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LETTER

Stakeholder-derived recommendations and actions to support deep-reef conservation in the Western Indian Ocean

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Abstract

Deep reefs below 30 m provide essential ecosystem services for ocean health and human well-being such as food security and climate change resilience. Yet, deep reefs remain poorly researched and largely unprotected, including in the Western Indian Ocean (WIO). Here, we assessed current conservation approaches in the WIO focusing on deep reefs, using a combination of online surveys and semi-structured interviews. Results indicated that deep-reef data are sparse and commonly stemming from non-peer-reviewed or non-publicly available sources,

and are often not used to inform conservation of WIO marine protected areas. Based on those findings, we co-developed a framework with WIO stakeholders comprising recommendations linked to specific actions to be undertaken by regional actors to improve the capacity of the region to collect and share deep-reef information. We hope this framework will enhance deep-reef stewardship and management throughout the WIO and thus aid sustainable blue economic growth in the region.

KEYWORDS
capacity, cold-water corals, interview, mesophotic coral ecosystems, online survey, public engagement, rariphotic, stakeholders

INTRODUCTION

Covering over 30 million km^2 (8.1%) of our global ocean (Obura et al., 2017), the Western Indian Ocean (WIO) is one of the most threatened marine regions worldwide (Cai et al., 2013). The region consists of five mainland countries (Kenya, Mozambique, Somalia, South Africa, and Tanzania), four island countries (Comoros, Madagascar, Mauritius, and Seychelles), and three French overseas territories (La Réunion, Mayotte, and îles Éparses). The WIO provides important benefits to the 220 million people who live there including half a million people who rely solely on artisanal fishing for their livelihoods (Obura et al., 2017). However, human activities are already impacting marine ecosystems in this region (Freed & Granek, 2014), and this impact is expected to worsen as human populations are projected to double over the next 30 years (Celliers & Ntombela, 2015; UN World Population Prospects, 2021). Therefore, conservation, stewardship, and sustainable management of ocean resources is imperative to creating a prosperous and resilient WIO, which is essential to supporting thriving societies (Obura et al., 2021).

Marine protected areas (MPAs) have been shown to conserve biodiversity and promote sustainable fisheries, while evidence is accumulating that they can enhance adaptation and resilience to the effects of climate change (Reimer et al., 2021; Roberts et al., 2017). Despite recent conservation advances in the WIO (UNEP-Nairobi Convention & WIOMSA, 2021), only ~4.3% of its waters (including High Seas) are designated as MPAs, of which ~2.1% are fully or highly protected (i.e., no or low-impact extraction activities are allowed) (Marine Protection Atlas, 2021).

Coral reefs are a worldwide priority for conservation (Díaz et al., 2019), including those of the WIO that are widely recognized as marine biodiversity hotspots with high endemism (Obura, 2012; Richmond, 2002). However, deep reefs, including mesophotic (30–150 m), rariphotic (150–300 m; sensu Baldwin et al., 2018), and cold-water coral reefs (> 300 m), are underexplored and underprotected, despite providing many essential services such as food production and acting as refuge for some organisms threatened in shallow water, including commercially important species (Holstein et al., 2019; Lindfield et al., 2016), and despite the unique biological communities they harbor that warrant targeted conservation efforts (Rocha et al., 2018). Furthermore, they are notably underexplored in the WIO (Pyle & Copus, 2019) due to high ship-based costs and challenging logistics involved with studying them (Osuka et al., 2021), and due to the widespread impression that they face few threats by simply being deep, despite evidence to the contrary (Frade et al., 2018). Consequently, less data are available than for shallow reefs, and deep reefs are rarely used to inform management and conservation activities (UNEP-Nairobi Convention & WIOMSA, 2021). At present, most deep and offshore reef habitats are unprotected (Marine Protection Atlas, 2021; UNEP-Nairobi Convention & WIOMSA, 2021). The few protected deep reefs are included incidentally due to geopolitical boundaries and rarely explicitly included in management plans and designation targets (Turner et al., 2019).

The purpose of this study was to identify knowledge gaps in current conservation approaches in the WIO, focusing on coral reef ecosystems found below scuba diving depths (>30 m). To achieve this, we reviewed MPA characteristics in the WIO to determine whether their design criteria and management also include deep reefs. Based on those findings, and in consultation with marine professionals from the WIO, we co-developed practical recommendations for how deep reefs might be better integrated into future management and conservation initiatives. Thus, this study aims to provide practical guidance to all those involved with ocean stewardship in the WIO, including resource managers, policy makers, scientists, cultural practitioners, and educators, from government agencies, academic institutions, community-based

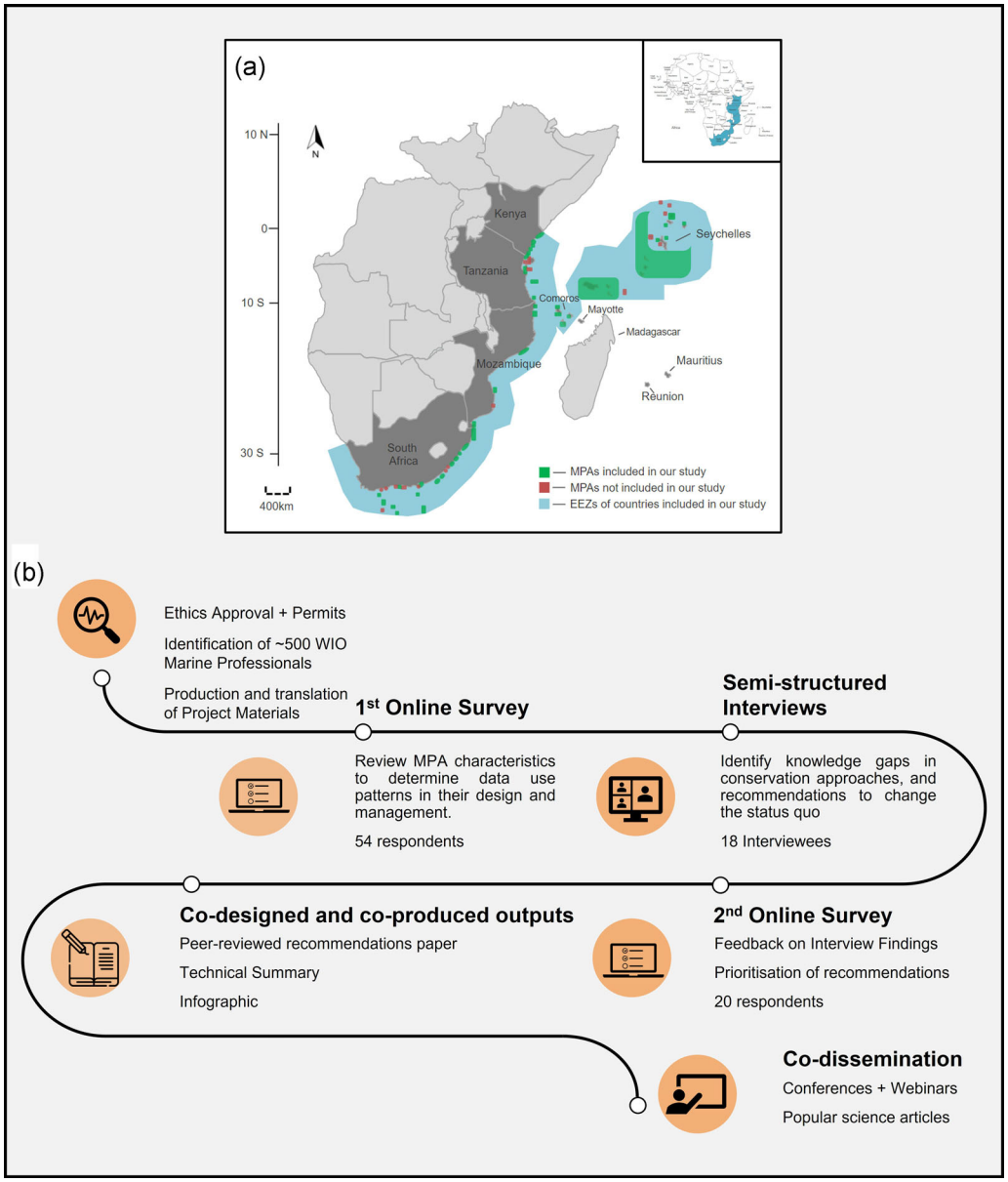

FIGURE 1 Methods summary: (a) Map of the six focal nations and the marine protected areas included (green) in the present study (b) The study's list of actions in chronological order

organizations, non-governmental institutions, cultural groups, and the private sector.

1 | MATERIALS AND METHODS

The present study focused on MPAs (including committed, designated, implemented, and actively managed) located in the exclusive economic zones (EEZs) of six WIO countries: Comoros, Kenya, Mozambique, Seychelles, South Africa (Indian Ocean Coast), and Tanzania (Figure 1a). Country selection was due to some deep-reef research having been conducted previously in those locations, as well as due to established networks of collaborators by the present authorship in those countries, which made it easier to identify and invite the most appropriate individuals during the next stages of the project.

To compile a comprehensive list of marine professionals relevant to the current study's objectives (Figure 1b), we contacted authors of peer-reviewed papers focusing on WIO MPAs and utilized our own networks, briefed them on the proposed research, asked for feedback on the project, and requested contact details of individuals who could provide an informed opinion. Then, we developed an online survey (University of Oxford Ethics Approval Number: R75501/RE001) to collect information on the processes

inherent to the design and management of MPAs in the WIO (Appendix S1). The first survey ran between 14 and 28 May 2021 and was sent to 460 marine professionals in the region, 54 of whom participated (response rate: 12%). Subsequently, 18 semi-structured interviews were conducted between 21 June and 4 August 2021. (Note that six interviewees did not complete the first survey but were included because they were suggested by other interviewees.) The number of interviews conducted was restricted by the project timeline; however, the composition of the interviewees ensured that as many MPAs as possible were covered, while also ensuring a broad geographic and stakeholder representation from the selected WIO countries (Table S1). During interviews, we sought to explore responses received in the first survey to understand the use of deep-reef data in current conservation and management approaches. We also asked interviewees for recommendations on improving deep-reef consideration in the WIO (Appendix S2). Subsequently, we distributed a second online survey (20 September to 3 October 2021) to the total of 60 marine professionals who took part in the previous online survey and semi-structured interviews, summarizing key findings from the semi-structured interviews, and categorizing them into four themes: Science, Capacity, Outreach and Education, and MPA Planning Process. During this second online survey, we presented the recommendations from the semi-structured interviews, and asked participants to provide feedback and rank them according to priority (Appendix S3). Overall, 20 participants took part in this survey (response rate: ~33%). Based on the responses, we then identified a list of practical actions that would complement those recommendations which we present here. The second online survey participants were invited to co-author the present publication, 12 of whom decided to do so (from CNO, KM, JDM, LMO, NEM, KEO, MS, NS, TS, ET, AT to FZ). Furthermore, dissemination of results is ongoing and already includes popular science articles and conference presentations. A visual summary of the methodological steps is shown in Figure 1b.

All materials (survey questions, participant information sheets, recruitment emails) were available in English, French, and Portuguese, and semi-structured interviews were conducted in all three languages based on the preference of interviewed experts.

2 | RESULTS AND DISCUSSION

A breakdown of survey and interview participants by country (based on institutional affiliations) and employment role can be found in Table S1.

2.1 | First online survey

Fifty-four participants provided information on protected areas they helped design, designate or manage, resulting in 97 reports that corresponded to 45 MPAs. The actual number of MPAs covered by participants is greater than this, since some respondents provided information based on their involvement with national marine spatial planning exercises. The majority (61%) of respondents provided information on one MPA, 35% on two to five MPAs, and 4% on more than five MPAs.

Regarding data sources used to inform MPA planning, technical reports were used most often (77% of all responses), followed by scientific literature (76%), expert opinion (76%), stakeholder knowledge (75%), anecdotal evidence (48%), ocean exploration data (48%), and policy briefs (30%). When deep-reef data was used to inform MPA planning (71% of responses), technical reports remained the most-used data source (64%), followed by scientific literature (56%), unpublished datasets (56%), anecdotal evidence (47%), global or regional databases (50%), and policy briefs (21%). Note that 29% of responses relating to MPAs that extended >30 m indicated that no deep-reef data were used to inform planning. When asked why that was the case, 59% of participants indicated unavailability of deep-reef data, while 41% were unsure. Notably, when deep-reef data were incorporated, 60% of respondents considered it very useful for the planning process, 33% partly useful, and 7% not useful. The online survey revealed one remarkable finding: MPA depth range was known for only 48% of the responses, with 10% being merely approximated and 42% being unknown.

2.2 | Semi-structured interviews and recommendations

During semi-structured interviews, we sought to better understand some results from the first online survey, for example, why specific datasets are more commonly used to inform deep-reef management (see Appendix 2 for full list of questions). A summary of those responses grouped into different themes is available in Appendix S4 and adds nuance to the state of deep-reef science and awareness in the WIO, and the factors driving the current status quo. Based on the content of the semi-structured interviews, we then tried to compile recommendations to aid WIO deep-reef conservation (Appendix S4). In Table 1, we illustrate how content from the semi-structured interviews was used to form those recommendations. Subsequently, during the second online survey, these recommendations were then ranked in terms of urgency and importance to aid future conservation and management strategies of deep reefs in

TABLE 1 Illustrative example of how content from the semi-structured interviews led to the recommendations that were then ranked for importance during the second online survey. The quotes below are in response to the question "Do you have any suggestions to make that would improve the inclusion of deep reefs in MPAs?"

Example Quotes from Interviewees	Resulting Recommendation
"It really depends on technology being available." "We do not have the equipment to inform us on what is happening down there." "The first thing is equipment and people working on those"	Create opportunities for sharing resources to enhance and widen access to and exploration of deep reefs.

the WIO (Table S2). After rewording and merging of some of the ranked recommendations to improve clarity and reduce overlap, the final set of recommendations is presented in Table 2. For each recommendation, we suggest actions and relevant parties to help with their implementation. While we acknowledge that some recommendations could be assigned to more than one theme, for clarity we have assigned them under the one where we felt they were most relevant.

2.3 | Theme 1: Capacity

Implementation and cost was identified as a major obstacle of deep-reef research, therefore creating opportunities that promote and widen access to these ecosystems is a top priority (Recommendation 1). Pools of shared equipment would enhance access to marine ecosystems, including deep reefs (Action 1). Similar models of pooled equipment sharing have been successful in the United States (Woods Hole Oceanographic Institute Shared Facilities), the United Kingdom (National Oceanography Centre Marine Equipment Pool), and South Africa (Acoustic Tracking Array and Marine Remote Imagery Platforms managed by the South African Institute for Aquatic Biodiversity), among others. There is a need for a new WIO-focused shared equipment facility embracing innovative and cost-effective deep-sea technologies (Palmer et al., 2021; Phillips et al., 2019) to enhance field research capabilities in the region. This would require a dedicated effort to identify the region's research needs, the equipment required to address those needs, and the institutions and individuals that would commit spearheading such an initiative. An endorsement from international programs like the UN's Decade of Ocean Science for Sustainable Development (2021–2030) would further help raise its profile and enhance funding acquisition. Furthermore, more training and ship-time opportunities for researchers, particularly early-career scientists, are required to enhance capacity and readiness for the regional adoption of such a shared facility (Action 2). Successful examples of past training initiatives in the WIO include the SAPPHIRE project, the SANOCEAN program, the Floating University Project, the SEAmester programme, and the SOLSTICE-WIO project (Palmer et al., 2021).

A crucial step toward reducing reliance on foreign expertise is the establishment of mechanisms that foster regional networking and collaboration (Recommendation 2). To that end, creating working groups inside existing regional organizations such as the Western Indian Ocean Marine Science Association (WIOMSA) will connect marine professionals active in deep-reef research and conservation (Action 3). For example, organizers of a WIO-focused meeting could convene a call of interested parties to develop of such a regional network. Women in WIOMSA successfully used this approach to establish the Women in Marine Science Network during the 10th WIOMSA Symposium in 2017. Another action to foster regional cooperation is creating a database providing information on past and current deepreef research and conservation efforts in the WIO (e.g., data and biological samples collected, data availability) and the marine professionals involved (Action 4). This database could be hosted and managed by a regional professional network such as WIOMSA.

Furthermore, to ensure data collected in the region are comparable, we suggest standardizing deep-reef surveying methods (Recommendation 3). This would enable regional data syntheses and produce data products that could aid marine spatial planning initiatives. To achieve that, the first step is to follow established field manuals for marine surveying and monitoring (e.g., Clark et al., 2016; Australia's Marine Biodiversity Hub; but also consider the continuously updated Intergovernmental Oceanographic Commission's Ocean Best Practices repository) and adapt to deep-reef settings (Action 5). Going forward, a WIO-specific monitoring protocol could be established that would consider low-cost options to survey deep reefs (Dominguez-Carrió et al., 2021; Phillips et al., 2019). This regional protocol could focus on how to monitor regionally important essential ocean variables and essential biodiversity variables (Muller-Karger et al., 2018), as determined by the Indian Ocean Global Ocean Observing System. Moreover, a series of regional workshops on surveying,

TABLE 2 Recommendations and linked actions per theme along with suggested parties (Funding Agencies, Government, Institutions, Research Community) to implement them. Institutions include academic and non-academic entities (e.g., non-governmental organizations). Research Community includes individual scientists, research groups, and research societies

	Rationale and recommendations by theme	Proposed actions
No.	Theme 1: Capacity	
1	Create opportunities for sharing resources to enhance and widen access to and exploration of deep reefs.	Action 1*: Create a shared equipment facility that meets the research needs of WIO institutes involved in the surveying of deep reefs. Embrace new cost-effective technologies for deep-sea research. *Government, Institutions, Research Community*. Action 2*: Create opportunities for WIO scientists, including early-career researchers, to be on vessels and to conduct deep -reef research using a wide range of technologies and equipment. *Institutions, Research Community*.
2	Reduce dependence on foreign expertise, by establishing structures that promote regional networking and collaboration.	Action 3: Create working groups within existing regional organizations, e.g., WIOMSA to connect marine professionals involved in deep-reef research and conservation. *Research Community*. Action 4*: Develop a database with information on past and ongoing research and conservation efforts focused on deep reefs in the WIO, and the marine professionals involved. *Institutions, Research Community*.
3	Standardize methodology for surveying deep reefs to allow for regional data syntheses that support resource management.	Action 5: Evaluate existing marine monitoring manuals and adapt where necessary to prioritize deep-reef data collection that aligns with WIO priorities or to incorporate cost-effective equipment options. *Research Community*. Action 6*: Hold deep reef-focused regional workshops and training courses in the WIO to standardize survey, sampling and taxonomic identification methodologies, enhance collaborations, and accelerate data processing. *Institutions, Research Community*.
	Theme 2: Information collection	
4	Limited existing knowledge on deep reefs hinders their appreciation and prioritization in marine spatial planning, and thus requires more information on their functioning and value to society.	Action 7*: Promote foundational, fundamental, and applied research on WIO deep-reef biodiversity, ecosystem functioning and provided services. Prioritize research that is directly relevant to decision-making for ecosystem-based management, including marine spatial planning, MPA design, fisheries, and the associated management activities. *Funding Agencies, Government, Research Community*.
5	International projects should be co-designed and co-produced with local stakeholders and communities in order to ground truth assumptions, build capacity, foster knowledge exchange, and ensure local buy-in.	Action 8*: Ensure WIO-centered international projects focusing on deep reefs are inclusive of regional scientists and follow best practices for effective collaboration. *Government, Funding Agencies, Research Community*.

(Continues)

TABLE 2 (Continued)

	Rationale and recommendations by theme	Proposed actions
6	Foster collaborations with a wide diversity of stakeholders to enhance access to deep-reef ecosystems and relevant data.	Action 9: Learn from successful cross-stakeholder collaborations, including those between researchers and managers from government agencies, academic institutions, nongovernmental institutions, and the private sector. Organize webinar(s) on how to foster such transdisciplinary collaborations for future deepreef research in the WIO, with individuals who have participated in successful programs in the past (both in the WIO and beyond). *Research Community*.
	Theme 3: Information sharing	
7	Enhance visibility and appreciation of deepreef ecosystems, by developing communication outputs customized for specific audiences.	Action 10*: Generate a variety of communication outputs that focus on deep reefs in the WIO and globally, the style and content of which will change depending on the target audience, e.g., science, technology, engineering, and mathematics material and activities for pupils; openly available online course aimed at university students that is embedded within curricula across the region; social media campaigns and story maps for the general public; webinars within existing regional professional networks and themed sessions in regional conferences such as WIOMSA Symposia; oral presentations, policy briefs, factsheets during regional policy forums such as the UNEP-Nairobi Convention. *Funding Agencies, Institutions, Research Community*. Action 11: Develop a centralized repository to host and distribute deep-reef content, as well as coordinate messaging around deep reefs. *Institutions, Research Community*.

Note: Asterisk indicates authorship's involvement in efforts to address an action.
Abbreviations: WIO, Western Indian Ocean; WIOMSA, Western Indian Ocean Marine Science Association.

sampling, and taxonomic identification protocols would also result in data and analysis standardization among WIO scientists, as well as promote regional collaboration and provide early-career training opportunities. For example, regional taxonomic workshops, held in-person (Stefanoudis et al., 2020) or online (Haupt et al., 2022), have expedited biological sample identification and marine imagery annotation and provided training to several WIO early-career scientists (Action 6).

2.4 | Theme 2: Information collection

One recurring theme in the semi-structured interviews was the current knowledge gap on WIO deep reefs (Appendix S4), except for South Africa (Benayahu et al., 2019). This leads to limited deep-reef awareness and appreciation among stakeholders and the public (Appendix S4), resulting in very few deep reefs being included in MPAs (UNEP-Nairobi Convention & WIOMSA, 2021). Consequently, there is a need for basic deep-reef research throughout the WIO to establish baseline information (e.g., species lists, Fassbender et al., 2021; habitat classifications, Osuka et al., 2021) (Recommendation 4; Action 7). More applied research avenues, such as focusing on deep-reef ecosystems functioning and their links to shallow reefs (Stefanoudis et al., 2020), or defining ecosystem services provided (Holstein et al., 2019) and their monetary value (e.g., Armstrong et al., 2012), will help reach a broader audience outside academia. Research outputs should be tailored to the needs of sustainable management and conservation priorities (e.g., modelling

deepreef distribution to prioritize Australia's marine reserve design; Bridge et al., 2020), which will require effective communication between scientists, marine practitioners, and policy makers. Regional symposia and meetings between these stakeholders should be conducted regularly to break through silos.

As deep-reef exploration is costly, much of the existing deep-reef knowledge in the WIO stems from international collaborations (Osuka et al., 2021; Stefanoudis et al., 2022). Therefore, it is important to ensure that parties of international research ventures work together to jointly frame the research agenda, co-conduct fieldwork, and collaborate post-fieldwork for the data analysis, interpretation, and dissemination of results (Recommendation 5; Action 8). This will lead to several positive outcomes for everyone involved, including knowledge and skills transfer between international and local researchers, as well as research outputs that are locally relevant. While there are best practices from past international marine projects (Rayadin & Buřivalová, 2021; Woodall et al., 2021), future projects should be fine-tuned depending on the unique local context. Some successful WIO examples meeting the above criteria are the African-German initiative MeerWissen or the UK-Seychelles Nekton Mission.

Collaborations with a variety of stakeholders engaged in the region, both from the public and private sector, can enhance access to deep-reef ecosystems and relevant data (Recommendation 6). For example, the SERPENT project (Scientific and Environmental ROV Partnership using Existing iNdustrial Technology) promotes collaboration with oil and gas companies, where researchers use industrial remotely operated vehicles to acquire deep-sea data, including from western and eastern central Africa (Gates et al., 2017). Going forward, webinars discussing how to foster such collaborations should be organized (e.g., Reef Resilience Network webinar series), inviting speakers who have successfully participated in similar transdisciplinary projects in the WIO and beyond (Action 9).

2.5 | Theme 3: Information Sharing

The semi-structured interviews identified a perceived gap in public awareness of the value of deep reefs to human well-being and prosperity (Appendix S4). To change that, we propose generating a suite of communication outputs customized to the target audience (Recommendation 7; Action 10). For example, providing science, technology, engineering, and mathematics (STEM) materials for teachers and holding activities with primary and secondary school students have both been successful methods of raising awareness on coral reefs and deep-sea exploration in the WIO (e.g., PAREO project and EncounterEdu, respectively). University students would benefit from an academic online course introducing them to the taxonomy, ecology, and biodiversity of deep habitats (particularly deep reefs) in the WIO and internationally. The course should be developed and delivered by regional academic partners and included as an approved module into existing academic curricula of WIO universities. Opening up the course to all (i.e., massive open online course, MOOC) would maximize deep-reef literacy across the region, as has been shown from similar ocean-focused MOOCs (Fielding et al., 2019; Santin & Santoro, 2017), including those with a focus in the WIO (Jacobs et al., 2021).

Marine professionals, including conservationists, managers, and researchers, could best be reached via webinars, workshops, and conferences. For example, webinars could target groups with a focus on marine conservation and protection (e.g., Western Indian Ocean Marine Protected Areas Management Network) and showcase findings from recent deep-reef expeditions in the WIO or highlight relevant MPA case studies (e.g., uThukela Banks MPA in South Africa). Furthermore, holding special sessions within regional conferences, as done during the 2021 WIOGEN Ocean Governance Conference, can help raise the profile of deepreef biodiversity and conservation.

Popular science articles or blog posts in regional (e.g., WIOMSA magazine: People and the Environment) or international publications (EcoMagazine; The Conversation) coupled with high-quality imagery showcasing the deep-reef biodiversity could enhance visibility and raise awareness of those habitats among eco-conscious communities. Moreover, social media campaigns, story maps, infographics, and short (2–3 min) videos can be effective in galvanizing interest among the public and policy makers and can be used in complement to traditional media content.

For scientists and policy makers, it is important to explicitly communicate deepreef ecosystem services and their linkages to human well-being and prosperity at regional policy fora such as UNEP's Nairobi Convention's Science to Policy Platform. This could help support consideration for prioritizing deep reefs within integrated regional development plans, current examples being the Great Blue Wall and the WIO Resilience and Prosperity Initiative.

Finally, depositing all of the above content into a regionally accessible repository would help streamline deep-reef messaging across WIO stakeholders (Action 16).

3 | CONCLUDING REMARKS

Based on our results, we propose a framework to aid integration of deep reefs in future WIO conservation strategies (Figure 2). The framework starts with acknowledgement

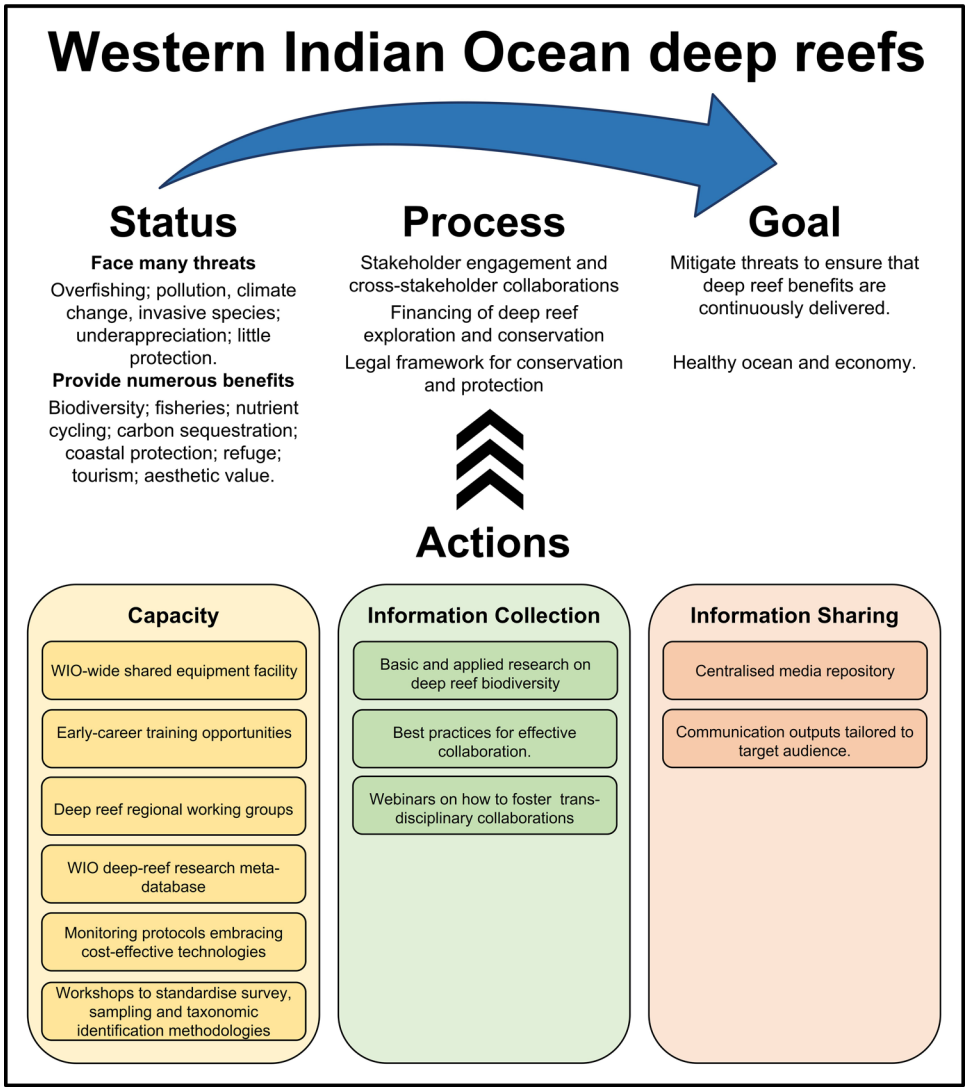

FIGURE 2 Recommended framework for the successful integration of deep reefs into future Western Indian Ocean (WIO) conservation plans. The framework first identifies the current status of deep reefs and then outlines the process needed to achieve a healthy ocean and economy, which is dependent on healthy deep reefs, by identifying key sectors (stakeholders, finance, legal) needed to reach that goal. A series of actions feeding into that process are presented per theme (Capacity, Information Collection, Information Sharing) and correspond to those presented in Table 2.

of the current status of deep reefs in the WIO, and outlines the process, comprising a series of specific actions per theme (Capacity, Information Collection, Information Sharing), via which regional stakeholders can achieve the end goal of healthy deep reefs, and hence, a healthy ocean and economy. Notably, although the framework focuses on deep reefs, it can be adapted to aid conservation of any data-poor marine habitat. Its success hinges on the ability to meaningfully engage the diverse groups of stakeholders that are working on and depend on WIO ocean resources. Given the large knowledge gaps that still exist, as well as the high costs of surveying deep reefs, no single stakeholder will be able to undertake this alone. Hence, cross-stakeholder collaborations and co-production of the actions recommended in this study is crucial to effectively navigate the research, financial and legal landscape linked with deep-reef conservation.

AUTHOR CONTRIBUTIONS

Paris V. Stefanoudis, Daniel Wagner, and Lucy C. Woodall conceived and designed the study, and Sheena Talma, Nico Fassbender and Denise Swanborn helped develop it. Paris V. Stefanoudis prepared and distributed the online surveys and obtained the relevant ethics approvals. Paris V. Stefanoudis and Sheena Talma conducted the semi-structured interviews with the help of Denise Swanborn.

Christine Nyangweso Ochieng, John D. Komakoma, Levy M. Otwoma, Nsajigwa Emmanuel Mbije, Kennedy E. Osuka, Melita Samoilys, Nirmal Shah, Toufiek Samaai, Evan Trotzuk, Arthur Tuda, AND Francisco Zivane took part in the online surveys and/or semi-structured interviews, and were essential in drafting the initial set of recommendations. Paris V. Stefanoudis processed the data and prepared the figures with the help of Nico Fassbender. Paris V. Stefanoudis, Sheena Talma, Nico Fassbender, Denise Swanborn, Daniel Wagner, and Lucy C. Woodall drafted the manuscript. All authors reviewed the manuscript and gave final approval for publication.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available in the Supporting Information of this article.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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