هـيـئـة الـبـيـئـة - أبـوظـبـي
Environment Agency - ABU DHABI

A ROADMAP TO **ENVIRONMENTAL** PRESERVATION

STRATEGIC PLAN 2021–2025

To access this report as a downloadable PDF or for more details about our strategy, please visit www.ead.gov.ae

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Crown Prince of Abu Dhabi
Deputy Supreme Commander of the UAE Armed Forces
Honorary Chairman of the Environment Agency – Abu Dhabi

H.H. Sheikh Khalifa bin Zayed Al Nahyan

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H.H. Sheikh Hamdan bin Zayed Al Nahyan

Ruler's Representative in the Al Dhafra Region
of Abu Dhabi Emirate
Chairman of the Environment Agency – Abu Dhabi

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WHO WE ARE
AND WHAT WE DO

Established in 1996, the Environment Agency – Abu Dhabi (EAD) is committed to protecting and enhancing air quality, groundwater as well as the biodiversity of our land and marine ecosystems. By partnering with other government entities, the private sector, NGOs and global environmental agencies, we embrace international best practices, innovation and hard work to institute effective policy measures. We seek to raise environmental awareness, facilitate sustainable development and ensure environmental issues remain one of the top priorities of our national agenda.

INTRODUCTION
FROM OUR CHAIRMAN

As always, the vision of the late Sheikh Zayed bin Sultan Al Nahyan, the founder and foremost environmentalist of the UAE, has forged a unique path for our great nation, serving as a beacon for us to follow. Looking ahead to the future, we should continue to learn from the past, cherish our environment and preserve our rich local heritage and precious natural resources. It is our duty for future generations.

We should be committed to embracing the rapid and remarkable development of Abu Dhabi, with its continued growth and prosperity, and ensuring that this blends perfectly with our conservation and sustainability efforts, to achieve a healthy environment for all.

Through our role as the largest environmental regulator in the region, and as the competent leader for Abu Dhabi, we at Environment Agency – Abu Dhabi present here our new and comprehensive strategy for the next five years (2021–2025) which provides a visionary and structured roadmap to ensure that everyone is able to enjoy a clean, safe, and healthy environment.

H.H. Sheikh Hamdan bin Zayed bin Sultan Al Nahyan
Ruler's Representative in Al Dhafra Region &
Chairman of the Board of Environment Agency - Abu Dhabi

MESSAGE FROM OUR VICE CHAIRMAN

As we approach the 50th anniversary of the founding of the United Arab Emirates, I can only begin to express the immense pride I feel when I consider all the achievements of the Abu Dhabi Emirate over this short period of time. My sense of pride is matched only when I reflect on the achievements of the Environment Agency – Abu Dhabi, which since its establishment 25 years ago, has come so far in conserving and protecting our beautiful natural spaces during a time of rapid development.

Throughout the years, we have faced and overcome many challenges as we strive to build a better environment for the future. Abu Dhabi is now a world leader in environmental affairs, and we are pleased to be able to offer our knowledge and experience to other nations. All of this make us confident that we are on the right track under the guidance of our leadership and it allows us to shift our focus to the pressing needs of the future.

After diligent review of the environmental challenges facing the Emirate, we know that we need to follow a well-articulated and insightful strategy to achieve our goals.

As such, in this strategy that follows, we lay out our priorities for the upcoming five years. We describe how we intend to continue to serve as good stewards and guardians of the environment, whilst working closely with our stakeholders and partners to build upon our past successes and tackle the challenges of today, to create a better future for us all tomorrow.

H.E. Mohammed Ahmed Al Bowardi
Vice Chairman of
Environment Agency - Abu Dhabi

MESSAGE FROM OUR MANAGING DIRECTOR

We take our responsibility as environmental stewards very seriously, the trust that our prestigious Board places in us to fulfil our mandate, as well as the duty to do so for the people of the Emirate of Abu Dhabi.

Which is why, mindful of the precious nature under our stewardship and after careful consideration of the current state of Abu Dhabi's environment, we have crafted our strategy for 2021–2025 to mitigate potential impacts, ameliorate existing pressures and protect the environment of Abu Dhabi Emirate.

We continue our comprehensive research programmes and studies to understand better the environment of Abu Dhabi and its biodiversity and critical ecosystems, and to anticipate future risks, while also continuing strengthen our capabilities to address these challenges. Still, we are also keenly aware that multiple sectors of society have a key role to play in all aspects of environmental protection and conservation. We understand that our stakeholders share a commitment to integrating socio-economic progress with care for the environment. We truly appreciate the vital role our stakeholders play, and we value the fact that they share our vision and leadership.

Throughout the next five years we look forward to fulfilling our mandate to protect the environment in partnership with our many stakeholders, bringing about a bright, sustainable, and robust future today and for generations to come. This strategy will enable us to meet the many challenges of preserving and protecting our environment, promoting the health and wellbeing of our communities, while at the same time supporting sustainable economic growth.

H.E. Razan Khalifa Al Mubarak
Managing Director & Member of the Board of
Environment Agency - Abu Dhabi

STATEMENT FROM OUR SECRETARY GENERAL

The Environment Agency – Abu Dhabi (EAD) recently celebrated its silver anniversary, 25 years of measuring, monitoring, improving our knowledge and understanding, refining our expertise, developing regulations and policy, and effectively managing the environment for the benefit of all. Of course, we did not do this alone; we had many stakeholders and partners helping us to realise the emirate's vision for the environment.

As we look forward to the next five years of our journey towards realising our leaders' vision and aspirations for the emirate, we are confident in our mandate, our abilities, and our support from leadership and partners in helping us achieve these goals.

I am delighted to introduce EAD's Strategic Plan 2021–2025, covering our vision and mission, as well as our priorities and objectives over the next five years that will contribute to the Abu Dhabi Plan and the successful realisation of Abu Dhabi's aspirations for the future.

We set our priorities and goals after careful reflection of past successes and tribulations, a thorough review and assessment of the pressures acting upon the environment of Abu Dhabi Emirate, and thoughtful consideration of our capabilities. We are enthusiastic about tackling the task ahead and eager to make progress and achieve our objectives in making Abu Dhabi a better place for all.

This version of our strategy aimed to:

- inform stakeholders about the key environmental challenges facing the Emirate of Abu Dhabi, as well as our role and strategy for responding to these challenges, and
- provide a basis for collaboration and cooperation with partners that can contribute to successfully overcome the key environmental challenges facing the emirate, its biodiversity and the people who live here.

We look forward to working with you as we implement this strategy, equipped with the best available science, technology and talent with a passion for fulfilling Abu Dhabi's aspiration for a more sustainable future for us and subsequent generations.

H.E. Dr Shaikha Salem Al Dhaheri
Secretary General of
Environment Agency - Abu Dhabi

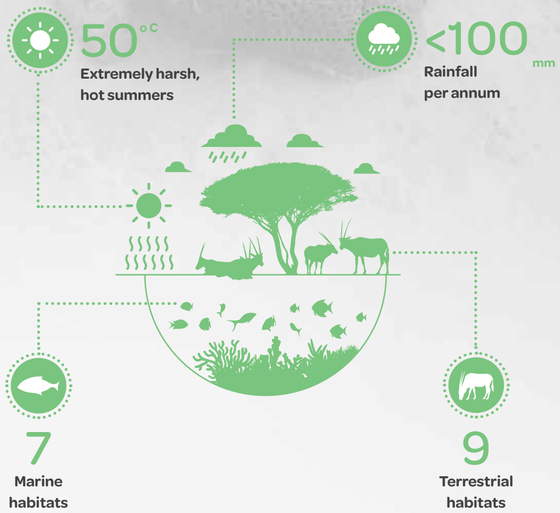
ABU DHABI'S **ENVIRONMENT** AT A GLANCE

ABU DHABI'S ENVIRONMENT AT A GLANCE

The Emirate of Abu Dhabi lies on the southern shores of the Arabian Gulf, on the Tropic of Cancer, which means we experience hot summers of up to 50 ° and relatively mild winters with temperatures in the 20's. Given the extreme heat and less than 100 mm of rainfall a year, we have hyper-arid desert-conditions and one might be excused for thinking there is little of natural value worth protecting. Nothing could be further from the truth; despite those harsh conditions, we have an impressive nine terrestrial and seven marine habitats, along with 50 sub-types ranging from seabed to mountain, nurturing a uniquely abundant biodiversity.

The beautiful, crystal waters of the Gulf host a bounty of marine life including some 500 species of fish and serve as nesting habitats for birds and turtles. These waters are also home to the world's largest population of endangered Indian Ocean Humpback Dolphins *(Sousa plumbea)* and second largest population of the vulnerable Dugong *(Dugong dugon)*. This demonstrates both the international value of Abu Dhabi's marine biodiversity and our responsibility to ensure the conservation of these natural treasures. To aid this effort, we have six marine protected areas including the 4,255 km² Marawah Marine Biosphere Reserve, which safeguards 13.98 % of our precious marine ecosystem.

Our marine habitats include corals for the critically endangered Hawksbill Turtle *(Eretmochelys imbricate)*, seagrass for the endangered Green Turtle *(Chelonia mydas)* and intertidal saltmarshes and flats that



are essential for wading and migratory birds. Our mangroves fulfill a variety of roles, providing a nursery habitat for a multitude of species, as well as ecosystem services such as carbon sequestration, storm surge protection and, of course, aesthetic value for us to enjoy.

Our land habitats range from coastal dunes with shrub cover and one of the most complete coastal sabkhas in the world, the Sabkha Matti, to desert sands in the central and western regions and the wadis and peaks of Jabal Hafit in Al Ain, home of the elusive, endangered Arabian Tahr *(Arabitragus jayakari)*.

Over 17 % of our terrestrial ecosystem is in 13 protected areas, including the 5,974 km² Arabian Oryx Protected Area. Thanks to this refuge, the Arabian Oryx *(Oryx leucoryx)* has recently improved its rating on the IUCN Red List from endangered to vulnerable.

In total, around 18,000 km² of Abu Dhabi Emirate's 67,340 km² are already managed as protected areas. Over the next few years, we plan to expand this network, to bring even greater protection to our natural heritage.

MARINE & TERRESTRIAL PROTECTED AREAS IN ABU DHABI

13.9 %
Marine protected areas

16.96 %
Terrestrial protected areas

67,340 Km²
Abu Dhabi Emirate's area in total

18,000 Km²
Already managed as protected areas

THE CHALLENGES
WE ALL FACE

THE CHALLENGES WE ALL FACE

Abu Dhabi has experienced a transformation in terms of economic prosperity, but it has come at a price. Our environment has also, to a certain extent, suffered.

The pace of development has been so rapid that infrastructure, environmental controls and enforcement capacity have not always been able to keep pace. As a result, we now face environmental challenges such as land, sea and air pollution, overexploited resources, habitat destruction and increased human health concerns.

We aspire to have clean, healthy air to breathe, clean and plentiful fresh water to drink and grow crops, clean seas to swim in and bountiful fish to catch. In short, a clean, unpolluted environment with an abundance of wildlife for us to enjoy. But without determined, focused effort, we may not realise these aspirations. It is simply essential that we carry out our duty as stewards of the environment we are blessed with.

To this end, we have reviewed the current state of the environment and identified the key pressures and impacts, to determine what our responses for the next five years should be.

CHALLENGES

A close-up look at our challenges:

- Local impacts of climate change
- Declining air quality and increasing risk of respiratory illness
- Declining marine water quality
- Unsustainable use of groundwater
- Land pollution and soil degradation
- Insufficient waste infrastructure
- Habitat loss, alteration & fragmentation
- Overexploitation of wild populations of fish

When it comes to tackling these challenges, we need to ensure we have sound scientific data as the basis for our decisions. This is a challenge in itself, so we add data, science and outreach to our main priorities.

To reach our goals, we also need to ensure we build an efficient organisation with world-class strategic planning, sound budgeting, strong financial performance and reliable internal service delivery. We see a customer-centric approach, effective engagement with stakeholders and strong public relations and communications skills as equally vital attributes. We need to secure long-term resilience and continuity through emergency preparedness, effective human resources, corporate sustainability, data security and Emiratisation.

Meeting these goals all help to position Environment Agency – Abu Dhabi as an excellent, innovative and futuristic organisation, able to fulfill its mandate to secure the environmental future of Abu Dhabi Emirate.

OUR VISION

A healthy, well-protected and sustainable environment that enhances quality of life

OUR MISSION

To protect the environment and promote sustainability, through innovative environmental management, and impact-oriented policies and regulations, in collaboration with our partners and the broader community

OUR VALUES

Partnership and Teamwork

We actively pursue internal teamwork and external partnership, by openly sharing our knowledge and building effective networks for collaboration

Initiative and Innovation

We encourage employee initiative and recognise our shared responsibility to foster innovative solutions that support our priorities

Excellence

We strive for excellence through continuous improvement of our people, processes and service delivery

Focus on Results

We work to achieve positive results on our strategic plan and make a meaningful impact on the Abu Dhabi environment. For that, we set environmental, strategic, institutional and operational targets, measuring our progress on a regular basis

Resilience

Our environment goes through many changes and challenges caused by external factors. We must be equally resilient to address them effectively

Ownership and Accountability

We believe in clear ownership of actions and accept accountability for achieving our objectives

OUR MANDATES AND OUR ROLES

The Environment Agency – Abu Dhabi was established in 1996 as an independent agency, mandated to preserve and protect the environment, as summarised in Article (3) of Law No. (16) Of 2005:

This Agency aims at protecting the environment and wildlife along with its biological diversity in its natural environment, offering suggestions, making recommendations and conducting necessary studies and research to conserve the environment and wildlife. All government departments and agencies are required to coordinate with the Agency in relation to research, studies and programmes relating to environmental and wildlife affairs.

EAD's diverse mandate derives from numerous federal and local legislations. However, the core functional roles on behalf of the government are as follow:

Policy, Planning, Regulations and Enforcement

- Review, develop and propose environmental policy and plans on behalf of the government
- Develop, implement and enforce environmental regulations, standards and guidelines
- Permit, license and inspect projects and activities with the potential to improve our environment and biodiversity
- Monitor and investigate compliance with environmental regulations

Science and Research

- Identify research needs and strategically fill knowledge gaps to improve environmental protection and biodiversity conservation
- Monitor, report, assess and model the state of the environment
- Develop and promote technical innovation to meet environmental challenges

Service Delivery

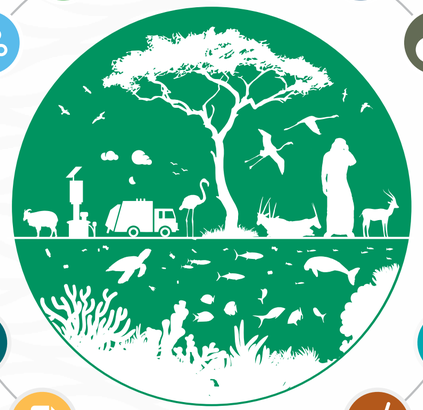
- Manage environmental data and deliver scientific information
- Provide support and advice to decision makers based on environmental knowledge
- Support environmental education to schools and develop human capital in the environmental field
- Promote environmental awareness and behavioural change through outreach to businesses, governments and community
- Encourage adoption of environmental quality and conformity measures
- Provide leadership and support in preparing for and responding to environmental emergencies
- Undertake environmental impact assessments for new and existing projects and activities

Environmental Management

- Direct management of protected areas
- *Ex-situ* and *in-situ* conservation of species to protect biodiversity

OUR KEY SUCCESS MEASURES BY 2025

KEY SUCCESS MEASURES BY 2025



Climate Change

- **15 %** less greenhouse gases compared to **2016**
- Adaptation plans in place to protect all vulnerable sectors

Air Quality

- National air quality standards met year-round
- **PM 2.5** exposure standards met in full
- **90 %** of days in a year that meet national air quality standards by end of **2025**

Biodiversity

- **90 %** habitat baseline area retained
- **21 %** of land, **21 %** of offshore waters in protected areas
- Improved status of all threatened species

Fisheries

- Achieve **81 %** Sustainable Fisheries Exploitation Index
- Achieve **30 %** Mean Relative Stock Size
- Achieve **30 %** Aquaculture versus Wild Catch

Marine Water Quality

- Marine water quality standards met in full
- Microbial (public health) standards met in full

Awareness

- **90 %** stakeholder environmental awareness by **2025**

Waste Management

- Reduce municipal solid waste to **1.4 kg** per capita - per day
- **70 %** diversion of total hazardous waste and **39 %** diversion of total non-hazardous solid waste

Environmental Emergencies

- **100 %** of developed, updated, and approved emergency plans for high environmental risks implemented

Policies Plans, Regulations, Assessments

- **100 %** of policies and regulations being implemented
- **95 %** of permitted facilities to comply fully with environmental conditions

Analytics And Research

- **70 %** of satellite datasets integrated in environmental database
- **100 %** of research agenda completed

Groundwater

- Achieve **74 %** Water Quality Index
- **0 %** increase in the area of groundwater depleted zones
- **9 %** replaced by alternative sources

Soil

- **78 %** quality index score

PUTTING OUR **STRATEGIC PLANS** IN ACTION

OUR MAIN **PRIORITIES**

1

Secure the Resilience of Abu Dhabi Through Mitigation and Adaptation to Climate Change, and Protection of Our Air and Marine Water

- Develop policies and regulations to mitigate and adapt to climate change
- Develop policies and regulations to improve air quality and reduce noise pollution
- Develop regulations and monitor improvements in the management of ambient marine water quality

2

Sustainably Manage Our Groundwater

- Secure the conservation and sustainable management of groundwater reserves
- Develop regulations and monitor soil protection

3

Empower Optimised Waste Management and Encourage Circular Economy Principles

- Develop policies and regulations for integrated waste management and the encouragement of circular economy

4

Ensure the Conservation, Protection, and Enhancement of Our Rich Biodiversity

- Conduct research into conservation, restoration and sustainable use of biodiversity
- Develop regulations and enforcement policies for the recovery and sustainable exploitation of fisheries

5

Drive Integrated Environmental Policy and Regulation Instruments

- Develop, evaluate and launch integrated policies, plans, and regulations
- Assess environmental interactions between society and economy

6

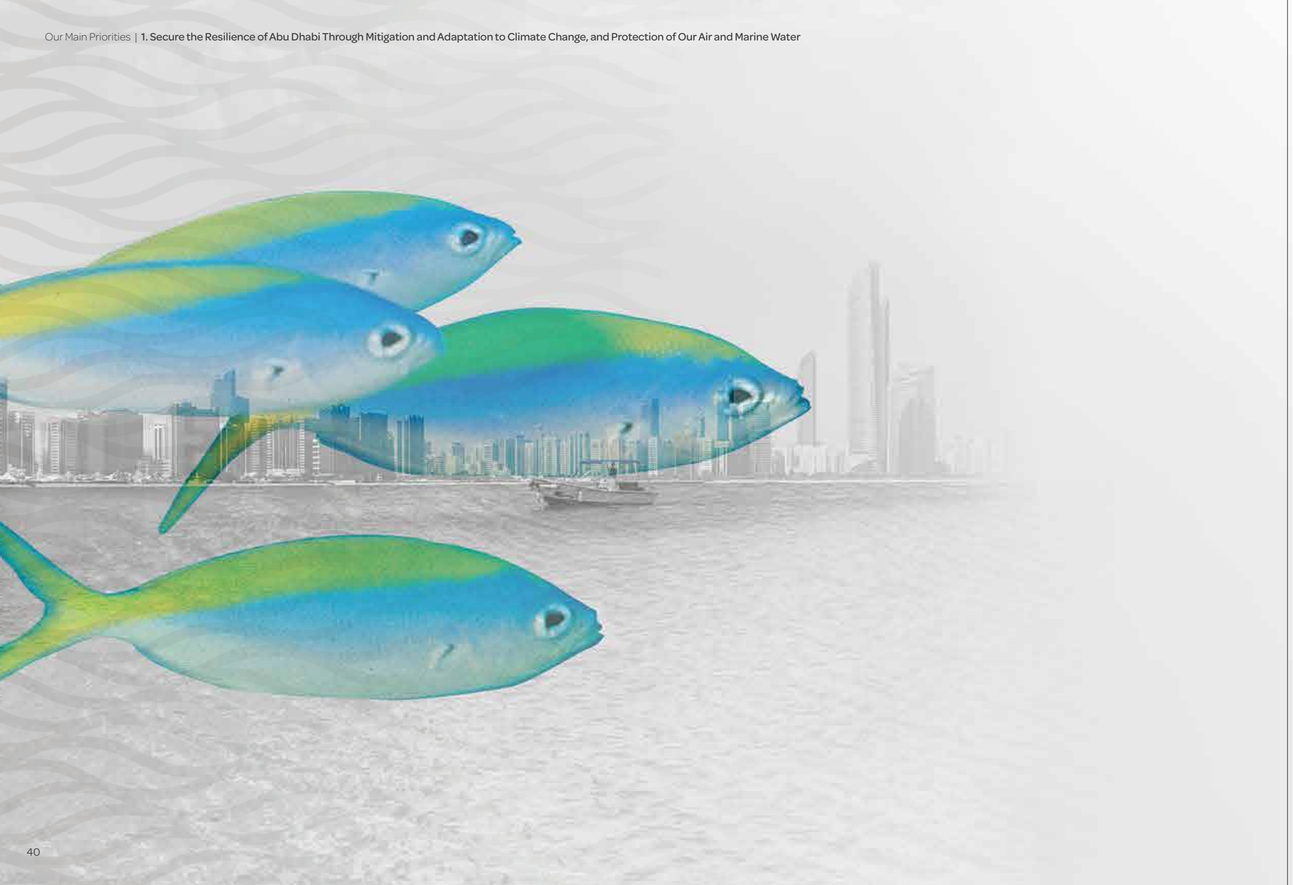
Establish Evidence-Based Environmental Enforcement, Rigorous Permitting and Compliance

- Carry out environmental assessment, permitting, compliance and enforcement initiatives
- Manage environmental emergencies

7

Leverage Advanced Data Analytics and Lead Environmental R&D and Outreach Activities

- Acquire data and strengthen advanced analytics
- Strengthen environmental research and development for Abu Dhabi Emirate
- Deliver the required environmental outreach and awareness programmes



Our Main Priorities

Secure the Resilience of Abu Dhabi Through Mitigation and Adaptation to Climate Change, and Protection of Our Air and Marine Water

1

1.1 Development of Policies and Regulations for the Mitigation and Adaptation to Climate Change

Our Environmental Challenge

Abu Dhabi's overall contribution to global emissions is small, standing at 1% for the whole of the UAE. But its contribution to greenhouse gas emissions-driven by a thriving economy and population-continues to increase. Abu Dhabi's GHG emissions have been growing by 5.3 % annually since 2010, reaching a total of ~135,400 Gg CO_2 equivalent in 2016.

Climate change brought about by global emissions of GHGs (including those from Abu Dhabi) is likely to result in the following environmental changes:

Increased air temperatures - an increase of ~1 °C has been observed over the last 100 years and an increase over land areas of 2–3 °C is projected by 2060–2079

Increased sea-surface temperature - the rate of increase in the Arabian Gulf is accelerating more than the global rate, at ~1.5 °C vs ~0.7 °C since 1984

Rise in sea level - a rise of 0.5–0.65 m is expected by 2100

Increased acidity of marine water - pH has reduced by 0.01 units since 1990

Reduced rainfall - precipitation has reduced by ~80 mm between 1982 and 2013

Increased frequency of extreme events - EAD analysis indicates a higher frequency and intensity of storm events such as Hurricane Gonu in 2007 and the storms of 2015

Abu Dhabi Emirate is particularly vulnerable to the impacts of climate change. This is due to the extreme, arid climate and low-lying coastal areas, which are home to the majority of people and economic activity. Impacts include increased storm surges and erosion, which affect coastal development and coastal nesting species such as turtles, as well as habitat loss and die-offs such as coral bleaching.

Our Scope

EAD has a clear role in developing a sound scientific understanding that improves our capacity for mitigation and adaptation. Over the next five years, we will work with our respective stakeholders at national and emirate level, to further define and clarify governance of climate change. We will focus on improving data collection through the use of technology and innovation, including AI and spatial technologies, data availability and information services related to GHG and CO_2 emissions, as well as measures related to the impacts on health, the vulnerability of sectors, as well as species, habitats and ecosystem services.

Mindful of the potential impacts of climate change, EAD will develop clear policies for addressing it for Abu Dhabi Emirate in line with federal policies, as well as a comprehensive mitigation plan.

94% of Abu Dhabi's GHG emissions come from just four sources: electricity & water (30 %), industrial and manufacturing (26 %), oil and gas (23 %), and transportation (15 %). With this in mind, EAD will work with its strategic partners to establish clear policy, strategies and institutional relationships to manage these emissions and develop adaptation strategies. Key aspects of this challenge are a Monitoring, Reporting and Verification (MRV) system for GHG emissions, and incentives for the proper management of such emissions.

EAD also keeps a constant watch on species and habitats at risk from the impacts of climate change, updating conservation approaches to protect the ecosystem services they provide to the population.

94 % Abu Dhabi's GHG emissions come from four industries:

30 % Electricity & water

26 % Industrial & manufacturing

23 % Oil & gas

15 % Transportation

Our Key Objectives

- To foster an integrated approach for climate change, in line with the federal plan and framework
- To work with emitting sectors to mitigate effects of climate change leveraging clear regulations
- To support roll-out of adaptation measures across sectors to strengthen resilience
- To enhance knowledge, visibility and forecasting capabilities on climate change

Our Key Success Measures

- 15 % less greenhouse gases compared to 2016
- Adaptation plans in place to protect all vulnerable sectors

Our Desired Outcomes

- Reduction in carbon emissions per capita
- GHG emissions limited within targets relative to the 2016 baseline
- Protection of vulnerable coastal areas from rising sea levels
- Impacts of climate change on vulnerable species minimised

1.2 Policy & Regulation Development and Monitoring for the Improvement of Air Quality and the Reduction of Noise Pollution

Our Environmental Challenge

Protecting air quality and managing ozone-depleting substances are crucial for public health and quality of life in Abu Dhabi. The UAE National Strategy and Action Plan for Environmental Health identified outdoor air pollution as the primary environmental threat to public health. The main air pollutants with the potential to harm human health, are:

1 Particulate Matter (PM)

Abu Dhabi experiences high ambient concentrations of particulate matter, both PM_{10} & $PM_{2.5}$, which emanate from both natural and human-made sources. PM_{10} remains relatively stable, but peaks past air quality standards during dust storms, sometimes as much as 14 times more than WHO standards. $PM_{2.5}$ concentrations are also much higher than WHO guidelines and have increased recently

2 Ground-Level Ozone (O_3)

is a secondary pollutant formed by chemical reactions involving nitrogen oxides (NOx), volatile organic compounds (VOCs) and sunlight. As well as being hazardous to human health, ozone is also toxic to plants and can cause leaf necrosis and affect photosynthesis, thus reducing the productivity of crops and trees

3 Nitrogen Dioxide (NO_2)

is not directly emitted from human-made or natural sources but forms in the atmosphere through the photochemical reaction of precursor pollutants (VOCs and NOx) in the presence of sunlight. Oil and gas activities, some industrial processes, petrol stations and transport can contribute to its formation

4 Sulfur Dioxide (SO_2)

Concentration remains below national air quality limits, but has been rising at an average rate of 13 % each year between 2015 and 2018. Highest in the Al Dhafra region, it could present future challenges on air quality

Other air pollutants include H_2S, VOCs, black carbon and others. National limits and sufficient monitoring efforts have yet to be established, but their potential adverse effects on health and environment is a target for assessment.

Our Scope

Over the next five years, EAD will focus on ensuring that ambient air quality and outdoor noise in Abu Dhabi do not adversely impact human health or the environment, working with our partners within government and across the various sectors on policies and regulations to achieve this aim.

With the Ministry of Environment and Climate Change, we will develop a National Air Quality Strategy with $PM_{2.5}$ 24-hr average limits, along with regulations on industrial emissions and concentration limits for pollutants such as H_2S and SO_2. We will also work with industry to develop self-reporting regulations for licensed entities, with unified data standards.

Using Technology, Innovation and Artificial Intelligence, We will:

- Expand the e-linking of the air quality monitoring network
- Develop continuous emissions monitoring systems for industrial stacks
- Develop dispersion modelling tools to inform policy and regulation development

In Collaboration with Stakeholders We will:

- Delineate roles and responsibilities for the transport sector related to air emission monitoring, regulation and standards, control and compliance
- Set incentives for adopting cleaner energy, best environmental practices and best available technologies
- Use innovative tools to assess the impact of air quality and noise on human health

Our Key Objectives

- Work with key emitting sectors to implement agreed policies and plans
- Strengthen our regulatory reach
- Expand our understanding of air quality and its impacts, for robust and reliable analysis

Our Key Success Measures

- National air quality standards met year-round
- PM 2.5 exposure standards met in full
- 90 % of days in a year that meet national air quality standards by end of 2025

Our Desired Outcomes

- Ambient nitrogen dioxide, sulfur dioxide, ozone and $PM_{2.5}$ particulate matter concentrations maintained within accepted standards
- PM_{10} particulate matter concentrations minimised in line with regional background concentrations
- Noise levels minimised within accepted standards, without impact on wildlife

1.3 Regulatory & Monitoring Improvement for the Management of Ambient Marine Water Quality

Our Environmental Challenge

Maintaining good marine water quality is essential for safeguarding public health, our environment and fisheries, as well as aquaculture, tourism and recreational activities. But if Abu Dhabi's population and economic expansion are not carefully managed, the accelerated growth could lead to threats including increased industrial and treated sewage effluent discharges, sediment discharge from coastal construction, as well as illegal discharges containing pathogens.

Such conditions can lead to excessive algal growth and reduced oxygen content resulting in harmful algae blooms, reduced productivity, degraded seagrass and coral ecosystems and lower fisheries production. Sediment concentrations of heavy metals are also a concern in Mussafah South Channel in the industrial area near Abu Dhabi City, as they could pose long term health risks.

Our Scope

EAD's core role includes long-term environmental monitoring of marine water quality; targeted environmental studies at high-risk or impacted sites, data management and information services; permitting, inspection and enforcement activities; and emergency management planning and response for marine incidents.

Over the next five years, we will continue to coordinate with our strategic partners on the development of regulations covering discharges from relevant polluting sectors to ensure a robust regulatory framework for sectors such as shipping, oil and gas, construction and industry. We will also work with the Ministry of Climate Change and the Environment to ensure inter-emirate alignment of regulations, and alongside National Emergency Crisis and Disasters Management Authority (NCEMA) on an emergency response programme for shipping discharges.

In terms quality of monitoring and assessment, we will conduct more frequent sampling of marine water quality, especially in the Al Dhafra Region, and install additional monitoring stations along Abu Dhabi's coast and in hotspot areas.

We will also seek to encourage public participation in scientific research, including work with fishing boat owners to use their boats for data gathering. Finally, we will leverage innovations such as satellite imagery and drone technologies for monitoring.

Our Key Objectives

- Work with relevant sectors and authorities to ensure well-regulated discharges
- Conduct monitoring to enhance research and decision making

Our Key Success Measures

- Marine water quality standards met in full
- Microbial (public health) standards met in full

Our Desired Outcomes

- Protection of the coastal marine environment from over-enrichment with nutrients
- Reduced risk to public health from bacterial or viral contamination during water sports and bathing at public beaches
- Reduced incidence of potentially harmful algal blooms

Our Main Priorities

Sustainably Manage Our Groundwater 2

2.1 Conservation and Sustainable Management of Groundwater Reserves

Our Environmental Challenge

Groundwater is a vital but non-renewable resource in Abu Dhabi, with recharge significantly lower than abstractions and a general decline in quantity and quality. The natural recharge rate is 113 mm^3 per year with an additional 724 mm^3 of return flows from irrigation and losses. Offset against an annual abstraction rate of 2,203 mm^3, this results in a yearly net depletion of 1,366 mm^3.

Abu Dhabi Emirate has ~606,000 mm^3 of groundwater found mainly in the shallow aquifer, of which ~340,000 mm^3 is of a quality considered usable.

Current groundwater abstraction is estimated to be 20 times the natural recharge rate. Agriculture (~83 %) and forestry (12 %) making up the bulk of usage.

Declining Levels

- The high rates of abstraction have resulted in declining groundwater levels across the emirate. Al Ain and Liwa Crescent are particularly affected, with the level reducing by up to 50 min the last 25 years in some areas. Several zones have had to be declared Red Zones where abstractions are banned

Declining Quality

- Today 97 % of groundwater in Abu Dhabi is brackish or saline, with only 3 % of the total categorised as fresh. Along the coast and between Al Dhafra and Al Ain, total dissolved solids (TDS) exceed 100,000 mg/L, more than six times over the safety threshold
- Quality has also been diminished by high concentrations of chemicals such as nitrate, boron and fluoride from fertilisers and other sources

Our Scope

Over the next five years, EAD will collaborate with relevant entities to implement the Abu Dhabi Groundwater Policy, and build a long-term joint plan to align policies and targets for conserving groundwater and actively contributing to integrated water management across all sources.

We will do this by developing an Integrated Water Resources Management Plan, expanding the groundwater monitoring network (currently 452 wells), conducting phase 2 of the groundwater quality assessment programme focused on an extended number of quality indicators, and exploring the potential of deep groundwater aquifer.

We will incentivise efficient groundwater use by introducing an abstraction cap system which can be expanded into a cap-and-trade system. We will also roll out an abstraction monitoring programme, with meters on all wells including those used for forestry, and evaluate remote metering methods.

We will provide irrigation water supplies for Dubai Road with around 140,000 m^3 of treated sewage effluent (TSE) daily, supply 4,015 farms in the Al Ain region and 32 forested areas with 250,000 m^3 of TSE daily, and make plans for supplying desalinated water to farms and forests in Liwa.

Also, we will push forward with research and innovation by evaluating untapped well injection with desalinated water in the Al Dhafra region, study the effects of the Al Shuwaib strategic reserve project, assess oil and gas produced-water and other alternatives, and conduct studies on the use of brine discharge for Salicornia production and aquaculture at eight farms.

Our Key Objectives

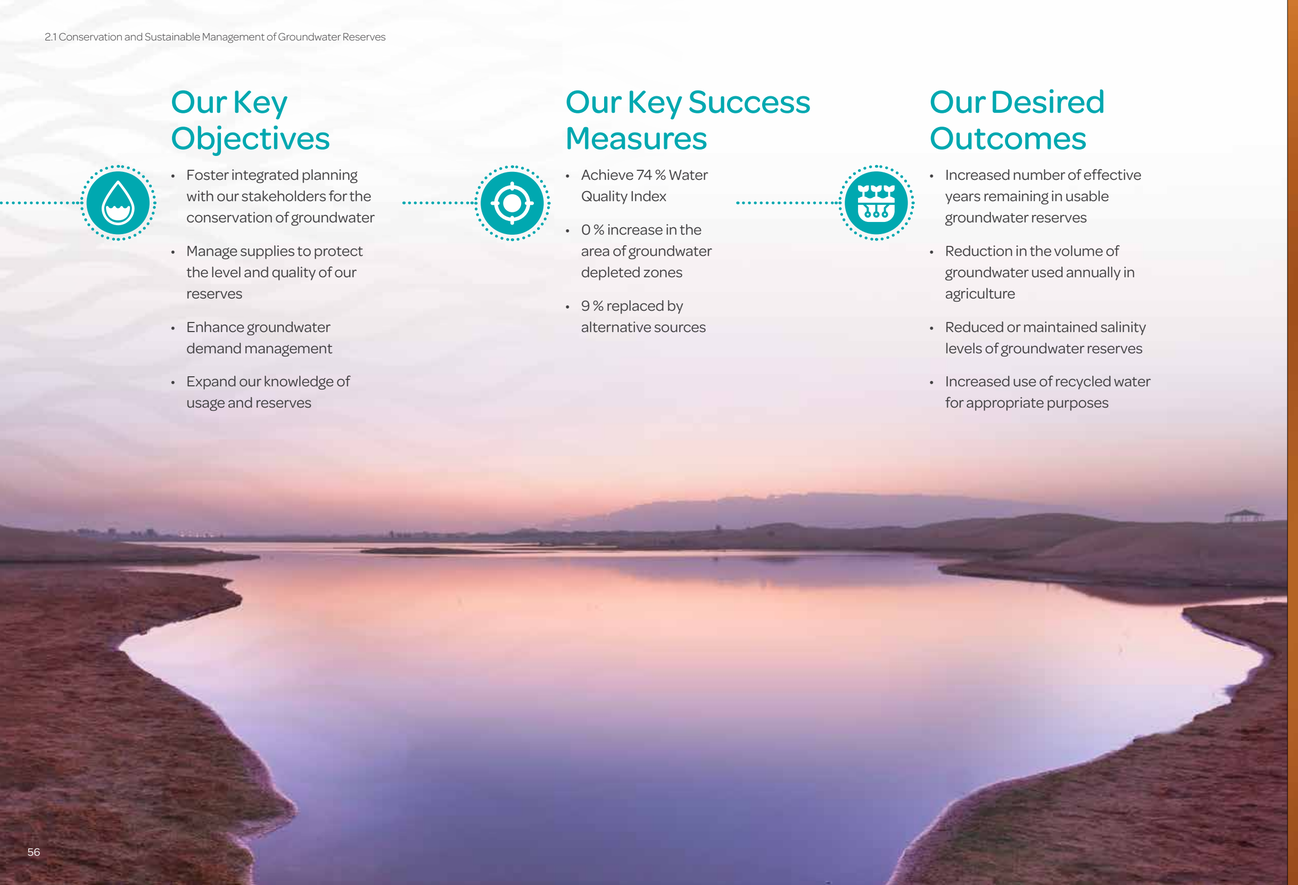
- Foster integrated planning with our stakeholders for the conservation of groundwater
- Manage supplies to protect the level and quality of our reserves
- Enhance groundwater demand management
- Expand our knowledge of usage and reserves

Our Key Success Measures

- Achieve 74 % Water Quality Index
- 0 % increase in the area of groundwater depleted zones
- 9 % replaced by alternative sources

Our Desired Outcomes

- Increased number of effective years remaining in usable groundwater reserves
- Reduction in the volume of groundwater used annually in agriculture
- Reduced or maintained salinity levels of groundwater reserves
- Increased use of recycled water for appropriate purposes



2.2 Soil Protection Regulations and Monitoring

Our Environmental Challenge

Abu Dhabi's hyper-arid climate and limited usable groundwater present challenges in maintaining the quality of our precious soil resources.

Dry weather leads to wind erosion

High temperatures and evaporation increase soil salinity

Limited rainfall results in high salinity levels of soil

In addition, growth in the agricultural sector (6.3 % annually over 33 years) has promoted unsustainable farming practices, such as overgrazing, soil contamination from excessive fertiliser use and secondary soil salinisation due to excessive irrigation with brackish and saline water.

Soil degradation is found in many parts of the emirate. In a 2009 survey of 5.7 million hectares, 22.6 % was highly degraded, 0.1 % moderately degraded, and 77.3 % slightly degraded, with the worst degradation mainly in coastal areas. Only 5.4 % of soil was deemed moderately to highly suitable for irrigated agriculture.

Insanitary landfilling, oil leaks, illegal discharge of industrial waste and brine injection into the soil have also had a detrimental effect. Contamination data is limited, but an EAD monitoring programme launched in 2018 showed nickel exceeding screening limits for agricultural land in 29 % of samples, and arsenic exceeding the limits for residential land in 14 % of samples. There is also possible contamination from total petroleum hydrocarbons (TPH) in industrial areas.

In a 2009 survey of 5.7 million hectares:

22.6 % Highly degraded

0.1 % Moderately degraded

77.3 % Slightly degraded

5.4 % Soil suitable for irrigated agriculture

Our Scope

Over the next five years, EAD will focus on developing policies and regulations that protect our soil from further degradation and contamination. We will develop a best-in-class regulatory framework for waste disposal and licensing scheme for waste carriers and ensure enforcement with a focus on curbing illegal dumping, develop regulations to prevent the selection of critical natural habitats as development sites and implement regulations for environmental considerations as compulsory aspects of urban planning and zoning.

We will introduce annual surveys of soil quality in residential, industrial and agricultural areas, conduct an inventory project to enhance our soil database and provide decision makers with accurate data to help sustain the emirate's agriculture and food sectors, and develop a programme to monitor changes in salinity at 100 farms across the emirate.

To mitigate the use of brackish water for irrigation, we will supply 4,015 farms in the Al Ain region and 32 forested areas with 250,000 m^3 of treated sewage effluent daily and develop a programme for small desalination plants in 1,200 farms.

In partnership with stakeholders, we will identify areas most affected degraded by salinisation and work to produce land recovery programmes to reverse the impact.

We will also push forward with innovation, using artificial intelligence and drones for quality assessment, research sustainable practices for the disposal of brine from small desalination plants, and conduct research into carbon sequestration.

Our Key Objectives

- Develop and implement an integrated approach and regulatory framework for soil protection, in coordination with our partners
- Conduct sampling and surveying of soil quality to enable data driven research

Our Key Success Measure

- 78 % quality index score

Our Desired Outcomes

- Reduced soil salinity on irrigated agricultural lands
- Minimised degradation and contamination of coastal and inland soil

Our Main Priorities

Empower Optimised Waste Management and Encourage Circular Economy Principles

3

3.1 Development of Policy and Regulation for Integrated Waste Management and the Encouragement of Circular Economy

Our Environmental Challenge

As the Emirate of Abu Dhabi continues to grow, so too has its generation of solid waste, which has risen 6 % annually between 2015 and 2018, to reach 9.99 million tonnes in 2018.

Generation is decreasing in some large-contributing sectors, with commercial and industrial (35 %), construction and demolition (32 %) and municipal (18 %) all recording falls, although they still comprise over 80 % of the total. Agricultural waste is climbing 39 % each year, but this is largely due to a successful curb on illegal dumping activity and its incorporation into the overall data. Hazardous waste comprises just 2 % of the total.

Two thirds of the waste in Abu Dhabi goes to landfills and dumpsites. However, the development of suitable waste disposal infrastructure continues to lag behind the growing volumes of waste generated. The emirate has one small sanitary landfill, eleven legal dumpsites, four recycling facilities, six incineration plants and four composting facilities. But a 2014 survey estimated a total of 18,000 illegal dump sites.

9.99
Million tonnes of solid waste in 2018

35 %
Commercial and industrial waste

32 %
Construction and demolition waste

18 %
Municipal waste

The many environmental challenges associated with inadequate waste disposal facilities include:

- Contamination of soil and groundwater from leachate
- Release of GHG such as methane due to anaerobic decomposition of organic materials in dumpsites and landfills
- Impacts on wildlife from habitat destruction, entrapment in waste, and death of animals due to waste consumption, especially in areas close to landfills
- Air quality and odour nuisance from emissions of gases such as H_2S and methane wastewater
- Health problems affecting workers on waste management sites due to exposure to airborne particulates and contaminated soil
- Human exposure to disease-carrying pests such mosquitoes and rats

Key aspects to address the emirate's waste management challenge are: continuing to reduce total waste generation, segregating waste sources to enable differential treatment, investment in appropriate infrastructure, tightening regulatory enforcement of illegal dumping, addressing legacy waste and encouraging growth in reuse and recycling.

Our Scope

Over the next five years, EAD will ensure there is clear governance throughout the waste sector, with policies and regulations to ensure continuous improvement. We will draft a National Integrated Waste Management strategy in line with the government directions. This will feature initiatives such as a policy to make Abu Dhabi free of single-use plastic bags.

We will develop an integrated regulatory framework with policies and guidelines to encourage waste reduction and increase opportunities for recycling and recovery of materials. Aspects of this will include a project to extract biofuels from waste and a code of practice for used batteries.

We will work with relevant stakeholders to develop and implement incentives for circular economy practices focusing on lower waste generation, reuse, segregate & recycle programs and penalise the use of landfills and illegal dumping.

EAD will also work with our operational partners to address the problem of legacy waste at illegal dumpsites.

Our Key Objectives

- Foster an integrated waste management approach, coordinating actions across the sector, and cascading UAE targets
- Develop a strong regulatory framework to support circular economy and environmentally sound treatment and disposal of waste
- Support relevant stakeholders to ensure timely collection of accurate waste data

Our Key Success Measures

- Reduce municipal solid waste to 1.4 kg per capita - per day
- 70 % diversion of total hazardous waste and 39 % diversion of total non-hazardous solid waste

Our Desired Outcomes

- Lower volumes of municipal solid waste
- Diversion of municipal solid waste, construction and demolition waste and agricultural waste from landfills
- Improved management and treatment of hazardous waste before reuse or disposal

Our Main Priorities

Ensure the Conservation, Protection and Enhancement of Our Rich Biodiversity

4

4.1 Research, Conservation, Restoration and Sustainable use of Biodiversity

Our Environmental Challenge

Abu Dhabi has a uniquely precious biodiversity and we seek to improve our understanding of how to manage and protect this highly valuable natural asset. Biodiversity provides ecosystem services such as carbon sequestration, creates livelihoods for local communities, and can reap enormous benefits through eco-tourism. The aesthetic and intrinsic values of the emirate's biodiversity, alongside traditional practices such as falconry and pearl diving which are strongly linked to local culture must also be preserved and protected.

However, the pressures on our precious biodiversity are constantly on the rise. They include land use change leading to habitat disruption and fragmentation, natural resource exploitation such as overgrazing, illegal trade and the introduction of invasive alien invasive species that compete with our native species and contribute to pollution and climate change.

Of the known species in Abu Dhabi Emirate, around 70, or around 2 %, are "threatened". They are classed as Critically Endangered, Endangered and Vulnerable categories in the International Union for the Conservation of Nature's Red Lists of threatened species. The most threatened species in this list are the sharks, rays and skates with 17 species threatened, followed by birds with 15 species and fish with 13 species threatened.

17
Species of sharks, rays and skates are threatened

15
Species of birds are threatened

13
Species of fish are threatened

Our Scope

Over the next five years EAD will embed biodiversity conservation deeply in policies and regulations, and advocate for a halt of creeping development into sensitive areas. We will also improve protected area connectivity and representation, particularly for under-represented critical habitats such as sand sheets and dunes with tree cover and northern alluvial or interdunal plains, and develop a protected areas system plan.

We will conduct comprehensive baseline assessments of terrestrial and marine species and launch standardised monitoring programmes for key species and habitats, covering species distribution and population assessment, habitats status and other aspects.

We will strengthen our enforcement capabilities by developing information-based patrolling plans, improve integrated planning and enforcement and increase our use of technology such as drones.

Also, we will set a clear eco-tourism vision and development framework and concession management strategy, while working with stakeholders to strengthen regulation and governance and ensure their adherence to the framework.

We will implement a sustainable grazing project with designated grazing zones, develop management plans for the project and monitor its status. We will develop and coordinate innovative conservation and restoration programmes for threatened habitats and ecosystems and expand our efforts to control alien species encroachment.

We will also work with local partners such as Al-Ain Zoo on conservation and re-introduction programmes.

To help us do all this, we will improve our data collection and management capabilities, including expanding our biodiversity research activities and leveraging public participation in scientific research.

Our Key Objectives

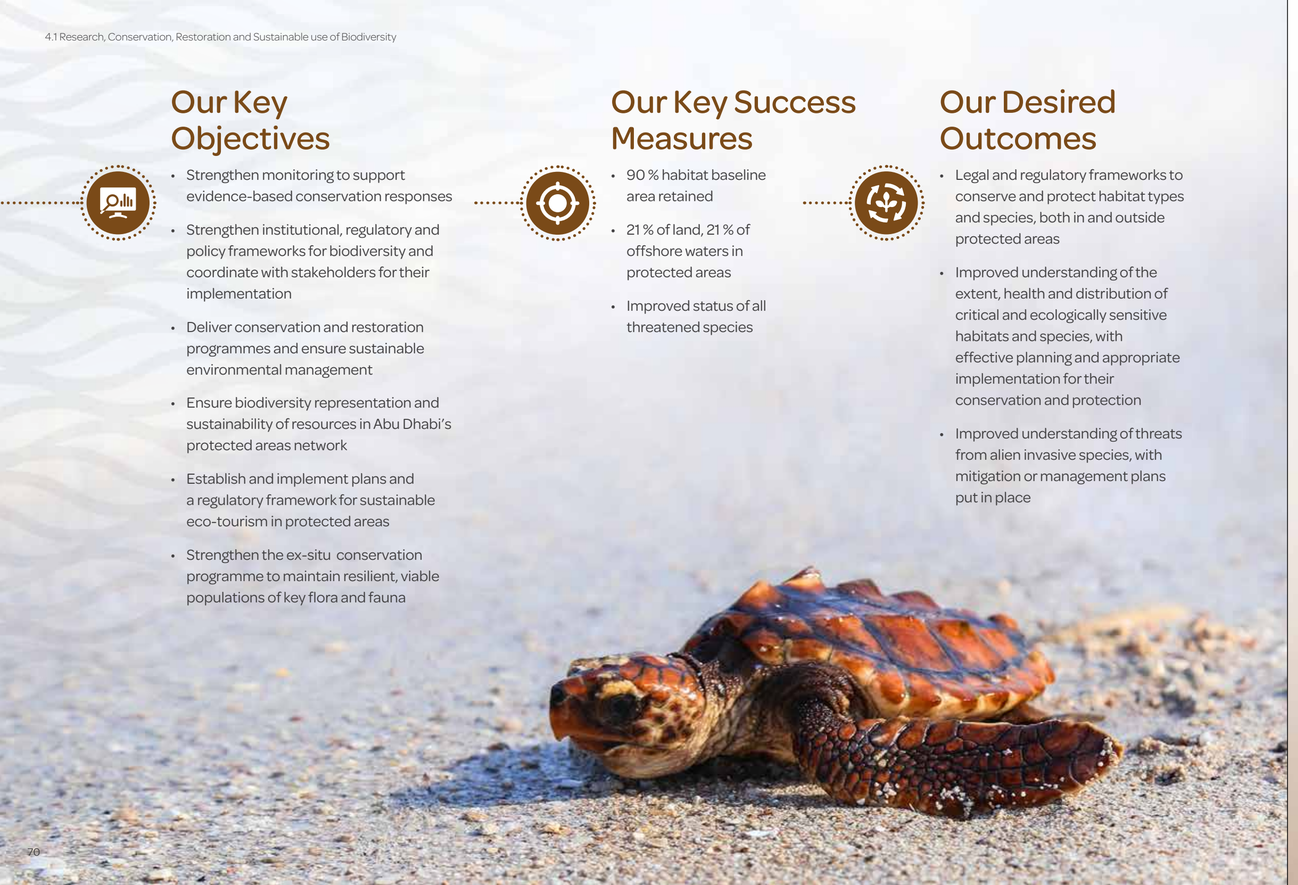
- Strengthen monitoring to support evidence-based conservation responses
- Strengthen institutional, regulatory and policy frameworks for biodiversity and coordinate with stakeholders for their implementation
- Deliver conservation and restoration programmes and ensure sustainable environmental management
- Ensure biodiversity representation and sustainability of resources in Abu Dhabi's protected areas network
- Establish and implement plans and a regulatory framework for sustainable eco-tourism in protected areas
- Strengthen the ex-situ conservation programme to maintain resilient, viable populations of key flora and fauna

Our Key Success Measures

- 90 % habitat baseline area retained
- 21 % of land, 21 % of offshore waters in protected areas
- Improved status of all threatened species

Our Desired Outcomes

- Legal and regulatory frameworks to conserve and protect habitat types and species, both in and outside protected areas
- Improved understanding of the extent, health and distribution of critical and ecologically sensitive habitats and species, with effective planning and appropriate implementation for their conservation and protection
- Improved understanding of threats from alien invasive species, with mitigation or management plans put in place



4.2 Regulation Development and Enforcement for the Recovery and Sustainable Exploitation of Fisheries

Our Environmental Challenge

Abu Dhabi's fisheries are deeply rooted in the emirate's heritage; and today fishing is still practiced through seven commercial and over 40 recreational sites. There are 2,818 active commercial and 3,164 recreational fishermen licensed in Abu Dhabi, mainly expatriates, contributing to an annual landed catch worth AED 128 million.

However, out of 28 species for which stock assessments exist, 12 are harvested beyond sustainable levels. They accounted for 61 % of the total landings and 77 % of wholesale revenue in 2019.

Key drivers for the depletion of Abu Dhabi's fisheries include population growth, as well as increased urbanisation and coastal development, and illegal or unregulated fishing. These have led to pressures including the degradation of key habitats and marine water quality.

This state of affairs brings impacts on the economy, food security and the environment. In previous years, fishing resources in Abu Dhabi Emirate were subject to severe overexploitation, with sustainability and stock size indicators below targets.

However, it should be noted that overall trends in this respect turned positive in 2019, thanks to measures such as seasonal bans and restrictions on fishing equipment sizes.

Aquaculture could help counteract overfishing, but it too has potential environmental challenges such as the build-up of organic waste on the seafloor, competition of escapees with native species, loss of landscape as a result of sea-based aquaculture, and the potential depletion of groundwater resources by land-based aquaculture.

Our Scope

Over the next five years, EAD will develop policies and regulations to continue the improvement we have seen in Abu Dhabi's fisheries. We will develop and issue strategies, guidelines and regulations to assist the growth of the aquaculture sector so it can increase its contribution to the Abu Dhabi economy. We will also work with the Department of Economic Development and Ministry of Climate Change and Environment, to implement planned regulation tools such as the aquaculture licenses portal.

We will stimulate aquaculture commercialisation, eco-tourism and innovation by defining an optimal model for commercialising farmed pearls, conducting or aiding research in regenerative aquaculture farming and promoting relevant business opportunities.

We will further address the unsustainable harvesting of fish species by introducing daily individual take and boat limits for recreational fishing. We will also strengthen collaboration with the Critical Infrastructure and Coastal Protection Authority to address illegal, unrecorded and unregulated fishing.

We will leverage technology in enforcement and monitoring, to ensure the availability of key information and data.

We to enhance our current programme of research, monitoring and assessment of resources by establishing a new research centre and vessel. We will conduct studies on carbon foot-printing, energy intensity and blue carbon, and assess recreational fisheries catch and effort. Our efforts for key habitat restoration will continue and expand through actions such as planting mangrove saplings and installing corals and coral fragments.

Finally, we will establish a programme to educate young Emiratis on cultural fishing techniques and launch a pilot-scale aquaculture sea cage project.

Our Key Objectives

- Develop and implement fisheries and aquaculture policies, plans and regulations needed to ensure sustainability
- Adopt innovative research and monitoring in support of habitats restoration and stock regeneration
- Promote fisheries and aquaculture's social, cultural, and economic value, expanding engagement and awareness

Our Key Success Measures

- Achieve 81 % Sustainable Fisheries Exploitation Index
- Achieve 30 % Mean Relative Stock Size
- Achieve 30 % Aquaculture versus Wild Catch

Our Desired Outcomes

- Recovery of reproductive stocks of severely over-exploited fisheries species to sustainable thresholds
- Restoration of Abu Dhabi's broader fisheries to international standards of sustainability

Our Main Priorities

Drive Integrated Environmental Policy and Regulation Instruments

5

5.1 Development, Evaluation, and Mainstreaming of Integrated Policies, Plans, and Regulations

Where We Are

Throughout our journey, EAD has defined a clear path of policy and regulation development to safeguard environmental quality and biodiversity conservation. To this end, we have worked internally on building capacity and introducing best practice.

We set our environmental policy development framework in 2015, updated it in 2019 and issued three subsequent guides on development and evaluation. In 2019 we also approved an ambitious policy and regulation development plan, targeting key areas. In 2020, we set out on a new journey of developing policies and regulations that follow the guides and the Board approved plan.

2015
We set our environmental policy development framework

2019
We approved an ambitious policy and regulation development plan

2020
We set out on a new journey of developing policies and regulations

Our Scope

The scope of this priority includes championing the development and implementation of environmental policy and regulations consistent with the EAD Board approved plan. In the next five years we will focus on developing a defined set of policies and regulations for each of the priority areas and evaluating their effectiveness and efficiency. We will ensure that the different policy and regulations instruments are very well embedded in other entities and sector planning as needed.

We will establish the Environmental Protection Fund and develop the required legislation for it. We will also drive the establishment of a Policy Lab for Public Innovation, and work towards establishing an environment policy response centre.

Our Key Objectives

- Oversee the development and evaluation of environmental policies and regulations across EAD
- Embed environmental considerations in all local and federal policies, plans and regulations

Our Key Success Measure

- 100 % of planned environmental policies and regulations implemented

5.2 Assessment of Environmental Interlinkages with Society and Economy

Where We Are

EAD has conducted ongoing policy analysis and research to support the policy development process, working with partners to bring environmental considerations into the innovation policy in 2020, the energy policy in 2019, the industrial policy in 2016, the project to foster a sustainable ocean economy in 2018, a report on the state of the environment in 2017 and a project to improve organisational effectiveness in 2016.

More recently we have been working internally on introducing best practice for analyses including the Driver, Pressure, State, Impact & Response Analysis, a benchmarking analysis and a socioeconomic analysis. In 2020, we developed a new guide for policy analysis aligned to the new Abu Dhabi Executive Office (ADEO) Public Policy Framework and started building capacity for its application.

2020 Innovation policy

2019 Energy policy

2016 Industrial policy

2018 Project to foster a sustainable ocean economy

Our Scope

Policy analysis refers to the practices used to define a problem for government intervention, as well as to prescribe the measures required to solve that problem through policy action. This encompasses the gathering of information about the problem, its context and causes, the design and comparison of policy instruments, and the assessment of policy alternatives capable of feasibly solving or mitigating the problem. Recommendations for future courses of government action, or inaction, are the desired outcome of policy analysis.

The scope of this priority includes leading policy analysis and research to support evidence-based and impact-oriented policy making, in collaboration with our partners, to ensure that environmental considerations are integrated into sectoral policies and to provide advice to decision makers which acknowledges the interplay of environmental, economic and social issues. These interdependencies refer both to the impact of environmental change on society and the economy, as well as the impact of social and economic development on the environment.

In the next five years, we will focus on improving the frameworks and tools available for policy analysis and providing research and recommendations on issues and trends that may affect Abu Dhabi's ability to achieve its environmental goals.

Working with stakeholders such as the Department of Health (DoH), Department of Economic Development (DED) and Department of Community Development (DCD), we will continue to assess environmental implications of socioeconomic policies and plans impacting society.

We will work with the DoH to share relevant data, and aim to set up a joint database to analyse correlations between environmental issues and health. We will also develop joint outreach activities with the DoH and work toward integrating relevant environmental information, such as the air quality index, into its online platforms.

Our Key Objectives

- Conduct analyses to assess environmental impacts on society and economy
- Develop and deliver a joint action plan with the Abu Dhabi Department of Health to address environmental impacts on human health

Our Key Success Measure

- 100 % of planned environmental, society, economic and health impact assessment policies implemented

Our Main Priorities

Adopt Evidence-Based Environmental Enforcement, Rigorous Permitting and Compliance

6

6.1 Assessment, Permitting, Compliance and Enforcement

Where We Are

The Environment Agency – Abu Dhabi is the legally mandated competent authority for environmental issues. We are responsible for reviewing applications for licenses of industrial, agricultural and environmental projects and ensuring the protection and optimal utilisation of our natural resources. Our legal authorities derive from over a dozen different federal and local laws that provide both direct and delegated responsibility to us for regulation, compliance and enforcement of legislation in various environmental areas.

We review proposed environmental legislation, identify and address regulatory gaps, amend existing regulations, improve compliance monitoring, strengthen enforcement capabilities, and support the development of environmental judicial courts.

The purpose of this cross-cutting priority is to establish and implement a comprehensive, enforcement-based regulatory framework across our mandates to provide a common and a comprehensive, consistent approach to our regulatory roles.

Our Scope

Over the next five years we will focus on solidifying the core environmental regulatory framework and assessing current practices against this framework to identify gaps and inconsistencies.

We will promulgate the use of support tools that we have developed and continue to adopt innovative technologies such as unmanned vehicles, image recognition and remote sensing that enhance our permitting, licensing and enforcement activities. Our focus is on fulfilling our mandate in the most efficient and effective way possible, to ensure we protect the environment and serve the community.

We will strengthen collaboration with the Judicial Department and relevant stakeholders to enhance the effectiveness of regulatory action against identified cases of non-compliance, and develop parameters for administrative fines.

Our Key Objective

- Adopt rigorous environmental assessment, permitting, compliance and enforcement that fully leverage the Agency's legal authority

Our Key Success Measure

- 95 % of permitted facilities to comply fully with environmental conditions

6.2 Management of Environmental Emergencies

Where We Are

As the authority for environmental protection, our role includes working with our partners in other government entities to prepare for, respond to and possibly restore the natural environment from emergency incidents. We are prepared to act in a lead or supporting role, as the emergency demands.

We have established an Emergency and Crisis Management Centre in our headquarters and an Emergency and Crisis Management Plan to guide the management of any environmental incident, irrespective of scale, severity, impact or threat. We carry out emergency training for staff, collaborate with other government entities in developing specific scenario-based response plans, and participate in emergency and crisis drills and exercises on local, federal, regional and international levels.

Our Scope

We are, as always, prepared to respond to environmental emergency incidents to protect people, environment, assets and reputation. Over the next five years we will further strengthen and enhance our emergency and crisis management capabilities, building capacity for effective execution and deployment.

In coordination with our partners in other government entities, we will raise awareness of EAD's emergency preparedness and response capabilities, develop joint plans where appropriate and continue to practice and test ourselves through emergency drills and exercises.

Our Key Objective

- Handle timely and effective responses to environmental emergencies

Our Key Success Measure

- 100 % of developed, updated, and approved emergency plans for high environmental risks implemented

Our Main Priorities

Leverage Advanced Data Analytics and Lead Environmental R&D and Outreach Activities

7

7.1 Acquisition of Data and Strengthening of Advanced Analytics

Where We Are

To protect, conserve and manage the environment of Abu Dhabi appropriately and effectively, it is vital that we make well informed decisions. This requires high quality data, collected via scientifically sound methods, to provide the best possible information for our scientists and policy makers.

Critical to this is a precise understanding of what data and information is required. For this we use the well-established Driver, Pressure, State, Impact & Response analytical framework, which is embedded in our ongoing monitoring programmes as well as our periodic State of the Environment reports.

Currently, we have powerful data on the state of our air quality, marine water quality, groundwater, soils, aerial extent of habitats, fisheries and some taxonomic groups. Much of this data is readily accessible through our enviro-portal (https://enviroportal.ead.ae/map/) and we continue to provide high quality data and informatics in regular themed reports and publications on our website (https://www.ead.gov.ae/en/knowledge-hub/resources-materials).

There is of course more for us to know and understand and we cannot measure everything, which is why we focus our resources on those areas most at risk, or where we believe there is a pressing need for more information.

Our Scope

Over the next five years, we will continue to push the boundaries of cutting - edge technology to gather further information in specific areas. We are working with our strategic partners at the UAE's Space Agency to develop and launch a constellation of four earth observation satellites, to improve our environmental data gathering capabilities even further. We will also continue to explore the potential for drones as a means of gathering data on habitats and species in particular.

We will work with our strategic partners at the Abu Dhabi Digital Authority and the Statistics Centre - Abu Dhabi on policies and practices that will strengthen the robustness of our data, thus improving our Statistical Maturity Index score and ensuring that the information is consistent across other government entities. We will also strengthen our input in supporting the United Nations Statistics Division's Framework for the Development of Environmental Statistics as well as the System of Environmental Economic Accounting in our contribution to national, regional and global efforts.

Embracing artificial intelligence, we will develop a smart-data platform for environmental data and an AI-based integrated marine environment monitoring system.

We will also further support our participation in scientific research programmes with tools such as the Species Data Collection Application and provide timely information by offering regular reports and access to data.

Our Key Objective

- Ensure timely acquisition of data and strengthen analytics and business intelligence to better inform decision making

Our Key Success Measure

- 70 % of satellite datasets integrated in environmental database

7.2 Strengthening of Environmental Research and Development for Abu Dhabi Emirate

Where We Are

While good science has always been the foundation of our work, it is only recently that we have created a division wholly devoted to ensuring our research is the best it can be, focused on developing partnerships with research institutes to maximise its efficiency and effectiveness.

EAD's science and research informs decisions that are essential to the protection of human health and the environment. As such, our research needs to deliver scientifically sound results of consistently high calibre over the long-term. Our research must be responsive, able to react quickly to emerging issues and have the necessary flexibility to adjust where required. Being proactive with a finger on the pulse of environmental research can only enhance our ability to respond quickly.

Our Scope

Over the next five years we will develop and activate research tools such as a knowledge-graph and research-needs register, to consolidate our knowledge and help researchers to actively engage with us. Providing timely, responsive and relevant scientific research and solutions depends on partnerships and continuing dialogue with internal and external partners and stakeholders. We will therefore continue our efforts to promote a network of collaboration with research partners.

We will leverage the AGEDI partnership with UNEP, establishing GRID - Abu Dhabi as an EAD research and development hub in the field of environmental informatics.

We are also mindful that, to maximise the impact and usefulness of our research, we need to communicate the results of our endeavours in material that is accessible, understandable, and relevant.

Our Key Objective

- Ensure impactful and high-confidence research and development, aiming at closing knowledge gaps to improve conservation and environmental management

Our Key Success Measure

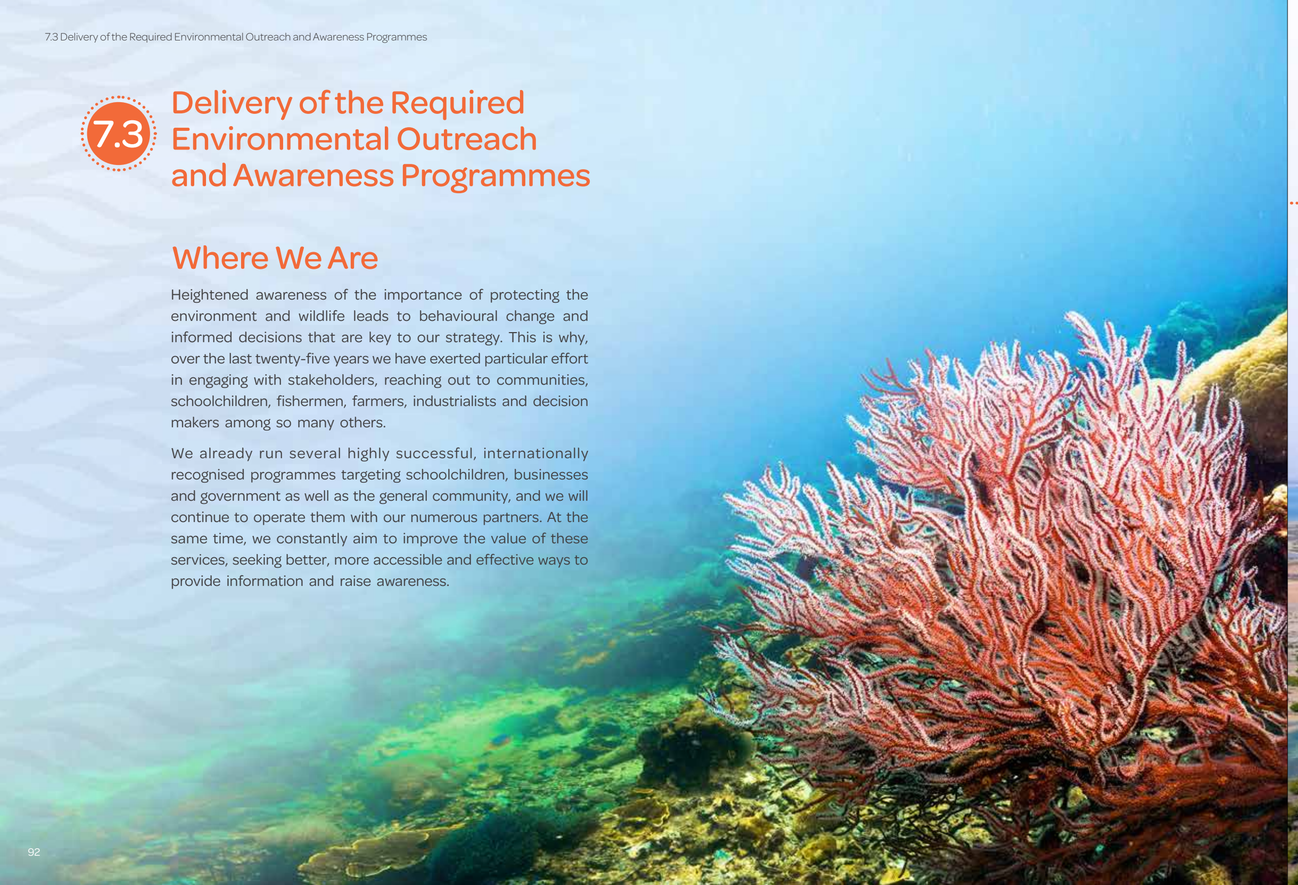
- 100 % of research agenda completed

7.3 Delivery of the Required Environmental Outreach and Awareness Programmes

Where We Are

Heightened awareness of the importance of protecting the environment and wildlife leads to behavioural change and informed decisions that are key to our strategy. This is why, over the last twenty-five years we have exerted particular effort in engaging with stakeholders, reaching out to communities, schoolchildren, fishermen, farmers, industrialists and decision makers among so many others.

We already run several highly successful, internationally recognised programmes targeting schoolchildren, businesses and government as well as the general community, and we will continue to operate them with our numerous partners. At the same time, we constantly aim to improve the value of these services, seeking better, more accessible and effective ways to provide information and raise awareness.



Our Scope

Over the next five years we will continue to encourage environmentally sustainable practices, through engagement with school children, businesses, government and the community at large.

We will accomplish this through education programmes, general awareness campaigns, toolkits and resources, as well as targeted outreach initiatives to specific groups.

We are actively developing tools such as online training courses and digital engagement platforms with actionable content that is relevant to our many stakeholders.

Our Key Objective

- Provide integrated and stakeholder-centric environmental awareness and education to the community and target sectors

Our Key Success Measure

- 90 % stakeholder environmental awareness by 2025

نحافظ على تراثنا الطبيعي · ضماناً لمستقبلنا
preserving our heritage · protecting our future

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