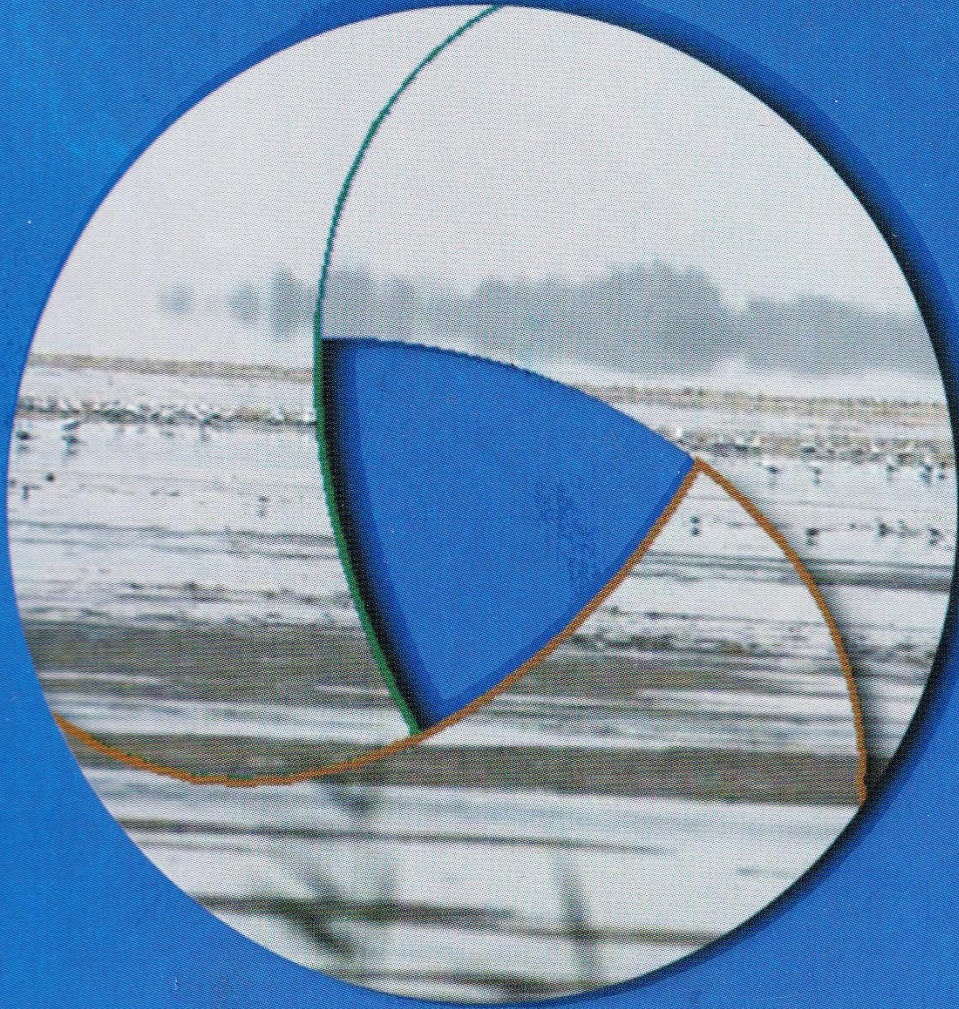




Ministry of Environment



Republic of Iraq



THE NATIONAL ENVIRONMENTAL STRATEGY AND ACTION PLAN FOR IRAQ

(2013 - 2017)

Executive Summary



Republic of Iraq

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The National Environmental
Strategy and Action Plan for Iraq
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"Executive Summary"

This document has been prepared in collaboration with the United Nations Environment Programme, United Nations Development Programme and the World Health Organization





Prime Minister Speech

Iraqis today look to upgrading their livelihood to the level of what was described by the country's constitution in its thirty-third article, "Everyone has the right to live in a sound environmental conditions," and it really is what the Ministry of Environment try to achieve and is represented by its sober emblem "environment gives us life, let's care for it". Perhaps this is what distinguishes the relentless pursuit of the government, and all its sectors, to achieve those aspirations and environmental

benefits and privileges to live in a healthy, safe, beautiful, sustainable, multipurpose and productive environment.

The country has suffered in the past from a failure in the political and administrative decisions which led to a serious deterioration, and for decades, in the social and living conditions for Iraqis. Those circumstances later shadowed, and still, most of the wealth and environmental features in Iraq, and led to the aggravation of the suffering of individuals from the low level of welfare services associated with local ecosystems, and in conjunction with the weakness and lack of clear commitment to the application of the provisions of the legislation and the environmental laws and regulations .

The development and protection of environmental quality and sustainability for future generations is a national duty, popular, and governmental, with shared responsibilities to achieve it by individuals, organizations and government departments alike. However, this ultimate goal will not come to light without the availability of several factors, not least the proper environmental planning and identifying approaches and environmental policies to be stated in a strategy for the future that is clearly defined and has guaranteed results .

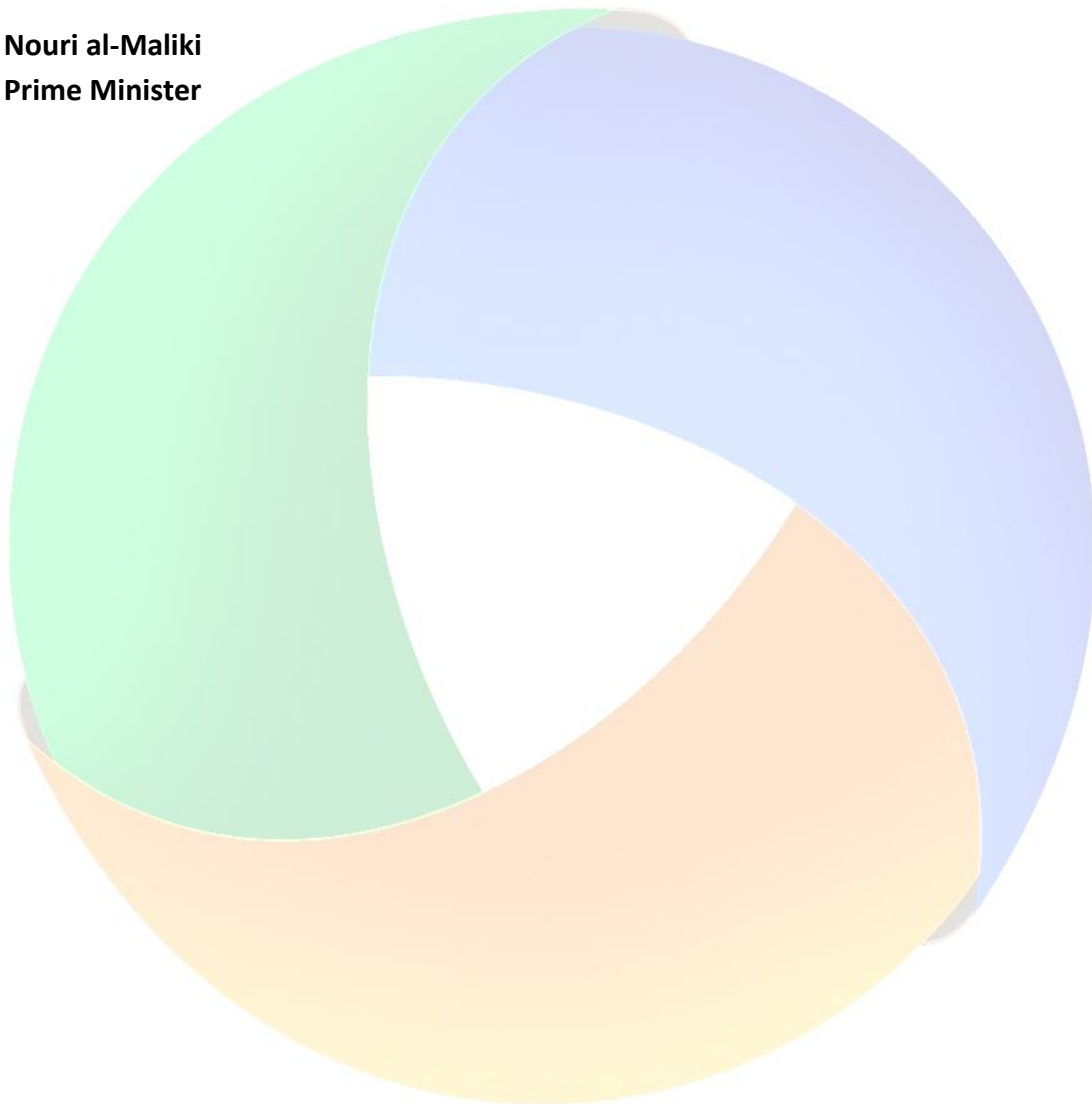
The government, over its past years has tackled the tasks of environmental protection and conservation of natural resources through the issuance of laws and regulations that aimed at that. As well, has ratified many regional and global conventions and protocols which have high content of support to what Iraq sought to achieve for the aspirations and objectives in this area.

We are delighted today to reap the first fruits of scientific work organized and played by the Ministry of Environment for planning and determining priorities, launching the first national environmental strategy specializing in environmental issues. Thereby, achieving the launch of attested work and effective realization of

the Action Plan, all aimed to protect ecosystems and biodiversity and to address environmental problems within the nature of Iraq .

Sincere thanks and appreciation is offered to all who contributed to the completion of this work, calling for God to help us all for the goodness of Iraq and humanity. Peace and mercy and blessings of God.

Nouri al-Maliki
Prime Minister





Minister of Environment Speech

I'm pleased to present the National Environmental Strategy and Action Plan (NESAP) for Iraq (2013 – 2017) to both citizens and decision makers in order to take all necessary measures to preserve the environment and ensure safe life and good health for Iraqis.

After the creation of the Ministry of Environment (MoE) in 2003, there was a need to develop programs and plans to address the deteriorating environmental situation in Iraq. In order to adopt an accurate technical approach, decisions makers sensed the need for an integrated national environmental strategy in Iraq taking the current situation and future prospects into consideration.

A nation's development and advancement can be truly measured by having future visions based on clearly defined strategies for different social goals and activities. Relations between governments and people are based on a series of commitments which can't be satisfied without previous knowledge of current and future conditions including environmental and strategic planning and long-term plans, as a trait of developed nations, which provide a true opportunity to address the actual and complicated environmental problems. Consequently, it leads to building an integrated national environment corresponding to the aspirations of the state and society. Lack of proper strategic environmental planning and random decision making have caused significant environmental deterioration in Iraq and reflected negatively on public health, ecosystems and living organisms in Iraq.

As everyone knows, Iraq has gone through extremely difficult conditions because of the repeated and continuous wars causing significant damage to all aspects of life. Today, the environment requires a practical reconsideration of the requirements to halt deterioration, protect the environment and biodiversity from pollution, change ways of addressing natural resources to sustainable approaches and activate the role of local authorities and population in planning proper environmental development and management.

NESAP highlights a vital issue, that is "state institutions and society shall adopt a proper and integrated environmental management approach by applying the concepts of sustainable development, encourage cleaner production, use environment-friendly technology and cleaner fuel, implement policies of optimal utilization of natural resources and promote environmental awareness to build a generation well aware of environmental issues."

NESAP aims at providing a distinguished quality guide for state institutions and society for environment protection in Iraq. Previous development plans were based on excluding environment protection projects from the priorities of other ministries and sectors for institutional and financial considerations. This Strategy, however, obliges the bodies concerned (as they have participated in the preparation process) to adopt environment-protection procedures and implement relevant activities during the period (2013-2017).

MoE has adopted an ambitious plan to pursue this task by bringing together its experts, other academic professionals from the Ministry of Higher Education and Scientific Research and international experts from UNDP and UNEP. The Strategy identifies urgent priorities such as protecting and improving the quality of water, soil and air; preserving biodiversity and marine and coastal environment; minimizing oil, radioactive and chemical pollution and waste in general; and developing the institutional and legislative framework. Furthermore, the Strategy has an implementation plan that includes several programs to protect and enhance the environment over the next five years. We should praise the efforts of the representatives of all ministries in the preparation of the strategic environmental analysis in collaboration with the World Health Organization, which has been one of the important sources that have been relied upon to develop this Strategy.

We extend our gratitude to all parties participating in accomplishing NESAP, especially UNDP-Iraq office, UNEP-West Asia office, MoE experts and academics from the University of Baghdad. Special thanks to head and members of Health and Environment Committee in Iraqi parliament for their valuable comments on this documents. May God grant us all success to do good for our beloved country and serve humanity.

Eng. Sargon Lazar Slewa

Minister of Environment



Speech of the Head of Health and Environment Committee at the Iraqi parliament

One of the most important features of progress today is the care and attention a nation may provide to environment. Environment has direct and indirect impact on the human health and also on various social and economic aspects of life in different countries.

Having suffered much from the scourge of wars, Iraq needs diligent and methodical efforts to repair the ravage caused by those wars. Meanwhile, natural changes, most prominently the climate change and drought, have started to negatively affect our environment.

The first step toward improving the environmental conditions is an in-depth analysis of the environmental circumstances in Iraq and the development of adequate strategies and action plans to reform the whole environmental system and protect environment against the so many wrong practices which are unfortunately still prevalent as mentioned in this document.

We highly appreciate the MoE initiative to develop the national environment strategy and the related 5-year action plan. This document, which was developed last year by national experts in collaboration with UNEP/UNDP consultants, provides a realistic strategic analysis of the environmental situations in Iraq.

What distinguishes this MoE strategy prepared is the realistic identification of the priorities of environmental action in Iraq as well as the most important environmental challenges and problems facing the country. The strategy proposes programs and projects to address these problems in order to protect and improve the environment in Iraq. We, as a legislature, are responsible of this sector. We support and adopt this document with a view to providing a good environment worthy of the children of our country. We recommend all parties to cooperate with MoE in implementing its tasks. We also call all individuals, government institutions and NGOs to provide physical as well as moral support to MoE to enable it to fulfill its duties.

God bless

Dr. Liqaa Alyassin
Head of Health and Environment Committee-Iraqi Parliament

The Strategy Development Team

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Chapter 1 : Introduction

The environment in Iraq has continually suffered many problems for which the causes may be due to natural, human factors and wrong policies which have isolated Iraq from the world for many years, as a result of successive wars and international sanctions and the harsh economic blockade.

the Ministry of Environment with the active participation of all the relevant authorities and by national expert participation, with technical support of both the United Nations Development Program (UNDP) and United Nation Environment Program (UNEP) and the World Health Organization (WHO), during the period July, 2011 to June, 2012, has taken initiative to determining the path of environmental interventions in Iraq for the period 2013-2017, and for this purpose has embarked on the preparation of this strategy and its Executive program.

The environment in Iraq attains increased attention at all levels which was also confirmed by HE Prime Minister Nouri al-Maliki in his opening address to the strategy " Protection of the environment is a national duty that requires stakeholders to work hard to take care of it and take the necessary measures to preserve it", especially since the environment of Iraq has been exposed to serious challenges and continuously neglected during the previous eras, and therefore there is a need to serious and rigorous procedures of legislation and laws for environmental protection, and the need for capacity building and the provisions of participation of all competent specialized institutions and bodies and non-governmental organizations in order to protect the elements of the environment and biodiversity, with emphasis on raising environmental awareness at the community level, which we believe is key to the solution for the protection of the environment in Iraq. "

In addition to what was confirmed by HE Eng Sargon Lazar Slewa, the Minister of Environment in introducing the strategy "the true measure of the civilization of the nation and progress comes through ownership of future visions which are based on strategies and the goals and activities of interest to the community, including environmental planning, and for the long-term strategic plans". Although the goal of completion of this strategy and its Executive program in Iraq is its use as a guide for work of the institutions of the state and society in order to protect the environment in Iraq, and can be regarded as distinct quality work.

Dr Liqaa Alyassin, Chairman of the Health and Environment Committee in the Iraqi Parliament has asserted that what distinguishes the strategy prepared by the Ministry of Environment as we have stated, the determining of priorities for environmental action in Iraq and to identify the most important challenges and

environmental problems facing the country and then propose programs and projects to address these problems so that the environment in Iraq is protected and improved, and we as a legislature responsible for this sector support and embrace what is stated in this document in order to provide a good environment worthy of the children of our country, and we recommend that all parties need to cooperate with the Ministry of Environment in the implementation of its tasks and requires implementation to achieve the objectives of this strategy. "

The Ministry of Environment in appreciation of the importance of stakeholders participation in the preparation of the strategy, has set up a team which held intensive consultations with technicians, experts and leading officials in the institutions concerned, in addition to holding six meetings of experts with national consultants, and held three seminars for discussion of issues, problems, and alternatives and identification of priorities to provide the necessary technical assistance for the preparation of the strategy.

The strategy consists of four chapters in addition to the fifth executive plan. The first chapter includes an introduction while Chapter two deals with a general description of the state of the environment in Iraq, the third chapter covers the diagnosis and analysis of key environmental issues and identifies the strategic objectives, and finally the fourth chapter included monitoring and evaluation mechanisms and the roles of different institutions.

CHAPTER 2 : Description of the state of environment in Iraq

Iraq has in recent decades passed through a series of wars and political changes which directly and negatively affected the reality of society and the environment. The drivers as (causes) of environmental degradation in Iraq can be summarized as follows:

1. Population Increase which led to increasing needs for food, energy resources, housing and water, in addition, timber cutting, fishing and overgrazing have also led the degradation of ecosystems and loss of homeostasis, and increasing amounts of solid and liquid wastes.
2. Urbanization, which in turn led to the displacement of a proportion of the rural population to the cities at a rate of three times higher over the past two decades, placing pressure and drain on resources and increased environmental degradation
3. Desertification and land degradation, where the desert lands accounts for about 42% of the total area of Iraq has exacerbated this phenomenon and led to high rates of sand and dust storms which hit major cities such as the capital Baghdad at frequent intervals during the recent years. The main causes of desertification may be attributed to:
 - A. Natural conditions of weather and physical properties of the soil.

B. Human activities such as indiscriminate cutting of natural plants and urban activities and overgrazing.

4. Poor environmental awareness, due to the novelty of the concept of environmental awareness in Iraqi society, not including the environmental issues in the educational curriculum, and the community and individuals who are conducting practices unfriendly environmental practices.

5. Ineffective monitoring and environmental control systems

6. Wars and political circumstances which impacted the state of the environment in Iraq mainly in the form of draining the marshes and the decline of the green areas and the drop of water supplies from neighbouring countries to Iraq.

This deterioration has resulted in several negative changes in the state of the environment which can be summarized as follows:

A. Scarcity and pollution of water sources

B. Air pollution

C. The deterioration of biodiversity

D. Pollution of the marine waters

The Ministry of Environment carried out in 2008 the first study in cooperation with the World Bank to determine the cost of environmental degradation in Iraq. It has been estimated at \$5.5 billion, or the equivalent of 6.4% of GDP.

It is important to go about adopting a green economy because of its economic and social results of a positive addition to ensuring the sustainability of resources and achieve greater efficiency in their use. It is hoped that Iraq can develop a strategy to shift to a green economy based on this strategy.

In terms of responses at the level of policy, legislation and environmental information, there is no doubt that concern for the environment in Iraq obsessed the attention of political leaders and decision-makers by identifying issues and environmental considerations and methods of dealing with them and included these in the priorities of national development plans and to meet international obligations and to achieve sustainable development. The scientific and technical environmental information has been provided in various levels such as annual reports on the environmental situation in Iraq (2004-2010) or other reports related to the environmental issues by national and international institutions.

The Ministry of Environment and since its inception implemented the state policy in the field of protecting and improving the environment in Iraq and shared it with a group of institutions such as the Health and Environment Committee in the House of Representatives and the Environmental Protection Authority to protect and improve the environment in Kurdistan region and departments of the environment in the provinces, which all seek to achieve sustainable exploitation of natural resources and strict application of the package conditions and technical specifications for environmental activities under the umbrella of contemporary semi-integrated environmental laws and regulations. The need is still urgent to complete the

legislation and the imposition of strict environmental control to all activities without exception, and in full compliance with the laws and regulations.

As it is also necessary to escalate the cooperation and partnership with the private sector in this field especially benefiting from democratic transitions and pluralist system and the move towards open market economy and openness to the international community, with which Iraq has become a full partner adhering to international environmental policy. A special priority was singled out a practice for environmental management that leads to commitment and fulfillment of international environmental treaties falling among the five priorities of the United Nations document for development under UNDAF aid for Iraq (2011–2014). The preparation of this strategy was tuned and consorts with the requirements and guidance document UNDAF. Iraq have joined to most international conventions and treaties related to the environment to access international partnership in the consolidated Environmental Action, as it is currently in accession to a number of them.

CHAPTER 3 : The Strategic Goals

Ten key objectives of the strategy (strategic goals) have been identified including all subjects and environmental affairs, those goals came as a result of in-depth analysis of the issues and environmental priorities and the active participation of all stakeholders and the extensive consultations that took place during the preparation of the strategy. The report of the strategic analysis of the environmental sector in Iraq which was prepared in collaboration between the Ministry and the World Health Organization (WHO) formed an important source and a key for the preparation of the strategy. It has been taken into account the compatibility of those goals with the five axes of environmental sustainability, which appeared in the National Development Plan 2010-2014. These were air pollution, water pollution, soil pollution and desertification, and solid waste and waste disposable.

The main themes were identified for each strategic objective in which also included a range of issues relevant as it is shown in the attached matrix. These strategic objectives are integrated and interrelate with each other and they are here arranged by the logical sequence of these objectives and must be dealt with through a unified and comprehensive perspective. Solutions and interventions needed to deal with each issue were also proposed.

CHAPTER 4 : Assessment and Monitoring Mechanisms

The process of monitoring and assessment is one of the most important tools to review progress made in the implementation of the strategy and thus improve performance, efficiency and optimum utilization of resources. The Ministry of

Environment assumes responsibility for monitoring, which will be carried out by the district and institutional structures within the ministry. However, in regard to the assessment, a third party will be responsible for that during 2014 and 2017. Instructive Indicators have been selected for monitoring and assessment. It should be noted that these indicators are indicative and more specific numerical indicators will be selected for the forthcoming plans and strategies that will be linked to the determinants national standards and will be measurable and reviewable. The matrix includes the proposed instructive indicators for each strategic objective.

Matrix of Strategic Objectives:

Strategic objective I: Protection and improvement of air quality

Proposed instructive indicators: 1. the number of air monitoring stations in the cities, 2. The ratio of improved air quality (sulfur oxides, nitrogen oxides, and the suspended particles), 3. the number of databases on air pollution, 4. the number of factories that use cleaner production tools, and 5. Decrease rate of respiratory disease.

- The first axis: air pollution as a result of natural factors

Issues: 1. Dust storms, 2. Weather and climate factors, 3. Degradation of green areas.

- The second axis: air pollution by fixed industrial sources.

Issues: 1. Legislation and limitations of gaseous emissions, 2. Processing units and air pollution control, 3. The proliferation of private power generators, 4. Indiscriminate burning, 5. The use of inferior types of fuel, 6. The efficiency of the energy used, 7. Overlap of industrial areas with residential areas.

- The third axis: air pollution by mobile industrial sources.

Issues: 1. insufficient public transport system, 2. Random increase of number of cars.

- Axis IV: Noise

Issues: 1. the widespread of different capacities power generators, 2. Transport and industry

- Axis V: inspection, measurement and monitoring

Issues: 1. Air quality monitoring stations, 2. Databases and information, 3. National permissible levels of air pollutants, 4. Research on the control of air quality

- Axis V: Clean Energy

Issues: 1. the use of cleaner fuels, 2. Environmental friendly technologies, 3. Use of renewable energy, 4. Production of energy from wastes.

Strategic objective II: Protection and improvement of water quality

Proposed instructive indicators: 1. Number of operational wastewater treatment plants, 2. the success rate of water quality indicators emerging from the treatment plants, 3. depletion rate of groundwater (pumping compared to natural replenishment), 4. Rehabilitation of water resources of the marshes, 5. Number of efficient operational industrial water treatment plants, 6. Number of agreements signed with sharing water resources neighboring countries, 7. percentage of the beneficiaries of potable water and sewerage network.

- The first axis: the regional dimension of the scarcity of water resources in Iraq

Issues: 1. Agreements of regulating the sharing of quantity and ensure the quality of water with the neighboring countries, 2. exchange of Hydraulic and operating information with neighboring countries

- The second axis: water needs

Issues: 1. Climate change, 2. Degradation of water quality of water sources.

- The third axis: the sustainable and integrated management of water resources

Issues: 1. Research and development and capacity building, 2. the management of demand.

- Axis IV: the Marshes

Issues: 1. Decline in the quantity and quality of water of the marshes, 2. Reviving the marshes, 3. International and regional support

- Axis V: wastewater

Issues: 1. Sewage treatment, 2. Industrial, agricultural and domestic water treatment, 3. the main drainage canal.

Strategic Objective III: Reduction of land degradation and desertification

Proposed instructive indicators: 1. Maps for identifying sites of contaminated soils, 2. Number of desert oases that are revived, 3. Ratio of green area to urban land, 4. Percentage of annual increase in forested area, 5. the number and severity of dust storms per year

- The first axis: land use

Issues: 1. Plan of land use management and determination of degraded sites localities, 2. Sustainable development of desert oases in the North and Western deserts, 3. Urban expansion on agricultural land.

- The second axis: Desertification

Issues: 1. the expansion of sand dunes, 2. Green belts around cities and areas affected by desertification, 3. efficient use of irrigation water, 4. the emergence of dust storms, 5. Soil erosion.

- The third axis: soil contamination

Issues: 1. Land contaminated by mines and unexploded ordnance, 2. Salinization and water logging due to surface irrigation and wasting the water, 3. Contamination of soils with chemicals and petroleum derivatives

- The fourth axis: the natural vegetation

Issues: 1. Natural habitats within the urban area, 2. Natural grassland and desert areas, 3. Sustainable forest management and forest areas.

Strategic Objective IV: Conservation of marine and coastal areas

Proposed instructive indicators: 1. Assessed and recorded marine fish species and fisheries, 2. the percentage of decrease in the use of environmentally unfriendly fishing methods, 3. Proportion of coastal areas covered by maps for environmentally sound uses, 4. Determine the quality indicators of fresh water flowing into the sea 5. Number sunk vessels that are recovered per year, 6. Percentage of oil chemicals and other contaminants.

- The first axis: pollution of coastal waters

Issues: 1. Oil pollution, 2. Non-oil pollution, 3. Indicators of water quality and marine sediments

- The second axis: Marine Fisheries

Issues: 1. Sustainable management of marine fisheries, 2. Index of contaminants in the tissues of marine fish, 3. Means of fishing and fish storage and marketing

- The third axis: biodiversity in the marine habitat

Issues: 1. Protected areas in marine and coastal habitat, 2. Marine organisms that can be used as indicators for detecting pollution

- Axis IV: coastal areas

Issues: 1. Planning the Use of coastal areas, 2. Rehabilitation of degraded coastal areas, 3. Size of mixing water area, 4. The quality of inland waters flowing into the sea.

Strategic Objective V: Conservation and sustainable use of biodiversity

Proposed instructive indicators: 1. Number of periodic reports on the status of the species of interest, 2. The number of species that are propagated in captivity, 3. number of proposed projects for eco-tourism, 4. Number of nature reserves under construction

- First: native species

Issues: 1. Natural infrastructures necessary for the sustainability of natural biodiversity, 2. Field surveys of local species and reports of the status of important species, 3. Threatened species, 4. Native species within urban areas, 5. Biodiversity within agricultural environments

- The second axis: preservation of Iraq's organism samples

Issues: 1. Gene bank of local species, 2. Preserving biological samples, 3. Authoritative taxonomy of organisms by international natural history museums.

- Axis III: safety and bio-security

Issues: 1. Presence of invasive alien species within Iraqi habitats, 2. Management of genetically modified organisms and genetic products, 3. Monitoring of migratory species and migration corridors.

- The fourth axis: the sustainability of ecosystems.

Issues: 1. Endangered natural ecosystems, 2. Natural Reserves and National Parks and enclosures, 3. Eco-tourism and benefit from the services of volunteers, 4. International cooperation for the protection of specific ecological systems

- Fifth: the institutional and legal frameworks

Issues: 1. Encourage scientific research to promote biodiversity protection, 2. Care for biodiversity and its importance in the educational curriculum, 3. updating of fishing regulations and laws and the instructions for Wildlife Conservation, 4. Activation of fines, compensation and damages swap relating to the protection of biodiversity, 5. upgrade the capacity of workers.

- Sixth Axis: environmental awareness and public participation

Issues: 1. allocation of awards and honoring of active individuals and institutions in the preservation of bio-diversity, 2. Inventory of the environmental and cultural heritage and its rationalization, 3. involving of local communities in biodiversity issues

Strategic Objective VI: Development and Improvement of waste management

Proposed instructive indicators: 1. Introducing of an integrated system for waste management, 2. Quantities of solid, paper and plastic wastes that are collected and sorted, 3. The number of environmentally sound landfill sites, 4. The amount of hazardous waste that is processed by environmentally sound procedures.

- The first axis: non-hazardous waste

Issues: 1. Integrated management system for non-hazardous waste, 2. Private sector investments, 3. Scientific research projects, 4. Monitoring and control.

- The second axis: hazardous waste

Issues: 1. Hazardous Waste Management System, 2. Landfill sites, 3. Legislation and Limitations.

Strategic objective VII: Reduction oil pollution

Proposed instructive indicators: 1. Number of institutions related to the management of oil pollution and are subject to training and capacity building, 2. existence of a comprehensive regulatory system, efficiently operational, working to monitor abuses, 3. Number of prepared emergency and safety plans.

- The first axis: the institutional and legislative frameworks

Issues: 1. development of deterrent legislative procedures, 2. Technical requirements, 3. Capacity building, 4. Strengthening the regulatory system, 5. public participation, 6. International and regional conventions on waters.

- The second axis: the technological tools

Issues: 1. Load and unload of crude oil from tankers, 2. Sunk vessels, 3. On site processing equipment for the purposes of rehabilitation

- Axis III: Response to Emergency

Issues: 1. Environmental monitoring and early warning, 2. exchange of information, 3. safety and contingency plans

Strategic objective VIII: Reduction of radioactive contamination

Proposed instructive indicators: 1. readiness of the eligible landfill sites for radioactive waste treatment, 2. control of the transport of radioactive waste at border crossing, 3. Full inventory of areas of exposure to depleted uranium is prepared and Ready, 4. Environmental limitations of radiation based on the global standards.

- The first axis: Management of Knowledge and Communication

Issues: 1. source of radiation databases and information, 2. Capacity building and training, 3. Awareness and education

- The second axis: Radioactive-contaminated sites

Issues: 1. Evaluation and monitoring of radioactive contaminated-sites, 2. Identification of landfill sites and treatment of radioactive waste

- The third axis: the transport of radioactive materials

Issues: 1. Licensing, 2. Technical regulations and the regulatory system on border crossing points, 3. control of personnel Exposure.

- Axis IV: Depleted Uranium

Issues: 1. radiometric survey of contaminated sites, 2. Disposal of radioactive contamination of the affected vehicles and sites

- Axis V: contingency plans for radioactive contamination accidents

Issues: 1. Setting Radiological limitations, 2. a workable contingency plan, 3. organizing principles of public participation

Strategic Objective IX: Integrated management of hazardous chemicals

Proposed instructive indicators: 1. Maps and comprehensive surveys of the prevalence of chemicals in all elements of the environment, 2. Sources of production, transport and disposal of hazardous chemicals that are locally manufactured identified and documented, 3. number of border crossing points put up to monitor the illegal transport of hazardous chemicals, 4. Number of hazardous chemicals that are disposed of by an environmentally sound procedure.

- The first axis: inventory and assessment of the hazardous chemicals

Issues: 1. the proliferation of chemicals in the components of environment, 2. locally manufactured toxic and hazardous chemicals, 3. imports of toxic and hazardous chemicals

- The second axis: inventory of residues and disposal of chemicals resulting from various activities.

Issues: 1. Industrial activity, 2. Hospitals and health centers, 3. Agricultural activity, 4. Military activity, 5. Scientific and research activity, 6. Sound management for the disposal of hazardous chemical wastes.

- The third axis: control over the handling of toxic and dangerous chemicals.

Issues: 1. local Manufacture of toxic and hazardous chemicals, 2. commercially traded Toxic and hazardous chemicals, 3. imports of Toxic and hazardous chemicals

- The fourth axis: the transport of toxic and hazardous chemicals

Issues: 1. International transportation of toxic and hazardous chemicals to and via Iraq, 2. Local transportation of toxic and hazardous chemicals inside Iraq.

Strategic objective X: Development of the institutional and legal framework for the sector of environment

Proposed instructive indicators: 1. Number of legislation that have been reviewed, amended, and issued officially, 2. Number of environmental strategies and plans which has been prepared and approved, 3. Number of international conventions and treaties to which Iraq acceded, 4. The number of institutions that ensured the environmental dimension in their own policies, 5. Number of influential research studies to decision-making

- The first axis: Legislations and policies

Issues: 1. The integration of the environmental issue in development activities, 2. lack of available appropriate legislation and policies, 3. Commitment and capacity to implement, 4. international and regional treaties and conventions, 5. Environmental justice and environmental policing.

- The second axis: efficiency and effectiveness of institutions

Issues: 1. Council for protection and improvement of the environment, 2. Institutional structures, 3. work environment and requirements, 4. Centralism and mechanism for decision-making, 5. Accountability and empowerment, 6. Information, databases and environmental indicators, 7. activities of assessment and follow-up, 8. Financial and administrative systems

- The third axis: Human Resources

Issues: 1. Human capacity, 2. plan for Rehabilitation and training of manpower.

- Axis IV: environmental awareness and propaganda

Issues: 1. Activities and institutions related to environmental awareness, 2. Awareness programs and environmental education, 3. Modern means of communication and social networking, 4. sustainability and Environmental citizenship as a human right.

Chapter V: Action Plan for implementation of the National Plan for Environmental Protection

A matrix at the end of the strategy document is included for the indicators, programs and projects of the Action Plan and related axis and issues. This matrix is summarized below:

Strategic goal I: protection and improvement of air quality,

Indicators: Number of the air monitoring stations, the percentage of the improvement in the air quality, number of the factories that using clean production, and the decrease in the respiratory system diseases.

Programs and Projects: Limitation of the dusty storms, with a related projects of reforming the lands, fixation of the sandy dunes, and maximizing the vegetation cover, assessment of the impacts of the climate change, assessment for the climate changes, execution of the adaptation activities for the most vulnerable sectors, controlling and minimizing air pollution, issuing laws, legislations, and the limitations for the air pollutants from the air emissions, the national center for the clean production, the partnership with the private sector to control the emissions, installing the air quality stations in the northern governorates, rehabilitation of the ministry of industry companies, rehabilitation of the oil sector, rehabilitation of the power plants, preparing the solar and wind atlas of Iraq, reduction of the random burning , environmental awareness, enhancing of the clean energies in the traditional industries, substitution of the public transports and usage of the biofuel, air quality, assessment of the environmental degradations and damages resulted from the brick industry, usage of the CNG,LNG,LPG in the public transport, enhance using of the solar cells in the buildings ,using of the bio-fuel.

Strategic goal II: protection and improvement of water quality

Indicators: number of water treatment plants, percentages of successful water quality indicators, depletion of ground water, percentage of water resources and marshland rehabilitation.

Programs and Projects: collaboration with the regional countries to ensure the quantity, and the quality of water resources, setup of a national data base for monitoring quantity and quality of the regionally common rivers, proposing treaties with the neighboring countries for the rights of water resources divisions, setup of aquatic data bank, study the effect of drought and heat on water shares, study the effect of climate changes on water demands, monitoring of the water resources, remote sensing for the Tigris and Euphrates rivers, usage of mathematical models in the sustainable managements of water resources, preparing demand maps for different sectors, constructing of water dams and canals, usage of the remote sensing techniques and (GIS) systems for the marshlands, preparing a national plan for the rehabilitation of the marshlands villages , reuse of the water in the marshlands, including the marshlands with international treaties, rehabilitation of the wastewater treatment plants and introducing a new treatment technologies, reuse of the sludge form the treatment plants for the agricultural activities, rehabilitation of the sewer pipe networks, rehabilitation of the industrial wastewater treatment plants , constructing wastewater treatment plants (compact units)for the residential areas belonging to the oil sector, using of the magnetic technologies for the industrial wastewater treatment, rehabilitation of the wastewater treatment plants for the ministry of electricity, encouraging the reuse and the recycling programs in the factories.

Strategic goal III: limitation of the land deterioration and desertification,

Indicators: maps allocating the deteriorated soils, number of the oases that have been rehabilitated, percentage of the green areas to the others, the increasing in the forest areas, number and intensity of dust storms.

Programs and Projects: organizing the optimum usage of land, managing and usage of soils, the environmental wetland management, removal of the military debris from the marshlands and wetlands, fixation of sandy dunes, monitoring of the desertification and land deterioration by remote sensing, preparing desert and vegetation cover maps for Iraq, awareness for desertification , land reforming and water harvesting, green belts around cities, limitation of soil contamination by petroleum products and chemicals, rehabilitation of lands contaminated by mines, rehabilitation of the public parks and yards.

Strategic goal IV: Conserving marine and coastal environment.

Indicators: records of fish species, usage of the traditional fishing methods, percentage of the coastal areas that are covered with maps, number of sunken vessels, percentage of the petroleum and chemical contaminants.

Programs and Projects: environmental monitoring of the coastal water, preparing the national plan for the study of the marine pollution sources, preparing a response plan for the spillages from the oil installations in Basra, limitation of the marine pollution , enhancing the capacity buildings for the emergency and pollution control, the strategic regional collaboration to reduce the contamination in the marines and protecting the coastal environment, preserving the fish species, the evaluation of the fishing stores, the integrated management of the Iraqi coasts, improvements of the coastal environment, upgrading of the laws , legislations related to the marine and aquatic environment.

Strategic goal V: sustainable use of biodiversity.

Indicators: number of the periodic reports , number of the species breeding in captivity, number of the experimental project in the environmental tourism,

Programs and projects: the protection of biodiversity, constructing a national grid of the natural reserve areas, protecting the biodiversity in the marshlands, conservation of natural heritage areas, the national strategy for the biodiversity, execution of the national program for the biological safety according to the protocol, program of introducing the biodiversity in education syllabus, activation the environmental tourism.

Strategic goal VI: improvement of the solid waste management).

Indicators: integrated solid waste management system, percentages of sorted and collected paper and plastic waste, number of the sanitary landfills, percentage of environmentally treated hazardous waste,

Programs and projects: integrated solid waste management, implementing of the 4R principle, preparing of database for the quantity and the quality of waste, environmental impacts resulting from the industries, investment with the private sector , recycling the solid waste, privatization of the management of solid waste, production of the biogas from wastes, use of environmentally friendly technologies, control and management of the hazardous waste, treatment of sludge containing hazardous materials in the tanning industries, the environmental assessment of the mercury contamination in Iraq, selecting the sites for sanitary landfill for hazardous waste.

Strategic goal VII: control of pollution from petroleum sources.

Indicators: percentage of the establishments connected with the petroleum pollution, presence of a comprehensive auditing system, emergency plans.

Programs and Projects: the capacity building, the petroleum transport, use of remote sensing to control the petroleum pollution , limitation of the petroleum pollution, the control the loading and unloading of oil tanker, rehabilitation of oil terminals , prepare response program for oil spillages, use of local treatment equipment , setup of petroleum pollutants data bank, preparing a safety codes.

Strategic goal VIII: control of the radioactive contamination.

Indicators: study the rehabilitation of radioactive waste dumping site locations, control of depleted uranium contaminated areas

Programs and projects: setup of database of radiation sources, capacity buildings for the monitoring and assessments of radioactive sources, public awareness, assessments of the radioactive contaminated sites, decontamination of sites, construction of radioactive waste landfill, issuing licenses for the storing and transport of radioactive waste, issue of law for licensing, monitoring the labors radiation doses, radioactive survey of the contaminated sites, radioactive assessments of Iraqi cities.

Strategic goal IX: integrated management of the hazardous chemicals.

Indicators: preparing maps of the hazardous chemicals distribution in Iraq, sources of the production and transporting the hazardous chemicals , number of customs check-points prepared for the monitoring of the illegal transporting of the chemicals, percentages of the disposed off chemicals according to the environmental standards.

Programs and projects: program for the control of chemical wastes resulting from different activities, effects of the use of pesticides, treatment of wastes resulting from the phosphate industry, integrated management of the chemicals and wastes, monitoring the handling and the transporting of the chemicals.

Strategic goal X: improvement of the institutional and legal framework.

Indicators: number of the revised legislations, number of the environmental strategies and plans that have been approved, number of the environmental conventions and treaties, number of the researches and studies.

Programs and projects: improving the legislations and institutional framework, preparing the environmental legislations, and the use of the environmental inspection guidelines, the institutional improvements, supporting the affiliation to the international treaties

Collected Photos from the meetings and symposiums regarding the strategy preparation:

1. **The first meeting (or inception workshop):** the work on preparation this strategy has been launched during a workshop for the national team was held in Amman during the period 2-3 July 2011.







2. **The second meeting** in Amman – Jordan /28 to 29 September 2011 of the strategy developers.





3. **First symposium** in Baghdad – Iraq /October 24 ,2011 , for showing the stages of developing the Strategy to all staff of MoE.





4. **The third meeting** in Amman – Jordan /15 to 16 November 2011, of the strategy developers.





5. **The fourth meeting** in Beirut – Lebanon /20 to 23 January 2012, of the strategy developers.





6. **Second symposium** in Baghdad – Iraq /25 April 2012 , it was attended by the strategy developers and employees of the Ministry of Environment of all departments and sections.





7. **Third symposium** in Baghdad – Iraq /20 June 2012 it was attended by the strategy authors and representatives of all ministries.



8. **Fourth symposium** in Baghdad – Iraq, 7 November, 2012, For showing the strategy to the Parliament Council / Health and Environment Committee.

