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Environmental Security Law as a Solution to Desertification Problem

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A brief overview of the Iraq Policy Program

The Iraq Policy Program aims to bridge the gap between youth elites and decision-makers by training young elites to effect positive change through influencing the decision-making process. The program aims to empower participants to prepare policy papers and propose policy alternatives aimed at enhancing system performance and supporting its legitimacy. This program enables participants to communicate with decision-makers and understand the main difficulties and problems affecting the implementation and follow-up of public policies. Additionally, the program seeks to provide participants with a realistic understanding of the decision-making environment in Iraq, as well as an understanding of the opportunities and challenges of change.

The program stages

Preparation: Assisting participants in acquiring the fundamental skills to prepare policy papers and effective advocacy campaigns.

Discovery: Clarifying important public policies in Iraq by experts through stakeholder engagement, frameworks and institutional procedures, practical realities, and discussions surrounding each public policy, as well as reform prospects.

Engagement: Training participants to develop promotional campaigns and coordinate meetings with government officials to initiate their campaigns.

Enrichment: Supervising participants to prepare a policy paper in their area of interest to enrich dialogues, develop policy alternatives, which can help address current challenges.

About the Center

The Platform for Sustainable Development is a registered center with the Non-Governmental Organizations Department at the General Secretariat of the Council of Ministers under the number (1S2106012). It serves as a space for thought, dialogue, and action towards positive change.

Vision

We seek to establish a platform for dialogue and policies that contribute to achieving the Sustainable Development Goals in Iraq.

Mission

Filling the gap between the state and society to ensure the essence of democracy by engaging citizens in the decision-making process through training, monitoring, analysis, research, awareness, and advocacy.

Strategic Goals

- Preparing a youth elite that rises to its social responsibilities through studying problems, proposing policy alternatives, and working towards their implementation.
- Utilizing knowledge outputs and encouraging youth to work towards achieving the Sustainable Development Goals
- Presenting statistics and issues that occupy the political arenas and societal circles to reflect a deeper understanding of the Iraqi reality.
- Creating a network of active, informed, and committed citizens dedicated to the project of building the Iraqi government.

Executive Summary:

Planet Earth is currently undergoing significant transformations due to the phenomenon of global warming resulting from economic activities and excessive use of fossil fuels that emit greenhouse gases, leading to environmental challenges such as droughts and water scarcity in some regions, while causing floods in others.

Climate change impacts, including reduced rainfall, water scarcity, rising temperatures, and a significant increase in desertification, have had a profound effect on agriculture in Iraq in recent years. The cultivation area for crops, particularly wheat, decreased by 50% in 2022 compared to 2021, resulting in a significant drop in crop deliveries to the Ministry of Agriculture, from 4.2 million tons in 2021 to 2.5 million tons in 2022, and 6.2 million tons in 2020.

This paper proposes a range of solutions, alternatives, and recommendations related to legal legislation or practical measures by relevant authorities in the fields of environment, climate, and agriculture. These measures aim to develop appropriate strategies and plans to overcome the impacts of climate change and reduce its adverse effects, including food scarcity and threats to water security in Iraq

Introduction:

The term “food security” refers to the availability of food for individuals without any shortage. Food security is achieved when individuals do not fear hunger or face it, and it is used as a criterion to prevent future food shortages. Water is considered one of the most important natural resources in arid and semi-arid regions like Iraq, as it controls population distribution, economic activities, especially agriculture, and is therefore a key pillar of national food and water security.

The exacerbation of water problems, increased demand due to population growth and economic development, negative climate change impacts, and significant water pollution issues have rendered some water sources unsuitable for human use.

The sharp decline in agricultural land, the lack of biodiversity in agriculture, land and soil deterioration, and the increase in sandstorms have all led to a decrease in agricultural production in Iraq. Farmers have suffered from seed and fertilizer shortages, while livestock breeders have been forced to sell or abandon their animals, with some falling victim to diseases. Likewise, the rising prices of foodstuffs have prevented many poor Iraqis from supplementing their government-provided



food rations with fresh and nutritious food. Water scarcity is one of the key factors contributing to the loss of livelihoods.

The aim of this paper is to study the impact of climate change on food security levels in Iraq, analyze the damage caused to food security, its effects on the population, and find the necessary solutions to mitigate climate-related damage while also increasing and ensuring the availability of food for all members of society.

Background:

Iraq is among the countries most severely affected by climate change, and it ranks as one of the highest water consumers. The decrease in rainfall rates in recent years has led to a significant increase in drought, with the past year being one of the driest seasons in 40 years. This has resulted in water scarcity, desertification, and soil erosion due to unsustainable agricultural practices, leading to the destruction of land and water sources in Iraq, further exacerbating soil degradation and pollution. Several factors influence food security to some extent, including desertification, drought, and others. Among these factors:

1. **Rising Temperature:** Most desertified lands have high temperatures, resulting in increased soil evaporation, reduced rainfall effectiveness, decreased relative humidity, and a lack of natural vegetation. High temperature ranges are characteristic of most arid and semi-arid regions, affecting soil components and cohesion, making them susceptible to erosion in these environments.
2. **Removal of Vegetative Cover Due to Human Activities:** The removal of vegetative cover for human activities has made the land vulnerable to desertification. Depriving the soil of its natural vegetative cover that provided protection against erosion and drift.
3. **Over-Irrigation of Crops:** Many farmers still have the misconception that giving more water to plants results in better quantity and quality of production. However, excessive watering negatively affects plant productivity due to decreased soil productivity.

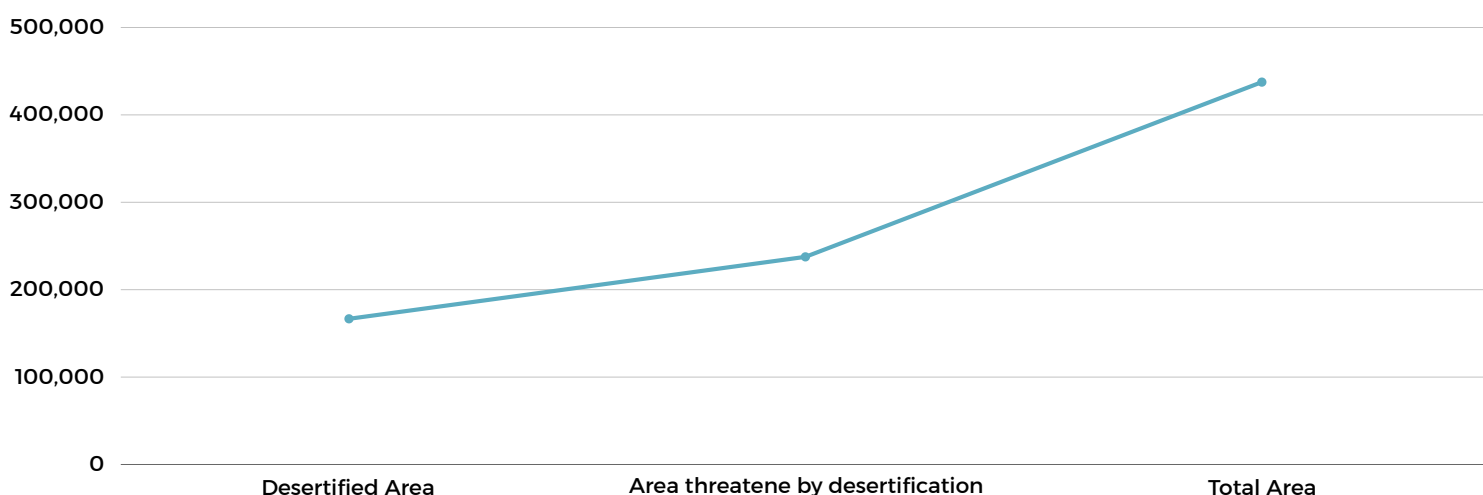


Effects of the Issue:

1. **Deterioration of Vegetative Cover:** The removal of vegetative cover has negative effects on biodiversity, wildlife, water sources, local climate, humidity, temperature, wind, and soil erosion.
2. **Soil Degradation:** Desertification leads to soil erosion or salinity, waterlogging due to excessive irrigation, and a decrease in biological and agricultural productivity due to soil fertility loss. It also leads to soil pollution as a result of adding gaseous, liquid, or solid materials from mining, industrial, agricultural, or wind and water sedimentation sources.
3. **Salinization and Decline in Groundwater Levels:** Excessive pumping and declining rates of aquifer recharge have led to a drop in groundwater levels, resulting in population-related problems such as food scarcity, famines, poverty, disease, and migration.

In recent decades, Iraq has experienced drought in most of its regions, with a 30% reduction in rainfall and a decrease of more than 50% in the water levels of major rivers. This has resulted in a 70% decrease in rainfed crop production, as well as a 37% and 63% reduction in wheat and barley production in the central and southern regions, respectively. The problem becomes more complex when considering that desert climates dominate 70% of the country, especially in the alluvial plain and the western plateau, where annual rainfall ranges from 50 to 200 mm.

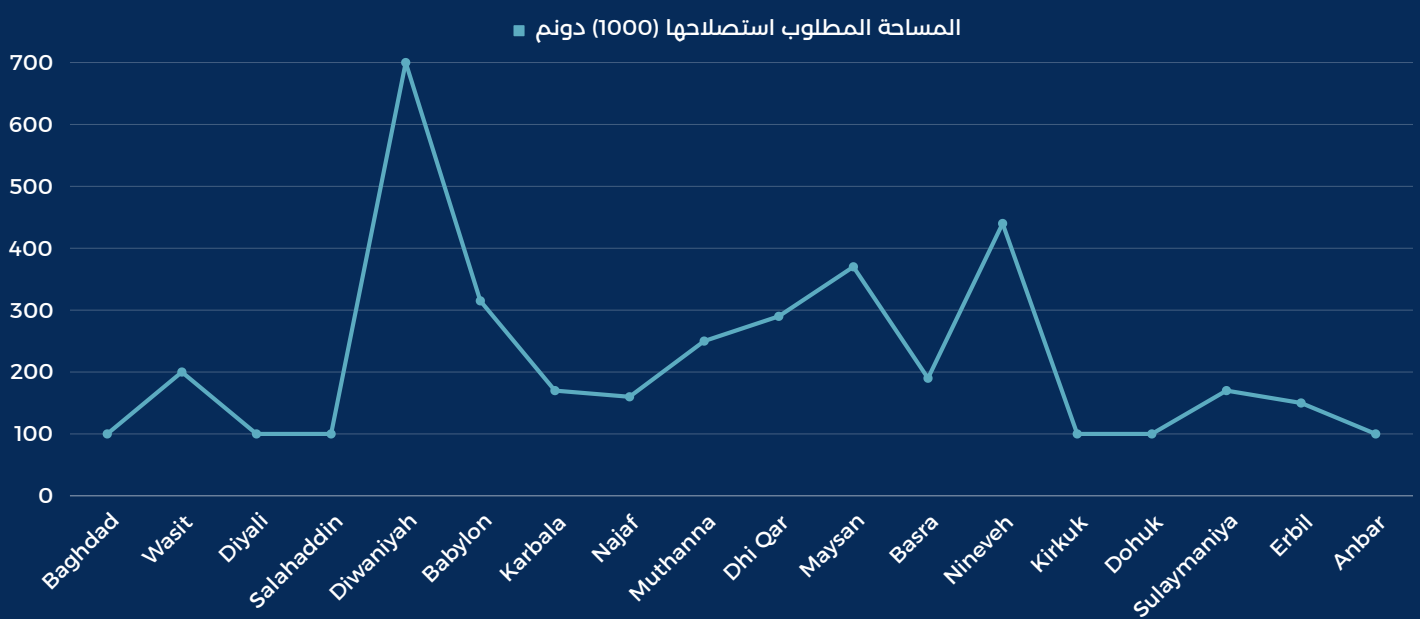
Figure No. (1) Desertified and threatened by desertification areas in Iraq





The agricultural sector is one of the most affected sectors by water scarcity in Iraq, especially with the use of traditional methods. Therefore, improving and developing irrigation methods is crucial. The low level of water utilization in irrigation is due to several main reasons. For example, in 1992, irrigated areas in Iraq were estimated at about 2300 hectares, using more than 39.2 billion cubic meters of water, at an average of 1700 hectares per cubic meter.

Figure (2): Areas to be reclaimed during the plan for the years (2014-2020)



Policy Alternatives:

There are several policy alternatives and solutions that can be summarized as follows:

- Amend and Activate Environmental Protection Law No. 27 of 2009: The importance of amending this law lies in adapting the current situation to the increasing rates of desertification, the loss of green spaces, and the climate changes occurring worldwide. This adaptation should align with climate summits such as Paris (2015), Glasgow (2021), and Sharm El-Sheikh (2022). The focus should be on sustainable development and renewable energy, contributing to the development of the agricultural sector and increasing crop yields to maintain food security.



- **Activation of the Environmental Security Council or Environmental Protection Council:** These councils are crucial for issuing resolutions and directives related to environmental protection and raising awareness in various areas. This includes guiding the use of water in agriculture, promoting modern methods, conserving agricultural lands and orchards from land reclamation, and raising awareness about food security.
- **Legislation of Environmental Security Law:** This law should encompass the preservation of the environment, water resources, and combating desertification. It should also include penalties and sanctions, as well as directives. Such policies help reduce excessive use and wastage of water and natural resources.

Additionally, it should put appropriate plans in place to stop land reclamation and its conversion into residential areas. It should also promote the effective use of forests in some regions to mitigate the severity of climate change. Environmental protection requires an understanding of environmental laws, and this can only be achieved through institutions dedicated to environmental protection.

One of the most important of these institutions is the United Nations Environment Programme, which monitors and analyzes the environment, provides environmental advice and information, enhances international cooperation, and ensures compliance with environmental agreements. It also includes strategies for developing environmental law, such as responsibilities for environmental damage, bilateral agreements, and aligning national environmental laws with international environmental law. It funds environmental programs worldwide, such as the “Belt and Road Initiative,” which aims to

share experiences and expertise in ecological restoration and desertification control for affected countries and utilize clean energy sources like wind and solar power. Additionally, mentioning the International Fund for Agricultural Development, one of its most significant provisions is supporting farmers and enabling them to make environmental decisions, providing assistance and loans to countries in various regions of the world through environmental projects. The World Food Programme aims to ensure food security, and one of its most significant provisions is the Food-for-Work Programme, which includes implementing projects in poor countries to revitalize these areas and assist affected populations, providing aid to these countries to develop agriculture and food production.

- **Increase Awareness Among Farmers About Modern Techniques and Irrigation Methods:** Modern techniques play a crucial



role in developing the agricultural sector and improving crop and agricultural product productivity. Increasing awareness about these techniques can encourage reduced consumption and wastage, contributing to a more sustainable agricultural sector.

The Feasibility of the Alternative:

The proper and just application of the law, along with its modification, can be achieved by adding legal provisions that align with the current reality. These provisions should encompass penalties and sanctions that encourage the protection of trees and agricultural lands. Moreover, they should include penalties related to gas emissions, aimed at reducing pollutants released by factories and vehicles. A portion of the revenue generated from these penalties should be allocated to continuous environmental preservation. The legislation of such a law aligns with Article 33/Second of the Iraqi Constitution of 2005, which stipulates that “the state shall guarantee the protection of the environment and biodiversity and its preservation.” The wide-scale enforcement and activation of this law within state institutions, ministries, provinces, and raising awareness about it should be at a level that ensures citizens understand the seriousness of climate change and its environmental impact,

as well as the importance of food security.

Active participation from civil society and relevant advisory and enforcement bodies will ensure extensive awareness and implementation campaigns. This approach is consistent with successful community-based environmental campaigns and relief efforts. Therefore, these extensive methods are impactful in society and one of the most successful means of addressing this policy alternative.

Conclusions:

- Iraq is among the countries most vulnerable to desertification and drought due to low rainfall and high temperatures in most of its provinces.
- Climate change directly affects food security in Iraq, which, in turn, impacts the availability of sufficient food for the population.
- The rise in temperatures during the summer, exceeding 50 degrees Celsius, and the variability in rainfall throughout the year have led to an increase in dry and semi-dry lands in Iraq, rendering agriculture almost impossible in these areas.



- The decrease in agricultural lands, biodiversity in agriculture, land and soil degradation, and the increase in sand dunes have caused numerous problems and the displacement of a significant number of humans and animals. Examples include the multiple sandstorms witnessed in the country in 2022, resulting in human and animal fatalities and damage to agricultural crops.

Recommendations:

1. Planting windbreaks and covering the soil surface, especially in sandy lands, to reduce soil erosion and sand encroachment.
2. Establishing terraces in areas with low slopes or flat lands for excess water drainage, preventing groundwater rise. Preserving natural vegetation and its rational use to protect soil from the danger of drifting and erosion.
3. Improving weather and climate-related information provided to farmers represents one of the means to reduce nutrient and waste loss. Therefore, there is a need to increase awareness and guide farmers on the concept and importance of sustainable agriculture and its role in combating desertification, land degradation, and crop deterioration due to climate change.
4. Reforestation plays a major role in climate change mitigation and improving food security.
5. Supporting innovation and entrepreneurship can also aid in the process of change. New processes and technologies in natural land planning, soil analysis, irrigation, and alternative proteins, such as plant-based meat, make land use and agriculture more sustainable.

References:

- United Nations and Non-Governmental Organizations call for action to support Iraq in water resource management and climate change adaptation, June 17, 2022, Baghdad.
- Projects of the Food and Agriculture Organization contribute to revitalizing crop and livestock production and creating job opportunities by stimulating growth - 2022.
- Karbala Center for Studies and Research - The Problem of Desertification, Its Causes, and Solutions - M.Sc. Malik Rahim Abdul Zaid Yadam - 2022.
- Desertification in Iraq and the Hindrances to Solutions - 2017.
- Jabr, Mustafa Qais, et al., Available Water Resources in Iraq and the Emergence of Water Scarcity - 2022.
- Al-Shammari, Jitan Fakhri Hasan, Food Security in Iraq: Problems and Solutions, Educational Studies Journal, Issue 46, 2019, p. 145.
- Al-Bayan Center for Studies and Planning, Reducing Environmental Pollution and Climate Change, Green Middle East Initiative, by Abdul Razzaq, 2021.
- Sabri, Desertification: Its Concept and Causes, First Edition, Dar Al-Yazouri, Jordan, 2011, p. 145.
- United Nations Environment Programme Report for 2001, Fortifying International Environmental Management, UN Publications, New York, 2001, p. 12.
- United Nations Convention to Combat Desertification Conference of the Parties in its fourth session, 2005, Ibid, p. 32.

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YOUR JOURNEY IN POLICY WORK STARTS WITH US



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