

**Key Scientific and Technical Needs Related to the
Implementation of the Strategic Plan for
Biodiversity 2011-2020 for the Kingdom of Bahrain**

Supreme Council for Environment

Kingdom of Bahrain

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Introduction

This report details some of the actions undertaken by the Kingdom of Bahrain to address the key scientific and technical needs related to the implementation of the Strategic Plan for Biodiversity 2011-2020. The Kingdom of Bahrain has paid special attention to the implementation of some of the topics that have been prioritized by the Convention on Biological Diversity, which have been reviewed in Section (1) in the form of case studies. Moreover, Section (2) illustrates the efforts and progress made nationally for the period (2011-2014) towards achieving each of the Aichi Targets (2020) for biodiversity whilst evaluating the status of its progress.

Section (1): Implementation of the Convention on Biological Diversity

Case Study (1): Applying the Ecosystem Based Approach

The Ecosystem Based Approach is considered one of the leading initiatives launched by the Convention on Biological Diversity and has been remarkably popular at the international level. The project was carried out during the period November 2012 to March 2014 and was implemented as collaboration between the Supreme Council for Environment, the Ministry of Culture of the Kingdom of Bahrain and the United Nations Environment Programme - Regional Office for West Asia (UNEP-ROWA). The project is considered the first of its kind in the region to aim at integrating the Ecosystem Based Approach into national strategies, plans and legislation as well as legal and environmental projects in the Kingdom of Bahrain.

The project involved a case study centered on the application of the Ecosystem Based Approach to enhance environmental protection of *Najwah Bul Thamah*, *Hayr Bul Thamah*, *Hayr Shtayyah* and *Hayr Bu Am'amah* which were (collectively) declared a World Heritage Site in 2012. As part of the project, four national workshops were organized and a number of specialised studies on the Ecosystem Based Approach were conducted, the most important of which identified relevant partners and analyzed their expected roles in the approach, evaluated the economic value of ecosystem services in the study area, as well as identified the beneficiaries of direct services provided by marine resources in that area. Within the areas studies, sectors of society that benefit from the direct services provided by marine resources were identified. As a result of the project, an Ecosystem Based Approach management plan was devised for *Najwah Bul Thamah*, *Hayr Bul Thamah*, *Hayr Shtayyah* and *Hayr Bu Am'amah*.

The project succeeded in attracting a wide range of national stakeholders, specifically representatives of government institutions, the private sector and civil society organizations who actively participated in the workshops and also contributed to the studies and the collection of information.

Case Study (2): Highlighting the Economic Value of Ecosystem Services

The Conferences of Parties to the Convention on Biological Diversity stresses economic importance of the services provided by biodiversity and ecosystem components in order to convince decision makers and the public of the importance of preserving biodiversity. In support

of this, the Supreme Council for Environment, in collaboration with the World Bank, conducted a study highlighting the economic consequences (estimated financial value) for the deterioration observed in coastal and marine environments in the territorial waters of the Kingdom of Bahrain during the period 2011-2013. Similarly, the Kingdom of Bahrain, in cooperation with the United Nations Environment Programme conducted a study on the economic value of the services provided by biodiversity and ecosystem components in *Najwah Bul Thamah*, *Hayr Bul Thamah*, *Hayr Shtayyah* and *Hayr Bu Am'amah*. The results of this study indicate that the services provided by this ecosystem contribute 3.4 to 227.1 billion/year (UNEP – ROWA, 2013). Following the results of the study, the Supreme Council for Environment, in cooperation with the Ministry of Culture, conducted a comprehensive survey to identify the stakeholders directly benefiting from the use of resources provided by *Najwah Bul Thamah*, *Hayr Bul Thamah*, *Hayr Shtayyah* and *Hayr Bu Am'amah*. It was found that raising the awareness of some of the stakeholders involved contributes effectively in the decision-making process.

It is hoped that these studies, which are the first of their kind in the Kingdom of Bahrain, will support the process of national decision-making by providing updated scientific information that highlights the economic and social consequences of biodiversity degradation.

Case Study (3): Engaging Civil Society

The Convention on Biological Diversity stresses the importance of adopting a participatory approach in the face of biodiversity issues by enabling the involvement of civil society in protection programs. The years between 2011 and 2014 witnessed expansion in civil society participation – including representatives of sports clubs and civil society groups and youth movements - in projects, programs and initiatives directed biodiversity.

Table (1): Selected examples of representatives of civil society contributions during the period 2011-2014 in the implementation of projects, programs and activities related to biodiversity in the Kingdom of Bahrain.

| Category | Organisation | Efforts |
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| Local Community | Barbar Club | The club regularly organizes awareness events, and in 2014 it organized a lecture highlighting the historical importance of the coast of the village of Barbar. |
| | Municipalities Affairs | Conducts many coast clean-up campaigns with the participation of schools. |
| Civil Society Groups | Bahrain Environment Society | In 2014 the society held a marine survey to determine the types of marine habitats in the territorial waters of the Kingdom of Bahrain. |



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| | Shark Conservation Society | In 2012, the society carried out a comprehensive survey to identify the shark species existing regional water and local markets in the Kingdom of Bahrain. |
| | Environmental Friends Society | In 2014 the society organised a workshop on sea turtles and contribute to the rehabilitation of some affected turtles. |
| | Bahrain Natural History Society | Society members implement an on-going bird ringing program that is considered the most comprehensive program of this type in the Arabian Gulf. |
| Youth | Arab Youth Climate Movement | In 2014, the group held a study on the economic and social aspects of <i>Najwah Bul Thamah, Hayr Bul Thamah, Hayr Shtayyah</i> and <i>Hayr Bu Am'amah</i> |



Case study (4): Environmental Rehabilitation Programs



During the period 2011-2014, Bahrain carried out several projects for the rehabilitation of degraded sites. For example, the Supreme Council for Environment carried out in collaboration with the Ministry of Works, Municipalities Affairs and Urban Planning a project for the cultivation of plants and planting mangrove seedlings in order to rehabilitate degraded coastal areas and increase green areas in the coastal areas. During the seeding season in 2013, the project succeeded in the cultivation of more than 1,500 seedlings of mangroves all from Tubli Bay and Doha Arad. Meanwhile, the Directorate of Fisheries at the Ministry of Works, Municipalities Affairs and Urban Planning implemented a project that aims to increase fish stocks in the Kingdom of Bahrain through landing artificial reefs in hopes of contributing to the recovery of fish stocks to safe levels once more. The project was launched in 2012 by conducting a number of intensive surveys to determine suitable sites for the landing of artificial reefs before lowering nearly 2,500 concrete houses (Reef balls) in six key locations. Also, commercial fish fingerlings were cultured and released at the artificial reef sites in order to revive the fish stocks of those sites.

Section (2) Progress made towards the achievement of the Aichi Targets (2020)

Table (2) National efforts made by Bahrain between 2011-2014 in the aim of achieving the Aichi Targets (2020)

| National Efforts | Status and Direction |
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|  <p>By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.</p> | |
| <ul style="list-style-type: none"> • The period (2011-2014) witnessed an increase in participation of civil society in implementing projects and programs related to biodiversity; some of which include environmental awareness programs, conducting surveys, restoration projects and monitoring programs. • In this time, approximately 51 awareness lectures were conducted along with other activities (e.g. workshops and seminars) in the aim of raising people’s awareness of the values of biodiversity and the threats faced. • In 2014, a documentary was produced to shed light on unique biodiversity components present in the Kingdom of Bahrain. • Numerous publications were printed and distributed to schools and the general public in the form of books, magazines and brochures on biodiversity in Bahrain. • Within the first half of 2014, over 30 articles related to biodiversity issues in Bahrain have been published in the daily local newspapers. • The organizing committee of the Bahrain International Garden Show organises this event annually whereby it has proven to be very popular amongst members of the public, tourists in addition to the public and private sectors. The show also aims to spread awareness on plant diversity to enhance food security through displaying samples of local plants, various agricultural techniques along with hosting competitions suited to all ages of the public. | <p>It is thought that the status, direction and projected scenario in achieving this goal are positive.</p> |
|  <p>By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies</p> | |

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| <p>and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.</p> | |
| <p>Numerous efforts have been put in to enhance the integration of biodiversity values into national policies, programs, projects, activities and sector initiatives through the utilisation of various tools such as strategic planning processes in sectors, legislations, environmental planning strategies, environmental impact assessment strategies and national committees.</p> | <p>It is thought that the status, direction and projected scenario in achieving this goal are positive.</p> |
| <p> By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.</p> | |
| <ul style="list-style-type: none"> • Economic incentives are given to support handicrafts produced using materials derived from palm trees in the aim of conserving cultural and heritage practices related to biodiversity. • Economic incentives and support are also given to farmers to encourage them to utilise modern methods of farming. • Economic incentives are further given to fishermen who are willing to abandon their fishing permit in an effort to limit the growing pressure on marine fisheries. | <p>It is thought that the status, direction and projected scenario in achieving this goal is positive.</p> |
| <p> By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.</p> | |
| <ul style="list-style-type: none"> • A yearly shrimp fishing ban season has been put into force to allow safe reproduction of this valuable species in national waters (15 March to 15 July – Source: Legislation and Legal Opinion Commission, 2014). • Setting restrictions on the export of fisheries. • Encouraging fishermen on catching and exporting crustaceans and mollusks of low economic value in the local markets in an effort to lower the growing pressure various finned fish species of high economic value. • Encouragement of citizens and expats to consume various species of fish to lower | <ul style="list-style-type: none"> • The constant increase in the amount of yearly fisheries landings in addition to increased fishing effort indicates that the fish stock is outside the biological safe limits. • The increase in landing size for jellyfish following the policies which encourage the export of species of low economic value from 130.2 kg in 2004 to 1381.5 |

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| <p>the pressure on the main fish groups that are of high economic value.</p> <ul style="list-style-type: none"> • Implement restrictions on the number of fishing permits in an effort to lower the pressure caused by fishing activities. • Strengthening of marine monitoring to ensure that fishermen are utilizing non-destructive fishing gear and are abiding by the law during the fishing ban season. • Cooperation with neighbouring countries in the Arabian gulf to strengthen the regional sustainable management of fisheries (e.g. Mackerel fisheries) • The adoption of an initiative that incorporates the encouragement of utilizing the mangroves present in Ras Sanad as a location for sustainable eco-tourism. • Expansion of using treated sewage water for irrigation purposes in farms and gardens. | <p>kg in 2013 which amounts to a 961.05% increase.</p> |
|  <p>By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.</p> | |
| <ul style="list-style-type: none"> • The implementation of the mangrove planting project in the aim of rehabilitating deteriorated mangrove areas in addition to increasing the green area in the Kingdom of Bahrain. • The expansion in the construction of artificial reefs accompanied by the launch of initiatives for coral propagations in an effort to rehabilitate destroyed and degraded coral reefs. • The launch of initiatives to rehabilitate degraded sea grass beds due to trawling activities. | <p>Despite the improvement noted on the current status of mangroves, no significant positive improvement was observed on the status and direction of coastal and marine habitats due to the increasing pressures resulting from urban development.</p> |
|  <p>By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.</p> | |
| <ul style="list-style-type: none"> • Efforts are similar to that stated under Target 4 above. | <p>Similar to Target 5.</p> |

- During the period (2012-2014), an ambitious project was launched adopting the ecosystem based approach in the Kingdom of Bahrain which incorporates preparing an environmental management plan for a UNESCO World Heritage site which includes three important oyster bed sites and a coral reef.




By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.



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| <ul style="list-style-type: none"> • Integrating the requirements of conserving the green belt which includes the palm groves in the urban planning process. • Economic incentives and technical support are given to farmers to strengthen sustainable farming activities whereby technical support is extended as consultations in restoring and rehabilitating degraded lands e.g. saline lands. • Ensuring fish farms are subjected to regular monitoring programs. • Expanding the use of treated sewage water for irrigation purposes in the aim of limiting the use of groundwater. In 2014, the number of farms connected to the treated sewage water network has reached 410 which represents 75% of the total number of farms (Agriculture and Marine Resources Affairs, 2014). • The registration of fertilisers and soil improves in an effort to limit any harm to the soil whereby, the number of certificates issued between 2011-2014 has reached a total of 300 certificates (Agriculture and Marine Resources Affairs, 2014). • Executing regular programs to measure agricultural soil salinity and acidity, whereby, between January to May 2014, 20 farms have been surveyed and a total of 116 samples were analysed (Agriculture and Marine Resources Affairs, 2014). | <ul style="list-style-type: none"> • The number of fish farms have increase by a total number of 2 new farms since 2010. • It is thought that the status, direction and projected scenario in achieving this goal are positive. |
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By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

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| <ul style="list-style-type: none"> • The continuation of executing a project which aims at increasing the receiving capacity of Tubli Sewage Treatment Plant. | <ul style="list-style-type: none"> • The improvement in the quality of treated sewage water drained into the |
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| <ul style="list-style-type: none"> • The construction of a temporary sewage treatment plant inside Tubli Sewage Treatment Plant to enhance the quality of treated water. • The opening of Muharraq Station for Sewage Treatment which will contribute towards lower the load on the Tubli Sewage Treatment Plant. • The continuation of the seasonal marine environment quality monitoring program which is present opposite to the Tubli Plant effluent outflow executed by the Supreme Council for Environment. • The continuation of the periodic monitoring program executed by the Supreme Council for Environment to assess the quality of treated sewage water expelled into the sea. • The formation of a national committee to monitor and study the phenomena of red tides within national waters. • The continuation of the monitoring program for deceased fish and marine life by the Supreme Council for Environment in collaboration with academic institutions and civil society. | <p>marine environment.</p> <ul style="list-style-type: none"> • The concentration of dissolved oxygen in the waters surrounding the Tubli Plant area remains low. • Records for some of the red tide incidents equal that to the year 2010. |
|  <p>By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.</p> | |
| <ul style="list-style-type: none"> • Monitoring of borders and exit points to ensure detection of invasive species entry into the country (especially poisonous and predatory species). • Continuation of the House Crow (<i>C. splendens</i>) monitoring and management program in residential and agricultural areas. • Increasing the efforts of the red palm weevil (<i>R. ferrugineus</i>) pest management program executed by the Directorate of Agricultural Affairs and Marine Resources following legislative, mechanical, cultural chemical and behaviour control which includes efforts related to monitoring, surveying, pest control and treatment. Examples of the most prominent efforts implemented during 2011-2014 include (Directorate of Agricultural Affairs and Marine Resources, 2014): | <ul style="list-style-type: none"> • Decrease in House Crows numbers despite its presence in many residential neighbourhoods and agricultural lands. • Increase in the number and geographical extent of the common myna bird (<i>Acriclotheres tristis</i>). • The increase in the geographical extent of the red palm weevil (<i>R. ferrugineus</i>) and its economic, environmental impacts in the northern and western |

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| <ul style="list-style-type: none"> - The survey of 1815 farms and analysis of 738,062 palm trees to ensure that they are not infected by the red weevil. - Preparation of a detailed map illustrating the geographic spread of red weevil infections in Bahrain. - The treatment of 14,364 infected trees (either through pest control or removal). - The distribution of 3,972 free red palm weevil pheromone traps and 12,023 pheromones on farmers. - Conducting two workshops on palm tree services and mitigating the red palm weevil pest. • Implementation of a project in collaboration with the International Research Center that aims to create an inventory for palm pests which includes agricultural insects and spiders whilst dividing them based on their economic importance in dry areas. | <p>regions of the northern governate.</p> <ul style="list-style-type: none"> • Monitoring of a total of 61 agricultural pest species that impact date trees in the Kingdom of Bahrain (Directorate of Agricultural Affairs and Marine Resources, 2014). |
|  <p>By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.</p> | |
| <ul style="list-style-type: none"> • Implementation of a strategic project aiming to revive reef fish stock through lowering the pressures on natural coral reefs by creating artificial reefs. • Launch of an initiative to restore degraded coral reefs through coral propagation. • The integration of biodiversity values in climate change mitigation policies, programs and activities especially those relating to assessing the sensitivity and adaptation rates of marine and coastal ecosystems to climate change. | <p>Although indications of some encouraging signs were noted however, the general status of coral reefs in Bahrain remains critical.</p> |
|  <p>By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.</p> | |

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| <ul style="list-style-type: none"> • The declaration of <i>Najwat</i> and <i>Hayr Bul Thamah</i>, <i>Hayr Amamah</i> and <i>Hayr Shtayyah</i> as a UNESCO World Heritage Site covering a total area of approximately 1638.23 km². • Implementing the Ecosystem Based Approach in preparing the Environmental Management Plan for <i>Najwat</i> and <i>Hayr Bul Thamah</i>, <i>Hayr Amamah</i> and <i>Hayr Shtayyah</i>. • The addition of MPA values in area planning projects for coastal and marine areas based on the 2030 Urbanization Plan. | <ul style="list-style-type: none"> • The increase in the number of protected areas by one which equals to an increase by 16.66% in comparison to the year 2010. • No change was seen in the area of in land waters and terrestrial land located within declared protected areas. • Stabilisation in the good status of Hawar Islands, Al Areen Nature Reserve, Dohat Arad and Mashtan Island in comparison to the no signs of improvements seen in Tubli Bay and Reef <i>Bul Thamah</i>. |
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By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

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| <ul style="list-style-type: none"> • The continuation in implementing regular breeding programs in families from various rare and endangered species such as the Arabian Reem Gazelle (<i>Gazella subgutturosa marica</i>) and the Arabian Oryx (<i>Oryx leucoryx</i>), the marsh frog (<i>R. ridibunda</i>) and the caspian turtle (<i>M. caspica</i>). • Continuous implementation of the monitoring of dead marine turtles which include periodic surveys and fishermen surveys to estimate the number of dead turtles in Bahrain. • Efforts were made by civil society organisations to rehabilitate a number of injured marine turtles. | <ul style="list-style-type: none"> • Stabilisation of the status of as the Arabian Reem Gazelle (<i>G. subgutturosa marica</i>) and the Arabian Oryx (<i>Oryx leucoryx</i>) as a result of protection and breeding programs. • No improvements were noted in the numbers of marsh frogs (<i>R. ridibunda</i>) and caspian turtles (<i>M. caspica</i>). • Fishing activities utilising nets continue having negative impacts on marine turtles and mammals. |
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By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

- The continuation of the “National campaign for planting a palm tree in every house” whereby a total number of 3752 saplings belonging to 23 species were distributed amongst 4376 homes throughout the country.
- The analysis of the genetic print of pure Arabian horses whilst maintaining documented records of relative species. In addition to the organisation of periodic speed races and competitions for pure Arab thoroughbreds on various aspects especially the beauty.
- Encouragement of breeders to acquire and breed native pure Arab thoroughbreds.
- Bahrain has taken special interest in conserving the purity of Arab thoroughbreds whereby the royal stables for Arab thoroughbreds comprises approximately 20 stalls.
- Technical support is given to farmers to encourage them on growing local and native species of palm trees in addition to breeding palm species of high economic value using tissue culture.
- The establishment of a genetic center that consists of a botanical garden where a total number of 200 trees belonging to 19 species of native and local species of plants are grown in addition to those that have adaptation to the country’s harsh environment.
- Free veterinary services are given to breeders to aid them in caring for good genetic breeds of farm animals (e.g. cows, goats, chickens etc).
- The status of pure Arab thoroughbreds remains good and these species continue receiving high levels of protection.
- Species of palm trees continue facing increasing threats due to the decrease of green spaces caused by urbanisation in addition to the introduction of alien species.



By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

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| <ul style="list-style-type: none"> • Two studies were conducted during 2011-2014 to determine the services provided by ecosystems and various biodiversity aspects in the northern oyster beds and coral reefs. • In 2013, a specialised study was undertaken to assess the economic impacts resulting from the degradation of coastal and marine habitats in Bahrain’s territorial waters. • Efforts are being made to halt the overexploitation of groundwater, which is, believed to be the main reason for the extinction of freshwater spring’s habitats. These efforts include: <ul style="list-style-type: none"> - The expansion in the desalination of sea water to provide water for domestic and industrial use. - The expansion of utilising sewage treated water for irrigation purposes in farms, roads and public gardens. • The opening of Muharraq Sewage Treatment Station in 2014, which is estimated to contribute towards tripling the increase in production of treated water by 100000 m³/day. | <p>The increase in participation of civil society and NGOs in implementing biodiversity related projects.</p> |
|  <p>By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.</p> | |
| <ul style="list-style-type: none"> • The launch of a mangrove planting project which consisted of planting 1004 seedlings during 2013-2014 in chosen coastal areas in Tubli Bay and Dohat Area in the aim of rehabilitating degraded mangrove sites in addition to increasing the vegetation cover within coastal areas. • Increase in planting campaigns in residential and public areas, roads hence contributing towards mitigating the concentration of greenhouse gases. • The continuation in implementation of the “National campaign for planting a palm tree in every house” whereby free palm saplings are distributed among citizens (refer to Target 13). • In 2014, a comprehensive scientific study was launched to investigate the degree of | <p>It is thought that the status, direction and projected scenario in achieving this goal are positive.</p> |

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| carbon sequestration in marine ecosystems within Bahrain's territorial waters. | |
|  <p>By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.</p> | |
| <ul style="list-style-type: none"> • Imposing restrictions on importing genetic resources to protect the right of exporting countries. • The Kingdom of Bahrain allows other countries access to its genetic resources including agricultural and marine resources such as vegetables and commercial fisheries based on previous restrictions. • Conducting a study to assess the benefits gained by the Kingdom of Bahrain on joining the Nagoya Protocol which included consulting national relevant stakeholders. • Bahrain contributes alongside neighbouring countries in the Gulf Cooperation Council in capacity building on access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation. | Bahrain has still not signed or ratified the Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation under the CBD. However, Bahrain is anticipated to sign and ratify this protocol shortly. |
|  <p>By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.</p> | |
| <ul style="list-style-type: none"> • The formation of the Directorate of Biodiversity following decision no (44) of 2012 that oversees the implementation of the national biodiversity strategy and action plan. • The launch of the revision of the national biodiversity strategy and action plan project in collaboration with the United Nations Environment Programme (UNEP) and the support of the Global Environment Facility (GEF). | It is thought that the status, direction and projected scenario in achieving this goal is positive. |
|  <p>By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation</p> | |

of indigenous and local communities, at all relevant levels.

- Implementation of the “Pearl Route” Project which aims to revive the national heritage that accompanied pearling and its trade which was known to be the heart of the cultural and economic life for centuries in Bahrain.
- Encouraging the use of traditional fishing methods (such as *hadrahs* and *gargoors*).
- Numerous efforts are being made to conserve the inherited culture accompanying palm trees. The most significant being the establishment of a permanent handicrafts center for palm products.
- The expansion of growing local plants that are used in traditional medicine in the medical botanical garden situated in Al Areen Nature Reserve.

- The increase in the number of participants in projects related to reviving national heritage accompanying pearl diving and trade.
- The increase in participation of civil society in biodiversity projects bringing together local NGOs, youth groups and movements.



By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

- The Central Informatics Organisation has an electronic portal that can access a national database which includes data on habitat maps and marine species in Bahrain.
- The Ministry of Municipalities and Urban Planning maintains a comprehensive database which includes statistical information on agriculture and fisheries which is updated regularly.
- Specialists at the University of Bahrain and the Arabian Gulf University conduct regular studies on various biodiversity aspects in Bahrain.
- The Supreme Council for Environment possesses a database updated using GIS which outlines the geographic extent of marine, terrestrial and anthropogenic impacts on biodiversity (e.g. dredging and reclamation activities, camping activities, factories outfalls and quarries).
- The Kingdom of Bahrain contributed in the implementation of the United Arab Emirates’ project surrounding the Atlas of habitat and protected areas in the Arabian Peninsula.
- The appointment of the latest technologies by the Directorate of agricultural affairs

- Despite the efforts made, no central national database exists dedicated to biodiversity in Bahrain.
- In comparison to 2010, no improvements were recorded in the transfer of new technology related to biodiversity in Bahrain.

and marine resources some of which includes: distance consultations, genetic engineering applications and nanotechnology. The number of farms adopting hydroponic farming has reached 10 by 2014 (Directorate of Agricultural Affairs and Marine Resources, 2014).

- The period (2011-2013) has witnessed an increase in the number of companies and farmers who have adopted the method of farming using hydroponics hence increasing the area of land using this technique.
- The Supreme Council for Environment utilizes the latest techniques in its monitoring programs, water quality assessment in addition to inspection of industrial activities programs.



By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

- Completion of an updated national legislation draft which frames the establishment of an environmental fund.
- Completion of drafting a legal legislation document illustrating compensation mechanisms for dredging and reclamation projects.
- The private sector contributes through financial donations to aid the implementation of projects involving biodiversity protection which includes captivity breeding programs.
- Financial aid is given to farmers and garden owners through services such as the analysis of farm soil and sand samples whereby a total number of 3313 samples were analysed between January 2010 and May 2014 as for the number of soil samples taken reached 1279 within the same period (Directorate of Agricultural Affairs and Marine Resources, 2014).

- Despite this, the amount of financial aid directed towards biodiversity projects remain very limited.
- Financial aid sources for biodiversity projects lack diversity and also remain from traditional sources.

