

OCEAN SCIENCES PROGRESS REPORT

Compiled by Professor Heather Nel

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1. INTRODUCTION AND PURPOSE OF THE REPORT

The purpose of the report is to brief the Management Committee (MANCO) and other key stakeholders on progress as it relates to Ocean Sciences as a key strategic trajectory of Nelson Mandela University. In pursuit of its vision to be a dynamic, African university recognised for its leadership in generating cutting-edge knowledge for a sustainable future, Nelson Mandela University aspires to be a destination of choice for Ocean Sciences on the African continent.

To this end, the overarching Ocean Sciences strategy is underpinned by the following key pillars, namely to:

- Scale up current and potential ocean sciences academic offerings through incremental adaptations to existing programmes, qualifications, and modules, including developing *de novo* inter- and transdisciplinary qualifications at under- and postgraduate levels.
- Develop short learning programmes (SLPs) that respond to the continuing professional development needs of various sectors of the ocean's economy locally, regionally, nationally, on the African continent and globally.
- Harness inter- and transdisciplinary research and innovation strengths and capabilities aligned with ocean sciences thematic areas that contribute to addressing global sustainability challenges confronting our oceans.
- Promote extensive and ongoing engagement with relevant ocean sciences stakeholders to forge mutually beneficial quintuple helix partnerships with civil society, industry, government, and other post-school educational institutions nationally and internationally.
- Develop a resourcing model that promotes the long-term sustainability and responsiveness of the University as it seeks to advance inter- and transdisciplinary ocean sciences scholarship and engagement.

2. PRINCIPLES INFORMING THE OCEAN SCIENCES STRATEGY AT NELSON MANDELA UNIVERSITY

The implementation of the Ocean Sciences strategy continues to be informed by various principles, most notably that it encompasses the three spheres of **sustainability**, i.e. environmental, social, and economic. In this way, the University aims to contribute to national efforts to unlock the economic potential of South Africa's oceans for the benefit of local

communities while conserving marine biodiversity and ecological integrity. At the same time, the health of our oceans is crucial not only for human social and economic prosperity but also for planetary sustainability. In this regard, the nexus between ocean health, biodiversity and climate stability is of critical concern.

This aligns with the [United Nations 2030 Sustainable Development Goals](#), especially [Goal 14](#), which aims to “*Conserve and sustainably use the oceans, seas and marine resources for sustainable development*”. The expansion of protected areas for marine biodiversity and existing policies and treaties that encourage responsible use of ocean resources are still insufficient to combat the adverse effects of overfishing and ocean acidification due to climate change. The UN correctly notes that billions of people depend on the oceans for their livelihood and food security and, given the transboundary nature of oceans, increased efforts and interventions are needed to conserve and sustainably use ocean resources at all levels.

Universities in Africa are expected to contribute to addressing the developmental needs of the continent through active civic engagement and social responsiveness. One of the key priorities of the [African Union Agenda 2063](#) is to aspire towards “*A Prosperous Africa, based on Inclusive Growth and Sustainable Development*” and this requires a dedicated focus on addressing persistent, real-world challenges facing the continent such as food security, resource scarcity, global change, conflict, poverty, rapid urbanisation and the burden of disease. To this end, [Goal 6 of Agenda 2063](#) prioritises the blue economy for accelerated economic growth with a focus on marine resources, energy, port operations, and marine transport.

Nelson Mandela University embraces efforts to give practical expression to its **African identity and rootedness** whilst remaining an integral part of an increasingly interconnected global community of scholars. This involves the promotion of innovative African-purposed curricula, learning and teaching, research, innovation, and engagement that draw on the rich cultural and biological diversity of Africa’s coastline and oceans and our unique geographical location.

As one of six comprehensive universities in South Africa, the University seeks to expand the frontiers of knowledge and harness the contribution of a wide range of disciplines from certificate to doctoral levels to facilitate **inter- and transdisciplinarity**. There is growing awareness that multiple viewpoints are best suited to address complex “wicked problems”,

which are difficult to define and have no clear solution (Peters, 2017: 386; Miller, 2016: 45). In addressing interconnected societal issues, transdisciplinarity seeks to bridge disciplinary divides to synthesise the generative and integrative potential of multiple knowledge paradigms in co-creating socially responsive solutions to intractable challenges.

The University is experimenting with the flexible design of **multi-purpose spaces** to optimise synergies. Through the co-location of academics, research chairs, postgraduate students, research and engagement entities, and postdoctoral fellows in spatial precincts on the Ocean Sciences Campus, the University is intentionally fostering pioneering, boundary-spanning inter- and transdisciplinary postgraduate studies, research, innovation, and engagement across all faculties.

It is acknowledged that the University is no longer the single source of knowledge and expertise but constitutes a node within a network of **quintuple helix partnerships**, spanning local, regional, national, continental, and global domains. The quintuple helix model is an enhancement of the quadruple helix perspective that focuses on the contributions of academia, government, industry, and civil society as important stakeholders. The relationships between the actors are the context for achieving value-creating outcomes that none of the parties could have achieved alone ([Hasche, Höglund & Linton, 2019: 3-5](#)). Environmental issues have become increasingly critical due to the problems of climate change and the need to decrease the greenhouse effect ([Chen, Chien, & Hsieh, 2013](#)). In this context, the quintuple helix has emerged as a transdisciplinary perspective that strives to achieve a sustainable balance between the development paths of society and the economy, with their natural environments ([Carayannis & Campbell, 2011](#); [Mineiro, de Souza & de Castro, 2021](#)).

This aligns well with the intentions of Mandela University to position itself as a transformative, responsive university where engagement is conceptualised as convergence or the coming-together of university and community to co-create knowledge through real-life programmes that make a difference to ordinary people ([Muthwa, 2018](#)). The infrastructural development and spatial plan for the Ocean Sciences Campus ensures that current and future developments progressively build towards creating a **conductive ecosystem for convergence** or dedicated physical spaces where university staff and students can come together with local communities, government, and industry to address multi-faceted sustainability challenges. The University is optimising the utilisation of the state-of-the-art science centre, facilities, and

entities on the Campus to host public lectures, seminars, and conferences to reach out to multiple stakeholders to promote a **national maritime consciousness** and inspire the youth to pursue ocean sciences qualifications and careers.

A further principle embedded in the University's Ocean Sciences strategy is the **hub and spokes model**, where the Ocean Sciences Campus is one of seven campuses of Nelson Mandela University and serves as a "hub" for transdisciplinary ocean sciences postgraduate studies, research, and innovation. This complements the undergraduate ocean sciences offerings located on the other six campuses in Gqeberha and George, as well as the research, innovation, and engagement undertaken by faculties at various other facilities and sites across the city such as the ports, industrial development zones, the Cape Recife conservancy, Algoa Bay, Sundays River and beyond. In this way, the phased development of the Ocean Sciences Campus to establish it as a centre of excellence will not detract from the resource capabilities and assets already available on other campuses.

The principles articulated above inform the updated ocean sciences strategy, including the design of an ocean sciences governance and management model that facilitates inter- and transdisciplinarity and interfaces seamlessly with institutional and faculty-level governance and management arrangements. The University has established interim governance and management arrangements for Ocean Sciences to oversee strategy implementation.

3. INTERIM GOVERNANCE AND MANAGEMENT ARRANGEMENTS FOR OCEAN SCIENCES

In April 2024, the Vice-Chancellor's Office announced that the Executive Committee of Council had approved the appointment of an **interim Head of Ocean Sciences** from 1 March 2024 to 30 December 2024. This arrangement aimed to ensure continued oversight of this important strategic trajectory while the governance and management model for Ocean Sciences was being finalised by Executive Management. Strategic funding is allocated annually by the University to appoint the Head of Ocean Sciences and an administrative assistant on short-term contracts to constitute the **Ocean Sciences Project Office**.

A workshop with key stakeholders was held on 17 July 2024 to table a proposal on the composition and terms of reference of the **Ocean Sciences Stakeholder Forum**. This was supported subject to minor amendments being implemented whereafter the revised remit of the Forum was submitted to MANCO for approval on 14 August 2024. Executive

management approved the establishment of the **Ocean Sciences Stakeholder Forum (OSSF)** to fulfil the following functions:

- Advise on developing, implementing, and monitoring the University's Ocean Sciences strategy.
- Foster inter- and transdisciplinary collaboration to ensure that Ocean Sciences is positioned to address societal and planetary challenges through the core academic missions of the University.
- Establish and maintain a platform to co-create conditions conducive to academic excellence and intellectual vibrancy on the Ocean Sciences Campus, including activities and programmatic interventions to promote student life.
- Foster a culture of responsibility and accountability in addressing operational challenges on the Ocean Sciences Campus.
- Advise MANCO on mobilising, allocating, and ensuring responsible stewardship of University resources (financial, human resources, infrastructural, digital, etc.) in support of the Ocean Sciences strategy.
- Ensure the risks associated with the University's Ocean Sciences strategy are identified and managed.
- Facilitate effective communication and engagement with internal and external stakeholders.

The OSFF will serve as a key mechanism to promote strategic and operational oversight of Ocean Sciences by providing key stakeholders with a "voice" in optimising opportunities and addressing matters of common concern. The establishment of this Forum contributes to the robust governance of Ocean Sciences by promoting transdisciplinary collaboration and collective ownership of strategy implementation.

In addition to establishing the OSFF, the interim Head has engaged with a wide range of Ocean Sciences stakeholders on numerous matters relating to strategy implementation, the most pertinent of which are highlighted below.

4. OCEAN SCIENCES STAKEHOLDER ENGAGEMENTS

A workshop was convened on 8 May 2024 to provide a platform for harnessing stakeholder inputs regarding the key pillars of the Ocean Sciences strategy. Various engagements took place with relevant line managers to respond to the concerns and challenges identified by stakeholders. Feedback on progress was provided at a follow-up workshop held on 17 July 2024. The inputs provided by a wide range of academic and support services stakeholders

established a solid baseline situational analysis, which informed various interventions and next steps implemented by the interim Head of Ocean Sciences.

4.1 Ocean Sciences Research Chairs

Meetings were held with the Ocean Sciences Research Chairs on 15 July and 6 September 2024 to explore the support required to ensure their longevity and sustainability through succession planning, resource mobilisation, and tapping into national, continental, and international networks. It was noted that there is a need to test the appetite of the University to support the consolidation and embedding of the existing Ocean Sciences Research Chairs beyond their current terms to promote sustainability. This assessment can serve to kickstart an analysis of where each of the research chairs are in their cycles of appointment to proactively plan for talent continuity in alignment with the human resources policies of the University.

A customised solution for shared services providing “back office” support for the Ocean Sciences Research Chairs and entities would assist in economising costs, facilitating integration, and streamlining processes. Key elements of such an integrated model could include supply chain management, administering research grant funding, and processing international partnerships, contracts, and agreements. It was also suggested that there is a need to look at the congruency of the various University strategies to grow the African footprint and the role of the Research Chairs in this regard to facilitate future partnerships and funding collaboration.

4.2 Ocean Sciences Infrastructure Development and Spatial Planning

Ocean Sciences stakeholders affirmed the importance of developing and implementing a five-year spatial framework for the Ocean Sciences Campus indicating who currently occupies which spaces and how this may change over time. This framework should document current and future space allocations to optimise campus layout and infrastructure usage, while also outlining the protocol for requesting and allocating space on the Ocean Sciences Campus. To this end, Infrastructure Services and Space Optimisation (ISSO) have developed an overview of current space allocations on the Ocean Sciences Campus in consultation with key users as a basis to develop a five-year spatial planning framework that provides an overview

of proposed future developments and space allocations to give effect to spatial precincts that optimise inter- and transdisciplinary collaboration and synergies.

Stakeholders furthermore emphasised the need for ongoing maintenance to promote academic excellence and operational efficiencies on the Ocean Sciences Campus. This requires that the maintenance and refurbishment requirements of existing infrastructure on the Campus are identified and embedded in the five-year institutional capital maintenance budget.

4.3 Ocean Sciences Communication, Marketing and Branding

The consultations with Ocean Sciences stakeholders surfaced the need for more frequent and transparent communication about strategic and operational issues impacting them. In response, Communication and Marketing advised that attention should be devoted to establishing a quarterly newsletter for Ocean Sciences; updating the Ocean Sciences web page to indicate upcoming events and a directory of experts; publishing topical opinion pieces in the popular media to feature Ocean Sciences expertise at the University; and establishing a dedicated Ocean Sciences email address to which stakeholders can direct complaints, suggestions, and queries. A public relations intern has been appointed to assist the interim Head of Ocean Sciences in implementing these recommendations.

Numerous meetings have been held with the OSSF to focus on the principles, criteria, and processes to guide the naming and renaming of buildings on the Ocean Sciences Campus. The OSSF noted the following proposals and suggestions for renaming buildings, namely:

- Evoke different aspects of the ocean using indigenous languages (e.g. ulwandle - isiXhosa for sea).
- Link names to cultural and spiritual connections of diverse local communities and indigenous peoples to the ocean.
- Use names that refer to historically significant ocean-related events involving South African citizens (e.g. SS Mendi).
- Names should reflect the expansiveness of the ocean and refer to life above and below the surface of the sea.
- Keep naming applicable to features, ecosystems, and history that is pertinent to the Eastern Cape and South African coast.
- Consider grouping or clustering buildings or venues within buildings and using ocean-related descriptors such as mangroves, reefs, estuaries, etc.

- If names of people are used, these should be aligned with what Nelson Mandela stood for, the University's values, and the kind of culture we want to build.
- Names must signify the transdisciplinary character of the Ocean Sciences and should identify the multi-dimensional categories of the ocean to be used as an organising framework, including:
 - **Marine Ecosystems:** Name buildings after significant marine ecosystems like coral reefs, estuaries, or mangroves.
 - **Ocean Currents and Winds:** Use names inspired by ocean currents or prevailing winds that shape maritime climates.
 - **Marine Biodiversity:** Highlight species found in oceanic environments, from large to small.
 - **Historical Ships and Explorers:** Honour historical ships or maritime explorers who contributed to oceanic knowledge.
 - **Oceanographic Features:** Name buildings after unique oceanic features such as trenches, ridges, or bays.
 - **Coastal Landforms:** Draw inspiration from coastal landforms.
 - **Marine Conservation and Sustainability:** Focus on conservation efforts or marine sanctuaries.
 - **Port Cities and Famous Maritime Locations:** Reference renowned port cities or significant maritime locations.
 - **Oceanography and Maritime Science:** You can use scientific themes related to oceanography.

As part of the way forward, the next steps will be to identify the categories of names linked to the ocean and then brainstorm within this framework. In addition, it will be important to ensure that a change management process accompanies renaming to promote awareness and educate stakeholders about the meaning and significance of the new names of buildings (e.g. plaques in each building to explain the new names). It was emphasised that it is vital to consult students as part of the renaming process and the OSSF will provide the names of under- and postgraduate students pursuing ocean/marine sciences and maritime studies qualifications to be invited to renaming consultations.

The OSFF, including identified students, will meet before the end of the fourth quarter to suggest the names of buildings using the organising framework referred to above. Thereafter, Communication and Marketing will provide the link to the customised online forms to be completed to kickstart the next phase of the process. This proposal was endorsed by the Arts, Culture and Heritage Committee at its meeting on 3 October 2024.

4.4 Ocean Sciences Resource Mobilisation and Budgeting

A meeting was held on 3 October 2024 with Dr Denver Webb from Strategic Resource Mobilisation and Advancement (SRMA) and Dr Derrick Swartz to discuss the resource mobilisation requirements of Ocean Sciences. The interim Head of Ocean Sciences provided a broad overview of the Ocean Sciences resource mobilisation requirements as follows:

- Infrastructure refurbishments:
 - 2nd floor of C Block to accommodate the newly established Department of Atmospheric and Oceanographic Sciences and the South African Master's in Ocean Sciences (SAMOS), which will be hosted at the University from 2026/27.
 - I block to accommodate the Virtual Academy, Learning Experience and Design (LxD), and maker spaces to promote synergies with the Science Centre.
 - Research Dive Tank (a business plan is being developed by the Investment Company).
- Ocean Sciences programmes and qualifications:
 - Seed funding is required to support the faculties in developing new or repurposed under- and postgraduate programmes in various knowledge domains of ocean/marine sciences and maritime studies. This will dovetail with the PQM review to be undertaken across all faculties to determine the optimal programme offerings of the University.
- Ocean Sciences research chairs:
 - There is a need for seed/bridging funding to support the research chairs in catalysing high-impact projects which have the potential to generate significant third-stream funding. Resources may also be required to either refashion existing chairs with new incumbents or to establish new chairs - these may be partly funded by the NRF or industry.
- Ocean Sciences entities:
 - Various entities may require funding support to promote their long-term sustainability, including SAIMI and the African Centre for Coastal Paleosciences. It was noted that it is important to ensure that entities do not rely on a single individual or entity leader since this is not sustainable. There is a need to develop a predictive forecasting capability to monitor the future needs of Ocean Sciences research chairs and entities, especially regarding talent continuity and succession planning. This will enable the University to know when a research chair or entity leader is due to retire so that succession planning arrangements can be proactively made to promote operational continuity and excellence.

The next steps will be to forecast the resource requirements of the abovementioned Ocean Sciences projects and programmes and phase these in over the next three to five years. As part of the process of developing the Institutional Resource Mobilisation Strategy, the interim

Head of Ocean Sciences will liaise with the Senior Director of SRMA to populate the resource mobilisation planning template after determining what proportion can be funded from the strategic resource allocation and third-stream sources of income.

In addition to the above, the interim Head of Ocean Sciences met with the Executive Director of Finance to discuss mainstreaming Ocean Sciences into the Council budget (CAPEX, salary, operations). While this will not be possible for 2025, planning must commence for this to be phased in over the medium term (2026-2030).

5. WAY FORWARD

As part of the way forward, MANCO is requested to advise on the following key issues impacting the future sustainability of Ocean Sciences, namely, the need for:

- Updating the Ocean Sciences Strategy in alignment with Vision 2030 to facilitate the development of a three-year rolling plan.
- Finalising the leadership and management model for Ocean Sciences
- Proactive planning regarding the continuation of existing research chairs (or the introduction of new research chairs) to enhance the academic stature and research productivity of Ocean Sciences.
- Prioritising the Ocean Sciences resource mobilisation requirements and phase these in over the next three to five years as part of the Institutional Resource Mobilisation Strategy being developed by SRMA. Furthermore, Ocean Sciences should be mainstreamed into the Council budget (CAPEX, salary, operations) since it is currently funded solely through a modest strategic resource allocation on an annual basis, which makes it difficult to conduct multi-year strategic planning.
- Creating an ecosystem conducive to transdisciplinarity with enabling conditions such as:
 - A revenue and cost-sharing model (i.e., RAM funding from research outputs and postgraduate supervision conducted by Ocean Sciences research chairs and entities to be allocated to Ocean Sciences as a “cost centre”).
 - Appropriate governance, management, and organisational design arrangements which foster collaboration and eliminate siloes.
 - A shared services model for Ocean Sciences to improve efficiencies and integration in support service delivery.
 - Spatial planning framework that advances the optimal utilisation of shared spaces within functional clusters or precincts.