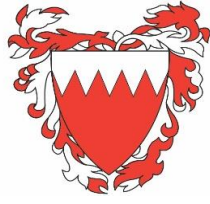
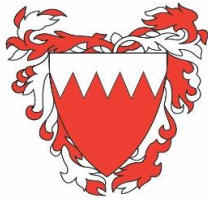


Kingdom of Bahrain  
Supreme Council for Environment



مَمْلَكَةُ الْبَحْرَيْنِ  
المجلس الأعلى للبيئة

**Nationally Determined Contribution of Kingdom of  
Bahrain under UNFCCC  
2021**



بسم الله الرحمن الرحيم

## Nationally Determined Contribution of Kingdom of Bahrain under UNFCCC

Manama, ..... 2021

### Introduction

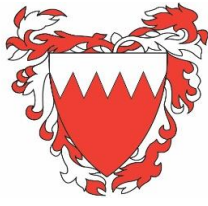
The Kingdom of Bahrain hereby communicates in good faith its Nationally Determined Contribution (NDC) and confirms its commitment to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement (PA).

The development of this NDC is guided by numerous relevant principles and decisions as outlined by Article 3 of UNFCCC; decision 24/CP.18, decision 1/CP.19; decision 1/CP.20; Article 24, decision 1/CP.21; Articles 4.1, 4.7 and 4.15 of the Paris Agreement as well as Katowice Rulebook of COP24.

As a developing country, the Kingdom of Bahrain is actively pursuing economic diversification considering sustainability as the pillar of its growth. Despite its low annual GHG footprint, estimated approximately below 0.1% of the global GHG footprint, the Kingdom of Bahrain strives to avoid and reduce emissions in its economic development. As per Article 4.7 of the Paris Agreement, at the core of this NDC is mitigation co-benefits resulting from adaptation actions and economic diversification plans.

### National Circumstances

Being a small developing island state, Bahrain's coastline and land area have evolved considerably over the last 30 years due to a series of land reclamation projects, which continue to the present day. Roughly, 111 km<sup>2</sup> of reclaimed land has been added since 1980, accounting for about 15% of its current total land area. Bahrain is an arid country



with mild, pleasant winters, and summers that are very hot and humid. Rainfall is negligible from April through the end of October, coinciding with high temperatures. Relative humidity is highest during the winter months of December through February, although other months of the year show only slightly lower levels.

Bahrain enjoys a rich social milieu, with diverse communities living side by side in primarily high-density urban contexts throughout the island. Several key aspects of Bahrain's social fabric are described in the subsections that follow. In 2021, total population is slightly over 1.5 million with roughly half of the population comprised of expatriates who come to pursue work opportunities. Most of the population is centered in the capital, Al Manamah and other major urban centers like Al Muharraq, Al Riffa' and Hamad Town.

### **Economic diversification with mitigation-co benefits**

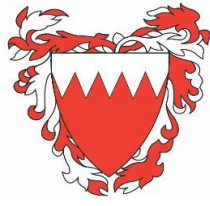
Launched in 2017, the National Energy Efficiency Action Plan (NEEAP) lays out a comprehensive set of initiatives to improve national energy efficiency in Bahrain. The Plan identifies 22 initiatives across all sectors to achieve a national target of 6% which was adopted by Cabinet. The target is set as a reduction of energy consumption in the year 2025, expressed as a percentage of the average final energy consumption.

Launched in the same year, the National Renewable Energy Action Plan (NREAP) identified feasible solar, wind and biogas renewable energy options for Bahrain, establishing *national renewable energy targets, also adopted by Cabinet, of 5% of peak capacity by 2025 and 10% by 2035.*

### **Adaptation**

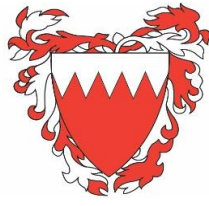
Climate change impacts have already been observed in Bahrain and are further elaborated on in the Third National Communication Report. The Kingdom of Bahrain has undertaken climate change vulnerability and impact assessments that have addressed four key areas: Water, agriculture, biodiversity and urban development.

Bahrain has no choice but to implement urgent measures to build resilience, improve disaster risk preparedness and response, and adapt to the increasingly adverse impacts of climate change in future. Indeed, there are substantially higher costs associated with

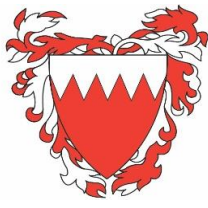


adaptation to future impacts of climate change in Bahrain, if actions are initially delayed or ignored. At present, the action being taken to address the issue of adaptation is executed with limited capacities and resources, with a need for a more comprehensive and articulated adaptation package *with support from the international community, Green Climate Fund (GCF) and the UNFCCC*. The Kingdom of Bahrain is undertaking the following actions to adapt to climate change:

<p><b>Adaptation Strategy</b></p>	<p>A national adaptation Investment Plan (NAIP) on climate change in cooperation with the relevant government agencies is in preparation. The plan aims to include adaptation priorities and implementation actions.</p> <p>Bahrain's national adaptation planning efforts aims at enhancing the adaptive capacity to cope with climate change risks. As part of this overarching picture, comes The National Adaptation Investment Plan to take the adaptation investment related efforts forward, by addressing some of the pressing climate change adaptation needs.</p> <p>The National Adaptation Investment Plan is the guiding document to identify interventions in order to increase the Kingdom of Bahrain's resilience to climate change. For that purpose, the document has the following four objectives:</p> <ol style="list-style-type: none"><li>1. To systematically describe what adaptation to the adverse impacts of climate change means in Bahrain and to identify objectives for adaptation (situational analysis),</li><li>2. To identify interventions to increase resilience to climate change and achieve the objectives for adaptation (project pipeline),</li><li>3. To identify relevant options of how to finance these interventions (finance strategy)</li><li>4. To identify the stakeholders in the different areas affected by the adverse impacts of climate change on which successful adaptation will depend (stakeholder analysis),</li><li>5. To prescribe institutional arrangements across different departments and agencies to implement the identified interventions.</li></ol>
-----------------------------------	---



<b>Coastal Zones</b>	<p>Coastal Resilience to Sea-Level Rise has been included in the Ministry of Works Dredging and Land Reclamation Technical Manual published in 2008. Some adaptation measures have already taken place and a code of height was implemented. However, in early 2020 and in harmony with the recent IPCC reviewed scenarios, the code was revised, and a new height was enacted to provide better costal resilience to important infrastructures. following these stages:</p> <ol style="list-style-type: none"><li>1) Stage one: Base lining flood risk from Sea Level Rise: Review of available scientific evidence and data on SLR and preliminary assessment of land and key assets at risk.</li><li>2) Stage two: Sources of Coastal Flood Risk: Detailed investigation of sources of flood Risk associated with SLR and storm events.</li><li>3) Stage three: Impacts on National Infrastructure: Detailed assessment of the impact of SLR on key infrastructure &amp; National Assets</li><li>4) Stage 4: Success Strategy Development of master plan and strategy to mitigate impacts and identification of options and actions.</li></ol>
<b>Water Resources</b>	<p>The current water situation in Bahrain is not sustainable. <b>The National Water Resources Council</b> was reactivated in 2016 and is working on <b>formulating a clear, comprehensive, and integrated water resources policy and strategy</b> in order to manage water resources efficiently and diversify its sources through investigating novel technologies linked to renewable energy.</p> <p><i>The Water Resources Management Unit (WRM)</i>, established in 2019 with initial funding from the GCF, aims to enhance climate resilience of the water sector. Among the projects undertaken by the unit is the modeling of the impact of climate change on freshwater resources, benefiting from gray water, conducting a comprehensive auditing of water management and use, as well as rainwater harvesting.</p>



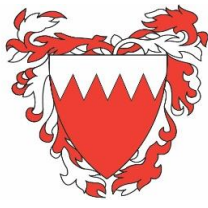
Bahrain also adopted and implements national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.

## Adaptation Actions with Mitigation Co-Benefits

Beyond “classical” adaptation actions, *Article 4.7 in the PA states that “Mitigation co-benefits resulting from Parties’ adaptation actions and/or economic diversification can contribute to mitigation outcomes.* Henceforth Bahrain launched several projects that concurs this concept such as:

<p><b>National Plan for Afforestation</b></p>	<p>The national project for afforestation, to support increase green areas at the kingdom, better accommodate rise in temperatures and create green sinks for emission is still at early stages,</p> <p>A thermal satellite imagery of Bahrain has been taken to identify the heat hotspots, a list of trees and vegetation that are suitable for Bahrain’s climate, compatible with heat, does not require a lot of water and does not impact infrastructure was identified, a pilot program has been established to test the reduction impact of afforestation in different areas prior to expanding the projects.</p> <p>The action plan will be expanded to include the type and percentage of green area, as well as initiatives to encourage nationals and residents to plant trees and a revision of building permits to include landscaping</p>
<p><b>Mangrove Habitats</b></p>	<p>There are several adaptation strategies that are under consideration to build resilience against climate change risks mangroves habitats are facing while at the same time considering natural sinks. Those strategies are the following:</p> <ul style="list-style-type: none"> <li>- Establishing the <b>Tubli Bay observatory</b> to strengthen existing observation systems to better understand ecological services provided by mangrove habitats in the area.</li> </ul>





	<ul style="list-style-type: none"><li>- Creating a <b>blue carbon inventory</b> to augment Bahrain's existing GHG emission tracking system to estimate and document carbon pools/fluxes in Tubli Bay consistent with international methodological guidance.</li><li>- <b>Ecosystem services valuation</b> to introduce economic valuation as a basis to account for the value of the market (i.e., tourism) and non-market (i.e., regulating, provisioning, supporting) services that the Tubli Bay mangrove habitats provide.</li><li>- <b>Mangrove Transplantation Project</b> is ongoing with more than 4,800 seedlings being planted in 2019 alone.</li></ul>
--	---

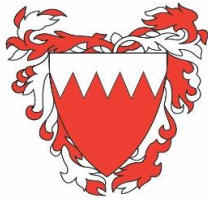
Bahrain will actively pursue the synergies between mitigation and adaptation exploring adaptation actions with mitigation benefits and vice versa.

## Economic Development and Diversification

Bahrain Bourse (Bahrain Stock Market) joined the Sustainable Stock Exchange (SSE) initiative in 2019, reinforcing its commitment to promote sustainable and transparent capital markets. Companies in Bahrain will have to disclose Environmental, Social, and Governance (ESG) information, and are expected to create shared value and inclusive growth, to assess their impacts on capitals and resources, and to contribute to national, regional and global visions and plans.

In addition, the Government has adopted a strategic plan to develop six key economic sectors, namely financial services, information and communication technology, industry, logistics, tourism, and oil. Several initiatives have been implemented to increase the volume of foreign and local investments and create job opportunities. Many initiatives have already been implemented such as a new tourism strategy, new measures to streamline visa procedures, new legislation to encourage foreign investors, a comprehensive strategy for the development of the logistics sector, and a national strategy to revive the pearling industry.

These initiatives will continue to contribute to positive growth in the Kingdom's non-oil sector, strengthening its contribution to GDP, increasing sustainable development and



further enhancing diversification while reinforcing the pivotal role of the private sector as the major driver of growth.

The Kingdom of Bahrain strives to avoid and reduce emissions in its economic development. As per Article 4.7 of the Paris Agreement, at the core of this NDC is mitigation co-benefits resulting from adaptation actions and economic diversification plans.

## Sustainable Development Goals

The Kingdom of Bahrain has taken major steps towards achieving the Sustainable Development Goals (SDGs) set by the United Nations General Assembly, aligning its national development agenda accordingly.

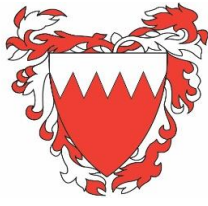
As a result, the Kingdom of Bahrain has established many governmental institutions, organizations, and committees to develop the programs, policies, and strategies to achieve sustainability in its various dimensions. It has also enacted a number of laws and regulations related to the achievement of sustainable development, which has become an international demand in the midst of the current economic, political and social changes that the global community witnesses currently.

## Means of Implementation

The elaboration of this NDC includes a public participatory process through a series of multi- sectorial meetings and has been reviewed by the National Climate Change Committee. This intended contribution is communicated under the assumption of the adoption of a universal, legally binding instrument that fully respects the principles and provisions of the UNFCCC, *in particular the principle of common but differentiated responsibilities, equity, and respective capabilities*. The domestic actions communicated in this NDC are voluntary and will be implemented in accordance with the principles and provisions of the Convention, in particular Article 4 paragraph 1, 7 and 8.

The Kingdom of Bahrain recognizes that the extent to which it will meet its obligations under the UNFCCC, PA *will depend highly on the level of international support in means of implementation*. Therefore, mitigation and adaptation stipulations are meant to inform and will be undertaken in the context of support on finance, technology-transfer, and capacity building.





## **Information Necessary for Clarity, Transparency, and Understanding of the updated NDC**

Bahrain will periodically review the mitigation and adaptation measures mentioned in the NDCs to ensure that efforts are implemented.

Bahrain will have a specific monitoring and evaluation plan for the adaptation, for monitoring and reviewing and verification of projects and policies.

### **Article 6**

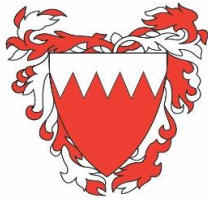
In implementation of its NDC, Bahrain will consider voluntary cooperation and cooperative approaches that involve the use of internationally transferred mitigation outcomes as per Article 6 of the Paris Agreement. For the Kingdom of Bahrain such cooperation and cooperative approaches will be multi-metric in their nature and include not only GHG but also other related parameters such as renewable energy, energy efficiency etc.

### **Technology Innovation and Deployment**

The Kingdom of Bahrain considers technology innovation and deployment at scale as a vital enabler of its NDC and for achieving the Paris Agreement goals. Bahrain supports key technologies such as carbon capture and utilization, direct air capture and others which are necessary for hard-to-abate sectors.

### **Response measures**

The Kingdom of Bahrain is impacted not only by physical climate change consequences but also the negative result of climate change policies made beyond its borders. Managing response measures to minimize their economic and social consequence in Bahrain is one of the key priorities for Bahrain to achieve sustainable growth.



As outlined in Article 4.15 of the Paris Agreement, the international community needs to take into account economies most affected by the impacts of response measures, particularly developing country Parties.

### **Ambition and fairness**

Given its small island and developing country status, historically low GHG footprint (estimated as approximately below 0.1% of the global GHG footprint), ongoing economic diversification, physical impacts of climate change, the Kingdom of Bahrain considers this NDC as ambitious and fair. To correctly utilize its limited resources, Bahrain will prioritize adaptation actions (especially those with mitigation co-benefits) over mitigation.