Session title
Galvanising deep-water research to support policy processes in the Western Indian Ocean

Brief background
Mesophotic (>30m) and deep sea (>200m) habitats, hereafter termed deep waters, comprise >95% of habitable space on the planet. Although less known than shallow-water systems, deep waters are also important for the well-being and prosperity of the global population. They provide ecosystem services which vary from supporting the regulation of the climate, to provision of protein for humans and a source of wonder and inspiration. Despite being remote, deep-water habitats are impacted by the consequences of human activities. These span global threats such as the effects of climate change to some damaging fisheries practices, especially those that are illegal, unreported and unregulated; and emerging activities such as seabed mineral extraction.

A recent review of deep-sea research in the Western Indian Ocean (WIO), prepared for the UN Nairobi Convention, identified that all regions, taxa and fields of studies are under-represented in published literature on the deep-sea biology of the WIO (Woodall and Talma, 2021). The extensive nature of this knowledge gap means very little usable information is available for policy makers in the WIO region.

A 2021 study explored the key obstacles that limit exposure to and participation in the field of deep-sea research in South Africa and identified potential pathways of entry and enablers to improve deep-sea research and management capacity (Sink et al. 2021). This study included mesophotic reefs, which are found shallower than the commonly used definition of deep-sea (>200m) but are considered deep-water features.

In the same year, an international team representing 18 institutions from seven countries, including five from the WIO, proposed a framework to aid integration of reefs below 30 m in future WIO management and conservation strategies (Stefanoudis et al., in review). The framework consists of policy recommendations and linked actions, which have all been identified by WIO stakeholders as a priority, across three themes: Capacity, Information Collection, and Information Sharing.

At our proposed special session we will directly address some of the most important recommendations and actions identified in both studies to support further development of deep-water research in the WIO. In addition, we will take a deeper dive into understanding what the key barriers to developing capacity in deep-water research in the WIO are and identifying potential solutions to address these.

Session objectives
- Identify priority deep-water research questions for the WIO (theme Information Collection).
- Identify key barriers and enablers for developing capacity in deep-water research in the WIO (theme Capacity).
- Explore opportunities to create a WIO-shared equipment facility (themes Capacity and Information Sharing).
- Explore possibilities in deploying new and affordable deep-water equipment for research and monitoring (theme Capacity).

The actions outlined above directly address United Nations Sustainable Development Goals 4.7 (acquire knowledge and skills needed to promote sustainable development), 14.a (increase scientific knowledge, research and technology for ocean health), 17.6 (enhance regional and international cooperation on and access to science, and technology), and 17.9 (enhance international support for implementing effective and targeted capacity-building). They also address Ocean Decade Challenge 9 (skills, knowledge and technology for all) of the UN Decade of Ocean Science for Sustainable Development (2021-2030).

Targeted audience
Researchers; Technicians; Conservationists; Marine Managers; Policy-makers.

Tentative session programme

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<tr>
<th>Time</th>
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<tr>
<td>11h00-11h05</td>
<td>5mins</td>
<td>Introduction</td>
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| 11h05-11h25| 20mins   | Presentation 1
Deep-water research in the WIO (overview by multiple researchers) |
| 11h25-12h10| 45mins   | Round table discussion*: Deep-water research
Identify priority deep-water research questions for the region.
Discuss plans for a white paper to support funding acquisition. |
| 12h10-12h20| 10mins   | Presentation 2       |
Expected outputs

The overarching expected outcome from the workshop will be the promotion of deep-water research in the WIO. Specific outputs of the workshop will include:

- Written summary of discussions on WIO shared equipment facility.
- Written summary or white paper on important deep-water research questions for the WIO.
- Written summary or report on key barriers and enablers for deep-water research capacity development in the WIO.

Note that the outcomes of the special session will feed into similar-themed efforts taking place through 2022 and beyond, including a WIOMSA-supported deep-water webinar that took place in April, as well as a possible MASMA-funded workshop to be tentatively held in November-December 2022. Both of these events aim to promote deep-water research and literacy in the WIO, through education, networking, data collection, and research training. In addition, insight on capacity development needs and possible solutions will feed into the UN Decade endorsed Challenger 150 programme (https://challenger150.world/), which is focused on connecting and coordinating biological research in the deep-sea over the course of the Decade, to direct activities in the region.

Organisers

In alphabetical order: Anthony Bernard (SAIAB, South Africa); Jean Harris (WILDTRUST, South Africa); Kerry Howell (University of Plymouth, UK); Kirsty McQuaid (South African National Biodiversity Institute, South Africa; University of Plymouth, UK); Kennedy Osuka (CORDIO East Africa, Kenya); Toufiek Samaai (Department of Forestry, Fisheries and Environment, South Africa); Kerry Sink (South African National Biodiversity Institute, South Africa; Nelson Mandela University, South Africa); Paris Stefanoudis (University of Oxford, UK; Nekton Foundation, UK); Sheena Talma (Talma Consultancy, Seychelles; Nekton Foundation, UK; Save our Seas Foundation, Seychelles); Lucy Woodall (University of Oxford, UK; Nekton Foundation, UK).

References