



## OCEAN ACTION HUB

### OCEAN FORUM

*Scientific Knowledge, Research Capacity and Transfer of Marine Technology*

*27 March – 17 April 2017*

Background Note - DRAFT

*Target 14.a: Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular Small Island Developing States and least developed countries.*

#### *About the Forum*

The [Ocean Action Hub](#) is hosting a series of online discussion over the course of the preparatory process for The Ocean Conference (5-9 June 2017) in order to engage stakeholders in assessing the challenges and opportunities related to delivering on SDG 14 implementation. Bringing together governments, UN agencies, intergovernmental organizations, international financial institutions, NGOs, civil society organizations, academic institutions, the scientific community, private sector, philanthropic organizations and other actors, each online discussion focuses on one of the agreed Partnership Dialogue themes and implementation of relevant SDG targets and were launched after the conclusion of the Preparatory Meeting in New York (15-16 February 2016). This discussion is focused on increasing scientific knowledge, developing research capacity and transferring marine technology in order to improve ocean health and to enhance the contribution of marine biodiversity to development, SDG Target 14.a.

#### *About Scientific Knowledge, Research Capacity and Transfer of Marine Technology*

##### *Target 14.a*

<sup>1</sup> Scientific understanding is essential to forecast, mitigate and guide the adaptation of societies to the ways oceans affect human lives and infrastructures at different spatial and temporal scales. A range of activities aim at strengthening the global knowledge base on oceans.<sup>2</sup> Most States and relevant organizations have established institutional infrastructures to carry out specific activities or programmes related to marine science, such as oceanographic institutes. They may be national,

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<sup>1</sup> Source: Edited extract from the Background note of the Secretary-General for the preparatory process of the Ocean Conference A/71/212.

<sup>2</sup> Further information is available from the on-line inventory of mandates and activities by UN-Oceans members at: <http://www.unoceans.org/inventory/en/>

regional or global in scope and influence.<sup>3</sup> Several States have developed marine policies that encompass marine science and technology plans and strategies to build the required human and technical capacity. A number of developing countries have also established specific infrastructures regarding marine science and technology but at different levels of development.<sup>4</sup> UN agencies are carrying out activities in relation to strengthening the knowledge base and maintaining information systems covering relevant science fields.

In spite of these efforts, our understanding of the current processes is not keeping up with the pace of changes in the oceans. There is a need to better understand ecosystem processes and functions and their implications for ecosystem conservation and restoration, ecological limits, tipping points, socio-ecological resilience and ecosystem services. In particular, the effects upon biodiversity and ocean productivity from cumulative impacts as well as socioeconomic impacts are often not well understood in order for the adequate political and business decisions to be made.<sup>5</sup>

<sup>6</sup>Many aspects of integrated coastal zone management still present important knowledge gaps. There is also a gap in terms of understanding species and the diversity of marine resources. Data and knowledge gaps exist with respect to pollution, including all aspects of the life cycle of marine debris, plastics and micro-plastics, heavy metals and other hazardous substances. The precise scope of the impacts of acidification on the marine environment remains unclear. There is still limited scientific understanding of the effectiveness and impact of conservation measures, including with regard to their socioeconomic benefits and how marine- and land-based human activities impact their effectiveness.<sup>7</sup> The limited amount of scientific knowledge of areas beyond national jurisdiction means that the extent of impacts and the productivity limits and recovery time of ecosystems and biodiversity in those areas cannot be predicted.<sup>8</sup>

Although monitoring of the oceans is carried out by many processes, the protocols used tend to be different, preventing comparisons and the harmonization of data, thus creating urgent need to have an effective science/policy interface at all levels.<sup>9</sup> The First Global Integrated Marine Assessment and future assessments under the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, provide timely opportunities to help fill these gaps at the global level.

Ocean science needs to apply a holistic approach towards understanding and addressing cumulative impacts of various threats such as climate change, pollution, coastal erosion and over-fishing. This could involve strengthening ocean monitoring, including by building on and expanding existing networks. There are opportunities for enhanced multidisciplinary research, with natural and social scientists working together with holders of relevant traditional and experiential knowledge to better understand the nature of the complex interactions between humans and marine and coastal ecosystems. Comprehensive databases, at all levels are required as well as ocean literacy programmes for communities of practice to share experience within and across regions.

Ocean research or related services and acquisition of sufficient credible scientific data and information are still weak in most countries due to their high cost. National ocean research policies to support sustainable development plans are rare.

Finally, there is a gap in our capacity to effectively measure progress in many areas of SDG 14. Although indicators have been developed for all targets under SDG 14, data gathering is a challenge

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<sup>3</sup> A/65/69.

<sup>4</sup> Ibid.

<sup>5</sup> United Nations, 2016, First Global Integrated Marine Assessment.

<sup>6</sup> Ibid.

<sup>7</sup> CBD COP decision XII/1.

<sup>8</sup> 66/70.

<sup>9</sup> A/65/69.

for many of those indicators. Currently, the Global SDG Indicators Database contains information on only two indicators for targets under SDG 14.<sup>10</sup>

UNCLOS (Part XIV) explicitly supports the transfer of marine technology (TMT). While there is no global mechanism for facilitating TMT activities, they occur through bilateral cooperation among States and through UN bodies and international organizations such as IOC, International Maritime Organization, FAO and the International Seabed Authority (ISA), among others.<sup>11</sup> A reference and guiding document in support of Part XIV of UNCLOS is the IOC Criteria and Guidelines on the Transfer of Marine Technology (CGTMT) which is directly referenced in target 14.a.<sup>12</sup> Most developing States are inadequately equipped to be able to fully benefit from ocean activities and resources and to deal with impacts on the marine environment<sup>13</sup> and continue to express the need for transfer of technology and technical assistance.

States have been encouraged to further use the CGTMT.<sup>14</sup> It has been suggested to develop a dedicated ocean stream on science and technology under the technology facilitation mechanism mandated by paragraph 123 of the Addis Ababa Action Agenda (A/RES/69/313).

#### *Discussion Questions:*

1. What are the **challenges** faced in your community, country or region in achieving Target 14.a aiming to increase scientific knowledge, develop research capacity and transfer marine technology in order to improve ocean health and to enhance the contribution of marine biodiversity to development?
2. What do you see as the **priority actions** which we can all rally around in global 'Calls for Action' in achieving Target 14.a?
3. Please share any **innovative partnerships** - existing or proposed - aimed at increasing scientific knowledge, developing research capacity and transferring marine that you are aware of or involved in that could be launched at the June Ocean Conference and can advance effective actions from local to global levels.

***To participate, post your response in the discussion forum here:***

***<http://www.oceanactionhub.org/ocean-forum>***

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<sup>10</sup> Indicators 14.4.1 and 14.5.1. See <http://unstats.un.org/sdgs/indicators/database>.

<sup>11</sup> The annual reports of the Secretary-General on oceans and the law of the sea report on the transfer of information and data covering a wide range of ocean issues through databases and geographic information systems, many of which are online. Information on the practice of States regarding the transfer of equipment, instruments and vessels is not available, however.

<sup>12</sup> See <http://unesdoc.unesco.org/images/0013/001391/139193m.pdf>.

<sup>13</sup> A/65/69.

<sup>14</sup> A/RES/70/235.