

SA IORAG Focus Group:

Academic Cooperation, Science and Technology (ACS&T; Marine Science)

Name of Meeting/Workshop attended, country:

Strengthening Ocean Observing in Africa (SOOA), South Africa

Date of Meeting/Workshop:

13 March 2019, 13:30-17:00

Purpose of the meeting:

There is an identified need to strengthen GOOS-AFRICA and links with IOGOOS and other GOOS Regional Alliances and ensure that there is coordination and open communication between East African countries and SIDS to maximise the opportunities. This was also an opportunity to discuss the IOC Ocean Decade to ensure that there is a strong African voice.

Relevance to South Africa:

This meeting built on the successes of the 10th WIOMSA Symposium special session held in Tanzania in 2017 and the SA IORAG Outreach programme which took place in 2018; one of South Africa's priorities as chair of IORA is to use the opportunity to strengthen academic networks in Africa.

Dr Gilbert Siko (DST; co-lead ACS&T) is one of only two African representatives serving on the Executive Planning Group for the 'United Nations Decade of Ocean Science for Sustainable Development (2021-2030)'.

Prof Juliet Hermes is the Vice Chair of the Ocean Coordination Group (OCG) of the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) and has coordinated the development of the 'Standards and Best Practices for marine observational networks and platforms'. She also sits on the Indian Ocean Regional Panel

Dr Siko and Prof Hermes participation on these programmes provides a chance for African priorities to be incorporated into the work plans.

This meeting provided an opportunity for African marine scientists to share their institutional priorities and network with other IORA Member States, as well as engage with programmes such as the International Indian Ocean Expedition-2 (IIOE-2) and the Global Ocean Observing System (GOOS) with a view to strengthening GOOS-AFRICA.

Summary of the Meeting:

The meeting provided an opportunity for several presentations which included information on the Indian Ocean-GOOS (IOGOOS), GOOS-AFRICA, the Department of Environmental Affairs contribution to the IOE-2, the UN Decade of the Ocean, an overview of IORA's Blue Economy meetings outcomes and the marine science programmes within Mauritius, Mozambique and Seychelles.

Discussions after the presentations included,

- Collaboration between IOGOOS and IORA: Discussion to form collaboration was had during the chairship period of Iran¹ but no subsequent commitments from Member States were made.
- There should to be better links formed between IOGOOS and GOOS-AFRICA.
- Researchers from IORA Member States should collaborate to make use of the IORA Special Fund.
- The proposal by the SA IORAG Fisheries and Aquaculture Focus Group to create a biannual review of fisheries and aquaculture activities in member states was briefly described. Academics from other member states were requested to consider working with South Africa to further develop the project.
- A request was made that the DST consider sponsoring participation for other African State's academics to the Third IORA Ministerial Blue Economy Conference proposed to be hosted by Bangladesh.
- The need for greater regional cooperation on issues of regional importance, such as mapping the oceans. This has direct operational impacts, such as the lack of information for search and rescue operations highlighted by the inability to predict and find the locations of aircrafts that have gone missing in the ocean.
- The lack of publications by (or acknowledgement of) African academics/researchers in marine science, even though they participate in international cruises/programs. Acknowledgement of the research is attributed to the sponsoring/funding country which undercounts the contributions made by African academics. The benefits of producing publications include access to funding or resources for students and garnering national government support to develop capacity in marine science.
- South Africa's use of the term 'oceans economy' even though it has many sustainability aspects. The decision was undertaken by government so as to be inclusive of the

¹ Iran was chair for the period 2006 to 2008.

private sector, which were apprehensive about the use of the term 'blue economy'. The term 'oceans economy' was also more specific.

- Manufacturing of sensors used on buoys and other marine instruments in South Africa: It was noted that South Africa has few accredited institutions that can manufacture sensors and other vessel technology. The DEA are planning to create a calibration unit to service and manufacture sensors; this is proposed to be done in partnership with the Cape Peninsula University of Technology. It was cautioned that South Africa should rather first focus on developing sensor capability first before trying to develop and manufacture large platforms, such as research ships.

- Sharing of research platforms: It was noted in presentations by speakers within the larger conference that European Union (EU) members shared their research platforms². The feasibility of African States developing similar initiatives should be investigated. The lack of research platforms (e.g., sensors, moorings, coastal and offshore vessels, gliders), human capacity (sufficient numbers of people with the expertise to maintain, operate and deploy the platforms) and funding within African states limits the research that can be undertaken. It was noted that the DEA had R60 million of institutional funding available that could be used to fund collaborative platforms.

Most issues within coastal east African countries happened in the near-shore; as such large vessels and the funding needed to operate them were not needed. There is therefore scope for engagement on coastal issues which would not need large funding grants.

- It was noted that Mauritius had a higher ratio of female students undertaking postgraduate studies in marine science. This was attributed to better academic performance of female students and male students electing to undertake other 'hard science' degrees. Degrees were focused towards practical applications e.g. finding edible molluscs for aquaculture development. Mauritius also had a number of international partners at university level including Nelson Mandela University, South Africa and the University of Wollongong, Australia.
- It was noted that accessibility to data from research conducted in Seychelles by international partners was not always made available to local researchers.
- It was noted that while Mozambique had implemented a number of programmes, the capability to maintain this and process data was limited by human capacity and expertise and funding. There was 1TB of visual data that needed to be processed. It

² The EU has programmes such as the National Marine Equipment Pool (<https://noc.ac.uk/facilities/national-marine-equipment-pool>) and the Marine Facilities Planning (<https://nerc.marinefacilitiesplanning.com/>) where researchers can apply to make use of gliders and ships time.

was also mentioned that Mozambique had submitted a proposal for a study in partnership with the DEA, which had been accepted.

It was also highlighted that although there were regulations in place for reporting back on data collected in Mozambique, researchers did not share the data or report on their findings. Whether this was archived at the Nairobi Clearing House needed to be investigated.

Recommendations and Future Actions:

- 11th WIOMSA Symposium: Participants should be invited to participate in further discussions if the proposal by the SA IORAG Secretariat to host a special session at the WIOMSA Symposium (1-6 July 2019, Mauritius) is approved. The session should focus on developing a research objective of importance to African states, which is nonetheless applicable within IORA.
- Further discussion should be had at intergovernmental level to assess the feasibility of creating an East African (or African) marine equipment pool.
- The IORA platform could be used to strengthen the link between IOGOOS and GOOS-AFRICA to expand dedicated monitoring in the entire Indian Ocean basin. Discussion should include how to implement long-term funding programs and providing human capacity and training to maintain monitoring sites.
- Discussion should be had at the relevant level to ensure that African researchers are involved in research conducted within national waters and agreements must be in place that any data collected is made accessible to national academics.
- The IORA Special Fund project undertaken by Seychelles, “Creating a Managed Environmental Network in the western Indian Ocean”, could be expanded in a second phase to include all African IORA member states. Existing programs (e.g. Nairobi Convention Clearinghouse and Information Sharing System) could be utilised for information sharing.

Meeting Participants

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24	M. Nagaraja Kumar	IOGOOS/INCOIS	raja@incois.gov.in

Final Meeting Program³

Title	Speaker
Introduction and Welcome	Prof Juliet Hermes
The Regional Alliance of the Global Ocean Observing System in the Indian Ocean (IOGOOS): Cooperation in Ocean Observations, Forecasting and Services in the Indian Ocean	Mr M. Nagaraja Kumar
African Experiences in Operational Oceanography GOOS-AFRICA: The Genesis and Foundations of the Framework for Operational Oceanography in Africa	Mr Justin Ahanhanzo
IOC Decade of the Oceans	Dr Gilbert Siko
Strengthening Ocean Observing in Africa	Mr Mthuthuzeli Gulekana
Strengthening Academic Collaboration in Africa	Ms Nicole du Plessis
Capacity building, research and consultancy in the marine sciences: promises and limitations	Prof Sabrina Dyall
The Role BERI plays within the Seychelles' Blue Economy Roadmap	Dr Nuette Gordon
Mozambique Channel Observation: Need to strengthen	Dr Bernadino Malauene

³ Each presentation was followed by a brief questions and answer session.

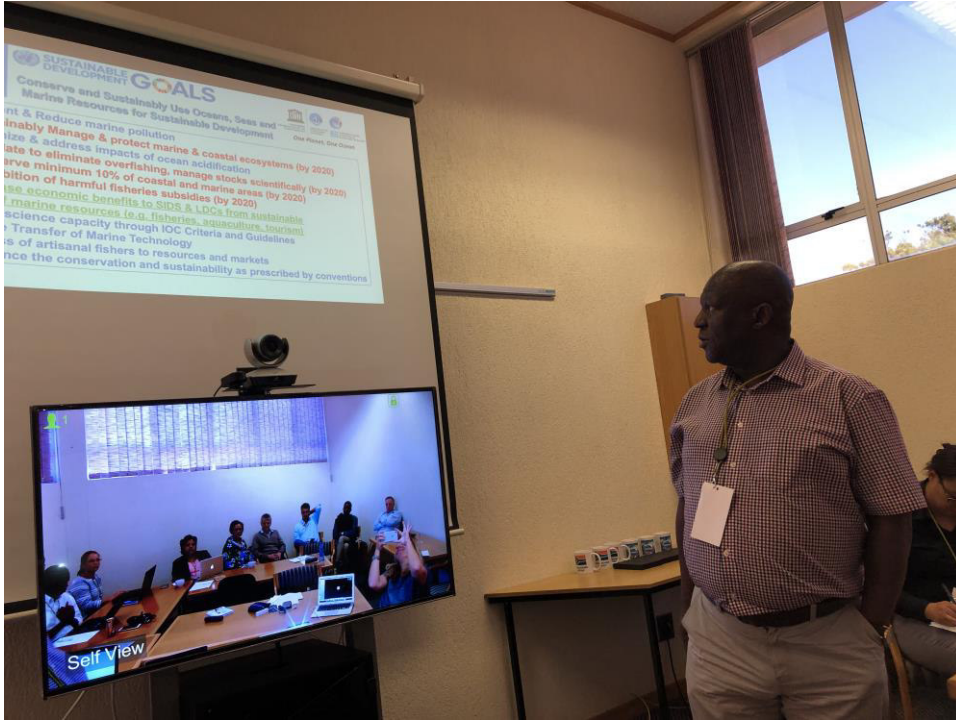
Presentations

The presentations can be found online on the SA IORAG website at the following [link](#).

Photographs



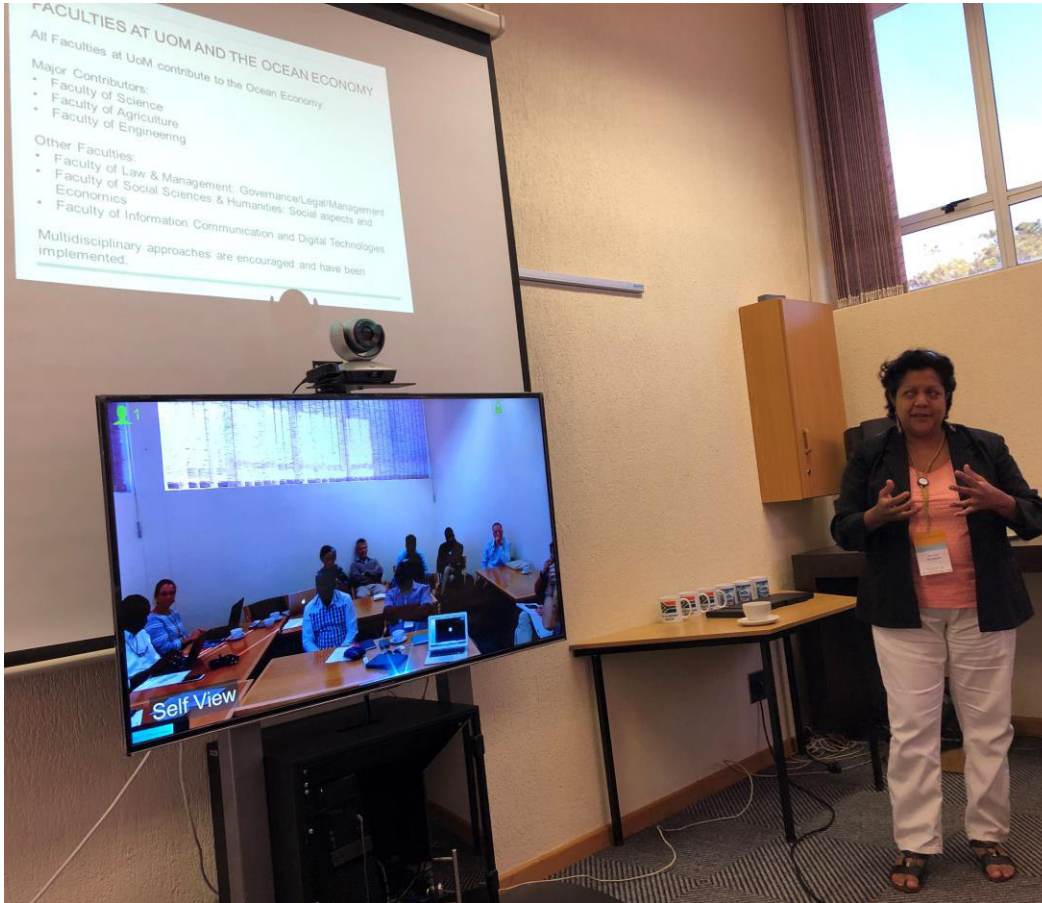
Mr. M. Nagaraja Kumar



Dr Gilbert Siko



Mr Mthuthuzeli Gulekana



Prof Sabrina Dyall



Dr Nulette Gordon



Dr Bernardino Malauene

The Herald Tuesday 12 March 2019

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news

● Scientists from around the globe gather at NMU for major marine conference on Earth's most under-researched expanse of sea

Experts share Indian Ocean findings



'AHEAD OF THE CURVE': British high commissioner Nigel Casey praised the role played by the NMU ocean sciences centre. Picture: LEONETTE BOUWER

Guy Rogers
rogersg@tsobackstar.co.za

A major marine research conference on the Indian Ocean, held for the first time on the African continent, got underway at Nelson Mandela University on Monday.

The Second International Indian Ocean Expedition programme has attracted senior scientists from around the world to present and debate study findings affecting the goal of sustainably expanding the Indian Ocean's blue economy and "avoiding a dead ocean".

British high commissioner Nigel Casey hailed NMU's ocean sciences centre of excellence, which hosted the event, and emphasised his government's multimillion rand support for research there.

"We're here because we're proud to have been on a journey with NMU," he said.

"They've demonstrated vision and ambition.

"We believe that globally they are ahead of the curve."

The UK is funding the R144m Solstice Sustainable Oceans, Livelihoods and Food Security Through Increased Capacity in Ecosystems project being run at NMU by South African oceanographer and



PETER BURKILL

Oceans are an important cog in the warming of the atmosphere

UK-ISA Bilateral Chair in Ocean Science and Marine Food Security professor Mike Roberts.

Casey said one of the key ocean challenges, plastic pollution, was receiving increased attention in the UK.

"It's something people can grab onto and make choices about.

"At our cricket matches, for example, right now we're getting rid of plastic beer glasses."

Prof Peter Burkill, president of the Scientific Committee on Oceanic Research in the UK, said the conference was important because the Indian Ocean



ISSUFO HALO

was the most under-researched of the Earth's oceans. "There are far more nations involved than when the first expedition was launched in 1957," he said.

"We have much better tools from undersea gliders to satellites. But there is still much we need to know.

"How resilient are our fisheries? What is the full impact of acidification from climate change on our oceans?"

"If we're going to overcome the huge problems facing the ocean we have to give it our best shot, and to do that we need to properly understand what's going on."

One of the problems was that the different types of phytoplankton, the tiny drifting plants that form the base of the marine food web, were shifting, he said.

"They are becoming smaller, offering less grazing opportuni-

ty for other species, so it is affecting fisheries.

"And we know it's happening because of warming."

Another problem was that the ocean water column was becoming more compartmentalised with a diminishing number of upwelling events where nutrients were pulled up from the seabed to enrich surface water and drive a healthy fishery sector, he said.

"We don't know exactly what is causing this situation but we do know that climate change is happening.

"We need to know more."

Oceanographer Issufo Halo, a Mozambican based at the Cape Peninsula University of Technology, said oceans were an important cog in the warming of the atmosphere as they amplified and reflected the sun's radiation back into the atmosphere.

"More greenhouse gases absorbed by the oceans will be translated into warmer oceans and increased warming of the atmosphere," he said.

Ocean temperature variations affected the density of the seawater and drove currents.

Understanding this dynamic and what would happen if it altered was key to understanding climate change and protecting the ocean, he said.

The online link to the article can be found [here](#).