UNESCO contribution to the Background note of the Secretary-General for the preparatory meeting of the 2020 United Nations Conference to support the implementation of Sustainable Development Goal 14

I. Activities, challenges and opportunities relating to the implementation of Sustainable Development Goal (SDG) 14

Ocean Science, as defined in the Global Ocean Science Report in 2017 (IOC-UNESCO, 2017), encompasses: human resources; the observation and data infrastructures that support ocean science; the application of knowledge generated through science for societal benefits, including capacity development through the transfer of marine knowledge; and the science-policy-

dependence of many Sustainable Development Goals and their targets on ocean science may not be obvious for some stakeholders. Setting ocean on a path to sustainability is a necessary condition for achieving such societal objectives as equity, sustainable economic development, food security, gender equality, and mitigation of climate change, among many others. Naturally, SDG14 targets are science-intensive and rely on innovation to deliver results

an, every effort is being made to ensure the

developing nations, from participating in ocean science and even from using the existing knowledge to act on factors that degrade ocean health and affect marine biodiversity.

In support of SDG target 14.a, focusing on ocean science capacity and the transfer of marine technology. IOC-UNESCO is the custodian for the related indicator and developed the related methodology in the context of the Global Ocean Science Report (GOSR). GOSR also acts as the system to collect data related to for SDG Indicator 14.a.1, thus allowing reporting on the status and trends in ocean science at the global level. The second edition of the Report (GOSR2020) will be launched at the 2nd UN Ocean Conference and will provide a baseline on ocean science capacity for the UN Decade on Ocean Science for Sustainable Development (2021 2030). It will looks at existing physical infrastructure/facilities, human resources (with disaggregated data on gender), financial investments, scientific productivity, scientific collaborations

Through the UNESCO 1972 World Heritage Convention, there are currently 50 marine sites recognized for their unique marine biodiversity, singular ecosystem, unique geological processes, or incomparable beauty. Together these places cover about 7% by surface area of everything that is protected in the ocean today. Managers from these flagship marine protected areas hold an unparalleled reservoir of experience about what works and what does not in ocean conservation and management, and are uniquely positioned to bring change at a global scale. In addition to the sheer size and reach of the World Heritage marine network, the sites that comprise it also have unparalleled visibility and influence. When they demonstrate that it is possible to balance preservation with progress, the world takes notice. There is a reason countries work for a decade or more to secure World Heritage Status. It represents care for the natural world. Healthy and prosperous communities. Responsibility to future generations. The very same values we can and must tap into to achieve the SDGs. UNESCO also has a network of coastal and biosphere reserves which are testing sites for new approaches to sustainable development.

There are growing pressures on our oceans due to human activities. These include more harvesting to feed our growing human population, disposal of a wide range of materials such as plastics, and changes to oceanic conditions due to rising anthropogenic emissions of greenhouse gases. Such alteration of the ocean exposes marine life to conditions that deviate from the norm (for example, eutrophication, coastal pollution including plastics in the food web, and extreme events such as heat waves) resulting in a suite of changes without precedent, termed here as multiple stressors or drivers. Some sources of changes to the ocean are local and transient in scale (e.g. episodic nutrient runoff from land), but others are global and long term (e.g. ocean warming and acidification).

There is an urgent need to better understand what environmental changes are putting the ocean under stress; how marine life responds to this stress; which individual stressors are most influential; and how responses to multiple stressors at the same time varies between organisms and/or communities. The IOC Working Group on Multiple Ocean Stressors aims at identifying main ocean stressors and their interaction, with a view to elucidating possible actions related to ecosystem-based management, including through comprehensive approaches to the management of the oceans and freshwater ecosystems (Source to Sea).

Improved understanding of de-oxygenation processes in the ocean is also required. As result of dimate change, warmer water holds less oxygen and also leads to increased stratification. Open ocean deoxygenation has been measured in nearly all ocean basins. In coastal areas, the

capacity building efforts, assessing the mechanisms behind deoxygenation, preparing policy briefs and facilitating ocean oxygen data accessibility.

omprehensive

13.d). Yet, inconsiderate industrial activities, large-scale trawling and clandestine looting threaten the underwater cultural heritage of the ocean, while climate change effects, overfishing, pollution or declining water quality impact the natural marine sites inscribed on

challenges, UNESCO undertakes a number of normative and operational actions to protect the cultural and natural heritage of the oceans and contribute to SDG 14.

The UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage provides a unique international cooperation framework permitting the protection of elements of cultural significance to humanity in all waters, including international waters. A first model case concerning international waters is under way with concerted efforts to protect the Skerki Bank site, located in the Tunisian Exclusive Economic Zone. This model could, among others,

survival of life on Earth. Educating people about oceans is about empowering people, youth in particular, with knowledge, skills, values and attitudes so that they are able to take responsible and informed decisions for the future of our oceans and of our planet.

It is crucial that people are informed and aware of the importance of the ocean to our lives, so that they can grow up caring and protecting our ocean. Education and ocean literacy for all and at all levels should therefore focus on enhancing awareness of the state of our ocean and on action-

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oceans with a view to developing research capabilities in underwater cultural heritage safeguarding and inventorying.

IV. Possible themes for interactive dialogues

UNESCO and its IOC stand ready to contribute to several interactive dialogues, and propose a dialogue on ocean science and capacity development, which would focus on the Plan of Action for the Decade of Ocean Science for Sustainable Development (2021-2030). In addition it stands ready to mainstream science and innovation as a cross cutting element of the interactive dialogues, including through the identification of experts, innovative projects and