengthening environmental governance requires a multidimensional approach that simultaneously pursues legal framework reform, the empowerment of executive institutions, the integration of environmental concerns into economic and energy policies, and the expansion of regional and international cooperation. Aligning Iraq's environmental governance system with the principles of sustainable development, including good governance, intergenerational justice, stakeholder participation, and institutional accountability, can effectively contribute to mitigating environmental crises and reinforcing the country's path toward sustainable development. Reforming environmental governance in Iraq is not only an environmental necessity, but also a fundamental prerequisite for achieving lasting stability, development, and human security in the country.

Keywords: *Environmental governance, sustainable development, Iraq, institutional challenges, international cooperation.*

Introduction

The environment, as one of the vital and fundamental pillars of sustainable development, plays a key role in ensuring human health, food security, economic stability, and social sustainability. In recent decades, Iraq has faced serious environmental crises due to a combination of internal and external factors, including continuous wars, political instability, deep dependence on hydrocarbon resources, uneven urban growth, and weak governance



structures. Issues such as water scarcity, the severe decline of surface and groundwater resources, desertification and dust storms, severe air and soil pollution, wetland degradation, and inefficient waste management, in addition to their direct effects on the quality of life of Iraqi citizens, constitute serious threats to human security and sustainable development in the country. Under such conditions, environmental governance, as a framework for regulating relations among the state, society, and natural resources, assumes heightened importance. Although Iraq legally possesses environmental laws and regulations and is also a party to some international conventions and instruments related to environmental protection and sustainable development, deep gaps can be observed between legal commitments and executive performance. These gaps stem less from the absence of laws than from weak institutional structures, fragmented competencies, lack of coordination among different levels of governance, limited technical and financial capacities, and the low participation of civil society in decision-making processes. Therefore, examining the challenges of environmental governance in Iraq and identifying strategies to strengthen it within the framework of sustainable development standards is both a scientific and practical necessity. The main question of the present study is: What are the most important challenges of environmental governance in Iraq, and how can the effectiveness of this system be enhanced by using the principles and standards of sustainable development? In response to this question, the main hypothesis of the study is that the inefficiency of environmental governance in Iraq is rooted more in weak good governance, political instability, institutional fragmentation, and neglect of environmental considerations in macro-development policies than in a shortage of laws. Accordingly, without reforming the governance structure and aligning it with the principles of sustainable development, effective environmental protection will not be achievable. The main objective of this study is to systematically analyze the legal, institutional, and executive challenges of environmental governance in Iraq and to provide practical strategies for strengthening it based on the principles and standards of sustainable development, including good governance, stakeholder participation, transparency, accountability, intergenerational justice, and the synergy of economic and environmental policies. This study seeks, while analyzing the current situation, to outline pathways for reforming and improving environmental governance that are compatible with Iraq's political, social, and economic realities. The novelty of this research lies in its comprehensive analysis of Iraq's environmental governance in light of sustainable development standards. This study moves beyond merely descriptive or technical approaches and addresses the interconnection among environmental law, good governance, and sustainable development. Moreover, by focusing on Iraq as a transitional and post-conflict country, it seeks to present an analytical and applied framework that can be used both in national policymaking and in regional and international cooperation. Among the studies conducted in this field is the research carried out by Khalil Mhawi Mroshn in 2025 under the title "Environmental Governance in Iraq: Challenges and Measures in 2025." He concluded that weak environmental governance in Iraq results from the absence of institutional coordination, jurisdictional overlap, weak enforcement of laws, and lack of public awareness. His proposed solutions to these problems included legal reform, strengthening civil society participation, and regional and international cooperation (1). In another study published by Dhahir Abdullah and Walid Msahir in 2025 under the title "Environmental Governance Frameworks in Iraq," it was concluded that Iraq has attempted to align its environmental governance frameworks with international commitments, but institutional weakness and the incomplete integration of these commitments into national laws have prevented the achievement of sustainable development goals (2).

These research findings indicate that the inefficiency of environmental governance in Iraq has multidimensional roots and is not limited to a shortage of laws. As Mhawi Mroshn (2025) notes, weak institutional coordination,

overlapping competencies, and lack of public awareness are among the fundamental factors underlying Iraq's environmental crisis (1). Abdullah and Msahir (2025) have also shown that despite Iraq's efforts to align governance frameworks with international commitments, institutional weakness and the incomplete integration of these commitments into the national legal system have impeded the realization of sustainable development goals (2). Accordingly, strengthening environmental governance in Iraq requires a comprehensive and multilevel approach that includes legal framework reform, institutional empowerment, the enhancement of transparency and accountability, active civil society participation, and the synergy of economic and environmental policies. Aligning Iraq's environmental governance system with the principles of sustainable development is not only a scientific and environmental necessity, but also a vital prerequisite for political stabilization, economic development, and sustainable human security in the country.

Theoretical Framework

The Importance of Environmental Governance in Sustainable Development

Environmental governance refers to the set of processes and mechanisms dedicated to decision-making, policy implementation, and oversight of environmental issues. This form of governance emphasizes principles such as transparency, accountability, public participation, and social justice, and its objective is to establish a balance among economic growth, social justice, and the protection of natural resources. Achieving sustainable development is possible only when these three dimensions are managed in a coordinated and simultaneous manner. A healthy environment is not only the foundation of human quality of life but also the shared capital of future generations. Nevertheless, uncontrolled exploitation of natural resources has become a serious threat to human security (3). Effective environmental governance can prevent resource degradation and create the foundations for sustainable development through coordination and cooperation among the state, the private sector, and civil society. Viewing natural resources as global public goods particularly highlights the necessity of transnational cooperation. The formulation of comprehensive and transparent laws, together with the enhancement of institutional transparency and active civil society participation, can significantly improve the quality of environmental governance. Furthermore, the use of scientific knowledge and modern technologies for monitoring, analyzing, and predicting environmental trends is considered one of the key elements of modern governance (4). Ultimately, strengthening environmental governance is regarded as a fundamental prerequisite for realizing sustainable development and ensuring a safe and sustainable future for all generations.

Iraq's Position in the International Environmental System

Iraq's position in the international environmental system must be examined in the context of the country's domestic crises and global pressures to align with sustainable development standards. Iraq, as a country highly vulnerable to climate change, is among the countries experiencing the greatest threats from drought, desertification, and the reduction of water resources. Global reports also indicate that these conditions have drawn the attention of international organizations to Iraq's environmental situation. From a legal and institutional perspective, Iraq's environmental policies are primarily based on government regulations and executive by-laws and make less effective use of comprehensive and binding legislation. This has led to weakness in policy implementation and a lack of transparency in environment-related processes. The World Bank has emphasized in its reports that Iraq's

institutional capacity to manage environmental crises is severely limited. Weak coordination among ministries and shortages of financial and human resources have reduced the effectiveness of efforts to manage environmental crises and challenges (5). Nevertheless, in recent years Iraq has made efforts to improve its environmental situation. The development of new laws in the field of renewable energy and increasing cooperation with international institutions are among the measures taken toward reform. From the standpoint of international cooperation, Iraq, as a party to the climate change convention and the biodiversity convention, has accepted its obligations, but problems in implementing these obligations and weaknesses in data monitoring have reduced global confidence in the country. At the regional level, Iraq plays a key role in environmental governance in West Asia due to the management of the shared water resources of the Tigris and Euphrates rivers. Pressures resulting from upstream dam construction and their consequences for shared water resources have highlighted the necessity of environmental diplomacy in relations between Iraq and neighboring countries. From the perspective of civil society, the presence of nongovernmental organizations in Iraq remains limited, but support from international institutions has enabled these groups to play an important advisory role in decision-making processes (6). Ultimately, Iraq's position in the international environmental system can be described as "transitional": a country facing domestic crises and institutional weaknesses, while at the same time being subject to global and regional pressures for reform. If Iraq can develop more comprehensive laws, strengthen its institutional capacity, and expand its international cooperation, it will be able to improve its position in the global arena.

The Theoretical Framework of Good Governance and Sustainable Development

The theoretical framework of good governance and sustainable development was broadly shaped in the final decades of the twentieth century and was introduced by the World Bank in the late 1980s as an essential condition for the success of development programs. The failure of structural adjustment policies showed that the absence of efficient institutions, administrative corruption, and weakness in accountability were among the main factors preventing the realization of development objectives. Good governance relies on components such as accountability, transparency, public participation, rule of law, effectiveness, and political stability, all of which directly affect the strengthening of social trust and the reduction of corruption. Within the framework of sustainable development, these components operate as institutional tools for managing natural resources, achieving social justice, and realizing sustainable economic growth. Sustainable development consists of three economic, social, and environmental dimensions, and any institutional weakness or corruption can seriously disrupt one of these dimensions (1). The relationship between good governance and sustainable development is reciprocal; that is, good governance is not only a condition for achieving sustainable development, but sustainable development itself is also considered a criterion for assessing the quality of governance. Studies have shown that the social dimensions of good governance, including public participation and social justice, have the greatest impact on sustainable development indicators. Therefore, economic or environmental reforms alone cannot be sufficient, and special attention must be paid to strengthening social institutions and civic participation. Sustainable governance is presented as an evolved version of good governance that emphasizes synergy among economic, social, and environmental policies and also takes intergenerational justice into account (7). This framework is particularly important for transitional countries such as Iraq, because institutional weakness and administrative corruption are considered major obstacles to sustainable development in these countries. Moving toward sustainable governance

in such countries is a fundamental prerequisite for achieving social justice, sustainable economic growth, and environmental protection.

The Relationship Between Environmental Law and Human Security

The relationship between environmental law and human security is one of the key and emerging issues in international law and global policymaking. A healthy environment not only serves as the main foundation of human life but is also an essential condition for the realization of fundamental human rights such as the right to life, the right to health, and the right to benefit from sustainable development. Environmental degradation, pollution of natural resources, and climate crises directly threaten human security and lead to consequences such as forced migration, the spread of diseases, reduced food resources, and even the emergence of armed conflicts. For this reason, environmental law and human security should not be treated as two separate and independent fields, but should instead be analyzed within a shared and synergistic framework (8). This relationship has also been clearly recognized in international instruments. The 1972 Stockholm Declaration was the first instrument to introduce a healthy environment as a fundamental condition for enjoying a dignified life. Subsequently, the 1992 Rio Declaration and Agenda 21 emphasized the central role of human beings in sustainable development and the necessity of environmental protection to ensure the security of future generations. The Aarhus Convention, by emphasizing access to environmental information, public participation, and access to justice, also demonstrated that environmental rights are an inseparable part of human rights and human security. From a human rights perspective, the right to a healthy environment has been recognized as one of the fundamental human rights. The United Nations Commission on Human Rights has emphasized in several resolutions that without a healthy environment, the realization of the right to life and social security is impossible. In the same vein, the International Covenant on Civil and Political Rights and the Convention on the Rights of the Child also indirectly emphasize the importance of environmental protection for ensuring human rights. On the other hand, natural crises such as floods, earthquakes, and droughts have shown that human security is seriously dependent on the effectiveness of environmental law. Recent studies at the University of Tehran indicate that interaction between environmental law and disaster law can strengthen environmental security and reduce threats to human security (9). Specifically, environmental law, through its preventive mechanisms, prevents the destruction of natural resources, while disaster law, through emergency rules for crisis management, simultaneously contributes to reducing environmental and human threats. The environment is also of special importance in humanitarian law. In wartime and armed conflicts, environmental destruction can seriously threaten human security. Recent studies have shown that environmental crises constitute not only violations of individual human rights but also violations of collective human rights, because the negative effects of these crises cross national borders and create a serious threat to international security (10).

The Necessity of Research on Iraq

The necessity of research on Iraq is particularly due to the country's special conditions and the extensive environmental and social crises it has faced in recent decades. Recurrent droughts, the decline of water resources in the Tigris and Euphrates rivers, the degradation of the Mesopotamian wetlands, desertification, and pollution resulting from oil industries are among the most important challenges with which Iraq is struggling. These crises have not only threatened human security and public health but have also disrupted the country's social stability.

Under such conditions, the need for scientific research to identify and provide sustainable solutions is felt more than ever.

From an institutional perspective, the status of environmental laws in Iraq is highly fragmented and inefficient. Supervisory institutions also lack sufficient capability to enforce regulations and effectively monitor the implementation of these laws. In addition, administrative corruption and lack of transparency in policymaking have caused efforts to protect the environment to remain largely ineffective (11). In this context, scientific studies can analyze existing institutional structures and provide reform models, thereby offering pathways for drafting comprehensive laws and strengthening supervisory institutions. In the economic dimension, Iraq's severe dependence on oil resources remains the main obstacle to the transition toward a green economy. Research can provide strategies for diversifying the country's economy and developing renewable energies, which in turn can help reduce dependence on oil and improve Iraq's environmental situation. At the international level, Iraq is a party to important environmental agreements, but institutional weakness and problems in data monitoring have prevented the full implementation of these commitments. In this regard, scientific research can help identify effective methods for implementing these commitments and improving the monitoring of them. At the regional level, the management of the shared water resources of the Tigris and Euphrates rivers requires effective cooperation with neighboring countries and the strengthening of environmental diplomacy. This requires joint research and scientific analyses to find solutions compatible with the interests of all parties. Ultimately, research on Iraq's environmental issues is not only a scientific necessity but also a social and political necessity. The results of such studies can assist policymakers in making evidence-based decisions and help smooth Iraq's path toward sustainable development.

Challenges of Environmental Governance in Iraq

Environmental governance in Iraq faces extensive crises due to a combination of continuous wars, deteriorated infrastructure, and pollution caused by oil industries, which have generated serious threats to water resource quality and public health. From an institutional perspective, the absence of comprehensive laws and effective supervisory structures, together with administrative corruption and lack of transparency in policymaking, has led to the inefficiency of Iraq's environmental policies (2). The country's severe dependence on oil resources remains the main obstacle to the transition toward a green economy and the diversification of revenue sources. In addition, the absence of green trade policies and insufficient attention to sustainable development have placed further pressure on the country's natural resources and intensified environmental crises. The main challenges of environmental governance in Iraq include institutional and legal weakness, severe economic dependence on oil, administrative corruption, and climate crises; reforming these challenges is not only necessary for environmental protection but also a fundamental prerequisite for realizing sustainable development and preserving social stability in the country.

Institutional and Legal Weakness in Environmental Protection

Environmental protection in Iraq faces serious institutional and legal challenges. After years of war, sanctions, and political instability, the country's governance structures have lost the capacity necessary to manage environmental crises. Iraq's Ministry of Environment, established in 2004, has in practice failed to prioritize environmental crises and has focused more on security and economic issues. This situation clearly indicates institutional weakness in environmental policymaking. From a legal perspective, Iraq lacks a comprehensive and integrated law for environmental protection. Existing regulations are often fragmented and outdated and do not

have the capacity to respond to new crises such as climate change, pollution caused by oil industries, and wetland degradation. The absence of a binding legal framework for assessing the environmental impacts of major projects has caused many construction and industrial projects to be implemented without regard to their environmental consequences (11). Administrative corruption and lack of transparency are other factors that have intensified institutional weakness in Iraq. Research reports show that even where environmental laws exist, their implementation fails because of corruption and the influence of economic groups. This situation has reduced public trust in state institutions and weakened society's attention to environmental policies. From an international perspective, Iraq is a party to some important conventions, such as the climate change convention and the biodiversity convention, but institutional and legal weakness has prevented the implementation of obligations arising from these agreements. The absence of institutional infrastructure for monitoring data and providing accurate reports to international organizations has weakened Iraq's position in the international environmental system. A clear example of these weaknesses can be observed in the management of the Mesopotamian wetlands. Development projects and state policies during Saddam Hussein's regime led to the drying of large parts of these wetlands, which not only resulted in the destruction of natural ecosystems but also generated serious environmental and human crises (12). This example demonstrates the complexity of the challenges and the necessity of fundamental reforms in Iraq's institutional and legal structures to improve the environmental situation and manage environmental crises. After 2003, despite international efforts to restore the wetlands, the absence of binding laws and institutional weakness caused the degradation process to continue. Ultimately, institutional and legal weakness in Iraq's environmental protection can be summarized in three main areas:

1. The absence of comprehensive and binding laws for managing environmental crises.
2. Administrative corruption and lack of transparency in the enforcement of regulations.
3. Weak supervisory institutions and the low priority of the environment in national policymaking.

These weaknesses have not only intensified environmental crises but also impeded the realization of sustainable development and human security in Iraq. Legal reform, strengthening supervisory institutions, and increasing transparency can constitute the first steps toward addressing these challenges.

Severe Dependence on the Oil Economy and Fossil Energy

Iraq's economy is fundamentally based on oil and gas; more than 95% of exports, 85% of government revenue, and about 42% of the country's gross domestic product are derived from oil. This severe dependence on oil resources has made Iraq highly vulnerable to fluctuations in global oil prices and has undermined the country's ability to engage in long-term economic planning. Any decline in oil prices directly affects the public budget, the provision of social services, and political stability. In this regard, dependence on fossil fuels, especially in the energy sector, is another major challenge for Iraq. More than 60% of the country's electricity is generated from natural gas, 35% from oil, and only about 5.5% from renewable energies, mainly hydropower. This energy mix indicates Iraq's backwardness in the transition to clean and renewable energy. While many countries in the region have made extensive investments in solar and wind energy, Iraq remains dependent on deteriorated and inefficient oil and gas infrastructure. One serious problem in this area is the flaring of associated gas during oil extraction. In 2023, Iraq flared more than 636 billion cubic feet of gas, which, in addition to wasting energy resources, caused widespread methane emissions and intensified the climate crisis. Iraq could have reduced pollution and created new energy resources for electricity generation by investing in technologies for capturing and using associated gas (2). Severe

dependence on oil has also prevented the diversification of Iraq's economy. The agricultural, industrial, and service sectors have not developed under the shadow of oil revenues, leading to increased unemployment and reduced productivity in other sectors. The International Monetary Fund has emphasized in its recent report that Iraq requires structural reforms and the development of non-oil sectors to achieve sustainable growth (13). From an environmental perspective, this dependence has imposed heavy costs. Greenhouse gas emissions, water and soil pollution caused by oil industries, and ecosystem degradation are direct consequences of Iraq's oil economy. Estimates indicate that Iraq needs 233 billion dollars of investment in clean energy and greenhouse gas emission reduction by 2040 to achieve its climate goals. At the political level, dependence on oil has caused the Iraqi government to resist international environmental negotiations, particularly meetings and agreements related to reducing fossil fuel consumption. Iraqi officials have repeatedly emphasized that the rapid elimination of oil from the country's economy could pose a serious threat to financial and social stability. This position reflects a contradiction between short-term economic needs and long-term environmental necessities (12). Overall, Iraq's severe dependence on the oil economy and fossil energy has not only impeded sustainable development but also made the country vulnerable to economic and environmental crises. Institutional reforms, investment in renewable energies, and the gradual reduction of dependence on oil can pave Iraq's path toward sustainable governance and human security.

Administrative Corruption and Lack of Transparency in Environmental Policies

Administrative corruption in Iraq, as one of the greatest governance challenges, has had direct and negative effects on the country's environmental policies. Lack of transparency in decision-making processes and the enforcement of regulations has caused many construction and industrial projects to be implemented without the necessary environmental impact assessments. This has not only led to the destruction of natural resources but has also significantly reduced public trust in state institutions. Studies show that Iraqi supervisory institutions, such as the Integrity Commission and the Board of Supreme Audit, have been unable to play an effective role in combating corruption due to political pressures, widespread corruption, and legal weaknesses. In addition, lack of transparency in access to environmental information has prevented civil society and the media from effectively monitoring government performance (14). In the Kurdistan Region of Iraq as well, anti-corruption policies lack the necessary coherence and effectiveness. Studies show that despite emphasis on good governance indicators such as civil society participation, accountability, and government effectiveness, anti-corruption measures in the environmental field have not achieved significant success (15). This situation has not only led to failure in implementing environmental laws but has also created conditions for political opportunism. Many oil contracts and infrastructure projects in Iraq have been concluded without sufficient transparency, and their environmental consequences have been ignored. Overall, administrative corruption in Iraq has not only halted the process of enforcing environmental laws but, by creating unfavorable conditions for transparency and oversight, has effectively intensified environmental crises and reduced public participation in environmental decision-making processes.

Social Crises Resulting from Environmental Degradation: Migration and Inequality

Environmental degradation in Iraq over the past two decades has become one of the most important factors shaping social crises. The reduction of water resources, desertification, pollution caused by oil industries, and degradation of the Mesopotamian wetlands have directly affected the living conditions of millions of people and

produced extensive waves of internal and external migration. According to reports by the International Organization for Migration, in 2021 alone more than 20,000 people in 10 Iraqi governorates were forced to leave their places of residence due to water shortages, salinity, and water resource pollution. These migrations have often moved toward major cities and have imposed heavy pressure on urban infrastructure and public services. Thus, environmental migration in Iraq is not merely an economic issue but a complex social crisis. Families migrating from rural areas to cities often face problems such as lack of identity documents, insecurity of land tenure, and limited access to social services. This situation has increased marginalization and the formation of informal settlements, which in turn provide fertile ground for social inequalities and increased vulnerability among weaker groups, especially women and children. From the perspective of inequality, environmental degradation has widened the gap between urban and rural areas. While cities enjoy relatively greater facilities, villages face severe water crises and declining agricultural lands. This has intensified poverty, unemployment, and feelings of discrimination among rural communities. Studies at the University of Tehran show that the water crisis in the Middle East, particularly in Iraq, is directly associated with increased poverty, inequality, and reduced state legitimacy. Environmental degradation has also intensified social and ethnic tensions in Iraq. Competition over water resources and agricultural lands in southern governorates such as Basra and Dhi Qar has repeatedly led to tribal conflicts and local violence. These conflicts not only threaten local security but also create conditions for political instability at the national level. From an international perspective, the United Nations has classified Iraq among the five most vulnerable countries in the world in terms of climate change and environmental crises. This status shows that social crises resulting from environmental degradation in Iraq are not only a domestic issue but also a regional and global threat (16).

Overall, social crises resulting from environmental degradation in Iraq can be summarized in three main areas:

1. Extensive internal and external migration due to water scarcity and the degradation of natural resources.
2. Increased social and economic inequality between urban and rural areas.
3. Intensification of social and ethnic tensions over natural resources and public services.

These crises show that environmental protection in Iraq is not only an environmental necessity but also a fundamental prerequisite for achieving human security and social stability in the country.

Pollution and Climate Change: Water, Soil, and Desertification

Pollution and climate change in Iraq have become among the most important environmental and social challenges over the past two decades. Reduced rainfall, rising temperatures, and inefficient natural resource management have caused a severe decline in the water levels of the Tigris and Euphrates rivers. This situation has not only threatened food security but has also caused widespread migration from rural areas to cities. In addition, the pollution of water resources due to the discharge of industrial wastewater and oil leakage from deteriorated infrastructure has become a serious environmental crisis. The quality of drinking water in many governorates, especially Basra, has declined, and diseases related to water pollution are increasing (17). From the perspective of soil, excessive exploitation of agricultural lands, overgrazing, and the widespread use of chemicals have reduced soil fertility and expanded erosion. This trend, together with declining water resources, has created the conditions for extensive desertification in central and southern Iraq. Desertification in Iraq is not only an environmental issue but also a social crisis. According to United Nations reports, more than 39% of Iraq's lands are exposed to severe desertification, and this process destroys thousands of hectares of agricultural land every year. The direct

consequence of this crisis is increased rural poverty, reduced agricultural production, and intensified social inequality (18).

Climate change, through rising temperatures and declining rainfall, has also disrupted the natural cycles of Iraq's ecosystems. The Mesopotamian wetlands, once among the largest aquatic ecosystems in the world, have lost a large part of their area, and the life of animal and plant species is under serious threat.

Overall, pollution and climate change in Iraq can be summarized in three main areas:

1. The reduction of water resources and widespread pollution of rivers and groundwater.
2. Soil degradation and reduced fertility of agricultural lands.
3. The expansion of desertification and the destruction of natural ecosystems.

These crises show that environmental protection and climate change mitigation in Iraq are not only environmental necessities but also fundamental prerequisites for achieving human security and sustainable development in the country.

Sustainable Development Standards and Their Adaptation to Iraq's Situation

Sustainable development standards are based on three fundamental principles: sustainable economic growth, social justice, and environmental protection, which have been formulated and introduced by the United Nations in the form of 17 goals and 169 indicators. Iraq has also committed itself to accepting and implementing these goals within the framework of the 2030 Sustainable Development Agenda, but the country's special conditions, especially structural and social crises, have prevented the full realization of these goals. From an economic perspective, severe dependence on oil, which provides more than 85% of government revenues, is recognized as the main obstacle to economic diversification and the development of renewable energies in Iraq. This dependence on oil resources has not only made the country economically vulnerable to global oil price fluctuations but has also prevented the growth of non-oil sectors and a sustainable economy. From a social perspective, long-term wars, political instability, and environmental crises, especially declining water resources and pollution, have intensified poverty and inequality and reduced human development indicators in Iraq. These crises have caused many social groups, especially in rural areas, to face numerous economic and social problems (13). From an environmental perspective, climate change and its consequences, such as reduced rainfall, rising temperatures, and recurrent droughts, have led to wetland degradation and extensive desertification in Iraq. International reports indicate that more than 39% of the country's lands are exposed to severe desertification, a trend that has strongly affected agriculture and natural resources and created serious challenges for the country's ecosystem. From an institutional perspective, Iraq faces problems such as weak comprehensive laws, inefficient supervisory institutions, administrative corruption, and lack of transparency in executive processes. These challenges have caused serious problems in the effective implementation of the country's environmental policies and international commitments, preventing desirable outcomes (18). Overall, Iraq requires institutional reforms, reduced dependence on oil, investment in clean energy, and strengthened good governance in order to achieve the Sustainable Development Goals. Without these fundamental reforms, Iraq's environmental and social crises will continue, and the country's position in the international sustainable development system will be severely weakened.

Key United Nations Sustainable Development Goals Related to the Environment: 13, 15, and 16

The United Nations Sustainable Development Goals, as a global framework, address environmental and social crises and clearly present the necessity of collective action at the global level to ensure a sustainable future for all societies and the environment. Among these goals, three major goals are directly related to the environment and sustainable governance:

Goal 13: Climate Action. This goal emphasizes the need for urgent and effective action to combat climate change and reduce its effects. Iraq, as one of the countries most affected by climate change, faces problems such as rising temperatures, declining rainfall, and recurrent droughts. These changes have severely reduced water resources and caused the spread of desertification in the country. According to a 2025 report, Iraq has committed to reducing greenhouse gas emissions by 15% by 2030 and increasing the share of renewable energies to 33%.

Goal 15: Life on Land. This goal emphasizes the protection of terrestrial ecosystems, forests, and biodiversity. Iraq suffers severely from the degradation of the Mesopotamian wetlands and the destruction of natural habitats. Although wetland restoration projects are being implemented with the support of UNESCO and other international organizations, the absence of binding laws and institutional weaknesses have prevented the complete success of these plans. According to the 2025 Sustainable Development Index report, animal species in Iraq face a serious threat of extinction.

Goal 16: Peace, Justice, and Strong Institutions. This goal emphasizes the creation of transparent, accountable, and effective institutions to support human rights and environmental protection. Iraq has been unable to establish effective governance in this field because of administrative corruption and lack of transparency in environmental policies. The 2025 United Nations report on sustainable development goals in Iraq refers to institutional weaknesses and widespread corruption as serious obstacles to the implementation of environmental policies and the realization of sustainable development goals.

These three goals clearly show that environmental protection in Iraq is not merely a technical issue, but requires institutional reforms, transparency, and international cooperation. Without achieving Goals 13, 15, and 16, Iraq's path toward sustainable development will face serious obstacles, and progress in economic, social, and environmental fields will be severely limited.

Iraq's National Sustainable Development Document and Its Weaknesses

Iraq's National Sustainable Development Document was designed to align the country's national policies with the global Sustainable Development Goals of 2030 and emphasizes three basic axes: sustainable economic growth, social justice, and environmental protection. Nevertheless, significant weaknesses exist in the structure and implementation of this document, preventing the achievement of the defined objectives. The first major challenge is Iraq's severe dependence on the oil economy, which directly prevents the realization of sustainable development goals. A major portion of government revenue is provided by oil, which has prevented sufficient growth in the agricultural and industrial sectors. This dependence contradicts standards that emphasize economic diversification and the development of renewable energies and creates serious difficulties for implementing these goals.

The second main problem is the institutional and legal weaknesses evident in Iraq's National Sustainable Development Document. The country's supervisory institutions lack the capacities necessary for effective enforcement of environmental regulations, and widespread administrative corruption has caused environmental

policies to become practically ineffective. Furthermore, lack of transparency in access to information prevents effective civil society oversight of the implementation of this document and reduces public trust in executive processes.

The third major challenge relates to environmental and climate crises. Although crises such as declining water resources, desertification, and degradation of the Mesopotamian wetlands are mentioned generally in the document, no practical and binding strategy has been presented to address them. This weakness has prevented Iraq from effectively fulfilling its international obligations in the field of climate change, posing a serious threat to the realization of sustainable development goals.

The fourth fundamental weakness is the absence of coherence between national and local policies. Many governorates require special and specific programs because of their particular geographical and social conditions, whereas Iraq's National Sustainable Development Document adopts a general and inflexible approach that cannot respond to the specific needs of each region.

The fifth challenge is the shortage of financial resources and foreign investment. Iraq requires extensive investment in green infrastructure and renewable energies to achieve sustainable development goals, but political and security instability in the country has prevented the attraction of foreign investment and the financing necessary to implement these programs. Ultimately, although Iraq's National Sustainable Development Document provides a vital framework for alignment with global sustainable development goals, achieving its objectives will be difficult without fundamental reforms in institutional areas, reduced dependence on oil, increased transparency, and investment attraction in renewable energies (18).

Successful Regional Experiences in Environmental Governance

In the Middle East, several successful examples of environmental governance demonstrate that even under difficult climatic conditions and despite economic pressures, positive outcomes can be achieved through sound policymaking and effective planning. The United Arab Emirates is one of the most prominent examples in this regard. Through extensive investments in renewable energy, especially solar projects such as Noor Abu Dhabi and the Mohammed bin Rashid Al Maktoum Solar Park, the country has increased the share of clean energy in its national energy mix. In addition, by establishing the Ministry of Climate Change and Environment, the United Arab Emirates has strengthened institutional governance and adopted transparent and effective policies to reduce carbon emissions. In the same vein, Saudi Arabia has also launched the Saudi Green Initiative and begun extensive programs to reduce dependence on oil and develop renewable energies. This initiative includes planting billions of trees, reducing greenhouse gas emissions, and investing in green hydrogen projects. By establishing new supervisory institutions and strengthening environmental governance at the national level, Saudi Arabia has taken important steps toward improving its environmental situation. Alongside these countries, Iran also has valuable experience in water resource management and combating desertification. Projects for restoring the Zagros forests and programs to combat dust storms in western provinces are examples of successful policies in that country. Although institutional challenges remain, these measures show that environmental crises can be effectively managed through active civil society participation and regional cooperation. Turkey has also been able to control part of its environmental crises by implementing major water resource management projects, such as the Atatürk Dam, and forest protection programs. Within the framework of the Paris Agreement, this country has also committed to reducing carbon emissions and has aligned its national policies with sustainable development goals (17). These

successful experiences clearly show that effective environmental governance in the region requires three key elements: first, institutional reform and the creation of specialized environmental institutions; second, investment in renewable energies and clean technologies; and third, transparency and civil society participation in environmental policymaking. Iraq can use these successful experiences to facilitate its institutional and policy reform path and improve its position in regional environmental governance.

The Role of Civil Society and Public Participation in Achieving Sustainable Development in Iraq

The role of civil society and public participation in achieving sustainable development in Iraq must be examined in the context of the country's specific conditions. After 2003, Iraq faced extensive political, social, and environmental crises, and these crises doubled the necessity of active civil society presence. Nongovernmental organizations in Iraq have been able to play roles in various fields, including education, health, the environment, and human rights. By creating social networks and providing a platform for dialogue between the state and the people, these organizations have helped increase public trust. Public participation is also recognized as one of the main pillars of good governance and sustainable development. Iraq's 2030 Sustainable Development Document emphasizes the necessity of public participation in local and national decision-making. This participation can be realized through local councils, civil associations, and voluntary activities (17). Experience has shown that whenever people are involved in the decision-making process, policy implementation is more successful. From an environmental perspective, Iraqi civil society has played an important role in raising awareness and pressuring the government to protect natural resources. Public campaigns to restore the Mesopotamian wetlands and address the water crisis are examples of this participation (19). These measures show that without public participation, environmental policies in Iraq will not achieve the desired results. However, institutional weakness and administrative corruption are major obstacles to realizing the role of civil society. Many nongovernmental organizations face financial and legal limitations, and free access to environmental information is also restricted. This situation has caused public participation in some cases to remain merely symbolic. Overall, the role of civil society and public participation in achieving sustainable development in Iraq can be summarized in three main axes: strengthening public trust and increasing transparency in policymaking, raising awareness and creating social pressure for the protection of the environment and natural resources, and creating local and national participation platforms for sustainable decision-making. These axes show that sustainable development in Iraq is impossible without the active presence of civil society and public participation.

Challenges of Adapting Global Standards to Iraq's Conditions

Adapting global sustainable development standards to Iraq's specific conditions requires a precise analysis of institutional, economic, and social obstacles. After years of war and political instability, Iraq is attempting to incorporate the 2030 Sustainable Development Goals into its national policies, but this path faces multiple challenges. The first main obstacle to achieving these goals is Iraq's severe dependence on the oil economy. While global standards emphasize economic diversification and the development of renewable energy, Iraq still derives more than 85% of government revenue from oil. This dependence on oil resources has prevented the agricultural and industrial sectors from growing sufficiently and has impeded the achievement of desirable economic diversification.

The second challenge is institutional weakness and administrative corruption, which are among the fundamental obstacles to achieving sustainable development in Iraq. The country's supervisory institutions do not have the capacity necessary to enforce sustainable development regulations and policies, and lack of transparency in governmental processes has caused many environmental policies to lack the required effectiveness in practice. This situation clearly contradicts global standards of good governance and prevents transparency and accountability in governmental policymaking (17).

The third major challenge concerns environmental and climate crises. Declining water resources, desertification, and degradation of the Mesopotamian wetlands are among the environmental problems that have intensified in Iraq. Global standards emphasize sustainable management of natural resources and mitigation of climate change, but Iraq lacks practical and binding strategies to confront these crises. This shortage of practical strategies prevents the country from achieving sustainable development, and the negative effects of environmental crises continue.

The fourth fundamental obstacle is the absence of coherence between national and local policies. Many Iraqi governorates require specific programs and policies because of their particular geographical and social conditions, but Iraq's national sustainable development documents adopt a general and inflexible approach that cannot be effectively coordinated with local needs (18). This lack of adaptation and coherence between national and local policies has caused the implementation of global goals at the local level to fail in many cases.

The fifth challenge is the shortage of financial resources and foreign investment. Political and security instability in Iraq has prevented the attraction of foreign investment, and the Iraqi government lacks the capacity to finance large environmental projects and sustainable infrastructure. This situation is particularly difficult in relation to investment in renewable energy and environmental projects and limits Iraq's capacity to achieve sustainable development goals.

Overall, the challenges of adapting global standards to Iraq's specific conditions show that the country requires institutional reforms, reduced dependence on oil, investment in renewable energies, and increased transparency in order to achieve sustainable development. Without these fundamental reforms and changes, global sustainable development goals in Iraq will remain merely at the level of documents and will not be realized in practice.

Strategies for Strengthening Environmental Governance in Iraq

Environmental governance in Iraq has faced serious challenges in recent decades, including institutional weakness and administrative corruption, severe dependence on the oil economy, and environmental crises resulting from climate change. To strengthen environmental governance and achieve sustainable development, Iraq requires a set of structural, institutional, and social reforms that should be implemented in an integrated and coordinated manner. The first step in this path is institutional and legal reform. Iraq must establish an independent Ministry of Environment with sufficient authority to supervise construction and industrial projects and ensure that economic development proceeds in accordance with environmental principles. Drafting a comprehensive environmental law that includes environmental and strategic impact assessments can provide a binding framework for all economic and construction activities. In addition, strengthening judicial and supervisory institutions to combat administrative corruption in the environmental field is essential, because corruption and weakness in oversight are among the main obstacles to implementing environmental policies (11).

The second step in strengthening environmental governance is increasing transparency and accountability. Establishing open environmental data systems that enable public access to information on water, air, and soil quality

can increase public trust and effective social participation in oversight processes. Requiring oil and industrial companies to publish annual environmental reports and ensuring active participation by the media and civil society in monitoring policy implementation are also effective tools for achieving transparency. These measures can help strengthen the responsibility of the state and the private sector toward environmental protection and create an environment in which the public interest and the preservation of natural resources are prioritized.

Reforming the Legal and Institutional Structure: Comprehensive Laws and Environmental Courts

Reforming Iraq's legal and institutional structure in the environmental field is an unavoidable necessity, because existing laws in this field are fragmented and inefficient and are unable to respond to new environmental crises such as climate change, pollution caused by oil industries, and desertification. Drafting a comprehensive environmental law that covers all dimensions of natural resource management, environmental impact assessments for projects, and enforcement guarantees can be the first step in reforming environmental governance in Iraq. This law should function comprehensively and effectively, especially in the area of assessing the environmental impacts of industrial and construction projects, ensuring environmental sustainability, and monitoring implementation. In addition to drafting new laws, establishing specialized environmental courts to deal quickly and accurately with environmental violations is another necessary step in reforming Iraq's legal system. These courts should operate with sufficient authority and institutional independence so that they can resist political and economic pressures and effectively and impartially address environmental violations. This will not only increase the efficiency of the judicial system in the environmental field but will also help reduce administrative corruption (3). Furthermore, strengthening supervisory institutions and requiring oil and industrial companies to comply with environmental standards, together with increasing transparency in access to environmental information, can strengthen public trust and increase the level of community participation in oversight processes. Public access to information, especially regarding the quality of water, air, and soil resources, ensures that environmental decisions are made on the basis of accurate and transparent data. Ultimately, legal and institutional reform must be aligned with the United Nations Sustainable Development Goals so that Iraq can improve its position in regional and global environmental governance and fulfill its international responsibilities in preserving natural resources and combating climate change.

Economic Diversification and the Development of Renewable Energies

Economic diversification and the development of renewable energies in Iraq are vital necessities, because severe dependence on oil has not only made the country's economy vulnerable but has also prevented the realization of sustainable development goals. Iraq, with its enormous oil reserves, is deeply dependent on this energy source, which has prevented other sectors such as agriculture, industry, and services from growing sufficiently. To move toward a diversified economy, Iraq needs to invest in these sectors to create sustainable employment while simultaneously reducing pressure on natural resources. In this regard, renewable energies, especially solar and wind energy, can play a vital role in reducing dependence on fossil fuels. With abundant sunlight and suitable wind capacities, Iraq has high potential for developing these resources. Developing these energy resources not only helps reduce greenhouse gas emissions but can also create conditions for attracting foreign investment and transferring modern technologies to the country. Especially under conditions in which climate crises and climate change represent serious threats to the region, investment in renewable energies can play an important role in environmental protection (5). In addition, creating tax and legal incentives for companies active in the field of clean

energy can increase the private sector's motivation to invest in these areas. These incentives may include tax reductions, facilities for project financing, and the simplification of legal procedures for renewable energy companies. Consequently, economic diversification and the development of renewable energies should be implemented within the framework of institutional reforms and in alignment with the United Nations Sustainable Development Goals so that Iraq can move toward a green and sustainable economy and protect itself against the threats arising from climate change and future economic crises.

Strengthening Regional and International Cooperation in the Environmental Field

Strengthening regional and international cooperation in the environmental field is a vital necessity for Iraq, because many of the country's environmental crises are transnational in nature and cannot be resolved without coordination and cooperation with neighboring countries and global institutions. Examples of these crises include dust storms resulting from desertification, the decline of the water resources of the Tigris and Euphrates, and the degradation of the Mesopotamian wetlands, all of which require joint cooperation with neighboring countries such as Iran, Turkey, and Syria. To address these challenges, Iraq should strengthen its institutional capacity by signing bilateral and multilateral agreements on water resource management and combating desertification (12). In addition, active participation in international conventions such as the climate change convention and the biodiversity convention can help Iraq benefit from global financial and technical resources. Cooperation with international organizations such as the United Nations Development Programme and the Food and Agriculture Organization can also create the conditions for implementing wetland restoration projects and sustainable natural resource management (11). Furthermore, establishing regional cooperation networks for monitoring air quality and combating dust storms can help reduce the effects of shared crises. Ultimately, strengthening regional and international cooperation not only contributes to protecting Iraq's environment but also improves the country's position in global environmental governance.

Conclusion

The examination of environmental governance in Iraq shows that the inefficiency of this system is not only the result of insufficient laws but also the outcome of a set of multidimensional factors, including political instability, institutional weakness, fragmented competencies, administrative corruption, lack of transparency and public participation, and severe dependence on oil resources. These conditions have caused environmental crises such as water scarcity, desertification, dust storms, wetland degradation, and widespread pollution to threaten human security and Iraq's path toward sustainable development. Strategies for strengthening environmental governance in Iraq must be based on the principles of sustainable development and good governance, including the reform and integration of legal frameworks, institutional and executive empowerment, the incorporation of environmental considerations into economic and energy policies, the enhancement of transparency and accountability, the expansion of civil society and stakeholder participation, and the development of regional and international cooperation. Aligning Iraq's environmental governance with global standards is not only a scientific and environmental necessity but also a fundamental prerequisite for political stability, economic development, and sustainable human security in the country. In general, reforming environmental governance in Iraq is a strategic necessity that can reduce environmental crises, strengthen social trust, and pave the way for the country's movement toward sustainable development and intergenerational justice.

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Authors' Contributions

All authors equally contributed to this study.

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The authors of this article declared no conflict of interest.

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Transparency of Data

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