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OUT OF THE BLUE

THE VALUE OF SEAGRASSES TO THE ENVIRONMENT AND TO PEOPLE

SUMMARY FOR POLICYMAKERS

WORLD SEAGRASS ASSOCIATION

Summary for Policymakers

Seagrasses are marine flowering plants that are found in shallow waters in many parts of the world, from the tropics to the Arctic circle. They exist in 159 countries on six continents, covering over 300,000 km^2, making them one of the most widespread coastal habitats on Earth. Seagrasses form extensive underwater meadows, creating complex, highly productive and biologically rich habitats. Seagrasses also play a significant role in providing a plethora of highly valuable ecosystem services that greatly contribute to the health of the world's ecosystems, human well-being and the security of coastal communities.

Seagrass meadows are of fundamental importance to world fisheries production, providing valuable nursery habitat to over one fifth of the world's largest 25 fisheries, as well as shelter and food for thousands of species, including fish, shellfish and threatened, endangered and charismatic species, such as dugongs, seahorses and sea turtles. Seagrasses can improve water quality by filtering, cycling and storing nutrients and pollutants and can reduce the incidence of pathogenic marine bacteria, which not only directly protects humans, but also reduces coral diseases and contamination in seafood. Seagrasses additionally provide cultural benefits worldwide by supporting tourism and recreational opportunities.

Seagrasses provide powerful nature-based solutions to tackle climate change impacts, as a key component of mitigation and adaptation efforts. Despite covering only 0.1 per cent of the ocean floor, these meadows are highly efficient carbon sinks, storing up to 18 per cent of the world's oceanic carbon. Seagrasses can also buffer ocean acidification, thus contributing to the resilience of the most vulnerable ecosystems and species, such as coral reefs, and act as the first line of defence along coasts by reducing wave energy, protecting people from the increasing risk of floods and storms.

However, seagrasses have been declining globally since the 1930s, with the most recent census estimating that 7 per cent of this key marine habitat is being lost worldwide per year, which is equivalent to a football field of seagrass lost every 30 minutes. Only 26 per cent of recorded seagrass meadows fall within marine protected areas (MPAs) compared with 40 per cent of coral reefs and 43 per cent of mangroves. Threats with the highest impact to seagrasses include agricultural and industrial run-off, coastal development and climate change. Unregulated fishing activities, anchoring, trampling and dredging also pose major threats. However, despite a general global trend of seagrass loss, there is reason for hope, as some areas have shown abating declines or substantial recovery of seagrasses. These recoveries can often be attributed to human interventions reducing the effect of human-caused stressors.

Increasing recognition of the importance of seagrass ecosystems to both biodiversity and human well-being can drive efforts around the world to conserve, better manage and restore these ecosystems. Ensuring a sustainable future for seagrasses can help countries achieve multiple economic, societal and nutritional objectives, aligning with and supported by policies implemented at the national, regional or global levels. The benefits from conserving and restoring seagrass meadows can also help countries achieve 26 targets and indicators associated with 10 Sustainable Development Goals (SDGs). Seagrasses are critical for life underwater, but also provide wide-ranging benefits to people on land. Given the carbon storage and sequestration capacity of seagrass ecosystems, including them in nationally determined contributions (NDCs) can help nations achieve their targets under the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC). Inclusion of seagrass ecosystems in the post-2020 global biodiversity framework and the Convention on Biological Diversity (CBD) is also critical for protecting the integrity of marine ecosystems and biodiversity. Restoration of seagrasses also provides countries with opportunities to achieve commitments to be made to the upcoming United Nations Decade on Ecosystem Restoration.

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This global synthesis report highlights the unique range of values provided by seagrasses to people around the world. It aims to provide a science-based synthesis of the numerous services linked to seagrasses and the associated risks in losing them in the age of climate change, as well as ongoing global habitat loss and degradation. This report provides management and policy options at the local, regional and global levels, with the aim to share best practices and prevent further losses. It also highlights the opportunities that effective conservation measures, sustainable management and successful restoration efforts for seagrass ecosystems can provide to governments in order to achieve their international environmental policy commitments, targets and objectives. It is hoped that this report will generate increased interest in seagrasses by policymakers, helping to ensure a sustainable future for these essential but undervalued ecosystems.

Key messages and findings

Seagrasses are one of the most widespread coastal habitats on the planet. Seagrasses are found in shallow waters worldwide, ranging from subarctic to tropical latitudes, and exist in 159 countries on six continents. Around 300,000 km^2 of seagrass has been mapped across the globe, but current estimates suggest that the actual coverage could be many times greater.

Seagrasses provide a range of environmental, economic and social benefits to humans, making them one of the most valuable coastal and marine ecosystems on the planet. Seagrasses have a significant global role in supporting food security, mitigating climate change, enriching biodiversity, purifying water, protecting coastlines and controlling diseases. The integrity and provision of services by seagrass meadows are enhanced by their proximity and connectivity to other coastal ecosystems, such as tidal marshes, coral reefs, mangrove and kelp forests, and oyster and mussel beds. The maintenance of these services is essential to support human well-being and promote future development.

Seagrass meadows are threatened globally by natural and anthropogenic stressors. Almost 30 per cent of global seagrass area has been lost since the late nineteenth century and at least 22 of the world's 72 seagrass species are in decline. Main threats include urban, industrial and agricultural run-off, coastal development, dredging, unregulated fishing and boating activities and climate change. Global losses of seagrass cover have major implications for humans due to the numerous ecosystem services they provide. Seagrass conservation, rehabilitation and restoration can reverse patterns of seagrass decline and rebuild lost ecosystem services.

There is an urgent need to develop and implement integrated policies and management options that recognize the multiple benefits of seagrass ecosystems. The conservation and restoration of seagrasses can help countries achieve multiple international commitments, contributing directly or indirectly to meeting 26 SDG targets as well as other international policy objectives, such as the Aichi Biodiversity Targets, the Paris Agreement, the United Nations Decade on Ecosystem Restoration, the United Nations Decade of Ocean Science for Sustainable Development, the Ramsar Convention on Wetlands and the Sendai Framework on Disaster Risk Reduction.

There are several regional, national and local practices that have led to proven benefits for seagrass ecosystems. Protection of seagrass ecosystems can be achieved by considering multiple pressures and cumulative impacts from marine and land-based activities. Management frameworks require cross-sectoral approaches and integration across jurisdictions, aligning with the global move towards holistic, inclusive and sustainable ocean-based economies.

Citizen science can be used to increase the influence on and effectiveness of policies, thereby strengthening seagrass conservation. Citizen scientists can help generate scientific information for conservation, implement restoration, provide input and engage in natural resource and environmental management and policymaking. Engaging local communities in co-managing seagrass ecosystems or associated protected areas can help build more effective and well-rounded initiatives.

Multiple private and public funds can be accessed for seagrass conservation and restoration, with a mixed approach likely to be the most effective. Payments for ecosystem services (PES) projects are rare for seagrass ecosystems at present, though multiple options exist for their development and they are a promising way forward. Inclusion of seagrass management, conservation and restoration should be a critical component of sustainable blue economy strategies in the future.

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Recommended actions

1 **Support the development of a policy expert group for seagrasses** in order to further analyse the current effectiveness of policies related to seagrasses and to make recommendations to the international community.

2 **Develop a comprehensive global map of seagrass distribution and health.** Build on and coordinate efforts to address the gaps that currently exist in global data sets for seagrass extent and distribution, strengthening existing in situ seagrass monitoring networks, exploring new opportunities for remote sensing and investing in data management for the long-term maintenance of a global database.

3 **Invest in further understanding and quantifying the value of seagrass ecosystem goods and services.** Invest in understanding and quantifying ecosystem services associated with different seagrass species, prioritizing underrepresented bioregions, such as the coasts of South America, South-East Asia and West Africa.

4 **Raise awareness and communicate the economic and social importance of seagrasses, as well as the consequences of their loss.** Address the 'charisma gap' for seagrass ecosystems by better communicating to the public the goods and services that seagrasses provide to humanity.

5 **Develop national action plans for seagrass ecosystems.** Actions plans should be connected to and help deliver on various international commitments. They should also be well integrated and recognize connectivity with neighbouring ecosystems, such as coral reefs, mangroves, kelp forests, saltmarshes or shellfish beds as appropriate.

6 **Integrate seagrasses into planning and implementation of the post-2020 global biodiversity framework.** Specific, measurable, attainable, relevant and time-bound targets for seagrass ecosystems globally would be a positive outcome for seagrasses and coastal regions generally from the 2020 CBD Conference of the Parties (COP).

7 **Include actions on seagrass ecosystems in plans for the United Nations Decade on Ecosystem Restoration and the United Nations Decade of Ocean Science for Sustainable Development.** Develop targets for restoring seagrass ecosystems and invest in seagrass science and monitoring with regards to food security, disaster risk reduction, climate change adaptation and climate change mitigation.

8 **Recognize the value of seagrasses in NDCs as a key component of climate change adaptation and mitigation.** Include seagrass ecosystems in national greenhouse gas inventories, appropriate Intergovernmental Panel on Climate Change (IPCC) tier reporting and NDC reporting.

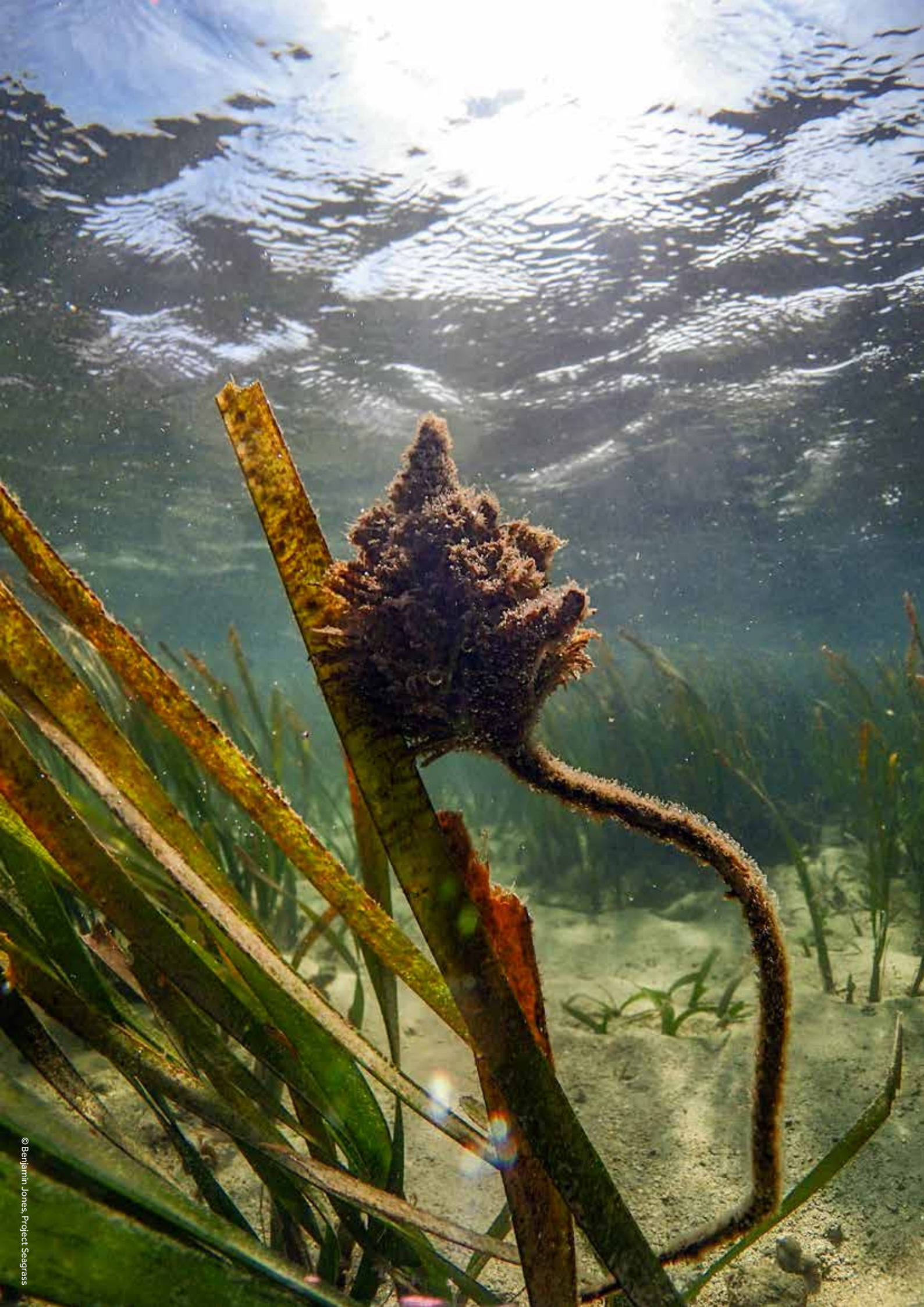
9 **Recognize the value of protecting seagrasses for the SDGs, the 2030 Agenda for Sustainable Development and other international policy targets.** Develop seagrass indicators within monitoring systems, based on both in situ and remote sensing methods, including these in the context of the SDGs, Paris Agreement, CBD and Sendai Framework.

10 **Increase national, bilateral and multilateral funding for comprehensive actions required to conserve and sustainably manage seagrass ecosystems.** Identify opportunities for specific funding windows under multilateral environmental funds. Explore the potential for developing a global fund for seagrass conservation, restoration and capacity development.

11 **Engage stakeholders at all levels and stimulate partnerships to facilitate integration of seagrass conservation into planning and implementation phases.** The role and knowledge of local and indigenous communities is fundamental to the long-term effectiveness and sustainability of interventions.

12 **Designate more MPAs or locally managed marine areas (LMMAs) that include or focus on management measures for seagrass ecosystems.** With only 26 per cent of known seagrasses occurring in protected areas, this is a critical step in preventing seagrass loss and maintaining the ecosystem services that they provide to humanity.

13 **Stimulate seagrass conservation and restoration by providing financial mechanisms and incentives.** Promote economic incentives or integrate seagrasses into existing PES as a source of local income from protection and restoration activities. Develop methodologies and guidance for seagrasses to enter the carbon market.



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