

## TEMPLATE B

### RESPONSE FOR CAPACITY-BUILDING NEEDS-ASSESSMENT: “Space2030” Agenda Mid-term Review

<b>Overarching objective [1]</b>	Space Economy
<b>Country</b>	Kingdom of Bahrain
<b>Outline the nature of your national challenge(s)</b>	<ol style="list-style-type: none"> <li>1. <b>Funding and Resource Constraints:</b> Limited budget, difficulty attracting private investment due to perceived risks, and absence of national funds specifically for space projects, research, and innovation, with limited public-private partnerships (PPPs).</li> <li>2. <b>Skilled Workforce Shortage:</b> Limited professionals in aerospace engineering, few jobs and limited opportunities in the space sector.</li> <li>3. <b>Infrastructure Gaps:</b> Lack of facilities for satellite AIT, labs, ground stations, that support the growth in the national space sector.</li> <li>4. <b>Market Access and Commercialization:</b> Difficulty competing with established players, limited experience in monetizing space-based services (e.g., Earth observation), and very few private companies operating in the space field.</li> <li>5. <b>Regulatory and Policy Challenges:</b> Absence of national space laws and policies to regulate activities, incentivize private sector participation, and stimulate investment.</li> <li>6. <b>Data and Innovation Barriers:</b> Limited national open-source satellite earth observation data, limiting research, innovation, and SMEs in downstream applications.</li> <li>7. <b>Public Awareness and Perception:</b> Not enough awareness of space sector benefits and business opportunities in the space sector.</li> <li>8. <b>Global Competition and Differentiation:</b> Pressure to justify the agency’s role, risk of being overshadowed by larger players, and challenges in differentiating from global competitors. Difficulty in attracting space-focused private sector to invest in Bahrain compared to other regional and international spacefaring nations.</li> <li>9. <b>Return on Investment Uncertainty:</b> Due to long project durations and long timelines for returns on investment, this could discourage private sector participation or government commitment.</li> </ol>

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<p>Please explain more, including whether you have already identified a space solution?</p>	<ol style="list-style-type: none"> <li>1. <b>Funding and Resource Constraints:</b> <ol style="list-style-type: none"> <li>a. BSA has initiated discussions with regional telecom operators to co-fund a satellite-based IoT project for Bahrain and the Middle East. This collaboration aims to share costs, leverage existing infrastructure, and open new revenue streams through IoT services.</li> </ol> </li> <li>2. <b>Skilled Workforce Shortage:</b> <ol style="list-style-type: none"> <li>a. BSA has organized training programs in satellite technologies, data processing, and job shadowing opportunities.</li> <li>b. BSA contributed to building and launching nanosatellites (e.g., Thabi Sat in 2021, Light1 in 2022), providing practical experience in satellite design, testing, and operation.</li> <li>c. Four annual workshops on space applications have been conducted, engaging 100+ stakeholders, including academics, industry experts, and government representatives, to foster knowledge sharing and innovation</li> </ol> </li> <li>3. <b>Infrastructure Gaps:</b> <ol style="list-style-type: none"> <li>a. BSA has established its first ground station to support the AlMunther satellite, enabling data reception, telemetry and command operations. This represents a foundational step toward developing national space infrastructure.</li> <li>b. In the coming years, BSA plans to build a headquarters, which will feature advanced facilities such as Assembly, Integration and Testing laboratories, dedicated testing facilities, and advanced ground stations, to support long-term growth and innovation.</li> </ol> </li> <li>4. <b>Regulatory and Policy:</b> <ol style="list-style-type: none"> <li>a. Bahrain has signed key international treaties (Outer Space Treaty, Liability Convention, Registration Convention) and the Artemis Accords, positioning itself as a responsible actor in global space governance.</li> <li>b. BSA has collaborated with national entities to draft a comprehensive national space law, which will regulate space activities and stimulate private sector investment.</li> </ol> </li> <li>5. <b>Data and Innovation Barriers:</b> <ol style="list-style-type: none"> <li>a. With the successful launch of the AlMunther satellite, BSA will provide Earth observation data to researchers, innovators, and SMEs, supporting applications such as agriculture, urban planning, and disaster management.</li> </ol> </li> <li>6. <b>Public Awareness and Perception:</b> <ol style="list-style-type: none"> <li>a. BSA has hosted multiple hackathons and competitions, engaging +1000 participants, including youth and SMEs, to inspire interest in space technologies and their applications.</li> <li>b. BSA organized events highlighting economic benefits of the space sector (e.g., Redwire workshop in 2024 for SMEs and University workshop in 2025 about space applications for sustainability for Government representatives, SMEs and academics).</li> </ol> </li> <li>7. <b>Global Competition and Differentiation:</b> <ol style="list-style-type: none"> <li>a. BSA was established through royal decrees in 2014, with a clear mandate. Its 2<sup>nd</sup> strategic plan and the national space policy was announced in 2018 by the cabinet.</li> </ol> </li> </ol>
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<p><b>What kind of assistance would be most beneficial for you in this regard?</b></p>	<ol style="list-style-type: none"> <li><b>1. Funding and Resource Constraints</b> <ol style="list-style-type: none"> <li>a. Capacity-building grants to support early-stage space projects.</li> <li>b. Advisory support on international partnerships to secure funding and co-fund initiatives.</li> </ol> </li> <li><b>2. Skilled Workforce Shortage</b> <ol style="list-style-type: none"> <li>a. Access to training programs in satellite design, Earth observation, and data analytics (ex, UNNATI (Unispace Nanosatellite Assembly &amp; Training Initiative) for hands-on training in nanosatellite development), space law workshops.</li> <li>b. Support for knowledge exchange with established space agencies.</li> </ol> </li> <li><b>3. Infrastructure Gaps</b> <ol style="list-style-type: none"> <li>a. Technical guidance on designing and building ground stations, AIT facilities, and labs.</li> </ol> </li> <li><b>4. Regulatory and Policy Challenges</b> <ol style="list-style-type: none"> <li>a. Advisory support on drafting national space policies.</li> </ol> </li> <li><b>5. Data, Innovation, and R&amp;D Barriers</b> <ol style="list-style-type: none"> <li>a. Support for creating open-source Earth observation platforms.</li> <li>b. Guidance on using satellite data for disaster preparedness, climate monitoring, and urban planning.</li> <li>c. Access to scientific research journals to actively publish scientific research.</li> </ol> </li> <li><b>6. Public Awareness and Perception</b> <ol style="list-style-type: none"> <li>a. Tools and frameworks for organizing outreach programs and hackathons.</li> <li>b. Guidance on highlighting the economic benefits of space technologies to entrepreneurs and businessman/businesswomen.</li> <li>c. Access to UNOOSA’s educational resources to promote STEM education and awareness.</li> </ol> </li> <li><b>7. Global Competition and Differentiation</b> <ol style="list-style-type: none"> <li>a. Strategic advice on identifying niche markets (e.g., IoT services, lunar exploration).</li> <li>b. Opportunities for collaboration in international space missions.</li> </ol> </li> </ol>
<p><b>Relevant SDGs</b></p>	<p><b>Relevant SDGs to the challenges</b></p> <ul style="list-style-type: none"> <li>• Funding and Resource Constraints <ul style="list-style-type: none"> <li>◦ SDG 17 (Partnerships for the Goals):</li> </ul> </li> <li>• Skilled Workforce Shortage and Public Awareness and Perception <ul style="list-style-type: none"> <li>◦ SDG 4 (Quality Education)</li> <li>◦ SDG 8 (Decent Work and Economic Growth)</li> </ul> </li> <li>• Infrastructure Gaps <ul style="list-style-type: none"> <li>◦ SDG 9 (Industry, Innovation, and Infrastructure)</li> </ul> </li> <li>• Regulatory and Policy <ul style="list-style-type: none"> <li>◦ SDG 16 (Peace, Justice, and Strong Institutions)</li> </ul> </li> <li>• Data and Innovation Barriers <ul style="list-style-type: none"> <li>◦ SDG 9 (Industry, Innovation, and Infrastructure)</li> </ul> </li> <li>• Global Competition and Differentiation <ul style="list-style-type: none"> <li>◦ SDG 9 (Industry, Innovation, and Infrastructure)</li> </ul> </li> </ul>
<p><b>Name of relevant national stakeholder</b></p>	<p><b>Bahrain Space Agency (BSA)</b></p>
<p><b>Overarching objective [2]</b></p>	<p>Space Society</p>

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<b>Country</b>	Kingdom of Bahrain
<b>Outline the nature of your national challenge(s)</b>	<ol style="list-style-type: none"> <li><b>Limited Access to Space Technologies:</b> Bahrain currently lacks widespread access to advanced space-based technologies that could directly enhance quality of life, such as satellite-enabled services for disaster management, precision agriculture, or telemedicine.</li> <li><b>Space Education and Awareness:</b> <ol style="list-style-type: none"> <li>Limited awareness and capacity to integrate space-derived data (e.g., satellite imagery) into sectors like agriculture, transportation, and public health.</li> <li>Public perception of space exploration may still be disconnected from its practical applications in improving everyday life.</li> <li>Bahrain’s education system may not yet be equipped to prepare students and professionals for careers in the growing space economy, which includes fields like satellite manufacturing, space tourism, and space law.</li> </ol> </li> <li><b>National Challenges:</b> Environmental challenges, including desertification, coastal erosion, and air pollution, which require continuous monitoring and mitigation efforts.</li> <li><b>Entrepreneurship and Innovation:</b> As part of its broader economic diversification strategy, Bahrain must find ways to incorporate space entrepreneurship into its non-oil economy while competing with larger regional players.</li> </ol>

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<p>Please explain more, including whether you have already identified a space solution?</p>	<ol style="list-style-type: none"> <li>1. <b>Limited Access to Space Technologies:</b> Bahrain has successfully launched its satellite “AlMunther” that provides valuable data to advanced space-based technologies that may be used to enhance quality of life, such as in environment, agriculture, and urban planning.</li> <li>2. <b>Space Education and Awareness:</b> <ol style="list-style-type: none"> <li>a. BSA has hosted many hackathons, competitions, and outreach programs to inspire public interest, targeting youth. BSA organized events highlighting economic benefits of the space sector (e.g., Redwire workshop in 2024 for SMEs and the university workshop in 2025 about space applications for sustainability for government representatives, SMEs, and academics).</li> <li>b. BSA has collaborated with the Ministry of Education on embedding space subjects in the national curriculum, offered internship opportunities to university students, and offered workshops and trainings to youth.</li> <li>c. BSA collaborated with the MOE on introducing scholarships in regional universities such as in the UAE and in the UK.</li> </ol> </li> <li>3. <b>National Challenges:</b> <ol style="list-style-type: none"> <li>a. The Satellite Imagery and Data Analysis Lab at the BSA has been partially established with necessary hardware and software and has started to introduce services to stakeholders to support national projects covering the areas of disaster management, infrastructure and urban planning, renewable energy, environment, agriculture, and maritime.</li> <li>b. Bahrain is a member of relevant international space organizations like the Space For Climate Observatory (SCO) to integrate space data into climate action plans, enabling better management of natural resources.</li> </ol> </li> <li>4. <b>Entrepreneurship and Innovation:</b> <ol style="list-style-type: none"> <li>a. BSA has developed a plan to encourage investment and the establishment of start-ups, small and medium enterprises in the space sector.</li> <li>b. Bahrain has finalized its national space law, in progress to be announced to regulate space activities in the Kingdom.</li> </ol> </li> </ol>
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<b>What kind of assistance would be most beneficial for you in this regard?</b>	<ol style="list-style-type: none"> <li>1. Capacity-building programs to develop skills to use space technologies effectively.</li> <li>2. Facilitate access to free or low-cost satellite data to address national challenges like environmental monitoring, disaster management, and resource optimization.</li> <li>3. Assist in technology transfer mechanisms to enable Bahrain to adopt and adapt space technologies for local needs.</li> <li>4. Facilitate collaboration with space agencies, enabling them to share knowledge and resources for integrating space data.</li> <li>5. Provide access to platforms like Copernicus (EU Earth Observation Program) and other satellite-based monitoring systems to track environmental changes and support sustainability efforts.</li> <li>6. Participation in space education and outreach programs like the Space4Youth initiative, to encourage young people to pursue careers in space science and technology.</li> <li>7. Access to fellowships and internships through partnerships with space agencies, providing Bahraini students and professionals hands-on experience in space-related fields.</li> <li>8. Assist in designing curriculum focused on STEM and space applications.</li> <li>9. Guidance on developing policies and regulatory frameworks to support the growth of space startups and small businesses.</li> <li>10. Promote incubators and accelerators for space entrepreneurs.</li> </ol>
<b>Relevant SDGs</b>	<p>Relevant SDGs to the challenges</p> <ul style="list-style-type: none"> <li>• Limited access to space technologies <ul style="list-style-type: none"> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ <b>SDG 17 (Partnerships for the Goals)</b></li> </ul> </li> <li>• Space Education and Awareness <ul style="list-style-type: none"> <li>○ SDG 4 (Quality Education)</li> <li>○ SDG 8 (Decent Work and Economic Growth)</li> </ul> </li> <li>• National Challenges <ul style="list-style-type: none"> <li>○ SDG 3 (Good Health and Well-Being)</li> <li>○ SDG 6 (Clean Water and Sanitation)</li> <li>○ SDG 13 (Climate Action)</li> <li>○ SDG 14 (Life Below Water)</li> <li>○ <b>SDG 15 (Life on Land)</b></li> </ul> </li> <li>• Entrepreneurship and innovation <ul style="list-style-type: none"> <li>○ SDG 8 (Decent Work and Economic Growth)</li> <li>○ <b>SDG 9 (Industry, Innovation, and Infrastructure)</b></li> </ul> </li> </ul>
<b>Name of relevant national stakeholder</b>	<b>Bahrain Space Agency</b>

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### RESPONSE FOR CAPACITY-BUILDING NEEDS-ASSESSMENT: “Space2030” Agenda Mid-term Review

<b>Overarching objective [3]</b>	Space Accessibility
<b>Country</b>	Kingdom of Bahrain
<b>Outline the nature of your national challenge(s)</b>	<ol style="list-style-type: none"> <li>1. Bahrain lacks a national source of high-resolution satellite imagery and data, impacting the ability to harness the benefits of space technologies to address national challenges and achieve the Sustainable Development Goals (SDGs), therefore impeding progress toward achieving space accessibility. Also impacts skills development, innovation, policy formulation, and disaster response.</li> <li>2. The absence of robust space infrastructure, such as satellite manufacturing and Testing facilities, advanced ground stations, and launch capabilities, poses a significant barrier to achieving space accessibility.</li> <li>3. Bahrain is still in the process of establishing comprehensive policies and regulations governing space activities. This includes addressing issues like space debris management, licensing, and compliance with international treaties, impacting space accessibility.</li> <li>4. Regional and global collaboration is impacted by being able to share knowledge, resources, and data without a national source of high-resolution satellite imagery and data.</li> <li>5. Limited contribution to global efforts.</li> <li>6. Limited access to open data sources for Synthetic Aperture Radar (SAR) and hyperspectral imagery restricts the advancement of knowledge and skills in processing and analysing these datasets.</li> <li>7. Most of the national challenges relate to earth sustainability: <ol style="list-style-type: none"> <li>a. Water scarcity, due to limited freshwater resources, over-extraction of groundwater, and climate change impacts.</li> <li>b. Poor air quality (GHG emissions) due to the heavy reliance on fossil fuels for energy production.</li> <li>c. Degradation of water quality due to pollution (e.g., industrial waste, oil spills, and agricultural runoff)</li> <li>d. Deforestation, reduction in green areas, and soil salinization.</li> <li>e. Palm trees and mangrove degradation</li> <li>f. Oil spills from ship oil tanks and offshore oil operations.</li> <li>g. High energy consumption rates, especially from non-renewable sources like oil and gas.</li> <li>h. Rise in temperature driven by climate change.</li> <li>i. Rapid urbanization.</li> </ol> </li> </ol>

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<p><b>Please explain more, including whether you have already identified a space solution?</b></p>	<ol style="list-style-type: none"> <li>1. Bahrain’s strategic plan includes a project to build and launch a small satellite with high-resolution imaging systems to serve national needs in environmental monitoring, urban planning, agriculture, and disaster management.</li> <li>2. Bahrain’s strategic plan includes the development of space infrastructure, such as satellite manufacturing, integration and testing facilities, ground stations and mission control, and advanced laboratories for processing and analysing satellite imagery and data.</li> <li>3. Bahrain has finalized the draft of the National Space Law; announcement is in progress, that will address issues like space debris management, licensing, and compliance with international treaties.</li> <li>4. The Bahrain Space Agency has produced several analysis studies utilizing space technologies, to help address national challenges, including:               <ol style="list-style-type: none"> <li>a. The impact of afforestation plan on temperature.</li> <li>b. The impact of sea level rise on land cover and use.</li> <li>c. Impacts on Human Health: Spatial and Temporal Analysis of Atmospheric Gas Concentrations</li> <li>d. Chlorophyll analysis in plants.</li> <li>e. Seasonal Soil moisture and salinity analysis.</li> <li>f. Green areas analysis.</li> <li>g. Palm trees count and health analysis</li> <li>h. Greenhouse Location, Count, and Type Detection.</li> <li>i. Mapping inland waterbodies.</li> <li>j. Mangrove Areas and Density Detection.</li> <li>k. Solar Radiation Power Detection.</li> <li>l. Urban Change Detection in Reclaimed Lands.</li> <li>m. Change Detection.</li> <li>n. 10-years Land Surface Temperature and Urban Heat Islands (UHI) Analysis.</li> <li>o. Land Cover/Land Use Classification Maps.</li> <li>p. The early detection system for the red palm weevil and the deficient irrigation in agricultural areas.</li> <li>q. The prediction of the direction of dust storms.</li> </ol> </li> </ol>
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<b>What kind of assistance would be most beneficial for you in this regard?</b>	<ol style="list-style-type: none"><li>1. Technical expertise and guidance during the requirements definition, system validation for high-resolution Satellites.</li><li>2. Guidance for establishing local satellite designing, manufacturing, integration testing. In addition to advanced ground stations and mission control software. Also, technical assistance in equipping data labs for advanced image and data processing and analysis.</li><li>3. Capacity-building opportunities for engaging Bahraini engineers and scientists in satellite development, operations and data analysis.</li><li>4. Guidance on drafting and finalizing the national space law and policies to ensure alignment with international treaties.</li><li>5. Support in securing affordable launch opportunities through UNOOSA’s Access to Space for All Initiative or similar programs.</li><li>6. Access to high-resolution Earth observation datasets.</li><li>7. Technical support for integrating satellite-derived data with ground-based measurements to develop predictive models.</li><li>8. Assistance in designing and deploying algorithms for automation and real-time processing of satellite data.</li><li>9. Expertise in integrating satellite data streams with IoT sensors for holistic environmental monitoring and smart city solutions.</li></ol>
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## RESPONSE FOR CAPACITY-BUILDING NEEDS-ASSESSMENT: “Space2030” Agenda Mid-term Review

Relevant SDGs	<p>Relevant SDGs to the challenges</p> <ul style="list-style-type: none"> <li>• Lack of a National Source of High-Resolution Satellite Imagery and Data <ul style="list-style-type: none"> <li>○ SDG 4 (Quality Education)</li> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 11 (Sustainable Cities and Communities)</li> <li>○ SDG 13 (Climate Action)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Absence of Robust Space Infrastructure <ul style="list-style-type: none"> <li>○ SDG 8 (Decent Work and Economic Growth)</li> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Incomplete Policies and Regulations Governing Space Activities <ul style="list-style-type: none"> <li>○ SDG 13 (Climate Action)</li> <li>○ SDG 16 (Peace, Justice, and Strong Institutions)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Limited Regional and Global Collaboration <ul style="list-style-type: none"> <li>○ SDG 6 (Clean Water and Sanitation)</li> <li>○ SDG 13 (Climate Action)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Limited Contribution to Global Efforts <ul style="list-style-type: none"> <li>○ SDG 13 (Climate Action)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> <li>○ SDG 14 (Life Below Water)</li> </ul> </li> <li>• Limited Skills in Processing Satellite Imagery and Data <ul style="list-style-type: none"> <li>○ SDG 4 (Quality Education)</li> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 13 (Climate Action)</li> </ul> </li> <li>• Earth Sustainability Challenges <ul style="list-style-type: none"> <li>○ Water Scarcity <ul style="list-style-type: none"> <li>▪ SDG 2 (Zero Hunger)</li> <li>▪ SDG 6 (Clean Water and Sanitation)</li> <li>▪ SDG 13 (Climate Action)</li> </ul> </li> <li>○ Poor Air Quality (GHG Emissions) <ul style="list-style-type: none"> <li>▪ SDG 3 (Good Health and Well-being)</li> <li>▪ SDG 7 (Affordable and Clean Energy)</li> <li>▪ SDG 13 (Climate Action)</li> </ul> </li> <li>○ Degradation of Water Quality <ul style="list-style-type: none"> <li>▪ SDG 3 (Good Health and Well-being)</li> <li>▪ SDG 6 (Clean Water and Sanitation)</li> <li>▪ SDG 14 (Life Below Water)</li> </ul> </li> <li>○ Deforestation and Reduction in Green Areas <ul style="list-style-type: none"> <li>▪ SDG 15 (Life on Land)</li> <li>▪ SDG 13 (Climate Action)</li> </ul> </li> <li>○ Palm Trees and Mangroves Degradation <ul style="list-style-type: none"> <li>▪ SDG 14 (Life Below Water)</li> <li>▪ SDG 15 (Life on Land)</li> <li>▪ SDG 13 (Climate Action)</li> </ul> </li> <li>○ Oil Spills <ul style="list-style-type: none"> <li>▪ SDG 14 (Life Below Water)</li> <li>▪ SDG 12 (Responsible Consumption and Production)</li> <li>▪ SDG 9 (Industry, Innovation, and Infrastructure)</li> </ul> </li> <li>○ High Energy Consumption Rates</li> </ul> </li> </ul>
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	<ul style="list-style-type: none"> <li>▪ SDG 7 (Affordable and Clean Energy)</li> <li>▪ SDG 12 (Responsible Consumption and Production)</li> <li>▪ SDG 13 (Climate Action)</li> <li>○ Rise in Temperature               <ul style="list-style-type: none"> <li>▪ SDG 2 (Zero Hunger)</li> <li>▪ SDG 6 (Clean Water and Sanitation)</li> <li>▪ SDG 13 (Climate Action)</li> </ul> </li> <li>○ Rapid Urbanization               <ul style="list-style-type: none"> <li>▪ SDG 11 (Sustainable Cities and Communities)</li> <li>▪ SDG 13 (Climate Action)</li> <li>▪ SDG 15 (Life on Land)</li> </ul> </li> </ul>
<b>Name of relevant national stakeholder</b>	<b>Bahrain Space Agency</b>

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### RESPONSE FOR CAPACITY-BUILDING NEEDS-ASSESSMENT: “Space2030” Agenda Mid-term Review

<b>Overarching objective [4]</b>	Space Diplomacy
<b>Country</b>	Kingdom of Bahrain
<b>Outline the nature of your national challenge(s)</b>	<ol style="list-style-type: none"> <li>1. As a relatively new entrant in the space sector, Bahrain has limited influence in shaping global space governance frameworks and policies.</li> <li>2. Bahrain relies heavily on international partnerships and collaborations to develop its space capabilities, given its nascent space program and limited resources. Those external partners may have different priorities also limiting Bahrain's ability to negotiate favourable terms.</li> <li>3. Competition and collaboration among neighbouring countries influence Bahrain's space ambitions.</li> <li>4. The Bahrain Space Agency may lack the expertise in, and experience needed to actively engage in multilateral negotiations and advocacy.</li> <li>5. Bahrain faces challenges in advocating for equitable access to space technologies and data, particularly for small and developing nations. This is because Bahrain lacks a robust national source of high-resolution satellite imagery and data; therefore, it has less to offer in international collaborations.</li> <li>6. Competing government priorities may divert attention and resources away from space diplomacy efforts.</li> <li>7. Financial constraints can limit Bahrain's ability to invest in diplomatic initiatives, such as hosting international conferences or contributing to global space projects.</li> <li>8. The lack of a national space law to ensure compliance with international treaties and responsible behaviour in space activities may impact space diplomacy.</li> <li>9. Difficulty in integrating space diplomacy with national goals, that may result in disjointed efforts and missed opportunities for leveraging space technologies to address local challenges.</li> </ol>

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<p><b>Please explain more, including whether you have already identified a space solution?</b></p>	<ol style="list-style-type: none"> <li>1. Bahrain is a member of UNOOSA, COPUOS, IAF, SCO, Arab Space Cooperation Group, among others, and actively participates in meetings and forums.</li> <li>2. Bahrain Space Agency currently handles many regional and international roles, strengthening Bahrain’s position in Space Diplomacy, including: Sh Hessa Al Khalifa, was assigned Second Vice-Chairman of the COPUOS Space for the year 2025. Ms. Amal Albinali was appointed Vice President of the International Astronautical Federation (IAF) for 3 years 2024-2027. Ms Rasha Al Amad was appointed committee chair for developing the Arab Space Strategy of the ASCG. A BSA engineer has been appointed as a mentor in the Space for Women mentorship program. Engineer Yaqoob has been appointed as the Chair of the Technical Committee.</li> <li>3. The agency has partnered with international organizations to conduct more than 30 specialized workshops for stakeholders. This includes partnering with ESA on a capacity-building workshop for stakeholders on international and national space law.</li> <li>4. On the sideline of the Bahrain International Airshow (BIAS 2024), Bahrain hosted the second edition of the space forum, with notable panellists from international space organizations, having a dedicated panel on space laws: a tool to implement space frameworks nationally and internationally.</li> <li>5. Bahrain has recently launched AlMunther satellite, with medium-resolution EO open, demonstrating its commitment to international cooperation and addressing global challenges. Additionally, it may be used for localized applications, reducing reliance on external providers and fostering self-reliance.</li> <li>6. The Bahrain Space Agency has joined many international space missions, enhancing influence in global governance: the Light 1 satellite project (in collaboration with UAE), Arab 813 satellite project (in collaboration with representatives from the Arab Space Cooperation group), the CO2sat payload project (with partners from the UK), the AI-Rideshare project (in collaboration with Omanlens and StarVision), the Aman payload project (winner of the UNOOSA and MBRSC PHI), the LunaHCAM payload project (in collaboration with Egypt, winning the International Scientific Payload Hosting Opportunity, which is hosted by the CNSA), Space4Sustainability Program (in cooperation with UAE).</li> <li>7. The Kingdom of Bahrain has signed three of the five main international space treaties developed under the UN Governing Activities in the Peaceful Exploration and Use of Outer Space: Outer Space Treaty, Liability Convention, and Registration Convention. The Bahrain Space Agency has also signed the Artemis Accords.</li> <li>8. The Bahrain Space Agency has drafted the national space law with relevant national entities, regulating space activities at the national level and ensuring compliance with international space treaties. The law will be announced in the coming years.</li> <li>9. The national space policy announced in 2018, and the 3<sup>rd</sup> strategic plan (2024-2028) link space activities to national priorities.</li> </ol>
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## TEMPLATE B

### RESPONSE FOR CAPACITY-BUILDING NEEDS-ASSESSMENT: “Space2030” Agenda Mid-term Review

<b>What kind of assistance would be most beneficial for you in this regard?</b>	<ol style="list-style-type: none"> <li>1. Capacity-building programs for global space governance and multilateral engagement; examples include offering workshops and fellowships through UNOOSA’s capacity-building initiatives to train Bahraini diplomats, engineers, and scientists in space law, policy, and remote sensing technologies.</li> <li>2. Access to satellite data and technology through platforms like UN-SPIDER and Access to Space for All to reduce reliance on external providers.</li> <li>3. Guidance on compliance with international treaties to promote peaceful uses of outer space.</li> <li>4. Support for regional collaboration and transboundary monitoring projects.</li> <li>5. Demonstration projects and transparency mechanisms to build trust and credibility.</li> <li>6. Integrated policy frameworks to align space diplomacy with national development goals.</li> </ol>
<b>Relevant SDGs</b>	<p>Relevant SDGs to the challenges:</p> <ul style="list-style-type: none"> <li>• Limited Influence in Shaping Global Space Governance <ul style="list-style-type: none"> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 13 (Climate Action)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Dependence on External Partnerships <ul style="list-style-type: none"> <li>○ SDG 8 (Decent Work and Economic Growth)</li> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Competition and Collaboration Among Neighbouring Countries <ul style="list-style-type: none"> <li>○ SDG 16 (Peace, Justice, and Strong Institutions)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Limited Expertise for Multilateral Engagement <ul style="list-style-type: none"> <li>○ SDG 4 (Quality Education)</li> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Advocacy for Equitable Access to Space Technologies <ul style="list-style-type: none"> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 10 (Reduced Inequalities)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Competing Government Priorities <ul style="list-style-type: none"> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> </ul> </li> <li>• Financial Constraints <ul style="list-style-type: none"> <li>○ SDG 8 (Decent Work and Economic Growth)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> </ul> </li> <li>• Lack of a National Space Law <ul style="list-style-type: none"> <li>○ SDG 16 (Peace, Justice, and Strong Institutions)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> <li>• Difficulty in Integrating Space Diplomacy with National Goals <ul style="list-style-type: none"> <li>○ SDG 2 (Zero Hunger)</li> <li>○ SDG 9 (Industry, Innovation, and Infrastructure)</li> <li>○ SDG 17 (Partnerships for the Goals)</li> </ul> </li> </ul>
<b>Name of relevant national stakeholder</b>	<b>Bahrain Space Agency</b>