

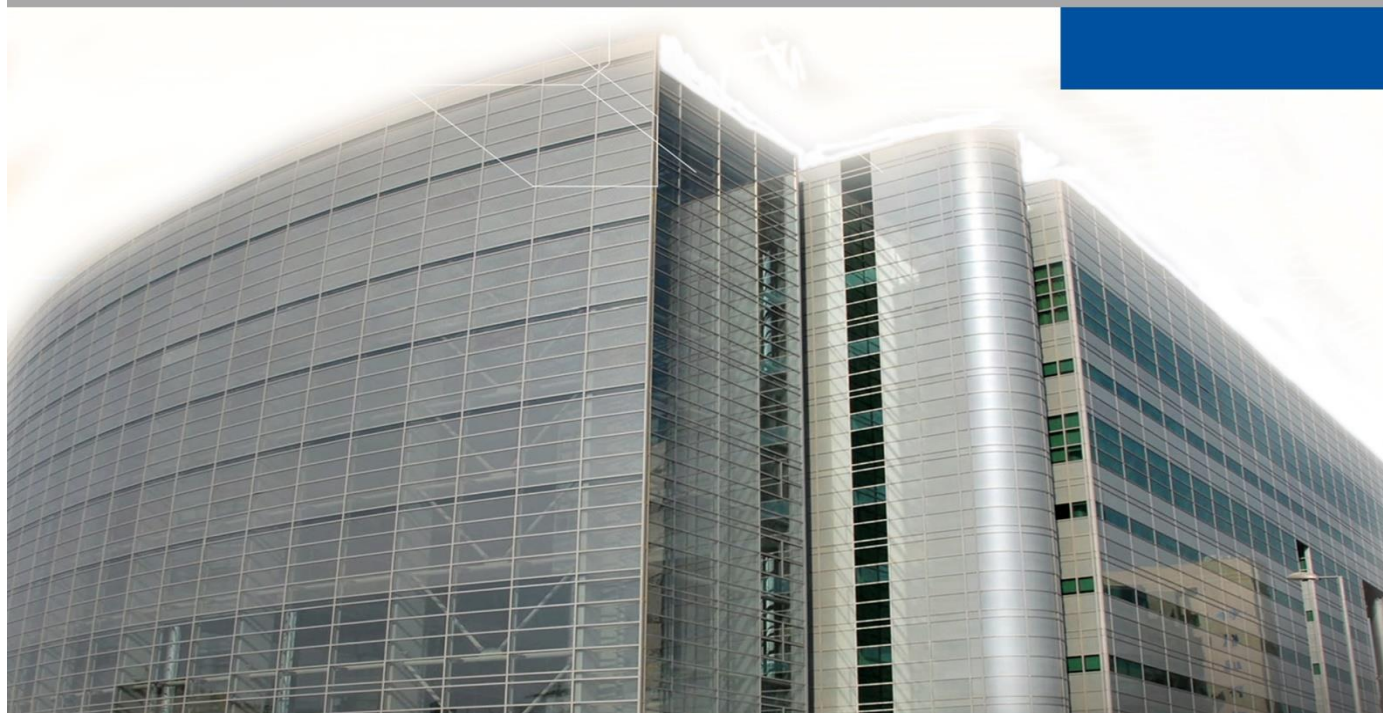


Evaluation Report of the Effectiveness & Efficiency of the Government Plans to Audit the Nature Reserves

Audit Report

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**Evaluation Report of the Effectiveness & Efficiency of
the Government Plans
to Audit the Nature Reserves**

October , 2017

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Evaluate the effectiveness & Efficiency of the Government Plans to Audit the Nature Reserves

Introduction

Biodiversity plays a significant role in the economic aspect of life, whereas the State of Kuwait is in need of developing an economic environment that is considered necessary for creating an economic base, which relies on the biodiversity aside from the Oil Economy Aspect. The State of Kuwait spurs no effort in increasing the number of the nature reserves in order to cover most areas of the State. The before mentioned is to be implemented incorporation with the specialized related bodies to save and preserve the animals, the vegetation life and the natural scenes. As well as to separate the endangered creatures from the others with the intention of reconstructing their colonies at the affected areas.

In light of the environment challenges that threatens the sustainable development at the State of Kuwait, the concern for the environment has become one of the most significant priorities that are itemized in the government agenda of action. The nature reserves are also one of the priorities of the Environment Public Authority. It is considered as one of the most vital elements of the environment policy followed at the State of Kuwait in order to achieve specified objectives concerning the preservation of the nature heritage, biodiversity, to serve as a location for the researchers and those

interested in the environment activity, as well as the sites of migrating birds. In addition to the enhancement of the nature wild plants, the protection against overgrazing, tilling and squashing the soil.

Article no. (21) of the State of Kuwait Constitution stipulates: “All of the natural wealth and resources are the property of the State. The State shall preserve and properly exploit those resources, heedful of its own security and national economy requisites”. The State of Kuwait strives to save and care for the wild life and the biodiversity on its lands. The before mentioned is shown though several methods, e.g. the establishment of nature reserves to achieve the sustainable environment system and maintain the production of natural resources and pasture development.

Since the liberation of the Iraqi invasion, the State of Kuwait gave an enormous attention to the establishment of nature reserves where it reached 12 land and marine conservation areas distributed over the areas of the State. This came in accordance to the Supreme Council of Environment Decrees no. (7 & 8 for 2016), with a space that covers more than 2074 Sq. Km. The said space represents 12% of the State of Kuwait space. The presented report addresses the evaluation of the effectiveness and efficiency of the plans itemized at the Public Authority of Agriculture Affairs & Fish Resources and the Environment Public Authority, as well as to those regarding the environment development and rehabilitation at the reserves areas authorized by the previous mention bodies.

Article no. (106) of Law no. 42 , amended by Law no. (99) for 2015 specified that the Environment Public Authority adopts the policies , plans, programs and bylaws concerning the nature reserves servers management . The authority is also assigned with supervising the monitoring and observation continuous operations to insure the implementation of the said plans. As well as to the special programs regarding the preservation and the spread of the animals and plants, especially the endangered species and resettlement of extinct animals. The law`s executive regulation (The Environment Supreme Council Decree no.(3) for 2017) includes the conditions and the special regulations concerning the audit of the nature reserves at the State of Kuwait .

The Public Authority of Agriculture Affairs & Fish Resources is a lead example in this field. The implemented projects, e.g. the establishment of five nature reserves with the UN, as well as to the one owner by the Authority demonstrates the previous mentioned. Articles (102 -107) of Law no. (42) for 2014, with some amended provisions by Law no. (77) for 2015 , specified the organization of the said reserves at the State of Kuwait.

Within SAB post – audit framework, the presented report was prepared on the efficiency and effectiveness of the government plans regarding nature reserves audit in order to verify the effectiveness of the implemented goals itemized in the government plans. This is to rehabilitate and develop the affected environment, in addition to the nature reserves at the State of Kuwait, and the UN Compensation Fund until March 2017. The evaluation of the

efficiency of preserving the environment wealth by the nature reserves, besides the risks resulted from the lack of coordination between the relevant entities, the problems and the obstacles facing the concerned bodies with proposals for solving the said problems. The report also provided a number of reached results and recommendations that are detailed in the designated chapters specified later on.

Audit Objectives:

- Verify the compliance to the nature reserves legislative framework, the regulating laws and decisions.
- Verify the implementation processes effectiveness of the nature reserves establishment goals.
- Verify the efficiency of the administrative and audit the implemented works to achieve the nature reserves preservation.

Audit Field:

- Natural Environment Development Projects listed in the development plan of the Environment Public Authority.
- Nature reserves development and enhancement projects of the Public Authority of Agriculture Affairs & Fish Resources.
- The efforts exerted by the Kuwaiti National focal Point for environmental Projects in cooperation with the relevant bodies regarding the re-habilitation of the marina and the land environment affected by the Iraqi Invasion.
- The Biodiversity Management Audit Program to maintain the environment wealth at the nature reserves.

Action Plan :

- The action plan included interviews and field surveys at the entities subject to audit. In addition to the preparation and the implementation of an audit plan and program in accordance to SAB

approved audit manuals. Data obtained from the Biodiversity Department of the Environment Public Authority were primarily relied on , in addition to those acquired from the Plant Wealth Sector of the Public Authority of Agriculture Affairs & Fish Resources.

The Report included the following main aspects:

Part I :

Evaluate the Efficiency and the Effectiveness of the Plans set to develop and enhance the nature reserves.

Part II :

Evaluate the efficiency of preserving the environmental wealth at the nature reserves of the State of Kuwait.

Part III :

The Significant results and Recommendations.

Part I

Evaluate the Efficiency and the Effectiveness of the Plans set to Develop and Enhance the Nature Reserves

Part I

Evaluate the Efficiency and the Effectiveness of the Plans set to Develop and Enhance the Nature Reserves

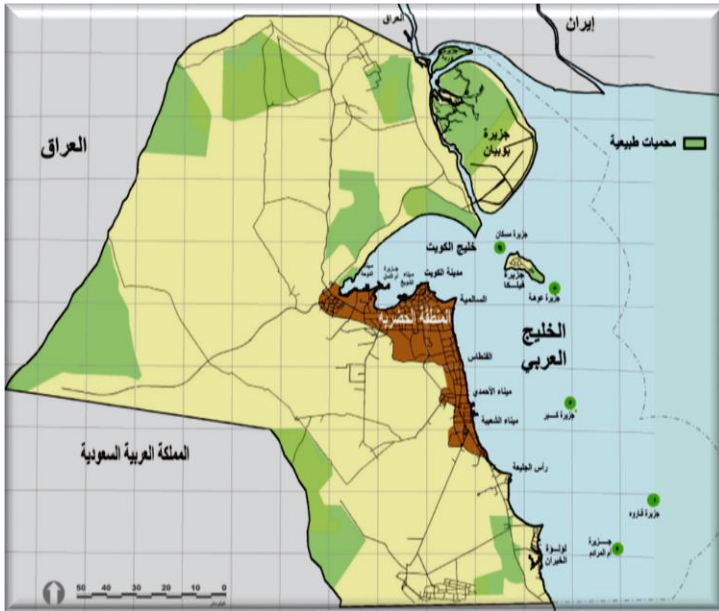
The State aims at enforcing its protection over the areas with established nature reserves, in order to moderate the depletion of their sources and natural wealth , as well as to preserve the natural heritage , natural life biodiversity for all creatures , rehabilitation of the areas and sites affected by the Iraqi invasion . In addition to serving as a location for researchers interested in the environment activities. The said stands in parallel with goal no. (15) of the UN Sustainable Development Goals toward the continues protecting of the wild life , fighting desertification , interception of Land degradation and the lack of biodiversity .

1- Spaces specified for the Nature Reserves at the State of Kuwait :

The State of Kuwait were greatly engaged in the establishment of nature reserves since the liberation of the Iraqi invasion. Currently, there are (12) reserves, (10) land, (2) marine conservation areas distributed on the different areas of Kuwait. The Supreme Council of Environment Decrees no. (7 & 8 for 2016) specified the nature reserves and fenced areas with their owning and supervising entities. The following statement demonstrates the said nature reserves in the State of Kuwait :

The State of Kuwait Nature Reserves Spaces compared against the State Space

Reserve`s Name	Preserver`s Nature	Owner	Supervising body	Area Sq. Km
Al-Khuwaisat (Aljahra)	Land Conservation Areas	The Environment Public Authority	The Environment Public Authority	17.95
Subah Al-Ahmed			Voluntary Work Center	325.03
Sa`ad Reserve			-	1.31
Salibikhat Costal Conservation Areas	Land Conservation Areas	Public Authority of Agriculture Affairs & Fish Resources	Public Authority of Agriculture Affairs & Fish Resources	1.31
Um Alniqa				70.61
Um Ghader				295.71
Wadi Albaten				520.16
Al-Huwaimliya				172.55
Jal Al-layah Fenced Area	Ecological Fenced Area	Kuwait Institute for Scientific Research	Kuwait Institute for Scientific Research	136.68
Al-Qurain Hill Nature Reserve	Ecological Fenced Area	KOC	Voluntary Work Center	6.21
The land Nature Preservers Space Total				1547.52
Mubarak Al-Kabeer Marine Conservation Areas	Marine Conservation Areas	Public Authority of Agriculture Affairs & Fish Resources	Public Authority of Agriculture Affairs & Fish Resources	510.22
Salibikhat Marine Conservation Areas	Marine Conservation Areas			16.27
The Marine Conservation Areas Space Total				526.49
The Nature Conservation Areas Space Total				2074.01
The State of Kuwait Space Total (**)				17.818



A demonstrating picture of the distribution of the natural reserves on the State of Kuwait areas.

2. An evaluation of the natural environment projects implementation effectiveness itemized in the Environment Public Authority Development Plan:

The idea of establishing nature reserves, as one of the natural resources elements emerged in order to provide protection of the natural resources, biodiversity and to maintain the environment stability. To serve the purpose of maintaining the said resources, the Environment Supreme Council issued Decree no. (7) for 2016 regarding the specification of nature reserves and fenced areas , alongside to their supervising entities . Later on announcing a number of (12) nature reserves until 2016, covering a percentage of 12% of the State of Kuwait Space.

The Environment Public Authority took part in the State of Kuwait Development Plan, which was evident in the implementation of several development projects that serves the environment policies and strategies that

mainly detects the environment condition and decreases the environment degradation. As well as to preserving biodiversity, supporting the establishment of nature reserves , evaluating and reinstating the nature reserves that are established on scientific foundations. The said projects are summarized as follows:

2/1- The establishment of a series of marine and land nature conservation at the State of Kuwait:

This project aims at developing a nature reserve system at the State of Kuwait, which is demonstrated in designing and preparing the organizational chart to reinstate and develop Al-Jahra nature conservation under the Environment Public Authority, and prepare a proposal to transfer the reserve to an environment tourism and awareness center.



A picture demonstrating Al-Jahra nature conservation - The State of Kuwait.

2/2- A program on evaluating and monitoring the coral reefs in the State of Kuwait:

Coral reefs are considered as a natural wealth that should be preserved, since they form a convenient place to grow all kind of fish. A great portion of the said natural wealth was damaged after the State of Kuwait Liberation War, which made it crucial to reinstate this wealth. The latter shall be accomplished through reforming the artificial coral colonies using natural methods at the affected areas, e.g. Um Al -Maradem Island Conservation. A program was developed to evaluate and monitor the coral reefs condition at the State of Kuwait to serve the aim of estimating the coral reefs condition, develop a program to monitor the coral reefs at the State of Kuwait, as well as to develop an action plan to preserve and reinstate the coral reefs.

3/2. The Regional Program on the detection of Harmful Algae Blooms (HAB) at the State of Kuwait:

The above mentioned program monitors the Harmful Algae Blooms in the regional waters, that is only at 2 areas of the Kuwait Bay with an average of twice a month , in addition to a sample taken from the south region per month in conformity with some algae types blooms with 3 samples of each location.

4/2. Evaluation of the Artificial Coral Reefs Condition:

This program aims at preparing a feasibility analysis of the artificial coral reefs creation, their impact on the environment and preparing a periodical program to monitor the artificial coral reefs in the regional waters in order to reinstate and preserve the marine environment.

5/2. A Project based on monitoring and detecting biodiversity components at different environments outside the nature reserves:

This project aims at the follow-up of the State of Kuwait commitments implementation toward the signed International and Regional Agreements and Treaties concerning biodiversity preservation and safeguarding with the concerned entities exemplified in the CBD and CITES Agreements.

3. The effectiveness of the projects itemized under the reinstatement of the affected environments of the Public Authority of Agriculture Affairs & Fish Resources:

The reinstatement projects of the Kuwaiti areas affected by the Iraqi invasion, especially after the aggrandizement of the Public Authority of Agriculture Affairs & Fish Resources role in specifying the in-need areas, experienced an environmental effective mobility in the establishment and development nature reserves since 2006. The Central Committee to overseas the implementation of the rehabilitation areas under the State of Kuwait

Program (Kuwaiti National focal Point for environmental Projects) completed the first phase of the project by the end of 2010 . The first phase came under the tittle of : The primarily planning and preparation, which was launched in May 2009 . The actual implementation of the second phase some projects was planned to launch in 2011. The implementation time duration extends to a 30 years period of time – until 2041 to be exact (A project on establishing a marine conservation in Al- Sulaibikhat Gulf) .

Part II

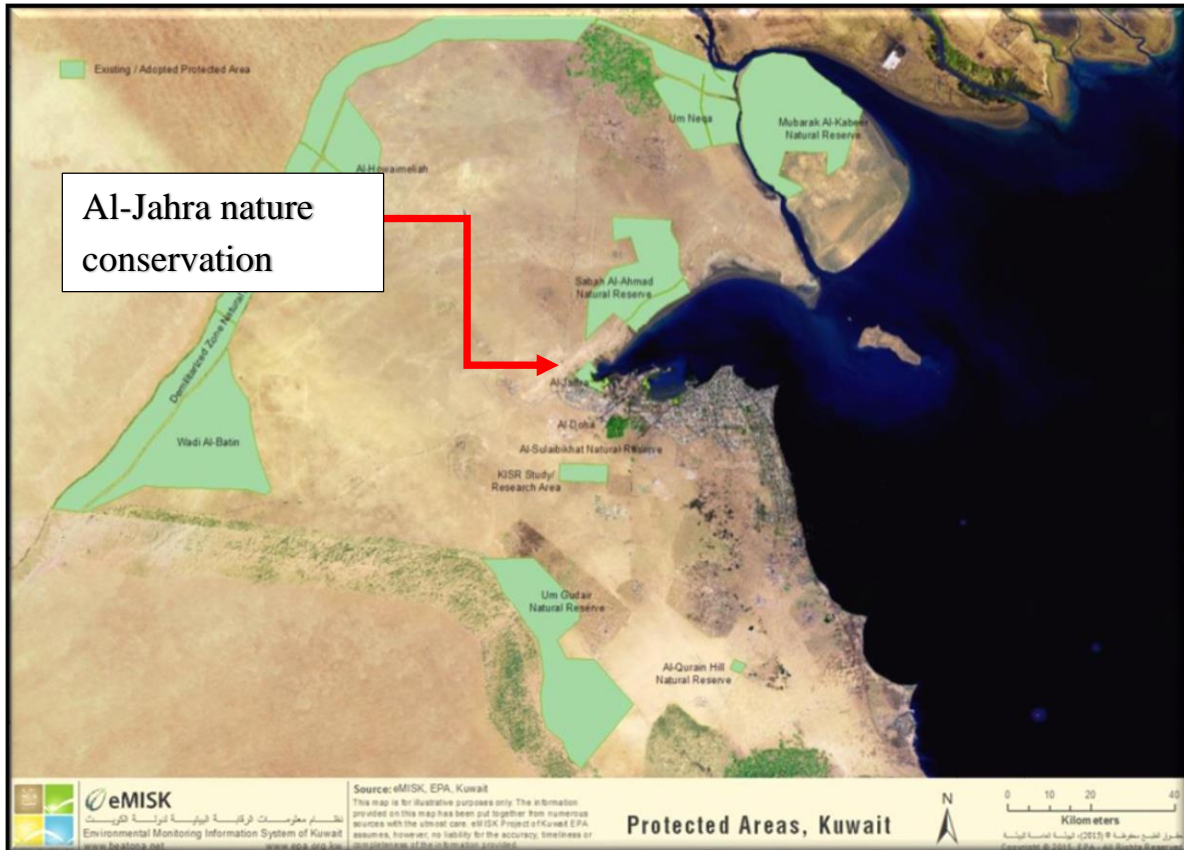
Evaluate the Efficiency of preserving the environmental wealth at the nature reserves of the State of Kuwait

Part II

Evaluate the efficiency of preserving the environmental wealth at the nature reserves of the State of Kuwait

The idea of establishing nature reserves, as one of the natural resources elements emerged in order to provide protection of the natural resources, biodiversity and to maintain the environment stability. The nature reserves, ecological fenced areas, the areas covered for scientific and research purposes, the protected isolated boarder areas and what falls under the same category are all subject to environmental terms and laws regarding the nature reserves that are specified by the said law executive regulation. The latter obliges all the State concerned bodies to coordinate with the Authority with reference to the management of the said areas.

Currently, the nature reserves section oversees Al-Jahra conservation, which was established in 1987. Al-Khuwaisat – Kathma spaces were later combined with Al-Jahra conservation space in activation of the Councils of Ministers Decree no. (10) for 2012. Al-Jahra conservation is located at the south of the forestry area at Al-Jahra city located within the 2921° N and 4741° E , as it covers an area of 3.5 Sq. km.



An effectiveness evaluation of biodiversity preservation department audit program, falling under the nature reserves plan 2016/2017 is addressed as follows:

1. Biodiversity management program implementation efficiency :

The biodiversity management program (nature reserves section) of the Environment Public Authority is represented in (4) programs developed to preserve Al-Jahra Conservation biodiversity in light of the nature reserves system strategic vision of the Environment Public Authority. The programs are as follows:

- Bird watching and biodiversity in Al-Jahra Conservation.
- Follow-up of vegetation in the conservation.

- Monitoring the costal birds' incorporation with the Public Authority of Agriculture Affairs & Fish Resources Team.
- Participating with the land monitoring team at the Department of the biodiversity.

The inspection demonstrates that biodiversity preservation department implemented the program falling under the nature reserves plan of the Environment Public Authority. However, some obstacles and problems were observed, which are facing the nature reserves section through the implementation process of the designated audit program. The said obstacles and problems are listed below:

- **The sufficiency of the human and material capabilities to implement the audit program.**
- **The efficiency of the training and administration development program.**

2. The significant violations detected and the activities adversely affecting the nature reserves:

- Some violations were detected at Al-Jahra Conservation during 2016/2017 by judicial officers. The violations are exemplified in the destruction and damaging of the fence, hunting, plants uprooting, the usage of the vehicles that pose a threat to the conservation land environment. A number of (2) violations were forwarded to the public prosecution,

whereas the procedures of other (7) violations are being completed. The reconciliation was accepted in two violations.

- Grazing and camping are two activities that affect the wild life .The Environment Public Authority, the Municipality of Kuwait and the Public Authority of Agriculture Affairs & Fish Resources coordinates the said activities. The State organized and listed the terms specifying the camping and grazing areas. One term stipulates that camping permitted areas shall be distended with at least 1 km from the reserves areas.

- The nature reserves section reviews studies regarding the development projects environmental impact with reference to their effects on the nature reserves. When needed, remarks and recommendations are provided regarding the subject matter as it is applied in the case of Sheikh Jabber Al-Ahmed Al-Sabah Bridge Project (Al-Sabeya Junction – Al-Doha Junction) and other recent projects .

- Al-Jahra Conservation is fed with a triple treated water supply from the Ministry of Public Works entrained since 2002/2003, which aims primary to feed the pod with fresh water. Two other entrained rainwater are poured into the conservation, one is located inside the area whereas the other is inside the area within the expanded areas added to the conservation. The two said entrained produce unpleasant smell, knowing that both are in the area before the establishment of the conservation for a period that exceeds 20 – 30 years.

- At the time being, the nature reserves section is about to analyze the waters mentioned above, with the need of imposing a tight control on the quality of the water at the conservation. As well as to comply with the Environment Public Authority terms.
- No Safety precautions are applied in the conservation, e.g. fire extinguishers and fire resistance equipment. It should be noted that the conservation experienced a massive horrific fire in October 1997 that resulted in the elimination of large areas of the vegetation and many of the living creatures.

3. The compliance to the approved International Agreements with regards to the nature reserves:

The global attention toward the negative impacts of the environmental pollution increased recently. The said matter is proven by the international charters represented in the agreements, treaties and protocols that are aiming at uniting the international efforts to address some issues related to the environment and its impact on an international level.

In accordance to item no. (7) article no. (7) of the Environment Protection Law no. (42) for 2014 , amended under no. 99/2015 , the Environment Public Authority performs a function that is to analyze the regional and international agreement regarding the environment affairs. As well as to provide opinions regarding joining the said agreements in

coordination with the concerned entities. Item no. (9) of the same article states the coordination of the State`s relations with the concerned regional and international organizations.

The Environment Public Authority is considered as the focal point concerning the pre-approval of the agreements listed , where the Authority forms a liaison link , and is responsible for the agreement`s works or the public meetings protocols of the states parties to the agreements .

The State of Kuwait has signed and approved a number of international conventions within this field, such as:

1/3 The UN Convention on Biological Diversity (CBD):

Kuwait signed the CBD in June 1993 alongside 156 countries during the United Nations Conference on Environment and Development (UNCED) in Brazil. The convention focused on the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources. On February 2nd, 2002, Kuwait ratified CBD and later came into force on August 2nd, 2002.

2 – Ramsar Convention on Wetlands:

It is an international treaty for the conservation and sustainable use of wetlands, which aims at the development of the economic, touristic, and scientific role of these lands; e.g. Al-Jahra Pools Nature Reserve. The convention entered into force in Kuwait on September 5th , 2015.

3/3 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):

CITES is an international treaty entered into force in July 1975. It is considered one of the most successful international conventions on the protection of wildlife. More than 175 countries signed the treaty and Kuwait was among the first to adopt the treaty on February, 3rd 2002.

3/4 Convention on the Conservation of Wildlife and their Natural Habitats in the Countries of the Gulf Cooperation Council (GCC).

The Convention on the Conservation of Wildlife and their Natural Habitats in the Countries of GCC was approved in 2001. It was then ratified and adopted by the State of Kuwait in December 2002.

The treaty aims toward the conservation of the ecosystems, safety and sustainability of wildlife - particularly the endangered species. This agreement is also concerned about the protection of species crossing international borders of two or more neighboring countries or the migration of wild species across GCC countries, such as the territorial waters and airspace under their sovereignty.

3/5 Regional Convention on the Protection of Marine Environment (ROPME 1978):

Kuwait joined a regional treaty and approved the formation of the Regional Organization for the Protection of Marine Environment (ROPME) in 1978. This treaty also resulted in the establishment of the Marine Emergency Mutual Aid Center (MEMAC) located in the Kingdom of Bahrain. The center is dedicated to help ROPME members to combat pollution resulting from oil and other toxic substances.

The treaty entered into force in June 1979, and therefore, a regional organization was established and located in Kuwait. The ROPME Secretariat commenced its duties on July 7th 1980 to enhance environmental management within the region.

4- Coordination Risks with Relevant Parties:

The Environment Public Authority (EPA) is responsible for the coordination with relevant State's bodies to protect the environment thus achieve sustainable development. EPA is to identify pollutants and set up appropriate healthy, environmental, and scientific standards to preserve ecological balance and control any activities, procedures and practices relevant to environmental protection along with performing ad hoc follow-up and evaluations. During an examination process, a number of risks were

detected. These risks correspond to poor coordination mechanisms between the concerned parties, such as:

Kuwait Municipality's lack of control on camping sites and poor disposal of wastes at the end of camping seasons contribute to the deterioration of vegetation in the camping areas. This in turn leads to the increase of desertification and therefore the violation of laws and regulations preventing these practices.

Violators shoot birds in Al-Jahra Pools Nature Reserve. This calls for more inspection by Kuwait Municipality on violators who sell these birds in the markets. The objective of establishing nature reserves is to conserve wild living resources and protect genetic diversity in particular groups of species.

Meetings outcome of CITES national standing committee was limited to proposing the Public Authority of Agriculture Affairs and Fish Resources (PAAF) to set up rescue shelters these species. This is a temporary procedure until setting up appropriate legislations obliging violators to bear the complete costs of shelters.

The Ministry of Public Works lacks control on illegal interfaces that dispose waste of sanitation and industrial sewage into the storm drain. The waste then pours into the marine environment leading to fish kill and therefore intimidating the sustainability of marine life in general. Therefore, it is necessary put an end to such interfaces or ensure the installation of preliminary purification process units prior to waste disposal.

5. Major Issues and Obstacles Facing the Management of the Biological Diversity:

- Poor coordination between relevant parties along with the absence of a national committee of natural reserves that is meant to spread awareness on the expected dangers on marine life and the terrestrial ecosystem due to the disposal of industrial and sanitation waste into the sea. In addition to explaining the dangers relevant to the reclamation of coastal areas, excessive water use and relinquishing land space due to landfill.

-Lack of financial and human capacities. Above all, national workforce specialized in preserving wild plants along with research specialists in biological diversity, and lack of equipment and apparatus relevant to monitoring natural reserves.

-The malpractices of people whether during leisure camping or boats may lead to the deterioration of natural vegetation, loss of biodiversity, overgrazing, unorganized hunting sprees and marine debris. Additionally, there is a lack of trained work force to manage and monitor violators within the reserves.

-Lack of guidelines on how to manage the proposed policies relevant to the transportation of imported different breeds of animals and plants. That is to control alien breeds that might be brought to Kuwait to be managed or disposed.

-Lack of environmental awareness on the importance of natural reserves and the utilization of natural resources. Furthermore, school curricula are deficient in adequate information and must be further developed to improve individuals' capacity to appreciate nature and protect the natural resources. Finally, the media presents poor programs addressing this topic.

-Not authorizing allocated budgets to execute ad hoc policies, strategic national work plans to carry out marine life conservation projects is effecting marine species and particularly wild coral reefs.

1/5 Proposed Solutions to Address the Issues Facing Natural Reserves:

-Setting a national committee devoted to national reserves that is headed by EPA. It is to include members of all public or national bodies or entities managing nature reserves.

-Appointing a director to each nature reserve. His/her responsibilities revolve around developing plans to manage the reserve. The plan must be submitted to EPA for approval and authorization.

-Each reserve's manager is to participate in this committee.

-Developing semi-annual reports on each reserve and submitting them to EPA.

-Setting up a National Conserve's department (which currently is a section) in order to supervise the execution and implementation of administrative plans of nature reserves in the State.

-Appointing a number of rangers to work on shift-bases. Providing SUVs for better surveillance and monitoring of the recently fenced reserves.

Part III

The significant Conclusions and Recommendations

Part III

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Main Conclusions:

1. The State of Kuwait represented by EPA pays great consideration to the nature reserves. The number of national reserves reached 12 lands and marine conservation areas distributed in various regions of Kuwait. This aligns with the goal number 15 of the UN Sustainable Development Goals towards sustainable protection of wildlife and combating desertification, along with limiting the deterioration of lands and biodiversity loss.
2. The net space of the national conservation areas in Kuwait is approximately 2074 Km² forming around %12 of the total State's area. The land and marine conservation areas form around %75 and %25 subsequently- of the total area of national conserves.
3. Underutilization of the listed financial provisions for reinstatement projects of Jahra Pools Nature Reserve for the whole duration of the project since 2011 until this day.
4. EPA presented positive efforts during the years 2016 and 2017 through biodiversity management to address the delay in the opening of Jahra Pools Nature Reserve. Wetlands were provided with water from processing plants

and power generation plants, which led to the first biodiversity in Kuwait. The national reserve will be welcoming visitors by the end of 2017.

5. Delay in the implementation of the set programs to protect marine natural environmental resources. There are 3 programs since 2009 and until today, within the Environment public authority which is due to the length of time the contracting procedures and not using the listed financial provisions led to the cancellation of these projects from the development plans and therefore being referred to the operational budget of the EPA.

6. The humble quality of the executed projects on the reinstatement of impaired environment in Kuwait for 11 years. The number of such projects reached only 6 within PAAF due to the novelty and vast number of administrative resolution managing those projects since the establishment of the Kuwait National Focal Point for environmental projects in 2006 up to 2017.

7. Failure to meet the needs of the Public Authority for Agriculture Affairs and Fish Resources to allocate a dedicated team to implement and follow up the projects assigned to the Authority, which affects the time of completion and implementation of land and marine environment reinstatement projects. The plant wealth sector, which is entrusted with the implementation of these projects, has additional burdens to its original tasks.

8. The Public Authority for Agriculture Affairs and Fish Resources has made positive efforts toward the reinstatement of impaired environment. These efforts were represented in the completion of fragments removal, detection of unexploded ordnance, and removal of military fortifications of the Iraqi invasion remnants in Sabah al-Ahmad nature conservation, and Sulibikhat nature conservation, and the site of Umm Al Rus, during the period from 2011 to 2017.

9. Insufficient physical and human resources in the Nature Reserves Department of the Environment Public Authority, especially in the national cadres specialized in wild plants protection, in the field of research in biodiversity, and in monitoring and control devices and equipment.

10. The Environment Public Authority suffers from poor coordination among the relevant authorities, and failure to form the National Committee of Nature Reserves to establish the National Network of Environmental Information. Accordingly, this affects the enhancement of technical knowledge in those damaged areas of the marine or land ecosystems because of sanitary and industrial drainage in the sea, coastal landfill, overuse of water, or waste of land as it is being used as solid waste dump.

11. Lack of supervision of the Municipality of Kuwait caused malpractices during the period of recreational and camping season that caused removal of natural vegetation and the loss of biological diversity such as overgrazing, unidentified hunting, dumping of boat waste on beaches and coasts, and lack of trained manpower to monitor violators in such protected areas.

12. Lack of safety precautions in the Al- Jahra nature conservation such as fire extinguishers and fire resistance equipment. It is worth mentioning that the conservation was exposed to a fire in October 1997, which resulted in the elimination of large areas of vegetation and many living creatures.

13. Lack of environmental awareness of the importance of nature reserves, interest in exploiting the environment and its sources, and the lack of curricula and awareness programs in the media to deal with this issue.

The most significant Recommendations:

First: Recommendations related to high risks:

Consider coordination among the concerned authorities, to take benefit from the financial resources included to complete the projects according to the developed time programs.

Study the reasons for non-disbursement and delay in the implementation of some projects and programs of the Environment Public Authority development plan and to avoid the allocation of funds without benefiting from them, which negatively affects the non-implementation of programs designed to preserve natural marine environmental resources.

Study the time of projects implementation to reinstatement of impaired land and marine environment, including the restoration of vegetation, and the completion of net fences for nature reserves areas, that Public Authority for Agriculture Affairs and Fish Resources are responsible of. In addition to

avoiding extension of some contracts period and the implementation and completion of projects on schedule.

Second: Recommendations related to medium risk:

Consider the Public Authority for Agriculture Affairs and Fish Resources and the Environment Public Authority concerned departments needs from material and human resources, and raise the job satisfaction level for those who develop and nature reserves in a way that suites the importance of the work assigned to them to maximize performance efficiency.

Consider coordination between the Public Authority for Agriculture Affairs and Fish Resources and the Municipality of Kuwait to ensure monitoring the environmental requirements violations. The violations represented in the increase overgrazing, or to build camps and not to remove the waste after the end of the season to preserve the land vegetation cover that was allocated for camping, and not to increase desertification in the State, limit the infringement of laws and decisions prohibiting such practices.

Take all necessary precautions for the safety in the Jahra reserve (and any other protected area to be developed and reinstatement) including fire extinguishing and fire-fighting equipment to prevent the exposure to the risk of eliminating large areas of vegetation and many living organisms resulting from sudden fire.

Consider methods of reducing the infringements on the Jahra reserve, which pose a threat to the reserve natural environmental life, that cause

destruction of the fence, overhunting and uprooting of some plants, because of the losses incurred by the State resulting from the increasing cost of such environmental damage.

Third: recommendations related to low risk:

Study ways to increase environmental awareness, especially in the school curriculum and the various media, in addition to intensifying awareness of all the of the society members about the various human activities during the camping season, which is considered one of the most important causes of the deterioration of the ecosystem.

Study the establishment of a national committee for nature reserves headed by the Environment Public Authority that comprises members from each governmental or private body to supervise or manages a nature reserve. This is to enhance their technical knowledge in relation to the damage of marine or land ecosystems resulting from sanitary and industrial drainage in the sea, coastal landfill, overuse of water, or waste of land as it is being used as solid waste dump.

Study the appointment of a specialized director for each nature reserve, with assigned tasks that include the development of a plan to manage the reserve. This plan shall be submitted to the Environment Public Authority and other directly related parties to review and approve.