

# NATURE-BASED SOLUTIONS

THE CHALLENGES AND OPPORTUNITIES FOR  
IMPLEMENTING NATURE-BASED SOLUTIONS  
INTO MAJID AL FUTTAIM'S OPERATIONS

**LEADING BY EXAMPLE: SUSTAINABILITY THOUGHT LEADERSHIP SERIES**



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We are aware of the adverse effects the climate crisis, pollution and the way we use land are having on the natural world we live in. There is a responsibility on businesses such as ours to take action to reverse the loss of nature. The conservation of biodiversity will radically support our fight against the ongoing environmental crisis and nature-based solutions are fast becoming an important element of our sustainability strategy as well as a cost-efficient solution for achieving our Net Positive in carbon and water by 2040 targets.

I am encouraged by the response of communities, businesses and governments who are promoting global initiatives. This includes the Business for Nature's Call to Action, which we have signed up to, that publicly advocates for more ambitious government policies to reverse nature loss. Similarly, the UN's Decade of Ecosystem Restoration, from 2021-2030, is a global push for the revival of ecosystems that are critical for the natural balance of our world. I am hopeful that campaigns such as these, along with the substantial benefits of nature-based solutions which are presented in this paper, will challenge us all to scale-up our restoration efforts and ensure we collaborate to restore and protect our planet.



Ibrahim Al-Zu'bi  
Chief Sustainability Officer  
Majid Al Futtaim

RETHINKING  
RESOURCES

We **DARE TO** rethink our use  
of resources to make a  
Net Positive impact

## OUR ALIGNMENT TO THE SDGS

6 CLEAN WATER  
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11 SUSTAINABLE CITIES  
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ON LAND



## DARE TODAY, CHANGE TOMORROW

In 2018, we launched our Company-wide sustainability strategy, *Dare Today, Change Tomorrow*. Our five-year strategy aims to reflect the world we live in and defines our commitment to transform the way we do business and embed sustainability thinking in everything we do.

The strategy sets out 21 material issues and 11 Sustainable Business Commitments (SBCs) across three strategic focus areas: Transforming Lives, Rethinking Resources and Empowering Our People. Within this thought leadership paper, we discuss the topic of nature-based solutions and the actions that can be taken to reduce our impact on biodiversity and the natural world.

## MATERIAL ISSUE: ECOSYSTEM SERVICES



At Majid Al Futtaim, our vision for preserving ecosystems is to conserve and sustainably use the oceans, seas and marine resources for sustainable development, to protect, restore and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat deforestation and halt and reverse land degradation and biodiversity loss.

## WHAT ARE NATURE- BASED SOLUTIONS?

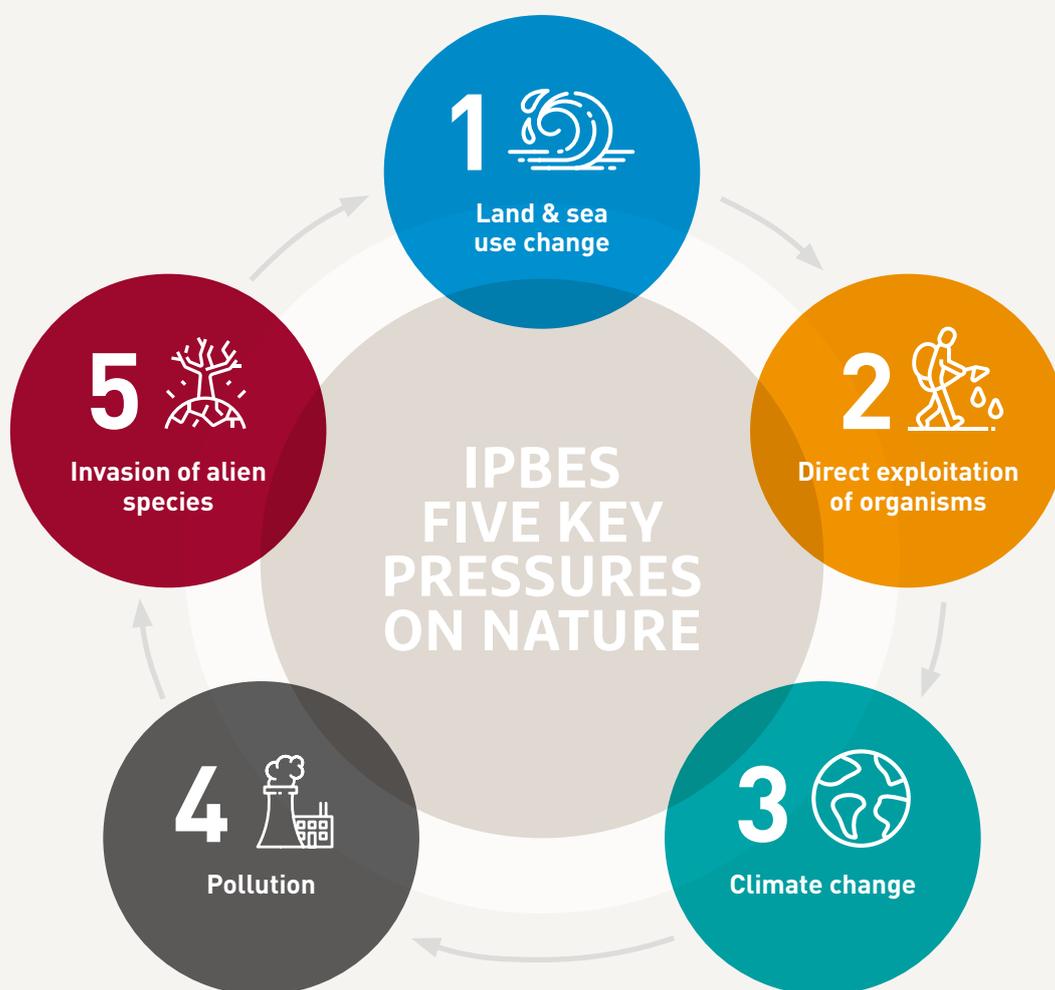
Nature-based Solutions (NbS) are defined by the International Union for the Conservation of Nature (IUCN) as actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, whilst also providing human wellbeing and biodiversity benefits<sup>1</sup>.



# THE RISKS OF THE DESTRUCTION OF NATURE

An estimated US \$44 trillion of global economic value generation is dependent on nature and associated services, with construction (\$4 trillion), agriculture (\$2.5 trillion) and food and beverages (\$1.4 trillion) being the three largest industries that depend most on nature<sup>2</sup>. Yet, nature is critically undervalued by businesses and governments alike. The staggering value of nature is vulnerable to the pressures of land-use change, exploitation of living organisms, climate

change, and pollution. These pressures are rapidly growing to the point of no return, if not already beyond this. If we continue following a “business as usual” approach, the destruction of ecosystems and collapse of biodiversity will only become an even greater risk to businesses’ long-term value creation, and ultimately, our planet and our wellbeing.



Research from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) shows approximately one million species globally are faced with extinction. This equates to 25% of the animals and plant life assessed<sup>3</sup>. In the Middle East and North Africa (MENA) region, it is predicted that a 2°C temperature rise will result in 40% of

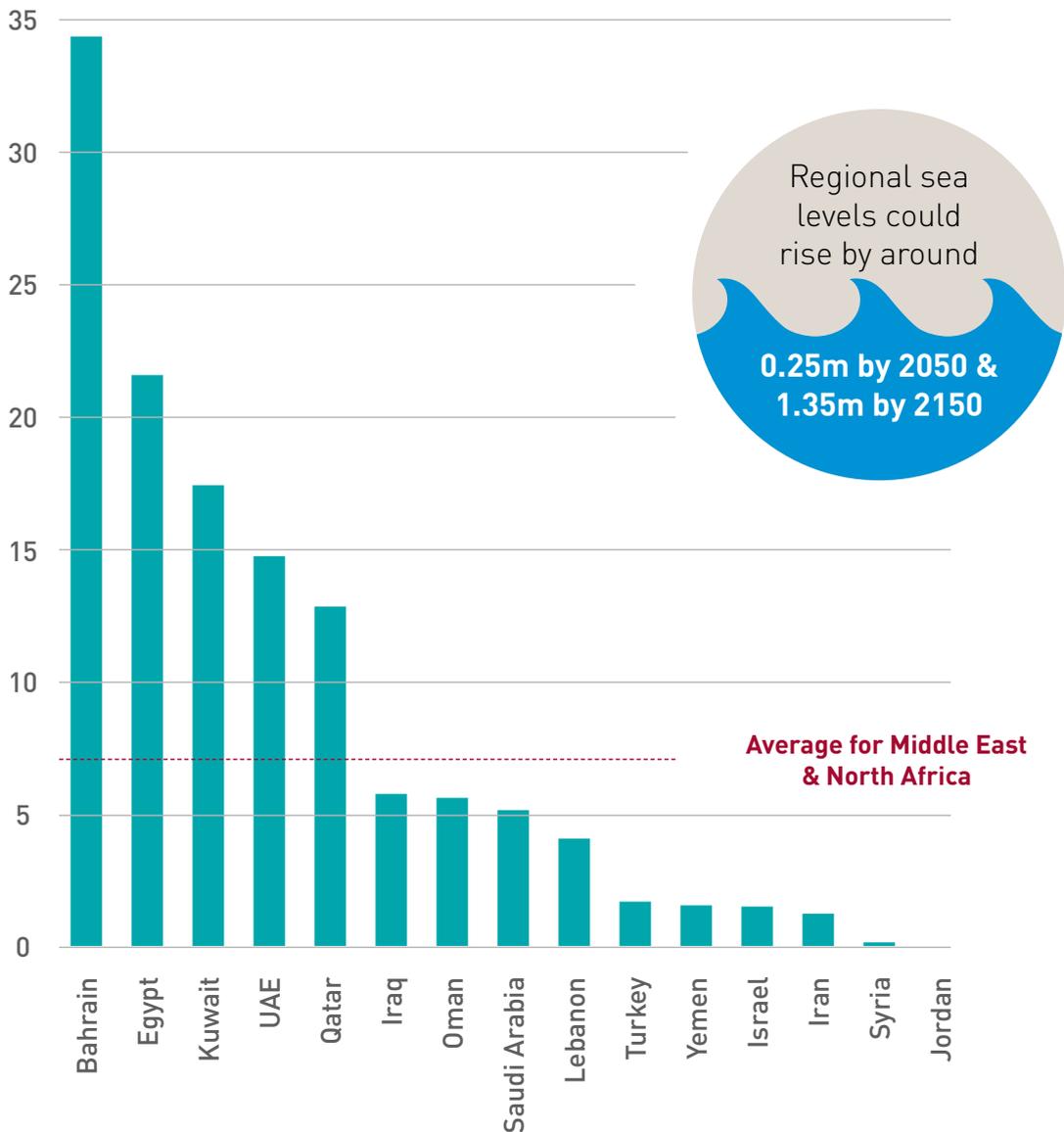
existing species facing extinction<sup>4</sup>. Water scarcity, soil erosion, and heat waves are already serious issues in the region and that will only be exacerbated by a disregard for nature. A concerning situation for what is already one of the most water-stressed areas in the world<sup>5</sup>.

## POPULATION VULNERABLE TO SEA LEVEL RISE IN THE MENA REGION

A further risk comes from sea level rise. A 0.5m sea level rise is predicted by 2099, according to one of the latest global climate science reports<sup>6</sup>. The World Bank has declared the MENA region to be one of the most vulnerable regions to sea level rise worldwide<sup>6</sup> (Figure 1). A more direct consequence of sea level rise is coastal inundation, namely the submergence of normally dry or low-lying land by seawater.

For example, it is estimated that 35% of the population (equivalent to 400,000 people) in Abu Dhabi may be displaced by coastal flooding by 2100<sup>6</sup>. This highlights just how threatened urban coastal areas in the region are to sea level rise<sup>7</sup>. Furthermore, the damage from storm surges would be even greater. These human-driven changes to nature threaten the food security, public health, and livelihoods of those populations.

Figure 1: Population living in areas where land elevation is below 5 metres above sea level as percentage of total population<sup>7</sup>



# FROM SHORT-TERM SOLUTIONS...

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Traditional methods to mitigate against the impacts on nature loss have been predominately infrastructural development, known as grey infrastructure. These provide short-term, inflexible solutions that often use unsustainable and finite materials. Examples of grey infrastructure include construction of large dams and reservoirs to store water for irrigation and consumption and control flooding downstream; or artificial sea walls that provide protection against coastal erosion and flooding. However, grey infrastructure is natural resources heavy and expensive to construct, maintain, and adapt to dynamic climatic conditions<sup>9</sup>. Moreover, these artificial structures often exacerbate climatic conditions and erode the ability of our ecosystem to regenerate. For instance, climate change is altering rainfall patterns globally and this is resulting in flash

floods in the MENA region. In Kuwait in 2018, 49mm of rain – the equivalent of roughly three months' worth – fell in one day. The flash flood wreaked havoc across the city, damaging roads and bridges, and causing the Ministry of Health to declare a state of emergency. The flood overpowered the city's grey infrastructure, such as storm drains and threatened human life<sup>10</sup>.

**IN KUWAIT IN 2018, 49MM OF RAIN – THE EQUIVALENT OF ROUGHLY THREE MONTHS' WORTH – FELL IN ONE DAY. THE FLASH FLOOD WREAKED HAVOC ACROSS THE CITY, DAMAGING ROADS AND BRIDGES, AND CAUSING THE MINISTRY OF HEALTH TO DECLARE A STATE OF EMERGENCY.**

# ...TO NATURAL CAPITAL

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The Nature-based Solutions (NbS) approach was developed towards the end of the 2000s to highlight the importance of biodiversity conservation for climate change mitigation and adaptation. This is a key concept aimed at reducing over-reliance on traditional methods, while providing many wider benefits to people and the planet. Nature-based Solutions are defined by the International Union for Conservation of Nature (IUCN) as "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits"<sup>12</sup>. In other words, NbS can provide alternative approaches to the effects of climate and nature change by using natural capital in a cost-effective way.

NbS are often considered win-win solutions since, when designed and implemented properly, they can have many benefits, including sustainably managed ecosystems while improving human wellbeing and increasing biodiversity<sup>13</sup>. Afforestation is a common term associated with nature projects, yet NbS encompasses a wide range of ventures such as the restoration of mangroves and wetlands, green urban infrastructure, biophilic design, and coral reef protection<sup>14</sup> (Figure 2).

The United Nations Global Compact (UNGC) states that NbS are an important component for future climate action. Research has concluded that NbS can contribute more than 30% of the climate mitigation required between now and 2030 to limit global warming to below 2°C<sup>16</sup>. This equates to a mitigation potential of 10-12 gigatons of CO<sub>2</sub> annually<sup>16</sup>. To put this number into perspective, China emits 30.34% of the world's total emissions, yet that only equates to 0.0000115 gigatons<sup>17</sup>. Furthermore, the Food and Agriculture Organization of the United Nations (FAO) describes how restoring 350 million hectares of degraded land by 2050 could create US \$9 trillion in ecosystem services<sup>18</sup>.

**THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) DESCRIBES HOW RESTORING 350 MILLION HECTARES OF DEGRADED LAND BY 2050 COULD CREATE US \$9 TRILLION IN ECOSYSTEM SERVICES<sup>18</sup>.**

Figure 2: NbS categories and application



In recent years, NbS have received growing recognition. The UN General Assembly announced 2021-2030 as the UN Decade of Ecosystem Restoration to significantly accelerate restoration projects globally as a method of climate change mitigation and to ensure food and water security. NbS were also a focus of discussions at the most recent global climate negotiations (COP26) in November 2021 and will be reviewed at the UN Biodiversity Conference of the Parties, COP15 (Part 2), which will take place in April 2022 in Kunming, China. The focus of these global biodiversity talks

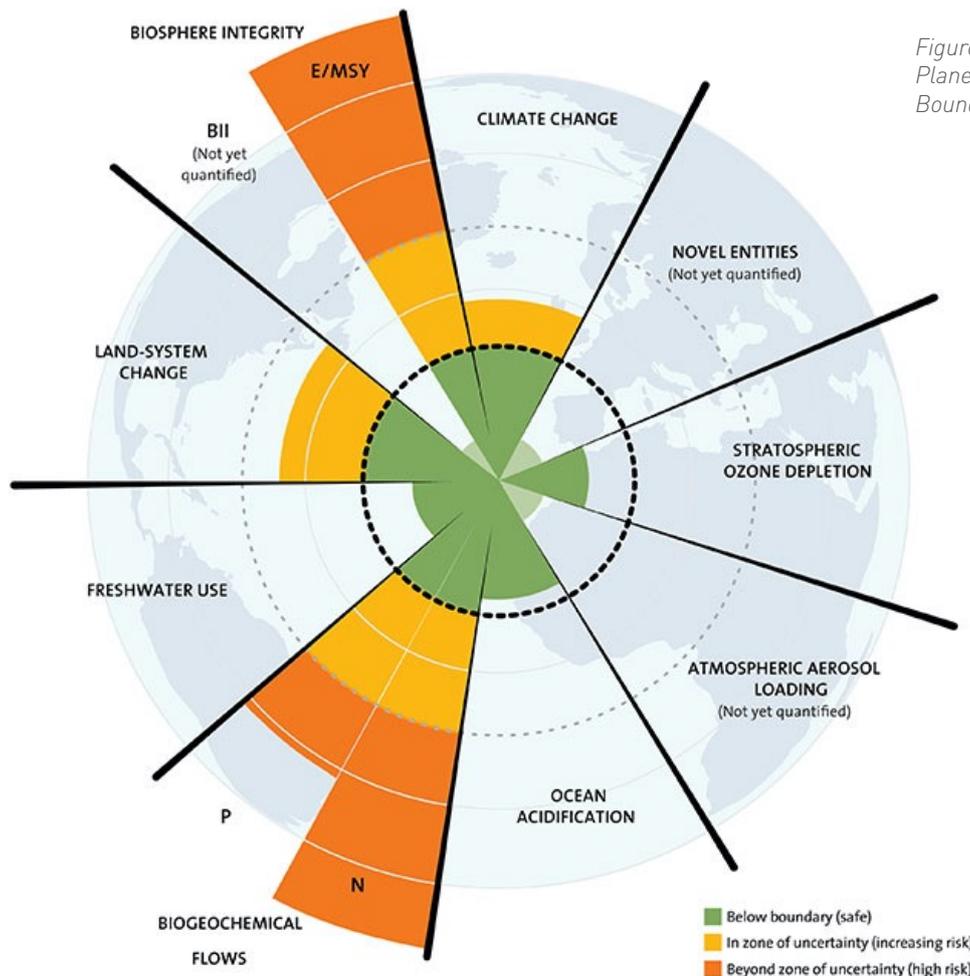
is to continue the development of the post-2020 global biodiversity framework, which presents a vision and roadmap for NbS over the next decade. The framework comprises 21 targets and 10 milestones proposed for 2030, which include ensuring that at least 30% of land and sea areas are conserved and increasing financial resources from all sources to at least US \$200 billion per year. These represent significant milestones towards the 2030 global agenda and their associated benefits will contribute to the Sustainable Development Goals<sup>20</sup>.

# ALIGNING WITH INTERNATIONAL EFFORTS

In recent years, the broader spectrum of sustainability has gained incredible momentum. Net zero carbon has taken centre stage with governments and businesses devising ambitious net zero strategies and targets to meet the Paris Climate Agreement. Such a narrow approach to environmental sustainability can however neglect other vital aspects of solving the global environmental destruction trends.

To encourage a more holistic way of thinking about these environmental threats, a team of world-renowned scientists from the Stockholm Resilience Centre developed a concept called 'Planetary

Boundaries'. The planetary boundaries concept details nine key earth processes that are heavily influenced by humanity's actions and increase the risk of irreversible environmental damage to our planet (Figure 3). If the tipping point is crossed for a boundary, it could trigger catastrophic environmental harm and perhaps tip the Earth into a new state – one that may not support humanity<sup>26</sup>. Four boundaries have already been crossed: biogeochemical flows, climate change, land-system change and loss of biosphere integrity (biodiversity loss and extinctions)<sup>27</sup>.



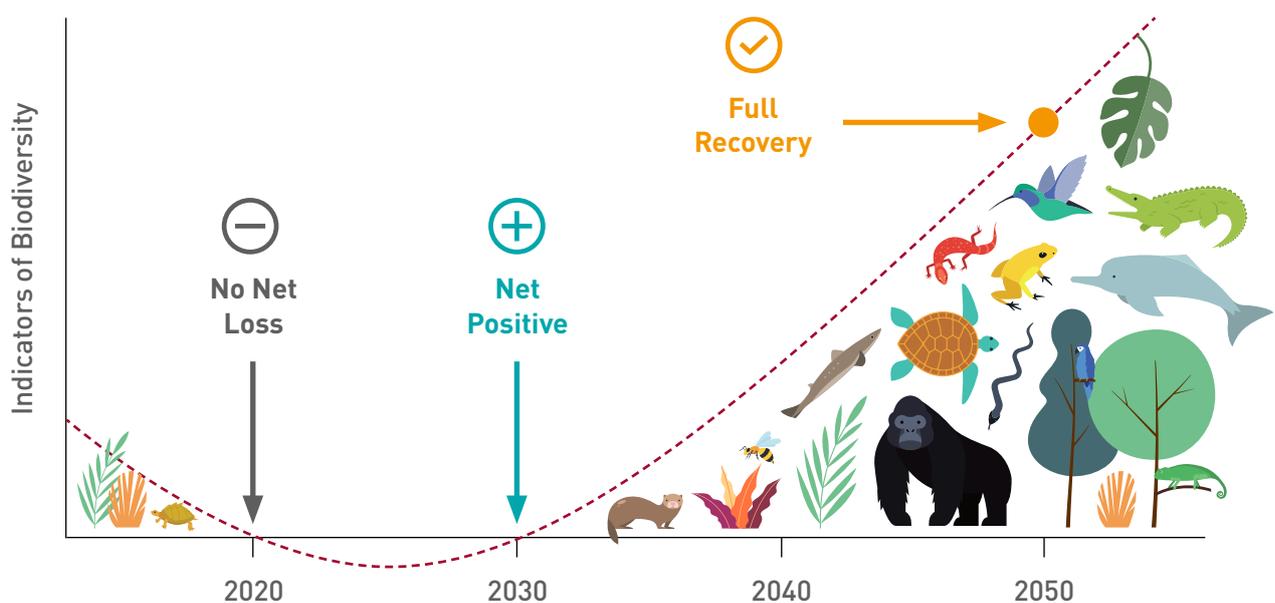
Through this, it is possible to visualise that nature and biodiversity are at the forefront of the new sustainability spectrum. In fact, the World Economic Forum highlighted that, without actions to reverse the loss of nature “there is no future for business as usual”<sup>28</sup>. The World Wildlife Fund (WWF) and the UN Environmental Program (UNEP) have also published ground-breaking reports detailing the significance of biodiversity and implementing NbS. Meanwhile, in addition to the UN Decade of Ecosystem Restoration, the UN have declared that 2021-2030 is also the Decade of Ocean Science for Sustainable Development – to support initiatives to reverse the deterioration in ocean health, an area where NbS can have a significant positive influence<sup>29</sup>. The IUCN have developed a global standard to help with designing, implementing, and verifying NbS actions<sup>12</sup>.

These global efforts have created a framework for understanding the importance of nature and for enabling actors to coordinate on the international stage. Nevertheless, the nature spectrum is broad and complex. It requires structuring and measuring for progress to be monitored.

In response to this, and with the great success they have had with their carbon emissions reduction targets, the Science Based Targets initiative (SBTi) has taken the next step to develop science-based targets for nature. The Science Based Targets Network (SBTN) has issued initial guidance on how this will be accomplished. It will guide companies to identify the most material nature-related risks to their business and then to set targets meeting their science-based target criteria. Science-based targets, or SBTs, are defined as “measurable, actionable, and time-bound objectives, based on the best available science, that allow actors to align with Earth’s limits and societal sustainability goals”<sup>30</sup>. Ultimately the goal of SBTN is to achieve a nature-positive world. It is essential that there is no net loss of nature from 2020, a net positive state of nature by 2030, and full recovery of nature by 2050<sup>31</sup> (Figure 4). Therefore, by setting SBTs for nature today, companies can not only get ahead of regulation and policy changes, but also catalyse innovation needed for the planet and businesses. Such targets are arguably more complex to set than carbon targets. For this reason, the SBTN is exploring this target setting exercise in a pilot phase with companies. Majid Al Futtaim intends to be one of these.

Figure 4: Timeline for Achieving a Nature Positive World<sup>30</sup>

### Nature Positive by 2030



# LEARNING FROM OTHERS

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As the benefits of implementing NbS are becoming more internationally renowned, organisations around the world and governments are seeking ways to embed NbS into their direct operations. While there are examples of ways small NbS projects can be used, such as implementing green roofs and planting street trees, more substantial approaches are also needed. However, these often require considerable capital and are typically a result of collaborations between private enterprises or governments. The following are examples of successful NbS projects.



## MANGROVES IN ABU DHABI

The Blue Carbon Project is a collaboration between The Environment Agency – Abu Dhabi (EAD) and the energy company - ENGIE. The goal of this project is to restore mangrove forests along the coast of Abu Dhabi that were cleared in the late 1970s and 1980s. By using innovative drone planting technology, the Blue Carbon Project has planted over 35,000 mangrove seeds and saplings in the Mirfa lagoon. The UAE has committed to planting 30 million mangrove seedlings by 2030<sup>32</sup>.

Mangroves act as natural flood defences for coastal cities since they reduce wave and storm surges, while also providing protection against flooding and erosion. The effectiveness of mangroves is due to the density, shape, and cross-shore widths of the forests<sup>33</sup>; in fact, research has shown that mangroves can reduce an estimated 66% of wave energy within the first 100 metres of the mangrove forest<sup>32</sup>. In addition, mangroves act as a significant carbon sink. One hectare of mangrove forests can sequester approximately 3,754 tons of carbon<sup>34</sup>. These numerous benefits are believed to equate to a monetary value of USD \$194,000 per hectare annually<sup>35</sup>.



## ACROS FUKUOKA PREFECTURAL INTERNATIONAL HALL, JAPAN

In the middle of Fukuoka city, Japan, resides the ACROS Fukuoka Prefectural International Hall, a multipurpose space which is home to an almost 100,000 m<sup>2</sup> park on the 15 stepped terraces of the Hall. This park was developed by the City of Fukuoka in partnership with a private enterprise and is a prime example of a type of NbS, called green roofs, that demonstrate how NbS can be integrated into urban planning.

Aside from providing a green, open space for the city's citizens, which incidentally promotes wellbeing, the green roof provides numerous additional benefits. From a biodiversity perspective, when the roof was first developed in 1995, 37,000 plants and 76 different varieties and species were planted. This number has grown to 50,000 plants and 120 different varieties, 25 years later<sup>40</sup>. Research from the IGNITION Project (nature-based solutions to the climate emergency) have found that an increase in bird and plant diversity promotes wellbeing of those who visit the green space and can decrease anxiety and stress<sup>39</sup>.



## THE NIMR WATER TREATMENT PROJECT IN SOUTHERN OMAN

BAUER Umwelt GmbH partnered with Petroleum Development Oman to construct the largest industrial wetland system to provide water treatment of an effluent, called produced water, from oil fields located nearby<sup>42</sup>.

The Nimr Water Treatment Plant is a NbS alternative to traditional processes, which are energy intensive and can produce by-waste. The wetland covers over 700 hectares and contains over 2.5 million local species of reeds like the common reed and bulrush plants. The wetland provides a habitat for reptiles, mammals, fish and resident and migratory birds. The plant also requires no pumping of produced water, unlike the traditional methods, therefore the plant requires zero energy input and is extremely efficient. The produced water filters through the reed beds naturally, which are situated on an artificial slope, leaving gravity to do the work. The reeds remove hydrocarbon contaminants, crude oil and purifies the produced water<sup>42</sup>.

Aside from increasing biodiversity and providing a habitat for numerous species, the wetlands also sequester almost 970,000 tons of carbon emissions. There is also a potential to use the reeds for dry biomass<sup>43</sup>. The wetlands qualify under the United Nation's Clean Development Mechanism to generate Certified Emission Reductions, or carbon credits and the feasibility of salt production is also being researched<sup>43</sup>.



## AGROFORESTRY AND RESTORATION IN BRAZIL

As part of their pledge to reach net zero by 2040, Amazon.com has partnered with the Nature Conservancy to invest in the Agroforestry and Restoration Accelerator. The aims of the project are to restore the native rainforest in the Brazilian state of Pará, which hosts 9% of the world's tropical forests<sup>44</sup>. This particular part of the Amazon rainforest is said to have lost 3,300 acres a day in 2020, predominantly due to the slash and burn technique to clear the forest for farm land<sup>45</sup>.

The Accelerator aims to restore an estimated 20,000 hectares of degraded cattle pastures within three years with the help of local farmers. The reforestation will provide an alternative source of income for the local farmers through the harvesting and sale of cocoa and other crops. In addition, the initiative's ambition is to sequester roughly 10 million tons of atmospheric carbon by 2050. This equates to the carbon emissions generated from 2 million cars on the road in one year<sup>46</sup>. The use of native vegetation will also help increase biodiversity in the region.

# HOW MAJID AL FUTTAIM IS IMPLEMENTING NATURE-BASED SOLUTIONS

Majid Al Futtaim is taking important steps to embed NbS into our *Dare Today, Change Tomorrow* sustainability strategy, realising their potential in supporting the achievement of our targets for Net Positive carbon and water by 2040 and beyond.

Our growing integration of NbS is demonstrated by our recent initiatives. At Al Zahia, Sharjah's first gated mixed-use community, our organic farm uses regenerative farming techniques to promote soil health and improve carbon sequestration from the atmosphere. Akin to other NbS, the organic farm has additional benefits, such as promoting wellness amongst the community by providing the opportunity for physical activity, reducing stress, and increasing resilience<sup>21</sup>. Additionally, the farm provides the potential for implementing circular economy principles by sourcing organic waste from the local community<sup>22</sup>.

It is estimated that roughly 35% of crop production worldwide is reliant on animal pollinators, such as bees, birds, and bats<sup>23</sup>. In fact, these pollinators boost the harvest of 87 of the main food crops globally<sup>23</sup>, including maize corn, rice and wheat. Consequently, our food security and livelihoods, particularly those in the agricultural sector, are reliant on pollinators such as bees. In recognition of this, Majid Al Futtaim are piloting 10 beehives across both the Tital Al Ghaf community and at their Head Quarters (Tower 1) to share the many advantages that these animals provide. Aside from being prolific pollinators, honeybees also aid in the preservation of wild plant biodiversity<sup>24</sup>. The introduction of apiaries at our developments contributes to SDG 2 by increasing food security, SDG 15 by helping preserve a rich biodiverse ecosystem and SDGs 1 and 9 by yielding the opportunity to build resilient livelihoods for farmers in particular<sup>23</sup>.

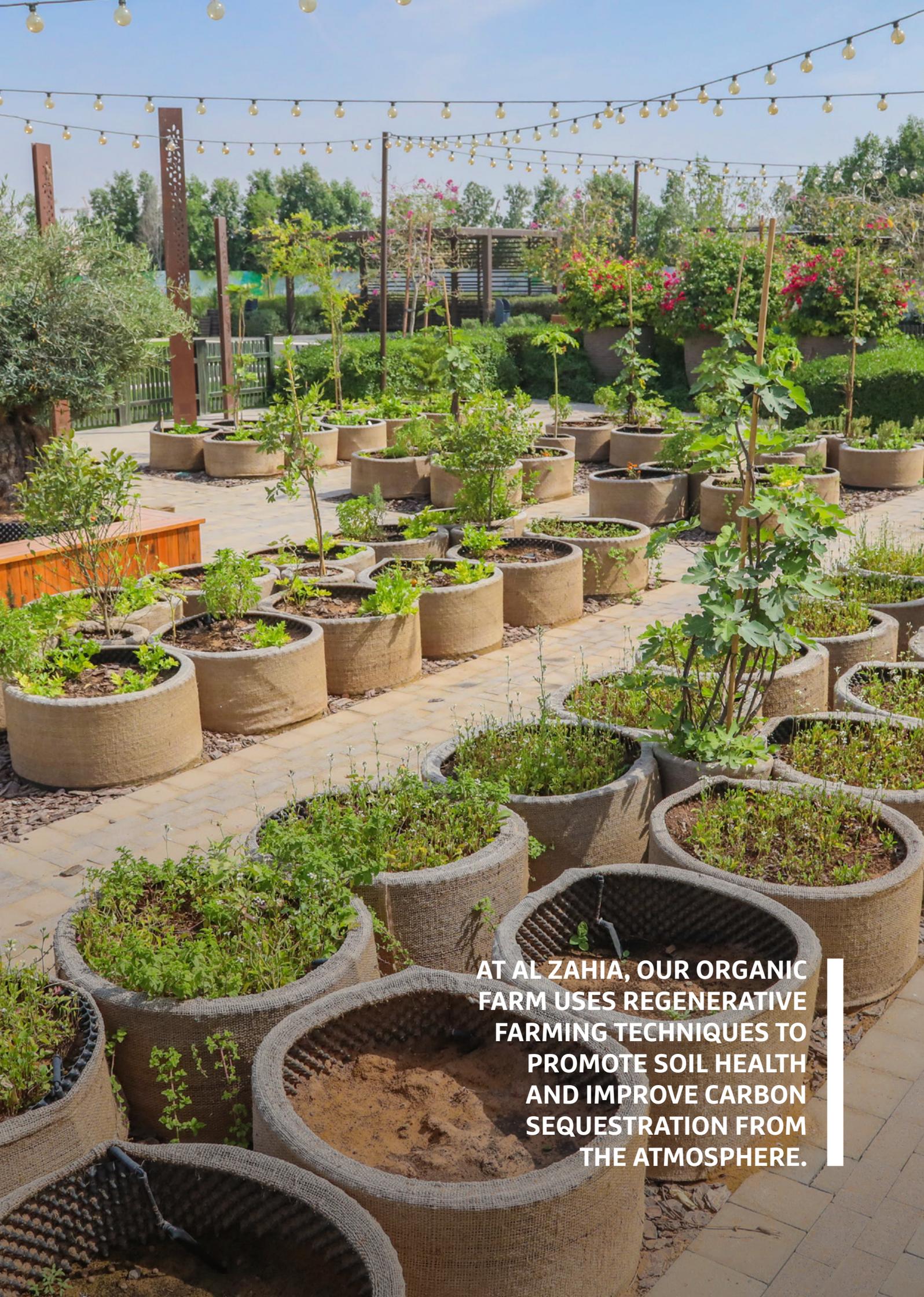


Mangroves are estimated to cover more than 150 km<sup>2</sup> of the UAE's coastline, vital in preventing the erosion of the shoreline and a rich source of food for many species of animals and insects. In 2021, Carrefour UAE partnered with Procter & Gamble (P&G) to launch the Forests for Good initiative, with the aim to plant 26 mangrove forests in the UAE within one year.

Majid Al Futtaim is also exploring an air-to-water pilot with hydro-panel technology and solar power to generate clean drinking water from the air. This aims to mitigate the risk that water scarcity poses to the MENA region, where many countries have been identified as some of the most water-scarce in the world. Each photovoltaic panel produces an average of 3 litres of water per day. In Dubai, we are also introducing air-to-water refilling stations at Metro links inside shopping malls. The stations will apply innovative technology that utilises the water vapour in the air by extracting this moisture via condensation and converting it into pure drinking water.

In 2021 and the beginning of 2022, we placed two 1,000L dispensers in or community's construction areas for labour workers to get high quality chilled water on-site, four 30L dispensers in our offices across the UAE, one 30L dispenser in Crate and Barrel for our customers and 12 100L dispensers in metro stations.

With Majid Al Futtaim operating across the highly biodiverse MENA region, we have a unique opportunity to catalyse innovation and the development of many NbS projects, not only within our direct operations but also throughout the supply chain.



**AT AL ZAHIA, OUR ORGANIC FARM USES REGENERATIVE FARMING TECHNIQUES TO PROMOTE SOIL HEALTH AND IMPROVE CARBON SEQUESTRATION FROM THE ATMOSPHERE.**



## LOOKING TO THE FUTURE

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Majid Al Futtaim is always looking for new ways to drive the sustainability agenda in the region and, over the past decade, the benefits of nature-based solutions have been critically overlooked.

NbS can have a significant contribution towards our targets while providing cost-efficient solutions to a wide range of impacts. Majid Al Futtaim is looking into the construction of appropriate green roofs, façades, and biophilic design across Majid Al Futtaim's portfolio of shopping malls, which can sequester and store atmospheric carbon, increase biodiversity, improve air quality and aid with rainwater runoff retention. Continued investment into urban farms and apiaries in our communities will not only support biodiversity gains and food security but also provide social benefits that come from a productive communal project and place to enjoy nature.

We must also understand and mitigate any negative consequences of the materials we use to build our communities. Inspired by major projects, such as the mangrove reforestation in Abu Dhabi and The Nimr Water Treatment Project in Oman, Majid Al Futtaim is considering the major opportunities in our wider value chain and offsetting projects. By 2030, we need to be having a positive effect on nature for its full recovery by 2050.

When exploring such a wide range of opportunities, it is important for us to consider where we can have the greatest impact. We will closely follow the development of frameworks, such as science-based targets for nature and guidance from subject matter experts such as Conservation International.

This decade is of paramount importance, not just to address climate change but to fix nature. As we develop our second company-wide sustainability strategy in 2022, and building on our success and learnings from *Dare Today, Change Tomorrow*, we look forward to harnessing the opportunities presented by NbS and flourishing our positive impact on nature.

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