

24to26
MAY'23

REPORT

FOR THE

AFRICAN MARITIME **LEADERSHIP CONFERENCE**

Fostering Partnerships

and Collaborative Agendas



S A I M I

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FORWARD

From SAIMI CEO Odwa Mtati

SAIMI is delighted to introduce the African Maritime Leadership Conference report, a comprehensive reflection of the events that took place under the overarching theme “Fostering Partnerships and Collaborative Agendas”. This Conference stands as evidence of the strides that have been made by the African Maritime Sector towards the attainment of collaboration and coordinated leadership in the sector.

The Conference delved into important subject matter that explored Policies, Strategies and Agreements, Seafarer Development, Skills Development Models, Technology and Innovation, as well as Infrastructure that supports the growth of the Oceans Economy. The various plenary sessions provided a valuable platform for Leaders, Research Experts, and Industry stakeholders from across Africa and beyond to exchange ideas and forge partnerships that would shape the future of the Maritime Industry in the Continent.

The discussions on Policies, Strategies and Agreements highlighted the importance of establishing robust and effective governance frameworks. Through collaborative efforts, the aim is to harmonise regulations, foster regional cooperation, and promote sustainable growth and development. By forging strong partnerships, delegates laid the groundwork for leveraging Africa’s Maritime resources, opening new horizons for trade and investment – all towards achieving economic prosperity across the African Continent.

Seafarer Development was a vital aspect of the Conference which allowed us to recognise the indispensable role played by a skilled workforce. The discussions centred on the importance of investing in education, training, and welfare programmes that nurture and empower African Seafarers. The Conference served as a platform to discuss strategies on ways to create a pool of competent professionals who would contribute to the growth and success of Africa’s maritime industry.

The session on Skills Development Models, unpacked the process of developing a Skills Forecasting Model that would support the supply of skills that seek to meet industry demands and technological innovation in the maritime sector. This approach aims to develop systems and models that will support the supply of relevant skills especially attuned to the changing industry dynamics that digitalisation has brought with it. The session also focused on the importance of collaboration between industry and academia to enhance the employability of maritime graduates.

The discussions on Technology and Innovation showcased ground-breaking advancements in digitalisation and automation. This served as an opportunity to demonstrate how embracing innovation and leveraging cutting-edge solutions can enhance operational excellence and drive sustainable development across the maritime value chain. SAIMI continues to advocate for the spirit of innovation to propel Africa’s Maritime Industry.

Port Infrastructure Development emerged as a catalyst for maximising Africa’s Oceans Economy potential. The Conference recognised that the development of modern and efficient ports provided important transportation hubs that enabled greater intra – African and global trade, and ultimately helped to unlock Africa’s vast blue economy potential. Through in-depth discussions, participants explored strategies to enhance port capacity, improve logistics and supply chain efficiencies, and foster seamless connectivity for both regional and international trade.

Reflecting on the Conference, SAIMI extends its deepest gratitude to all the Participants, Sponsors and Attendees who contributed to the success of this Pan African Conference. Their dedication, expertise, and unwavering commitment to the Sector has been truly commendable. SAIMI also wishes to express its sincere appreciation to the African Maritime Leadership Conference team for their tireless efforts in organising this event.

Platforms such as these support the Institute’s strategic role of leading in the coordination of centres of excellence in the South African and African Maritime Industries, for the realisation of sustainable growth and development in the Continent. They also allow SAIMI to sharpen its advocacy role and deliberate with some of the best minds in the industry towards the development and refinement of its education and training programmes, as well as its research programmes. This should ultimately help propel the Continent to its desired position as an International Maritime Centre.

As we move forward, we need to remember that the impact of this Conference extends far beyond its conclusion. The insights, recommendations, and strategic direction that have emerged from the collective efforts of delegates will serve as a compass guiding the journey towards a Thriving, Sustainable, and Prosperous Maritime Future for Africa.



SAIMI extends its deepest gratitude
*to all the Participants,
Sponsors and Attendees who
contributed to the success of
this Pan African Conference*

EXECUTIVE SUMMARY

The South African International Maritime Institute (SAIMI) hosted the illuminating 'African Maritime Leadership Conference: Fostering Partnerships and Collaborative Agendas', from May 24 – 26, 2023, in Gqeberha, Eastern Cape. The highly informative and probing Conference attracted high-level participants from a cross-section of institutions in the maritime sector. These included experts in the Oceans Economy and sustainable development, industry players, academia, government, and civil society. The industry experts were able to impart valuable knowledge on a myriad of topics pertaining to the Oceans Economy.

THE OCEANS ECONOMY

The maritime economy is vast and encapsulates a wide range of activities related to the exploitation of maritime resources. With 71% of the world comprising of water, and more than 90% of global trade using sea routes, the Oceans Economy is at the centre of global trade. According to the United Nations Conference on Trade and Development (UNCTAD), the value of the Oceans Economy sectors including maritime transport, offshore oil and gas, fisheries, coastal tourism, and marine bioprospecting, is estimated at about US\$3 trillion annually - or is about a fifth of the world economy. The Ocean's Economy is therefore pivotal to sustainable development of the Continent and the world.

Borrowing a quote shared by a speaker at the Conference, Ambassador Nancy Karigithu, by Alfred Thayer Mahan (US Navy Strategist), "Whoever rules the waves, rules the world." This rings very true for the Maritime Industry. The sector is poised to be one of the engines of South Africa's and the Continent's economic recovery especially if African countries strengthen their strategic cooperation and collaborate more meaningfully to promote harmony in the governance of the African maritime domain.

THE AFRICAN CONTEXT

South Africa and most of the African Continent are currently experiencing sluggish economic growth rates, high unemployment and rising poverty and inequality levels. The Oceans Economy offers significant potential to redress this economic downturn and foster sustainable economic growth, employment creation and poverty alleviation in Africa. The African Continent has 38 coastal states out of 54, with a coastline of approximately 48 000 km.

It is rich in resources and biodiversity and is expected to generate an estimated US\$ 100 billion from coastal tourism by 2030. Its Blue Economy sectors and components account for 49 million jobs currently and the expectation is that this will grow to 57 million jobs by 2030. Additionally, the African Maritime Sector is at a growing stage for new ocean-related economic activities and constant innovations that should aid in the Continent meeting or even exceeding its maritime economy's growth expectations.

POLICIES TO REALISE SA AND AFRICA'S OCEANS ECONOMY OBJECTIVES

Primary in the Conference discussions was whether fertile ground had been laid to help boost the South African and African Oceans Economy aspirations utilising existing policy instruments, agreements, and strategies. There were also discussions around the actions needed to realise the objectives set in these policies and strategies. The Conference, therefore, kicked off with a plenary session that looked at the policy environment and work underway at the national, regional, and multilateral levels on integrated ocean governance to support the development of the Continent's Blue Economy.

It looked at what needed to be done to build growth-driven and climate-resilient oceans economies on the Continent through the development of appropriate policy instruments, strategies, and agreements. Additionally, it looked at instruments in existence or those that needed to be developed to address some of the Continent's maritime challenges.

The Conference addressed the UN's 2030 Agenda for Sustainable Development, and how to achieve its sustainable development goals through policy engagement, collaboration, and merging Oceans Economy agendas with other countries. The AU's Agenda 2063 - Africa's Masterplan to deliver on the Sustainable Development Goals, the 2050 Africa International Maritime Strategy, and the AU Lomé Charter on Safety and Development were also discussed.

There was a call made for the creation of more equitable ocean governance which would help bring to the fore the voices of those that were traditionally marginalised in the global Oceans Economy arena. This would be best achieved by us speaking with one voice as the Continent. In this way, we would be better placed and able to influence the transformation agenda in the Maritime Sector for our sustainable economic development.

Thematic Areas

THEME 1: POLICIES, STRATEGIES AND AGREEMENTS

The AU has emphasised the importance of Africa's Oceans Economy in its Agenda 2063, the Africa We Want – Africa's Blueprint and Masterplan to deliver on its inclusive Sustainable Development Goals (UN's 2030 Agenda for Sustainable Development). This Master Plan focuses on building environmentally friendly and climate-resilient economies and communities. Additionally, it looks at the instruments to address some of Africa's maritime challenges for sustainable development and competitiveness including the 2050 African Integrated Maritime Strategy (AIMS) and the AU's Lomé Charter on Africa's Maritime Security and Safety and Development in Africa. This Charter focuses on safety and

security at sea and on preventing and suppressing national and transnational crimes. The Charter further seeks to promote the environment and to create a flourishing and sustainable Oceans Economy.

As part of this theme, the Conference sought to provide platforms to engage on the plans and actions needed to realise the objectives set by the above-mentioned policies, strategies, and agreements. It aimed also to steer the discussion towards regional integration, democratic governance and an appetite for partnership and collaboration for Africa to become a major Maritime Centre.

THEME 2: SEAFARER DEVELOPMENT IN AFRICA

This second theme talks to positioning the African Continent as a major Maritime Centre in respect of Seafarer Development. It looks at what should be done to ensure excellent quality training for African seafarers and to make them highly competitive in the international shipping labour market. As part of this theme the Conference also focused on the integration of digitisation in mar-

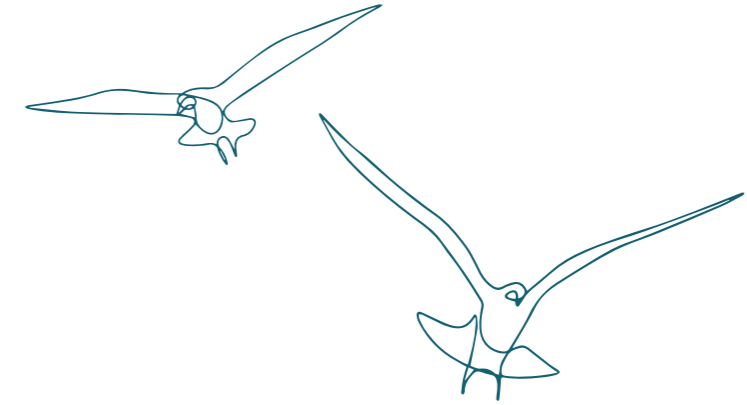
itime education. Other areas that formed part of this subject matter included the consideration of both domestic and international transformative debates on gender and race, and the prioritisation of berth availability for African cadets to ensure that they qualify faster as seafarers.

THEME 3: SKILLS DEVELOPMENT MODELS TO SUPPORT MARITIME EXCELLENCE

Global maritime economies are continuously transforming and with this transformation comes the need to develop updated skills to meet the demands of the industry. It is therefore important for the Continent to extract best practices and approaches from each other in order to develop systems and models that will support the supply of the skills relevant to the transformation taking place in the maritime industry.

In the South African context, to keep up with this sectoral transformation SAIMI has embarked on a process to develop systems

and models to support the supply of skills needed to support the growth of the maritime sector. It is embarking on this mission through the development of a Skills Forecasting Model. By focusing on this thematic area, the Conference sought to use this as an opportunity to extract and exchange best practices and approaches with other African countries who utilise different skills development models to support the development of their respective maritime industries.



THEME 4: TECHNOLOGY AND INNOVATION

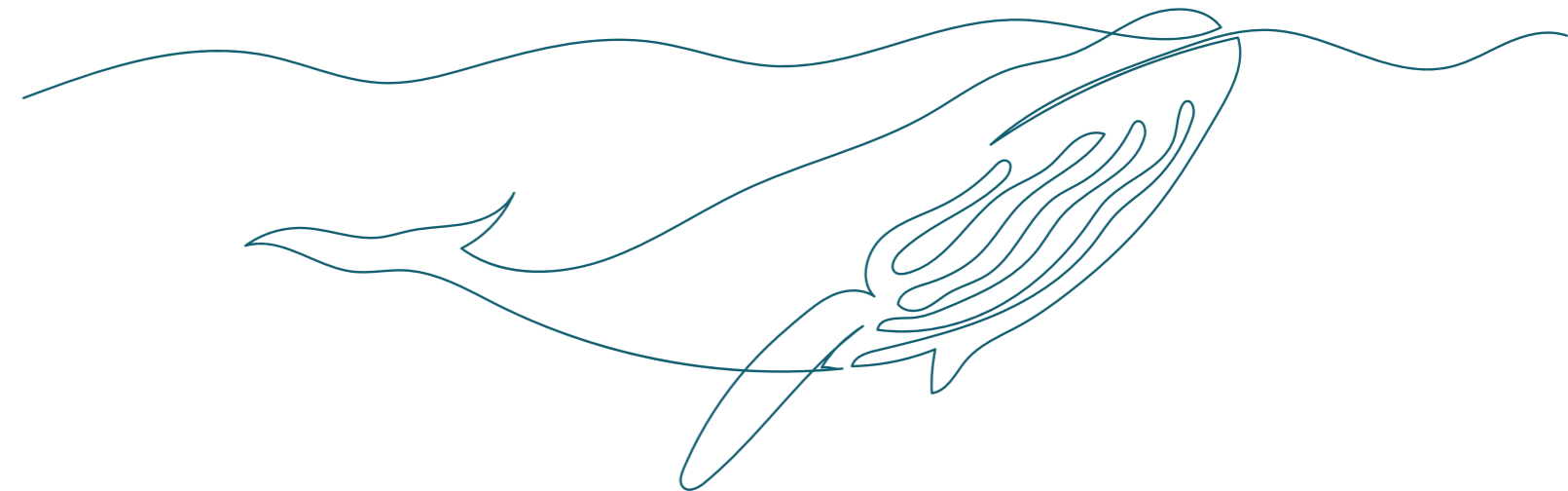
In this thematic area the Conference sought to identify opportunities and challenges faced by the maritime industry in Africa in relation to advancements in science, technology and innovation brought about by the Fourth Industrial Revolution. The 4IR has been identified by the AU as important for Africa's economic growth and development (including that of the Oceans Econo-

my). The Conference, therefore, sought to identify the benefits and challenges for the Oceans Economy value chain affected by these advancements in science, technology and innovation. The objective of the Conference was also to identify the opportunities and challenges the maritime sector faces related to the emergence of these new technologies.

THEME 5: INFRASTRUCTURE DEVELOPMENT AND THE OCEANS ECONOMY

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itime education. Other areas that formed part of this subject matter included the consideration of both domestic and international transformative debates on gender and race, and the prioritisation of berth availability for African cadets to ensure that they qualify faster as seafarers.



Key sectors of Africa's Oceans Economy

<p>Fisheries, aquaculture, conservation and sustainable aquatic ecosystems.</p>	<p>Shipping, infrastructure, marine manufacturing, transportation, trade, ports, maritime security, safety and enforcement.</p>	<p>Coastal and maritime tourism, climate change, and sustainable environmental use.</p>
<p>The development of alternative and sustainable energy sources, mineral resources, and innovative industries.</p>	<p>Policies, institutional and governance, employment, job creation and poverty eradication, innovative financing.</p>	<p>Pioneering maritime indigenous knowledge.</p>

The lack of infrastructure development and modern equipment has hampered Africa's opportunity to take advantage of the favourable positioning of its ports within the major global trade routes in the past. However, the development of new harbours has enabled more integration into the global maritime economic system which can only bode well for Africa's trade competitiveness.

The development of African ports is a critical infrastructure development and can catalyse local and international investment in the sector. The Freeport Saldanha Development Zone being declared the Green Hydrogen Energy Hub of Africa is one such initiative which supports the strategic position of ports as being central to economic development and the Continental Development Agenda.

THE ROAD TO ZERO CARBON

At the centre of all discussions held at the African Maritime Leadership Conference was the paradoxical position that the ocean occupies in the world's ecosystem as a vital mitigant against the impacts of climate change, while simultaneously being under great threat of absorbing more heat from greenhouse gases, leading to an increase in sea surface temperatures and rising sea levels. This could prove catastrophic for the survival of marine species and ecosystems and general ocean health, thereby threatening any potential plan for the growth of the Oceans Economy. It is therefore pivotal for any policy development to look at decarbonisation targets as an imperative.

The Conference discussed some of the challenges relating to the decarbonisation of the oceans and how there was yet to be a coherent international strategy in place to address these. This made it difficult to develop national and Continental plans to decarbonise. Speakers looked at several areas that could contribute to a just transition to a zero-emission maritime ecosystem. This included building alliances to drive market change around decarbonisation, green hydrogen-derived fuels for shipping, the production of green fuels for bunkering, port use and export, and the boosting of private renewable energy generation for the maritime sector amongst others.

KEY GOALS AND EXPECTED OUTCOMES

Overall, the Conference was highly successful in meeting the Institute's set objectives of having action-oriented discussions relating to the partnering of key stakeholders for the sustainable development of Africa's Oceans Economies. Some of the key goals that SAIMI had hoped to achieve include:

- Increased ocean awareness
- Meaningful participation, collaboration, and fostering of sustainable partnerships to implement the development of the Oceans Economy.
- Acquiring best practices from other regions
- Fostering mutual support for strengthening infrastructure development, maritime education, and skills development
- Formulation of strategies to foster Seafarer development in the Continent and
- Implementing plans for technological preparedness, innovation, and transfer of skills

The African Maritime Leadership Conference covered a wide range of issues which probed the full scope of the African Oceans Economy. In its exploration of the Oceans Economy, the Conference covered policy, the human element, technology investments, knowledge development, training, and renewable energy. Additionally, the Conference explored ways to attract investment for the development of Africa's Oceans Economy with an ultimate focus on improving and expanding maritime infrastructure, deploying effective strategies, and attracting investment. It also provided the stage for the forging of deeper and more collaborative partnerships and leadership on the Continent that would hopefully result in poverty alleviation, economic growth, and greater innovation on the Continent. SAIMI committed to following up on the discussions held at the Conference by providing reports, statements of intent, and implementation plans.



OFFICIAL OPENING

Facilitator: Mr Odwa Mtati – CEO of South African International Maritime Institute

OPENING

Professor Sibongile Muthwa (*Chair of Advisory Board, South African International Maritime Institute – SAIMI*) opened the Conference by greeting, recognising, and welcoming all the dignitaries, speakers, and delegates in attendance on behalf of Mandela University and SAIMI. She said although attendees came to the Conference with different outlooks their aim was to share their respective knowledge and hold fruitful discussions as they seek to develop common strategies to grow the Continent's oceans economies. The ultimate aim of the Conference was to stimulate dialogue for fostering partnerships and collaborative agendas. Professor Muthwa singled out the National Skills Fund (NSF) for its support for this initiative and all the players in the maritime industry who had lent their support to SAIMI. She also recognised the Advisory Board of SAIMI as well as the previous Vice Chancellor of Mandela University, Dr Derrick Swartz who had been instrumental in the formation of the Institute.

The South African International Maritime Institute (SAIMI) had been established for the purposes of coordinating maritime advocacy, education, and skills development. The Institute sought to unlock the potential of the maritime sector to enable it to contribute to socio-economic development by bringing together all stakeholders in the sector to create a unified force for change

and to implement high-impact initiatives. The Conference, therefore, afforded SAIMI the opportunity to deliver on its mandate to act in a concerted manner with partners in the African Continent and to foster collaboration and seek new strategies that they would harness in support of Continental policies and regulations.

The Conference would provide numerous opportunities for knowledge sharing and offer delegates a significant platform to expand knowledge, forge new networks and stay up to date with new trends in the maritime sector. Delegates would engage around the 5 thematic areas, while the Conference would furnish stakeholders with a collaborative platform as an entry point to reviewing maritime skills supply capacity against future demands.

Engagements would also be held around the appropriate skills for the emergence and spread of technological advancements in the sector and delegates would be able to consider further collaboration to address deficits and impediments in the current system and find ways to close the gaps. Professor Muthwa said Mandela University was pleased to house the only dedicated Oceans Sciences Campus in South Africa where SAIMI is located and urged the visitors to visit the Ocean Sciences Campus.

WELCOME ADDRESS BY HOST CITY

Councillor Luxolo Namette (*Nelson Mandela Bay Municipality*) welcomed the participants to the Conference on behalf of the Executive Mayor of the Nelson Mandela Bay Municipality Retief Odendaal. He commended them for their dedication and commitment to developing a coherent and achievable roadmap for a sustainable Oceans Economy strategy that supported the growth of the Oceans Economy in Africa.

He said the development of the Oceans Economy provided unprecedented opportunities to broaden the socio-economic prospects and the development of the Continent. This exchange of best practices in Africa would therefore ensure that the Oceans Economy became a major contributor to job creation and would also bode well for entrepreneurship in the sector. He said Nelson Mandela Bay was poised to become a leading maritime and shipping hub with its 2 ports.

He stated that the Oceans Economy holds immense benefits for job creation and economic growth, especially in the 5 thematic areas identified by the Conference and there was a need to develop knowledge, understanding and competence in the Oceans Economy that would link stakeholders in the region with extensive policy support for the sector.

Councillor Namette mentioned that it was crucial to take a leading role in climate change as this would impact the future quality of life, on a serious scale. There is therefore the need to remain vigilant and responsive to global challenges including climate

change, food and energy security, biodiversity conservation, management of marine resources, and resilience in the face of marine disasters and maritime security.

He said the origin and intent of the Conference could be derived from the NEPAD document where African leaders pledged to eradicate poverty and place their respective countries on the path to sustainable growth and development. This document helped one to have a better understanding of the origin and intent of the Conference, which was focused on the ocean environment, ocean governance and the blue economy.

The Nelson Mandela Bay Municipality expressed full support for partnership and collaboration that would ensure better maritime viability for Africa and the development of a sustainable maritime economy for all. Councillor Namette advocated for the removal of legislative uncertainty, bureaucratic red tape, delays in funding, infrastructure challenges, and skills gaps, especially in relation to women and the youth. The municipality committed to fully participating in removing all these obstacles and to working towards the development of thriving SMMEs in this sector.

He called on SAIMI and the DHET to implement skills development initiatives that would help grow the Oceans Economy and also expressed support for the implementation of partnerships and collaboration among African countries for the economic benefit of Africa. He concluded by wishing the delegates a successful Conference.

WELCOME ADDRESS BY THE HOSTING PROVINCE

Mr Oscar Lubabalo Mabuyane (*Premier of the Eastern Cape*) welcomed delegates from across Africa and the world on behalf of the province. He commended SAIMI for initiating and implementing the African Maritime Leadership Conference (AMLC). He contended that such engagements were necessary to find ways to lift citizens out of poverty, especially by working together as a Continent. He expressed confidence that the knowledge shared would lead to collaboration for the development of Africa's Oceans Economy. He also mentioned that the gathering of the Conference on Africa Day - May 25, which is a significant day on the African calendar, especially since this year marked 60 years of the formation of the African Union (AU).

The Premier reflected on what some of the founding fathers including Haile Selassie and Kwame Nkrumah would say about the state of our Continent today. He reflected that they might bemoan the state of the Continent characterised by lack of economic development, poverty, diseases, corruption and greed, and the conflicts that continue to undermine the peace and safety of the citizens on the Continent.

He said they would not be proud of the record in these areas as they had envisioned a united Africa, at peace with itself. An Africa that would be using its natural and mineral resources to rebuild itself into an economic powerhouse. He posed a challenge to the delegates to contribute towards building the Africa that was envisioned in 1963, so that on the centenary of the founding of the AU, it can be stated that there was no longer poverty in Africa and that the economies were integrated.

Premier Mabuyane said he was encouraged by the progress made by countries including Singapore and China, which had lifted 800 million of its citizens out of poverty by 2020. He questioned why Africa could not achieve similar milestones as this was possible if the Continent worked in an integrated way. This was, therefore, the most opportune time to gather Africans from the maritime sector to engage on economic development of Africa utilising the oceans.

The oceans and seas of the mother Continent remain a source of beauty, but the Premier made a call for delegates to also ensure that these were translated into economic engines that could ignite and transform the fortunes of the Continent. The Oceans Economy was seen as the new frontier for economic growth globally especially where the African Continent was concerned. According to UN Conference on Trade and Development (UNCT-

AD), demographic growth and regional integration could nurture Africa's maritime trade growth in shipping, ports and hinterland access and the Conference would allow delegates to reflect on these areas.

The maritime sector was key to the Continent's efforts to reduce poverty, unemployment, and inequality within its respective countries. To that end, the sector was also one of the priority sectors in the Eastern Cape Province's efforts in this regard and the province had embarked on a capacity-building drive to fully realise the benefits of the sector.

Owing to its understanding of the broad opportunities presented by the sector the provincial government had invested in the province's 2 Special Economic Zones (SEZ), the East London IDZ and the Coega IDZ and was well positioned to be a major player in the maritime sector. Maritime tourism was a niche for the province and could contribute to the growth of its economy and contribute also to poverty alleviation for some coastal communities. The Premier said that with the right policies, skills, and infrastructure these communities would thrive.

Engagement in fostering partnerships and collaboration needed to happen as this would lead to the growth of the Continent both in terms of human capital and economic value. Furthermore, the Conference would aid in Africa taking action towards the achievement of the UN's Sustainable Development Goals (Agenda 2030) to eradicate poverty in all of its forms, which was the biggest challenge globally.

The representatives of the different institutions present at the Conference were called to work together towards the realisation and full implementation of the African Continental Free Trade Area (AfCFTA) agreement. The various sub-sectors of the maritime industry would play a crucial role in achieving this, especially in the area of trade opportunities presented by the sector.

The African Development Blueprint Agenda 2063 further encapsulated the Continent's aspirations for the future and identified some flagship programmes to unlock the full potential of African economies and their development. The Premier spoke of the different thematic areas that would be discussed at the Conference and urged delegates to participate to enrich its outcome.

He also encouraged them to rally behind Ambassador Nancy Karigithu's candidature for the position of International Maritime Organisation Secretary General.

KEYNOTE ADDRESS

The *Director General at the DHET* **Dr Nkosinathi Sishi** spoke on behalf of DHET Minister Dr Blade Nzimande (Department of Higher Education, Science and Technology). He opened his address by offering support to the Conference and reiterating that the Department had provided this support through its investment in the National Skills Fund (NSF). He further committed to supporting SAIMI in all its future endeavours.

Dr Sishi made a clarion call for African countries to rally behind the candidature of Nancy Karigithu (Kenya) for the position of Secretary-General at the IMA. He expressed his appreciation for the Conference which had led to the convergence of thought leaders from across the Continent and the world, in our country. He highlighted that the themes of the Conference anchored on two important pillars, those being regionalisation and skills development and said that these were topics which coincidentally aligned with some of the Department's initiatives.

He hailed the presence of the different delegates and sector experts at the Conference as this would allow for the sharing of best practices as we sought to grow the economies in a coordinated manner. This focus on the Oceans Economy and collaboration within the sector would give an opportunity to drive Agenda 2063 - the Africa We Want. It was also well timed given the social and economic challenges that all countries in the Continent were confronting – challenges which had culminated in a race and competition for resources and could be addressed through an increased focus on the Oceans Economy. Many more countries were now turning to the ocean for food, energy, and transport, against the backdrop of accelerating climate change, compounding pollution, biodiversity loss, and the Covid 19 pandemic.

Dr Sishi mentioned that Minister Blade Nzimande had presented a budget the previous day where R130 billion had been allocated for skills development for the country and said that the NSF and skills development in our country had been prioritised as part of that budget. The NSF was committed to supporting economic recovery in South Africa after the devastation caused by the Covid 19 pandemic.

The African Continent as well as the countries adjoining the Indian Ocean had experienced growing interest in the development of the Oceans Economy, which was being manifested through policy development and the implementation of various initiatives on the Continent. The Oceans Economy provided the considerable potential for the Continent, which is made up of 38 coastal

and island states and spread over a 47 000 km coastline, to develop their ocean-based sectors. This is the main reason why the Department thought it was necessary to confirm its support of the Conference, and of the NSF.

The Department believed that it was also important to hold a Conference of this nature at a time when new oceans activities including offshore energy, aquaculture, and marine biotechnologies, were taking centre stage, in order to discuss and engage on how the Continent would maximise the potential of the Oceans Economy. Dr Sishi spoke of the South African government's launch of Operation Phakisa in 2014, and how a lot had been done since then. The government was now working on the Oceans Economy Masterplan (OEMP) to support growth and stabilisation, and to ensure the increased contribution of the Oceans Economy towards job creation and an increase in the country's GDP.

The development of the OEMP had begun in 2019 but progress had been stalled by the advent of the pandemic. The hope was that the Conference would allow South Africa to share its experiences with its African counterparts and for us to simultaneously learn from the Continental experience to enrich the work that was happening on the OEMP. Dr Sishi ended his address with the following questions:

- What is preventing us from intensifying regional integration and realising economic growth in the Oceans Economy?
- Can we establish a regional skills plan supported by all learning institutions across our region without duplication of resources?
- Can our individual regulatory frameworks be integrated and standardized to foster trade and standardised skills?
- Is it imperative that regional collaborative efforts be intensified to mitigate the cross-boarder impacts of developments in the Oceans Economy?

He expressed hope that the Conference would engage extensively in these areas and that the outcome would provide some answers to the questions he had posed, and solutions to some of the challenges faced.



PLENARY ONE

POLICIES TO ADVANCE AFRICA AS A MARITIME CONTINENT LEVERAGING OFF THE POLICIES AND AGREEMENTS: SCOPE FOR DEVELOPMENT

Facilitator: Ms Tsepiso Taoana-Mashiloane – Department of Transport

POSITIONING OF AFRICA'S COMPETITIVE ADVANTAGE TO ADVANCE ITS ECONOMY THROUGH THE MARITIME SECTOR.

H.E. Ambassador Nancy Karigithu (*Kenya's Ambassador and Special Envoy for Shipping and Blue Economy*) opened by declaring her candidacy for the position of Secretary General at the International Maritime Organisation (IMO). The IMO is seeking its 10th Secretary General when it meets for elections on July 18 and since the organisation was formed no one had occupied that position from the global South. The IMO had also never had a female Secretary General. This was now their opportunity to correct these misnomers especially since Africa is a Continent with a lot to contribute to the maritime sector and who hold the sector high in its hierarchy of interests.

The maritime domain was the cornerstone of the livelihood of humanity and the basis of the well-being of many national economies, particularly for the developing countries of Africa. Africa is bounded by 4 seas, the Mediterranean Sea, the Indian Ocean, the Red Sea, and the Atlantic Ocean and has a current population of 1,4 billion people by UN estimates. It has a median age of 19 years and increasing life expectancy but sadly high levels of impoverishment. Maritime zones under African jurisdiction cover 13 million kilometres and 65 square kilometres of Continental shelf.

Africa, therefore, needs to reawaken and redefine its future especially since it is endowed with so much wealth as a Continent. The Blue Economy has been described as the new frontier for Africa's renaissance. The maritime economy holds the potential for wealth creation and the promotion of trade, and the massive transformation of lives. Ambassador Karigithu said the oceans were under assault from pollution and a world affected by global warming. This was a wake-up call for Africa to work collaboratively to safeguard its marine ecosystem and blue resources. An example of the significance of the maritime industry was the Ever-Given vessel that was held by the Suez Canal Authority. The total trade loss from the vessel blocking the narrow canal amounted to almost US\$60 billion.

The maritime industry had several sectors and sub-sectors and was a major source of employment around the world served by a wide array of professionals. More importantly, it was also an industry that paid higher than average wages and therefore, played a big role in supporting the economies of maritime nations. She said shipping was the most efficient mode of transport when it came to climate change control and the IMO has called on us to reduce our contribution to greenhouse gas emissions by at least 50% by 2050 compared to 2008 levels. Additionally, the in-

dustry was a massive employer and paid more than the average wages. The Covid-19 pandemic exposed that there were looming job shortages in the industry, which presented an opportunity for Africa with its big pool of labour.

When it comes to trade, Africa is served by 15 trade corridors which serve at least 16 landlocked countries on the Continent which are economic lifelines. They are historical trade routes which have not been developed to provide linkages and connectivity between the corridors. Improving the capacity of our Ports had to be one of the major policy goals. Ambassador Karigithu noted that the Maritime sector had many interconnected nodes, however the biggest challenge had been the inability to acknowledge this connectedness. This requires a thought process that involves coalescing around maritime clusters in the countries and regions that complemented each other. There is also a need to collaborate and create partnerships on the Continent and work towards economies of scale and creating efficiencies. This would be an advantage that would aid the growth of the African Continental Free Trade Area (AfCFTA).

An interesting note is that the Continent's global share of trade was less than 3% and the participation in global and Continental trade would remain handicapped unless there is an increase in the fleet ownership of Africa. The Continent cannot continue to depend on foreign-owned vessels in the implementation of AfCFTA and therefore, there is a need to prepare to build, own and crew own vessels to carry African-made products all over the Continent. For this, appropriate policies are needed including the development of an African cabotage regime.

Ambassador Karigithu concluded with the assertion that Africa could not have a single Continental market without logistics. Operational inefficiencies affected the ports; therefore, this must be resolved. There is a defined need to add value to existing developments and consider the new internet of things and blockchain technologies as the sector advances, and to cure the slow uptake of technology in maritime transport and in the logistics system. Africa was on the cusp of a great transition in the maritime industry and had to use this opportunity for poverty alleviation, job creation and the achievement of more prosperous economies. The Continent also needed to address non-tariff barriers and commit to and review institutional frameworks to break down and remove obstacles that would help to realise enhanced intra-Africa trade.

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The *Director General at the DHET Dr Nkosinathi Sishi* spoke on behalf of DHET Minister Dr Blade Nzimande (Department of Higher Education, Science and Technology). He opened his address by offering support to the Conference and reiterating that the Department had provided this support through its investment in the National Skills Fund (NSF). He further committed to supporting SAIMI in all its future endeavours.

Dr Sishi made a clarion call for African countries to rally behind the candidature of Nancy Karigithu (Kenya) for the position of Secretary-General at the IMA. He expressed his appreciation for the Conference which had led to the convergence of thought leaders from across the Continent and the world, in our country. He highlighted that the themes of the Conference anchored on two important pillars, those being regionalisation and skills development and said that these were topics which coincidentally aligned with some of the Department's initiatives.

He hailed the presence of the different delegates and sector experts at the Conference as this would allow for the sharing of best practices as we sought to grow the economies in a coordinated manner. This focus on the Oceans Economy and collaboration within the sector would give an opportunity to drive Agenda 2063 - the Africa We Want. It was also well timed given the social and economic challenges that all countries in the Continent were confronting – challenges which had culminated in a race and competition for resources and could be addressed through an increased focus on the Oceans Economy. Many more countries were now turning to the ocean for food, energy, and transport, against the backdrop of accelerating climate change, compounding pollution, biodiversity loss, and the Covid 19 pandemic.

Dr Sishi mentioned that Minister Blade Nzimande had presented a budget the previous day where R130 billion had been allocated for skills development for the country and said that the NSF and skills development in our country had been prioritised as part of that budget. The NSF was committed to supporting economic recovery in South Africa after the devastation caused by the Covid 19 pandemic.

The African Continent as well as the countries adjoining the Indian Ocean had experienced growing interest in the development of the Oceans Economy, which was being manifested through policy development and the implementation of various initiatives on the Continent. The Oceans Economy provided the considerable potential for the Continent, which is made up of 38 coastal

and island states and spread over a 47 000 km coastline, to develop their ocean-based sectors. This is the main reason why the Department thought it was necessary to confirm its support of the Conference, and of the NSF.

The Department believed that it was also important to hold a Conference of this nature at a time when new oceans activities including offshore energy, aquaculture, and marine biotechnologies, were taking centre stage, in order to discuss and engage on how the Continent would maximise the potential of the Oceans Economy. Dr Sishi spoke of the South African government's launch of Operation Phakisa in 2014, and how a lot had been done since then. The government was now working on the Oceans Economy Masterplan (OEMP) to support growth and stabilisation, and to ensure the increased contribution of the Oceans Economy towards job creation and an increase in the country's GDP.

The development of the OEMP had begun in 2019 but progress had been stalled by the advent of the pandemic. The hope was that the Conference would allow South Africa to share its experiences with its African counterparts and for us to simultaneously learn from the Continental experience to enrich the work that was happening on the OEMP. Dr Sishi ended his address with the following questions:

- What is preventing us from intensifying regional integration and realising economic growth in the Oceans Economy?
- Can we establish a regional skills plan supported by all learning institutions across our region without duplication of resources?
- Can our individual regulatory frameworks be integrated and standardized to foster trade and standardised skills?
- Is it imperative that regional collaborative efforts be intensified to mitigate the cross-boarder impacts of developments in the Oceans Economy?

He expressed hope that the Conference would engage extensively in these areas and that the outcome would provide some answers to the questions he had posed, and solutions to some of the challenges faced.

PANEL DISCUSSION

LEVERAGING OFF THE POLICIES AND AGREEMENTS: SCOPE FOR DEVELOPMENT

Facilitator: Ms Tsepiso Taoana-Mashiloane – Department of Transport

HIGHLIGHTS OF PANEL DISCUSSION

Speakers that constituted this panel discussed the complexities of the maritime governance framework, and the importance of an integrated policy approach spearheaded by champions to ensure an effective implementation of these policies in the maritime sector to successfully govern the sector for optimal Oceans Economy development.

Mr Dumisani Ntuli (Department of Transport)

Mr Ntuli addressed the importance of the African Maritime Transport Charter for Africa's participation in the maritime economy. Delegates were urged to go through the African Union (AU) website for updates on the progress of countries ratifying the revised African Maritime Transport Charter.

Mr Ntuli mentioned that maritime policies operate in an extremely complex environment which included global and regional policies, national legislation, and various government departments - all with interests in the maritime sector. He, therefore, emphasised the need for governance in the national sphere and referred to the challenges and the contested framework of maritime governance in South Africa. Maritime policy was essential for understanding and navigating this environment effectively. Mr Ntuli further, explained that the absence of maritime policy presented problems such as reduced freedom and prosperity for coastal states, hindered sovereignty, and resource exploitation, raised security concerns, limited economic development, and had negative impacts on neighbouring countries dependent on maritime resources.

Mr Ntuli proposed that a maritime policy should define parameters for access and participation, reflect national aspirations, serve as an instrument of governance, protect marine ecology, support sustainable development, enable safe and secure maritime activities, assure global trade, and promote research in the maritime sector. He said that maritime policy was very important as a means of completing the decolonisation agenda and ensuring the inclusion of indigenous populations in the maritime sector.

He concluded by mentioning that maritime policy required dedicated champions as well as advocates for effective implementation, and there were no shortcuts to policy implementation. Additionally, maritime policy was key to navigating the complex governance framework, promoting sustainable development, and advancing the national interests of coastal states.

Mr Judy Beaumont (International Oceans Institute)

Ms Beaumont highlighted the complexity of ocean governance and the need to understand its various layers and users. She mentioned the challenges of bringing together different sectors such as environmental, economic, and social sectors for effective ocean governance. She then proceeded to consider the African context, including the significance of the African Union Agenda 2063, which focused on the blue economy and environmentally sustainable and climate-resilient economies.

Ms Beaumont emphasised the importance of African engagement in regional and global ocean governance processes, and the need for capacity building and coordination in areas like fisheries management. Additionally, she stated that regional conventions such as the Nairobi Convention and the Abidjan Convention had addressed various issues related to ocean governance and emphasised the growing global attention on ocean governance and how it called for transformation. There was potential for Africa to influence these agendas.

Furthermore, Ms Beaumont noted that the African Union Agenda 2063 provided a framework for cross-sectoral policies and systemic solutions that promoted inclusivity, justice, and collaborative decision-making. Collaboration, social inclusivity, environmental sustainability, and the use of modern data and information technologies were key to advancing Africa's blue economy and influencing global policy.

Prof. Mactar Doucouré (South African International Maritime Institute Expert)

Prof. Doucouré discussed the significance of the Oceans Economy and climate change on a global scale. He mentioned that the UNESCO Action Plan projected the Oceans Economy to be valued at US\$3 trillion by 2030. Additionally, the oceans absorbed 23% of humankind's CO2 emissions and this interconnectedness of the ocean and climate change affected people's lives across geopolitical borders.

To ensure sustainability, he stated that, a unique and breakthrough policy framework was required. Currently, there is a lack of coordination and no central point for policies related to the Oceans Economy and climate change. This had both positive and negative impacts, particularly on under-resourced communities. The Oceans Economy encompasses all economic activities linked to the ocean's natural resources and environment. Understanding the potential effects of climate change on the Oceans Economy was, therefore, crucial for decision-making and policy development.

Furthermore, Professor Doucouré mentioned that the African Union had recognised the degradation of the marine environment and the effects of climate change on Africa's oceans and seas. Observational evidence showed that heat waves in ocean waters were becoming stronger due to climate warming. The ocean acted as a carbon sink that could mitigate climate change, but if we continued to allow it, climate-related events could significantly impact the Oceans Economy in a feedback loop. More importantly, he noted that key sectors of the Oceans Economy, such as aquaculture and fisheries, marine transport, and offshore oil and gas exploration, were affected by climate change. Climate change posed risks to food security, job opportunities, shipping, and oil and gas reserves and threatened sustainable trade, development, and the potential of the Oceans Economy.

Professor Doucouré stated that in order to achieve impact, a horizontally integrated public policy framework was needed, enabling sustainable development, and aligning with global commitments like the UN's Sustainable Development Goals (SDGs). Collaboration, regional linkages, leadership, and champions were crucial for policy implementation. He explained that the Oceans Economy had the potential to contribute to South Africa's economic growth and create reciprocal impacts across businesses, government, and society. He concluded by stating that an integrated policy approach was essential to realizing the full socio-economic potential of the Oceans Economy while addressing climate change.

QUESTIONS ARISING FROM PANEL DISCUSSION

Q: An attendee raised concerns about misalignments in policies, particularly regarding the focus on transport and logistics instead of manufacturing and industrialisation within the Oceans Economy value chain. They also questioned funding policies that lack support for small businesses. The attendee further inquired about the development potential of the Continent's ocean area and its impact on calculating the Oceans Economy.

A: Professor Doucouré responded by emphasising the need for strong policy and regional cooperation to address these misalignments. He also highlighted the importance of establishing solid foundations through governance and business programs, acknowledging that results may not be immediate.

A: Mr. Ntuli acknowledges the challenges and highlighted the efforts made through the AU2063 agenda and the 2050 AIM strategy. He discussed the need for coordination among different departments and addressed the issue of competition between ports. He also mentioned the importance of marine spatial planning and the challenges in Oceans Economy master planning. Mr Ntuli then stated the lack of funding sources for the maritime sector and the efforts being made through the Maritime Development Fund.

OCEAN ACCOUNTING AS AN INSTRUMENT TO SUPPORT OCEAN GOVERNANCE IN THE CONTINENT

Professor Ken Findlay (*GOAP Africa Community of Practice*) addressed the topic of Ocean accounting as an instrument for ocean governance. He highlighted the historical interaction between humans and the oceans, emphasising the range of resource uses and pressures in the human-ocean nexus. The changing oceans and global resource utilisation, along with technological advancements, necessitated a comprehensive approach to ocean governance.

Sustainable and inclusive blue economies require a new model that goes beyond traditional economic metrics like GDP. Professor Findlay thus, proposed a comprehensive wealth model that incorporates natural capital, human capital, produced capital, and financial capital, and also considered pressures, inclusivity, and sustainability. He stressed the importance of integrating economic, social, and environmental domains in the ocean space.

Ocean accounting was presented as a means to measure ocean change, develop benchmark indicators, and inform evidence-based governance processes. Professor Findlay explained that ocean accounts had the ability to provide consistent and comparable information, enabling the assessment of trends and the measurement of stocks and flows within economic, environmental, and social systems. He highlighted the role of the Global Oceans Accounts Partnership in advancing ocean accounting globally, particularly in Africa, and mentioned specific projects related to marine ecosystem accounts and satellite accounts.

Ocean accounts also needed to support financing models, monitor progress, and contribute to governance processes within blue economies. Finally, Professor Findlay spoke of the importance of ocean accounting in integrating social, environmental, and economic metrics, promoting sustainability, and supporting informed decision-making in ocean governance processes.





PLENARY TWO

POSITIONING AFRICA AS A MAJOR MARITIME CENTRE: SEAFARER DEVELOPMENT IN AFRICA

Facilitator: Ms Theresa Williams – Transnet Academy

INTERNATIONAL BEST PRACTICES FOR SEAFARER TRAINING TO ENHANCE EMPLOYABILITY

Ms Theresa Williams (*Transnet Academy*) conveyed that Plenary 2 emphasised the importance of positioning Africa as a major maritime centre, which is the vision of administrations across the Continent. She highlighted two roles she embodies: that of a seafarer and that of an African and called on the attendees to keep Africa in mind while considering the session's topic. She then provided an overview of what would constitute an International Maritime Centre, including aspects like connectivity, innovation, talent, and digitalisation.

The focus of the session was seafarer development in Africa, with an emphasis on developing a multi-skilled maritime workforce with a global mindset. Ms Williams mentioned the challenges faced by seafarers, such as questions about career prospects and succession planning. She also discussed the impact of global shocks, such as the Ukraine-Russia conflict, on the shortage of seafarers.

In conclusion, she presented three problem statements namely, the low representation of African seafarers in the international fleet, the decreasing attractiveness of seafaring as a career option, and the demographic opportunities presented by Africa's youthful population. She urged Africa to make a decision on whether or not to become a major maritime centre, highlighting the need for collaboration and resource consolidation. Ms Williams encouraged self-reflection, quality assurance, and unity among African countries to ensure the success of Africa's maritime industry.

Professor Takeshi Nakazawa (*International Association of Maritime Universities IAMU*) explored the importance of competence and cost in relation to employability. He explained the formula $C = (K + S) * A$, where C represented competence, K was knowledge, S was skills, and A was attitude. He said that while institutions could provide theoretical knowledge and practical training, a strong attitude and motivation were essential for acquiring the appropriate competence. He mentioned the role of motivation provided by teachers, the reputation of seafarers, government support through tax exemptions and good salaries from the shipping industry in maintaining high levels of attitude and competence (the standard of competence as written in the Standards of Training, Certification, and Watchkeeping - STCW).

He emphasised the need for quality standards and continuous monitoring to ensure the achievement of defined objectives. Professor Nakazawa spoke of the correlation between the number of Japanese flag vessels, the exchange rate between the US dollar and Japanese yen, and the reduction in Japanese seafarers due to high operational costs. Furthermore, he explained how the Plaza Accord in 1985, which aimed to stabilize exchange rates, had led to a drastic reduction in Japanese seafarers and the loss of international competitiveness for Japanese flag vessels. Professor Nakazawa reflected on the prioritisation of cost over competence in the shipping industry and the challenges faced in attracting and retaining seafarers.

With regard to seafarer training, he focused on the development of propulsion systems and the shift towards environmental considerations. He discussed the historical progression from power to efficiency and then to environmental concerns such as harmful substances and greenhouse gas emissions. He mentioned the need to reduce NOx and SOx emissions while maintaining fuel efficiency, and the introduction of alternative fuels for ship propulsion. The importance of intelligence in the form of Artificial intelligence (AI) and technological advancements was raised, as were the reduction in costs for data storage and processing, the availability of big data systems, and the development of AI applications for ship operation, which could lead to safety benefits and lower operational costs.

PANEL DISCUSSION

STRATEGIC POSITIONING OF AFRICAN SEAFARERS IN THE GLOBAL LABOUR MARKET: COLLABORATING INDUSTRY AND ACADEMIA FOR SEAFARER DEVELOPMENT

Facilitator: Professor Malek Pourzanjani – South African International Maritime Institute

HIGHLIGHTS OF PANEL DISCUSSION

A global shortage of Seafarers presented an opportunity for African Seafarers to rise up and fill this gap. The economic benefits they could derive from assuming these positions would have a positive impact on the Continent as a whole. Training and skills development were however necessary to ensure that Seafarer capabilities matched the evolving needs of the industry.

Prof. Malek Pourzanjani (SAIMI Expert)

Prof. Pourzanjani noted the positive progress that had been made in the sector, with closer collaboration between higher education providers and SAMSA (South African Maritime Safety Authority). He also commented on the increased involvement of TVETs (Technical and Vocational Education and Training) in maritime education and training.

He however was concerned about the rapid implementation of automation and digitalisation in the industry, noting that the existing international regulations did not include training for these areas. This posed high-risk challenges for the sector. The global shortage of seafarers and the increased demand for African seafarers, on the other hand, presented opportunities for South Africa and Africa as a whole.

Mr Azwi Nelwamondo (South African Maritime Safety Authority)

Mr Nelwamondo stated that the projected shortage of around 90,000 certified seafarers by 2026, had implications for seafarers' well-being as they may be expected to stay on board ships for longer periods than desired. This shortage however also presented vast opportunities for African seafarers as it was a gainful source of employment for especially the young African population. It was therefore necessary for seafaring to be recognised as a critical and scarce skill in Africa, and for the Continent to increase investment in the education and training of African seafarers.

Mr Nelwamondo's address highlighted the economic benefits and multiplier effect of seafarers earning this foreign income and how it could positively impact their local communities. He mentioned the vast employment opportunities for skilled and unskilled labour in the maritime industry, including cruise liners.

There was a need for collaboration among African nations to establish maritime training institutions, not just for seafarers but for broader maritime roles. Mr Nelwamondo also expressed concern about the outdated information concerning South Africa in relation to the Baltic and International Maritime Council (BIMCO). He further, stated that there was a need for recognition agreements between African states in terms of seafarer training. He emphasised the need to prioritize African seafarers in African maritime policies and investment decisions. Despite the capacity of countries like India and the Philippines to train a large number of South African-certified officers in one year, there was still a significant shortage of seafarers in Africa.

He shared the view that some work also needed to be done to ensure that ship registration, trade policies, education investments, and regional cooperation benefitted African seafarers instead of solely benefiting investors. Collaboration amongst organisations such as SAMSA, SAIMI, the Department of Transport, the Department of Higher Education, and others to promote African seafarers was a solution for employment. Through such collaboration and leadership, the global shortage of seafarers could be addressed while making a positive impact on unemployment rates in South Africa.

Captain Sanket Mahajan (TMC Shipping)

Captain Mahajan focused on the development of seafarers in the African region, and on leadership and collaboration. The maritime industry was currently experiencing a shortage of certified officers with a deficit of 26,000 officers. This was expected to increase. Despite this shortage, many qualified seafarers struggled to find positions for sea time training. Captain Mahajan expressed that there was a need to address this imbalance between demand and supply in the industry. He urged the delegates, including policymakers, regulators, training centres, universities, ship managers, and ship owners, to take concrete steps and implement measures to overcome these challenges. He emphasised the importance of collaboration, suggesting that South Africa, being part of BRICS, had a significant role to play and encouraged Africa to lead in supplying maritime officers and ratings, considering the current geopolitical situation.

In addition to improving facilities and maritime education and training, he emphasised the need for advocacy to make a career at sea more attractive to young people. Career progression and succession were also important factors. Captain Mahajan supported the Conference call for greater collaboration, sharing of best practices, and creating a better future for the industry, with Africa emerging as a key player.

Ms Josephine Nthia (Kenya Maritime Authority)

Ms Nthia discussed the strengthening of seafarer training for global opportunities. She stressed the significance of quality standards and qualifications for seafarers, including the development of a code of qualifications and approval procedures for training courses. She acknowledged the challenges faced by African countries, which included limited resources for laboratories and simulators, and the importance of sharing knowledge and learning from each other.

The legal framework and administrative arrangements were also very important. Ms Nthia mentioned the international conventions that guided seafarers in Kenya as an example. She emphasised the need for policies, procedures, and prudent management of resources to ensure effective implementation of the legal framework.

Her address looked at the impact of technology and digitisation on seafarer development and highlighted the need for re-skilling and updating programmes to keep up with global developments. Youth and gender issues were discussed, as well as the need to prepare young people for international employment. She also mentioned the need to address challenges such as bullying and harassment.

In terms of innovation and diversification, Ms. Nthia suggested that new sectors be considered such as hospitality crews on cruise ships and the oil exploration industry. She called for support and collaboration among African countries, proposing joint guidelines on bullying and harassment and regional competencies.

Ms Nthia concluded by making mention of the upcoming comprehensive review of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and invited African countries to propose frameworks for consolidation. She said they needed to support each other on regional competencies, embracing digitisation for certificate verification purposes, and the training of seafarers based on industry needs.

TAKEAWAYS

Concerns were raised about the risks posed by the lack of training in the areas of automation and digitalisation, which were rapidly becoming a main feature of the industry. This was in an environment where there was a global shortage of seafarers. African seafarers therefore needed to be prioritized in African maritime policies and investment decisions that would ensure their adequate skilling in order for them to take advantage of these global opportunities.

PARALLEL SESSION

MARITIME INDIGENOUS KNOWLEDGE (MIK)

Facilitator: Dr Nina Rivers

OVERVIEW OF MARITIME INDIGENOUS KNOWLEDGE SESSION

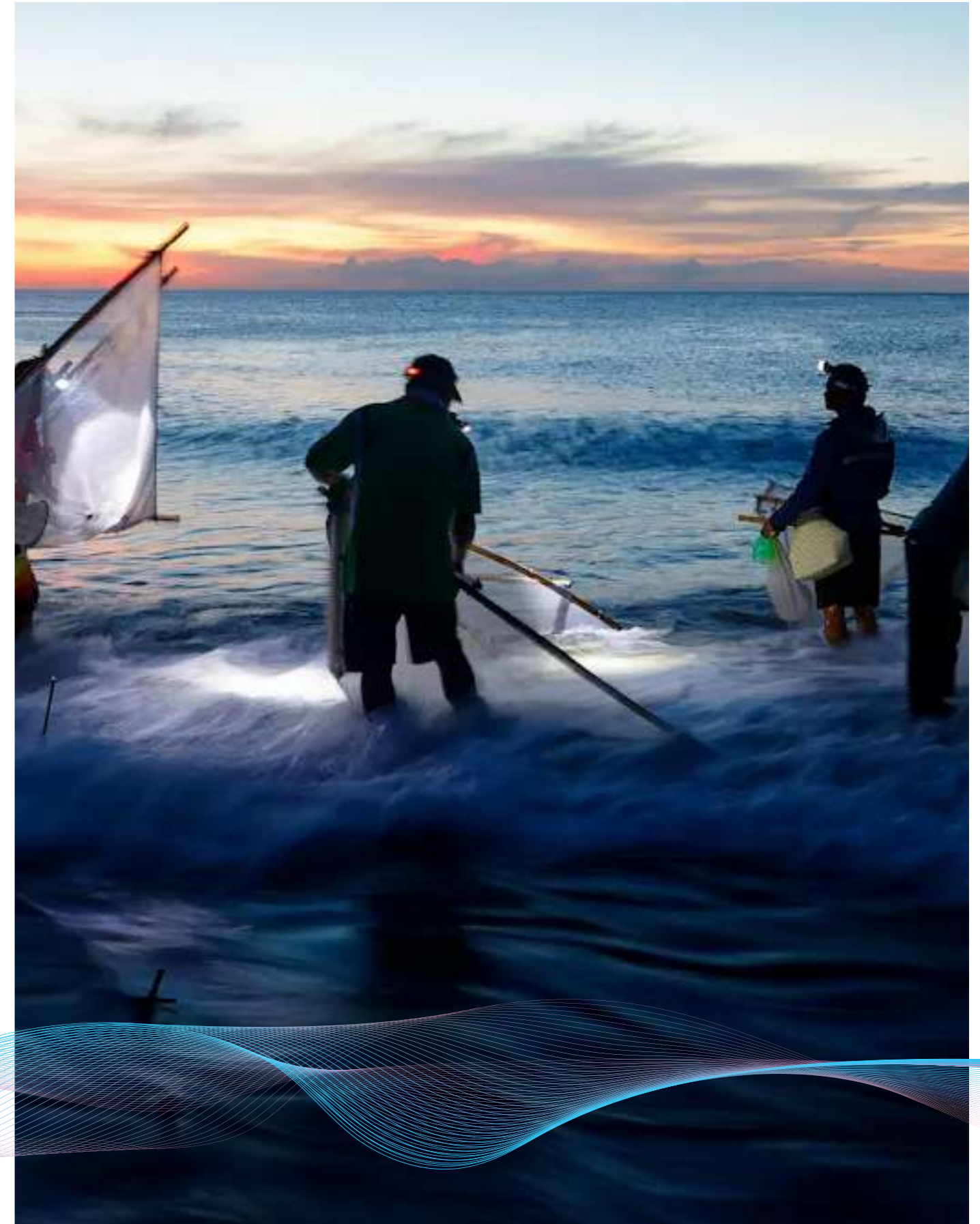
Presented by: Dr Yohan Seleti *SAIMI Research Expert*
Mrs Izuoma Egeruoh-Adindu (Virtually) *Senior Research Fellow Nigeria Institute of Advanced Legal Studies*
Dr Estelle Kabran *Assistant Professor, University Félix Houphouët-Boigny (Ivory Coast)*
Prof Rose Boswell *SARChi Research Chair in Ocean Cultures and Heritage*
Dr Mayashree Chinsamy *DSI-NRF Centre of Excellence in Indigenous Knowledge Systems*

Objectives of the roundtable discussion The objectives of the roundtable discussion were to identify the gaps associated with advancing the indigenous knowledge systems agenda. Presenters discussed the possible use of an integrated approach (a cooperative mechanism that would include traditional knowledge holders) to ocean governance and future maritime planning. They also looked at possible amendments to existing policies such as the Indigenous Knowledge Systems Policy (IKS).

Key points from the roundtable discussion Some of the key points raised during the roundtable discussion included the following:

- There was a need to identify the gaps within the current framework of the Indigenous Knowledge Systems Policy (IKS). Future amendments could then be made using this as a yardstick.
- Case studies from Nigeria and Ivory Coast were discussed, where traditional knowledge holders as custodians together with governmental agencies implemented a system promoting sustainable usage and economic development through the Oceans Economy.
- Various examples of indigenous knowledge systems and specific cultural beliefs were identified from a previous study.
- A case was made following a discussion on the cooperation and integration of views from policymakers, stakeholders, academia, and traditional knowledge holders, for the implementation of new strategies and policies pertaining to the sustainable economic development of the maritime sector.

Proposed Way Forward The working group focused on the systemic mapping of indigenous knowledge systems along the coast lines of Southern Africa. They highlighted the need to identify the different sectors within the MIKS agenda that required further research and development. This included sustainable ecosystem management in collaboration with local traditional knowledge holders as custodians of the environment. Presenters also proposed policy amendments and filling of the gaps that were identified for new and proposed legislature.



PLENARY THREE

A RESPONSIVE SKILLS DEVELOPMENT MODEL TO SUPPORT MARITIME GROWTH

Facilitator: Ms Nondumiso Mfenyana – South African International Maritime Institute

RECAP OF PREVIOUS DAY

Mr Odwa Mtati (SAIMI CEO) introduced the first group of speakers on day 2 for Plenary 3. He said the speakers would present models and systems of development that touched on the issue of skills development in South Africa and the Maritime Industry. He specifically referred to maritime skills forecasting, and collaboration across African countries and the rest of the globe.

DEVELOPING SKILLS MODELS AND SYSTEMS FOR DEVELOPMENT

Mr Tshepo Mokoena (National Skills Fund) provided a presentation that focused on the funding modalities, challenges, and solutions for the Skills Development Initiative regarding Maritime education and training institutions. Upon identifying the need for increased investment in production and transportation in the Maritime industry, he explored certain challenges that are the reason for such a need. These included educational challenges, inadequate capacity and infrastructure for the maritime training institutions, the absence of sufficient institutional and funding arrangements, as well as poor advertising within the maritime industry. To address these issues, he emphasised the necessity for collaborative efforts between the government and the private sector. This would need to be completed by a coordinated effort between South Africa, countries within the African Continent and other developed nations.

He brought to light the importance of communication and cooperation between the maritime industry and maritime training institutions, along with the need for transparency in financial management.

Professor Stephen Hosking (South African International Maritime Institute) focused on human resource planning models that are necessary at the societal level to adhere to the constant changes in the (global) labour market within the Oceans Economy. Such models would aid in forecasting specific future national human resources requirements, and efficient investment in national general education and training. He stated the current drivers of the aforementioned labour market changes which included artificial intelligence, the effects of climate change on the ecosystem and developing the labour market post-Covid 19. On the demand side, such impacts had resulted in a number of transitions such as energy transitions and labour demand transitions. On the supply side, the impacts had changed worker expectations and decreased average real wages.

Professor Hosking identified that the problem lay in the aggregation of the contributions of different sectors within national accounts, including the Oceans Economy, thus, impeding on the forecasting efforts and efficient investment mentioned. He acknowledged SAIMI's contribution to the resolution of this issue, through their consideration of social human resource (manpower) planning as a critical national task. However, he further emphasised the necessity of developing an estimate of the skills requirements for the national economy and specifically breaking that down amongst the industries in as detailed a manner as possible.

Mrs Nkala (Transport Educational and Training Authority) outlined the contributions of the Sector Education Training Authorities (SETAs) to the Maritime Industry, according to the National Skills Development Plan (NSDP) and Skills Development Act. She noted that the SETA's main focus was getting people into the workplace through providing them with the necessary qualifications and work experience in order to bridge the gap between education and the workplace in the maritime industry. They did this by contributing to the provision of scarce and critical skills, growing the public college system (TVETs), and increasing access to occupational driven programmes that would allow smoother access to the maritime industry. Nkala described how these objectives had been implemented in an adaptive manner that aligned with changes and disruptions in the industry (Covid-19, the internet). She further, defined the contributions of the SETAs transportation division (Transport Educational and Training Authority, TETA) and its focus on the provision of transportation training and education. She however, raised the issue within the transportation industry pertaining to a lack of transformation (gender gaps, disability gaps) that still needed to be addressed.

Ms Mampokhu Khuluvhe (Department of Higher Education and Training) focused on the effectiveness of a skills forecasting model. She initially outlined the efforts of the Department of Higher Education and Training in terms of skills development and the training sector in a general sense (applicable to the Maritime industry). The department had been working on anticipating skills needs through the Labour Market Research Programme. They previously attempted to implement a more demand-driven approach towards education and training in three ways, namely, the production of a list of occupations in high demand, the anticipation of skills needs through targeted skills provisioning and the development of more holistic human resource development programmes that bridge existing skills plans (NSDP, Master Skills Plan).

However, challenges pertaining to the rapidly changing economy, skills shortages, and the excess number of inadequately skilled graduates, had affected their efforts. She noted that the forecasting came with limitations including the inability to project certain nuances (load shedding) that may impact the labour market or the notion that not everything was quantifiable and thus, could not be measured. Currently the department through the Labour Market Research programme was developing an all-inclusive tool aligned with the national treasury microeconomic model, which steered away from long-term projections and focused on producing annual employment and skills projections according to economic sector, occupation, and province.

Mr Sabelo Buthelezi (Department of Higher Education and Training) presented a model that the department had developed with intentions of repositioning TVET colleges in terms of artisan training. He explained how TVET colleges are being undermined when it comes to their potential to aid in skills development and job recruitment. He proposed that the department encourage TVET colleges to reposition themselves in terms of providing specialised training that aligned with specific occupations in high demand, by not only providing theoretical learning but simulated practical learning that encourages occupational qualification as well.

This would then lead to an integration of authentic work experience so that learners were adequately equipped when entering the workplace. He emphasised the importance of a dual system in this approach to specialisation, where a relationship would be created between TVET colleges and the workplace so that the learner may rotate between learning in the workplace and in the college. He also noted that funding would be provided by the department through the fiscus and SETAs. On account of this approach to 'industry driving the curricula' and allowing colleges to respond to industry needs, the department believed that this model could be successfully implemented in the Maritime sector.

ENHANCING THE POTENTIAL OF THE EMPLOYABILITY OF GRADUATES THROUGH ENGAGEMENT BETWEEN INDUSTRY AND ACADEMIA

Nondumiso Mkhwenyana (SAIMI panellist), Head of skills, education, and training at SAIMI introduced the second phase of Plenary 3. She explained that the session was intended to connect the dots between the first speakers and their approaches to efficient skills development models to support economic growth, with the next speakers, who would address the mismatch of skills when it came to employing graduates.

Mr Nceba Mfini (African Marine Solutions) emphasised the Department of Transport Maritime Human Resources Task Force's approach of incentivisation. This is aimed at mitigating rising unemployment in South Africa that had resulted from mismatched skills amongst unemployed graduates. This is compounded by unsatisfactory transformation with regard to employment equity. He stated that this skills deficit was not the result of a shortage of funding that prohibited skills development, but rather a misalignment of skills development. He believed that the issue stemmed from the lack of ownership being taken between the government and the industry when it came to deciding who must drive skills development, specifically in terms of funding.

He stressed the need for collaboration and communication between the government and industry and provided a solution along the lines of creating a training pool system. To fund skills development, 10-20% of the pool's funding would need to come from SETAs, whilst the industry provided the rest. He said investment in such a system that provided adequate training to graduates before entering the workforce would be incentivised by offering, for example, potential BBBEE points. He provided an example of a successful existing programme which utilised this approach to increased funding namely, the Thuthuka programme.

Mr Kevin Janssens (Robertson Caine) explained the objectives and intentions of the Cape Town-based boat-building company, Robertson and Caine in terms of providing employment to unemployed youth who were interested in pursuing a career in the Maritime industry. He spoke about how the company makes little to no use of automated processes besides cranes or forklifts and said everything else was built by hand thus required employees with a sufficient skill set. The company had also expanded its employment quota since being bought out by international investors and had accordingly, created 350 new jobs in 2023.

However, Janssens stated that challenges to employment besides the skills deficit also included the inability of graduates to present themselves well in interviews therefore, their inability to show the range of their skill sets, and the inability of graduates to smoothly integrate into the workspace even with an adequate skill set. Janssens therefore, further stressed the importance of their partnership with TVET colleges. He highlighted the company's initiative of informal internal learnerships amongst unemployed matriculants in which they train and develop these interns. He proceeded to explain how the company was increasingly implementing a similar approach with unemployed graduates from TVET colleges, to allow for a smoother transition between college and the workspace.

Captain Talib Ibrahim Mohamed (Technical University of Mombasa) explored the issue of employability related to deskilling and upskilling by specifically outlining how human resources experts and professionals defined employability. He identified two perspectives wherein, the first was an outcome-oriented approach that looked at overall graduate employability based on the outcome (established skills checklist), and the second was a process-oriented approach that considered the process of employment which resulted in the aforementioned outcome. He stated that the former becomes an issue when the employability bases itself upon irrelevant checklists of skills that are outdated and provided an example of his own training according to the pre-2010 Manila amendments, which were no longer sufficiently applicable in the current day. He showed how this could be remedied in the future through infrastructural development and stakeholder engagement in universities and colleges, thus, advocating for the process-oriented approach that speaks to the synergy between industry, education, and training institutions.

Mr Jomo Jacobs (Umfolozi TVET College) presented Umfolozi TVET College's approach to affording the youth an opportunity to acquire the skills, and related how the College provides support that the students require to enter the workplace. He stated that their main aim as a college was to understand what the skills value chain was, thus establishing the necessary skills young people need, to prepare for entrepreneurship as well. Additionally, he referred to the difficulties faced by colleges when specifically acquiring funds from NSFAS and TETA for Maritime students. He described it as a tedious process, which was not sustainable. He stressed the need for an easier system.

He proposed that the department encourages TVET colleges to reposition themselves in terms of providing specialised training that aligned with specific occupations in high demand. The Colleges must, therefore, not only provide theoretical learning but simulated practical learning that encouraged occupational qualification as well. This would ensure the integration of authentic work experience so that learners were adequately equipped when entering the workplace. He emphasised the importance of a dual system in this approach to specialisation, where a relationship would be created between TVET colleges and the workplace so that the learner may rotate between learning in the workplace and in the college. He also noted that funding would be provided by the department through the fiscus and SETAs.

On account of this approach to 'industry driving the curricula' and allowing colleges to respond to industry needs, the department believed that this model could be successfully implemented in the Maritime sector.

KEY TAKEAWAYS FROM PLENARY 3

The maritime industry is constantly undergoing transformation, impacting oceans economies worldwide and as these economies evolve, new markets and employment opportunities emerge. Consequently, there is a pressing need to develop updated skills that cater to the current and future demands of the industry. To keep pace with this sector's transformation, the South African International Maritime Institute (SAIMI) is currently engaged in a process to develop systems and models that support the supply of skills to meet industry demands. One of the key components of this process is the creation of a Skills Forecasting model.

QUESTIONS ARISING FROM PLENARY 3

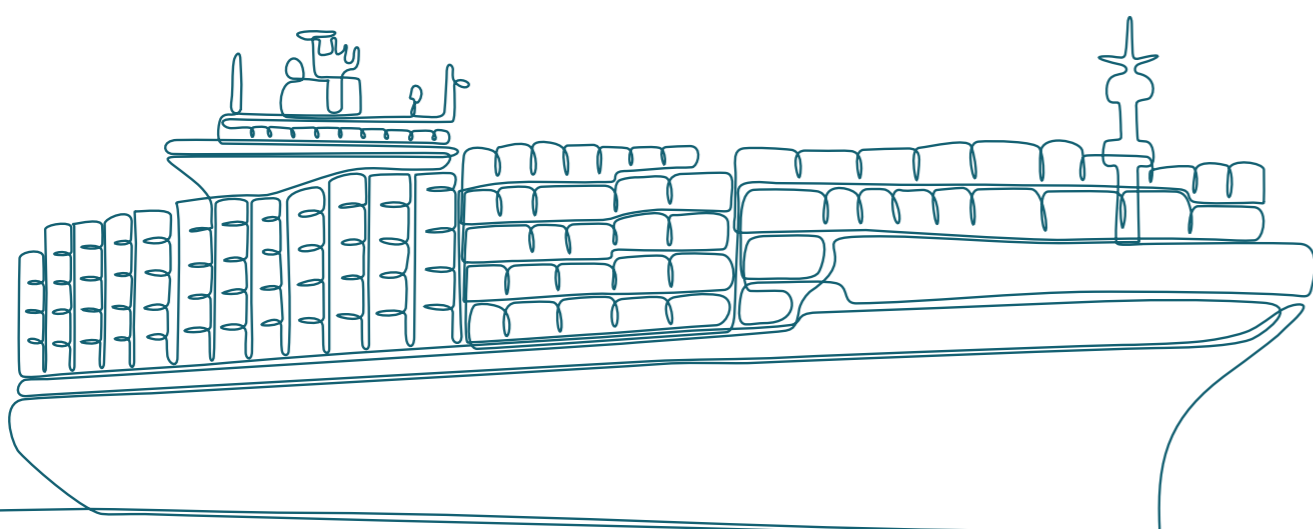
Q: An attendee raised a concern about needing to find a way to encourage TVETs to run short programmes (6 to 12 weeks) to fix the unemployment issue in the short term because employment could be provided in the rating space.

A: Mr Mtati responded and noted the potential of occupational qualifications as explored by Mr Buthelezi.

Q: A Maritime student expressed the lack of funding for their Masters programme and suggested that the engagements of the maritime skills development fund be resumed and further, called for a pool that allowed access to those funds to be created.

A: Mr Mokoena stated that NSFAS (National Student Financial Aid Scheme) currently has funding for Maritime studies at the top of their agenda.

A: Mr Mfini responded quoting what he had mentioned with regards to funding not being the issue, but the issue rather being the 'how' part of it. He further, stated that South Africa has a coordination problem and needed to redistribute its funding.



PLENARY FOUR

AFRICA AS A TECHNOLOGY AND INNOVATION HUB: RENEWABLE AND ALTERNATIVE ENERGY

Facilitator: Ms Clare Gomes – African Marine Solutions (AMSOL)

PROPOSED VISION FOR AFRICAN TECHNOLOGY AND INNOVATION IN THE OCEANS ECONOMY

Ms Clare Gomes introduced the session's speakers and explained the topics to be discussed, including renewable and alternative energy in relation to technologies and innovation in the Oceans economy for the African Continent.

Mr Andrew Young (*Marine Robotics Unit, Nelson Mandela University*) outlined the efforts of the Marine Robotics Unit at Nelson Mandela University (NMU), which was established in 2018 and is currently funded by SAIMI through the NSF. He expressed how wide the subject of Marine Robotics was by outlining certain projects the Unit is currently working on, such as underwater navigation and control (specifically for surveying coral reefs) and developing a catamaran design that houses solar power batteries and their autonomous oil boom system. These projects provided their students with adequate experience and allowed them to participate in innovation and problem-solving that expanded their abilities within technological advancements. Their efforts continued to respond to the needs of the industry.

Professor Edward Boje (*Marine Robotics Unit, University of Cape Town*) explained the University of Cape Town's (UCT) approach to Marine Robotics. Their Marine Robotics Unit resides under the Department of electrical engineering and is explored within the mechatronics space in both electrical and mechanical engineering. The unit's main objectives are to lead in research and innovation through providing post-graduate training at the highest level possible. Its interests lie in areas including surface (and sub-surface) robotic platforms, and machine learning, which they believe provides skills development that encourages innovation. An innovative project that they are currently interested in is that of the South African National Antarctic Programme.

Professor Scott Mackinnon (*Chalmers University of Technology*) referenced the concept of Maritime Autonomous Surface Ships (MASS) introduced by the International Maritime Organisation (IMO) as a regulatory framework for automation in the maritime industry. He discussed the different levels of autonomy and the challenges of implementing technology in the maritime domain, noting that the focus was currently on operational environments with traditional navigation and the gradual integration of automation to support decision-making on board. He also stated that although autonomous vessels were a possibility in the future, achieving high levels of automation, like the Elon Musk era of self-driving cars, was still far off.

Professor Mackinnon expected that there would be mixed environments with varying levels of digitisation and automation. He discussed the different levels of automation and the change in the flow of data, from human-to-human interaction to human-to-machine interaction. The strengths and differences between humans and machines were highlighted, emphasising the need to integrate the best aspects of both to create a safe and efficient navigational system. Professor Mackinnon also spoke of the "ironies of automation" and the potential for surprises as automation becomes more complex.

He proceeded to bring up the dichotomies in technology, such as codifying objectives versus human problem-solving heuristics, and the differences between work as imagined and work as done. These emphasised the research and application gaps within the maritime ecosystem. He also mentioned a simulation experiment that showed discrepancies between how vessels are navigated by qualified seafarers as opposed to when fully autonomous software controls the ship. This simulation demonstrated some of the challenges in automation.

Ms Marie Botha (*Council for Scientific and Industrial Research - CSIR*) spoke of the CSIR acts as a technical extension of the Department of Trade, Industry, and Competition (DTIC) in specific industries including the maritime manufacturing sector. Its mandate was to use research and technology innovation to foster national scientific and industrial development, improving the quality of life for all South Africans. It collaborates with the government to enhance industry, support industrialisation, promote job creation, and drive import substitution and export promotion.

She further mentioned that the CSIR mainly focused on marine manufacturing, because the DTIC had received exemption requests for designated components within the marine industry. The CSIR, therefore, aimed to build a local supplier base to meet these needs and increase local procurement. They work on obtaining specific type certifications for component manufacturers and assist with compliance issues through standards and accreditation.

Additionally, they provide technology enhancement support by collaborating with industry on proof-of-concept projects, advancing localisation, establishing local supply chains, promoting collaboration, and positioning South African industries in global supply chains. Furthermore, the DTIC enables innovation in advanced manufacturing through the CSIR.

Ms Siphokazi Ndudane (*Department of Rural Development and Agrarian Reform*) made mention of her background as an oceanographer turned fisheries scientist. She expressed the Department of Rural Development and Agrarian Reform's interest in addressing the problems faced by marginalized individuals. She further highlighted the challenges faced by fishermen who risk their lives but struggle to find markets to sell their catch, often ending up with low prices due to middlemen. She noted that during a review of the Marine Resources Act, the government recognised the need to support small-scale fishers. They had consequently introduced an app called Abalobi, that allows fishermen to sell their fish online and connect with buyers, including prestigious restaurants. The app had had a significant socioeconomic impact on marginalized fishermen, enabling them to receive better prices and access larger markets.

Ms Ndudane emphasised the transformative effect that the app has had on the lives of fishermen and on the flow of economic value to the small-scale fishing community. She mentioned that the app was not only used in South Africa but was also being adopted in other countries like Mozambique, Seychelles, Mauritius, and Comoros. She concluded by emphasising that technology could address both big and small social problems.

CYBERSECURITY AND TECHNOLOGICAL ADVANCES IN THE OCEANS ECONOMY

Clare Gomes introduced this session and said speakers would address challenges presented by cybersecurity attacks.

Prof Sune Von Solms and **Mr Tshepo Mawer** (SAIMI) discussed their collaborative work on information and communication technologies (ICT) and cybersecurity issues in the maritime industry. They referred to a focused study which aimed to identify deficiencies in ICT processes and protection within the maritime context. The study also led to conversations with companies like Bergesen Worldwide Offshore which highlighted cybersecurity issues impacting daily operations.

The presentation emphasised the complexity of integrating various systems on maritime vessels, including navigation, propulsion, IoT, and communication systems. As data flows and communication increased, there was a need to secure and govern the data effectively. Furthermore, the ongoing projects they mentioned included a cybersecurity awareness programme for onboard crew and modelling of the data flow on vessels to identify vulnerabilities and risks. The goal was to address these issues to ensure safe and secure operations in the maritime industry.

Professor John Chudley (Marine Learning Alliance - MLA) addressed the topic of cybersecurity and its impact on maritime education and training. He introduced MLA College, a UK-based private higher education institution focused on sustainable maritime operations and emphasised the importance of flexible education and training to meet the evolving needs of the maritime industry. The maritime industry faces a growing threat of cyberattacks which are akin to modern-day piracy.

Professor Chudley then stated how the University of Plymouth (MLA College's research partner) had established a unique cyber ship lab to simulate and analyse cyberattacks on complex ship systems. He noted a specific software called MaCRA (Maritime Cyber Risk Assessment), which assesses cyber threats for international shipping operators and insurers. Professor Chudley further suggested that the traditional three-year degree structure may need to be reconsidered to accommodate the continuous addition of new topics such as ethics, sustainability, and cybersecurity.

He proposed a more innovative and flexible approach to professional development, integrating knowledge and understanding with practical experience at sea. MLA College offers a total learning package that enables access to educational materials and facilitates global student forums through online platforms. Accordingly, he emphasised the importance of global partnerships and collaboration to address the UN's SDG's in maritime education and training and encouraged the normalisation of digital learning, the recognition of prior learning at work, and the adoption of experiential learning and action research methods.

He called for universities and educational institutions to prioritize accessibility and relevance in learning, making education accessible wherever individuals are located. He stressed the need for continuous innovation and a personalized approach to education, with the goal of making organisations more sustainable.

Dr Stanley Ehiane (University of Gaborone) discussed the importance of digital security and the increasing vulnerability we face due to digital transformation and the reliance on digital transactions. He highlighted the significance of maritime trade, which constitutes around 90% of global trade, and its connection to cyber threats. In 2021, there was a significant increase in cyber threats in the maritime sector, which surpassed threats in other areas of global trade. Dr Ehiane emphasised the reality and impact of cyber threats on social, economic, and political aspects of life.

Addressing cyber threats in Africa required learning from countries that have built resilience against such threats. Dr Ehiane said there was a need for African countries to collaborate and derive solutions from the experiences of others. He stressed that addressing cyber threats in the maritime sector should involve all countries in Africa, not just coastal nations, as maritime trade affects the entire region. There was a need for collective efforts in addressing cyber threats and integrating them into the peace and security framework of the African Union. Dr Ehiane conclusively mentioned the importance of implementing the Malabo Convention and urged member states to not only sign but also effectively operationalize it. He suggested the need to build resilience against cyber threats, just as we do against terrorism.

Dr Jabu Ntsweni (CSIR) discussed how cyberspace was a common factor connecting various domains including, maritime, air, land, and the world domain. Cybersecurity challenges existed in the maritime space; just as physical security challenges do. He further, explained that cyberspace intersects with critical infrastructures and discussed the importance of protecting information, IT security, operational technology (OT) security, and offensive security in the maritime domain.

Dr Ntsweni then mentioned the relevance of the Internet of Things (IoT) and how data from various sectors, such as shipping, could be crucial and emphasised that physical security is essential in conjunction with cybersecurity, as one without the other could be insufficient. The goal of cybersecurity was to minimize risks and protect data, and it involved people, processes, and technology. A variety of threats existed in the maritime domain such as nation-state actors targeting infrastructure, supply chain risks, as well as the impact of climate change on the Oceans Economy. Dr Ntsweni stated the importance of awareness, protection, and recovery in addressing cybersecurity challenges. He concluded by emphasising the need to think securely, build secure technologies, and develop a culture of cybersecurity awareness.

Mr Ndzimeni Ramugondo (SAMSA) expressed enthusiasm for innovative solutions and the potential of technology to address socio-economic problems. However, he also acknowledged that technology created vulnerabilities and emphasised the criticality of ensuring the safety of life and property at sea, particularly regarding cybersecurity threats. Mr Ramugondo mentioned that African countries, such as South Africa, Kenya, Nigeria, and Ghana, had experienced a high number of cyber threats. He highlighted the dark market where cybercriminals provided malicious services, including access, malware distribution, phishing, and crypting. He discussed the challenges of managing vulnerabilities and the need to understand assets and respond promptly.

He then explained that cyber attackers or threat actors study the environment, target vulnerabilities, and breach systems, often remaining undetected for long periods. It was, therefore, essential to detect breaches, respond effectively, and recover to maintain business continuity. He noted that recovery from ransomware attacks could be challenging if backups are not secured. Moreover, Mr Ramugondo mentioned the signing of a convention to facilitate partnership and information sharing among countries. He highlighted the shortage of skilled professionals in the security domain and the likelihood of experienced individuals leaving the field. Overall, he emphasised the need for appropriate responses to address these issues.

KEY TAKEAWAYS FROM PLENARY 4 *Automation in the maritime industry was a gradual process and varying levels of digitisation and automation had taken place. High levels of automation were however still far off. The maritime space was also faced with technological challenges in the form of cyber threats which could include nation-state actors targeting infrastructure, or supply chain risks. African countries therefore need to collaborate and derive solutions from the experiences of others where this is concerned.*

QUESTIONS ARISING FROM PLENARY 4 **Q:** *An attendee asked if there was any way that the youth could get a skills programme that would enable them to learn about cyber security so that they can become proactive in the space.*

A: *The panellists response that there were various programmes that are available when you look at MICST-SETA but from the CSR perspective, there was only one programme called the cyber security learning factory. The learning factory targets particularly your learners who have matric or those who have certificates, but they might not necessarily have degrees. There are various other programmes, such as the Cyber Excellence Programme, supported by SASSETA. More particularly they need to be proactive, because in the cybersecurity space, you don't necessarily need somebody to have a full degree for them to start participating. They can participate without that and start getting other qualifications including certifications.*

In the cyber space area, there's a big shortage of skilled professionals. Last year we were sitting at about a 6 million shortage of professionals in the field. In Africa alone it was around about a million or so. So, it's very, very important to do some of these skills programmes to contribute towards solving some of these problems.

Q: *An attendee asked about Africa's vulnerable position when it comes to cyberattacks.*

A: *In response, it was explained that the issue is not lack of awareness but the need for better collaboration among stakeholders. The responsibility lies with vessel owners, while other stakeholders were less involved, making Africa more vulnerable.*

PANEL DISCUSSION

AFRICA AS A TECHNOLOGY AND INNOVATION HUB: RENEWABLE AND ALTERNATIVE ENERGY

Facilitator: Professor Scott Mackinnon – Chalmers University of Technology

A CONTINENT ENDOWED WITH NATURAL RESOURCES. THE COEXISTENCE OF AFRICA'S OIL AND GAS EXPLORATION WITH OTHER SECTORS WHILST PROTECTING THE ENVIRONMENT

HIGHLIGHTS OF PANEL DISCUSSION

The Panel discussion looked at the exploration of Africa's oil and gas resources for purposes of the security of energy supply and economic growth and development in the Continent. It also explored ways in which the Continent could simultaneously do this whilst exploring alternative energy sources and moving towards a state of zero carbon emissions in the maritime sector.

Dr Brian Mubiwa (United Nations Environmental Programme)

Dr Mubiwa outlined the Tripartite challenges which he described as environmental challenges that the world was currently facing. These included Climate Change, Waste Pollution and Biodiversity/Nature Loss, which were interconnectedly perpetuated by unsustainable production and consumption. Dr Mubiwa explained that these challenges mostly impacted poor and marginalised communities. He gave specific examples of the manifestation of each of these challenges. Regarding climate-induced disasters, Dr Mubiwa spoke about the floods occurring in Malawi as a result of the rising sea levels. He explained that by 2080 an estimated 70 million people would be at risk of being affected by the floods. In relation to Biodiversity loss and deforestation activities, Dr Mubiwa stated that by 2025, about 250 million people would be subjected to water stress. He also noted that fisheries were expected to deplete. The insights he gave regarding waste pollution explained how 90% of the waste disposed in Africa, was done so on land but was not managed sustainably. He emphasised the need to transition toward waste recycling (including electronic waste).

Dr Mubiwa made mention of the significant increase in marine plastic pollution since 1980. He also noted the negative impact of fertilisers which continued to release tonnes of metals into the natural ecosystem and explored the increasing levels of global warming. As a way forward, he explained the importance of innovation, specifically to address the Sustainable Development Goals (SDGs). He stated the importance of achieving economic growth whilst preserving a healthy environment as well as the necessity of community engagement. Such community engagement had the potential to allow a 'just transition' towards low-carbon, climate-resilience, and resource-efficient economies. He additionally highlighted the need for more efficient use of material and resources across all economic sectors, and the utilisation of good strategies (such as the UNEP Medium-term strategy). Dr Mubiwa stated that SAIMI could spearhead capacity and awareness campaigns or initiatives that could address the aforementioned challenges.

Specifically, for Africa, Dr Mubiwa suggested solutions such as the creation of a space wherein Africa would trade energy as a region until every country had reached a reliable mix of clean energy. He provided the example of East Africa operating with a Geothermal pool, Central Africa operating with a Hydropower pool and so forth. Dr Mubiwa proceeded to explore natural gas as a substitution for coal. He stated, however, that this resource was not universally available and that 50% of Africa would be excluded from related development if there were to be no policy direction. Dr Mubiwa then stressed the need to include women and the youth in these 'just transitions'. He concluded by mentioning the need to incentivise 'just transitions' as well as the necessity of acquiring lucrative and realistic energy alternatives.

Mr Adrian Strydom (South African Oil & Gas Alliance)

Mr Strydom reminded the attendees that the Just Transition was a process and not an activity that could be switched on and off. Africa had to consider the risks associated with energy security before rushing into the transition process. All energy sources needed to be explored and used in Africa, to extricate the Continent from the current electricity supply crisis. He referred to Africa contributing 3% of global carbon emissions while 43% of Africans were still without electricity in their homes.

He emphasised that Africa should be allowed to develop at its own pace and should optimise the resources available on planet Earth for the benefit of the Continent. Mr Strydom highlighted a few examples to learn from such as Guyana (South America) which had embarked on oil and gas explora-

tion and production successfully and whose GDP grew by 62% in 2022. Another African counterpart Mozambique had experienced a 6% to 7% growth in its GDP to date. He said it was important for Africa to learn from the gains and mistakes of others.

Africa cannot afford the switching on of its resources or to restart coal-fired plants at any time as developed countries do. South Africa's challenge of load shedding was given reference to by Mr Strydom. He highlighted the costs of load shedding to the economy and spoke about how these had resulted in an estimated 650 000 job losses in 2022, R3 billion per month being spent on diesel, and a total of R560 billion being lost to the economy as per CSIR reports. He said it was important to focus on the suffering African population first, eradicate energy poverty, develop skills against the energy divide, incentivise experiential learning for scarce skills, and involve employers in initiatives such as the Mossel Bay plant. He concluded by encouraging stakeholders to work together, collaborate with other developed countries and local communities, and not underestimate the power of foundational skills learning for Africa's advancement.

Prof. Raymond Durrheim (University of the Witwatersrand, SAIMI Community of Practise)

Professor Durrheim spoke about South Africa's Karoo region and gave a geological perspective, highlighting events such as the offshore gas discoveries, the Karoo Shale Gas, Operation Phakisa and the Oceans Economy as well as the current Oil and Gas debate. He made mention of The Community of Practice (CoP) academia, which is working on issues relevant to the Oil and Gas industry. He stated that these issues can only be achieved through active engagement. Such engagement can be seen in co-partner institutions including Witwatersrand, UCT, Nelson Mandela University, Fort Hare and industry partners including CSIR, PetroSA (with Continental relations such as Mozambique and Namibia).

Furthermore, Professor Durrheim explained that the idea for CoP is not just for instrumentation but to illustrate the essence of working together. He also indicated that academics have a mandate to publish the research they do however there are challenges being faced including having busy academic schedules and not being able to reach expected research outputs. Professor Durrheim concluded by noting that it is important for academics to establish clear objectives that are relevant to stakeholders. It is also important that academics have access to incentives in the move towards growing research around Africa's Oceans Economy and growing the necessary critical skills.

Bongani Sayidini (Petroleum Agency of South Africa - PASA)

Bongani Sayidini Spoke about the sustainable development of South Africa's oil and gas resources. He provided an overview of prospective oil and gas resources in South Africa and focused on the exploration efforts offshore and the potential economic impacts of exploration activity. Mr Sayidini said South Africa's oil and gas potential was significant and that there were 27 billion barrels of prospectable gas resources on the coast. There was at least 60 tcf of gas in South Africa and an estimated 27 billion barrels of oil. This was compared to an estimated 9 billion barrels of oil in neighbouring Angola.

The presentation highlighted Block 11B/12B on the South Coast, where two significant discoveries of gas and condensate had been made in the Brilpadda and Luiperd fields. It mentioned the challenging ocean conditions, including the Agulhas current, which is the second fastest current in the world, and the high waves and strong winds that make offshore operations difficult throughout the year. The potential gas market for Block 11B/12B was discussed, with a GTL Refinery in Mossel Bay identified as a potential anchor market, along with the conversion of existing peaking power plants and the possibility of a new power plant.

Mr Sayidini's presentation also touched on the macro-economic impact of Block 11B/12B, including its potential for job creation, fiscal contributions, and decommissioning liabilities. Furthermore, it mentioned Block 5/6/7 on the West Coast, covering the Cape and Orange Basin, where exploration activities were ongoing.

Sayidini cautioned that South Africa was on the brink of a liquid fuels supply crisis and therefore, needed to ensure that there was a coexistence between the maritime industry as a whole and the oil and gas sector. He addressed some possible environmental impacts of exploration and production (E&P) and some mitigation measures including mandatory oil spill contingency planning, noise mitigation measures, and the requirement for an Environmental Impact Assessment (EIA). He also noted that natural gas emitted less CO2 than coal and oil when burnt.

He spoke about Seismic surveys, wherein Sayidini emphasised that they were a common practice for investigating sub-sea geological formations and optimizing well locations. He explained mitigation measures during seismic acquisitions including timing of the surveys to avoid sensitive periods for marine fauna, buffer zones around Marine Protected Areas, pre-watch periods, and termination of air guns when marine fauna was in the vicinity.

A CONTINENT ENDOWED WITH NATURAL RESOURCES. THE COEXISTENCE OF AFRICA'S OIL AND GAS EXPLORATION WITH OTHER SECTORS WHILST PROTECTING THE ENVIRONMENT

Mr Sayidini stressed the need for sustainable development of oil and gas resources in South Africa, aligning with the country's constitutional mandate of developing natural resources in an ecologically sustainable manner. The rigorous environmental impact assessment, stakeholder engagement, and permitting processes for oil and gas activities would help in mitigating some of the risks associated with oil and gas exploration.

Oil and gas development was extremely important for energy security and economic growth in South Africa, particularly where addressing South Africa's electricity and liquid fuels supply crises was concerned. The role of gas as a bridging fuel in the transition to a lower-carbon world was highlighted. Additionally, oil and gas exploration and production in South Africa had to date not had a catastrophic impact on the environment or marine life.

INDUSTRY TRANSITION TO A ZERO-CARBON MARITIME FUTURE: KEY ACTIONS

Ms Lydia Ngugi (Maritime Technology Cooperation Centre: Kenya - MTCC) Ms Ngugi shared how MTCC aimed to reduce the carbon emissions that result from shipping activities. She mentioned the Shipping Energy Efficiency Management Plane (SEEMP) which is one of the strategies that had been put in place to mitigate this issue.

Ms Ngugi then spoke on MTCC's role in promoting the MARPOL Annex 6 convention which ensures the prevention of air pollution from ships, specifically with regards to reducing greenhouse gas emissions. This Annex calls for efficient use of energy and it could ensure sustainability for economic growth.

Ms Ngugi additionally highlighted that a ship inventory framework had been developed through pilot projects that MTCC was involved in. These pilot projects included Energy saving/emission reduction strategies at the port of Mombasa, Kenya and the port of Doula, Cameroon, as well as the Fuel Consumption Data Collection System. Ms Ngugi mentioned that in these projects, energy audits were conducted resulting in a few success stories. An example she provided was the success of the adoption of Solar power and the use of LED lights at the port of Mombasa.

Furthermore, Ms Ngugi explained how MTCC worked closely with partnering organisations to support the port sustainability plan that aids the achievement of the sustainable development goals. She noted how MTCC Africa has recently completed the quantification of emissions pilot project at the port of Mombasa. This project had resulted in the production of a ship emission inventory which assists in planning future emissions strategies. In conclusion, Ms Ngugi spoke on MTCC and the IMO's current collaborative pilot projects that would benefit the African region.

Mr Sam Megwa (Global Maritime Forum - GMF) Mr Megwa described the GMF and its primary focus on human sustainability programmes and the decarbonisation of shipping. He explained the importance of people working together to provide solutions to existing challenges in the industry and highlighted the importance of treating people with dignity and respect in the process. Mr Megwa provided an example of the unfair treatment seafarers faced amid the COVID-19 pandemic specifically with respect to not being able to be with their families. In this light, Mr Megwa stated that decarbonisation efforts need to be cognisant of the potential impact they have on societal wellbeing.

He encouraged the youth and maritime professionals aged 18 to 30 years to apply for seafarer jobs and further stated that a call was made for industry and policymakers to work together in the mission to achieve sustainability. Mr Megwa then stressed the importance of curbing carbon emissions. He mentioned the "Getting to Zero Coalition" which intended to do this, as it was specifically centred around full and equitable decarbonisation and shipping. He noted, however, that in order to initiate this industry action, we first needed to achieve commercially viable vessel emissions by 2030, otherwise, decarbonisation would not be successful.

With regards to government participation, Mr Megwa shared how the coalition made an industry-led call to action on governments around the world to reduce emissions by 2050. He stated that to reach the decarbonisation goal an investment of between US\$1.4 – 1.9 trillion would be needed. He mentioned that South Africa would be able to supply vessels with zero emissions as South Africa is well-placed to produce vessels with zero fuel spills and has an abundance of renewable energy reserves available to meet domestic needs. This would allow the provision of employment opportunities in South Africa. It would also potentially ensure the production of enough energy to meet the domestic electricity demand in the country and decarbonise local industries as well as domestic and international shipping.

Mr Megwa accordingly gave recommendations in the form of action points for Ports, Policy, Industry and Finance. Regarding Ports, he mentioned the need for better coordination and guidance that would support port development that is geared towards decarbonisation and 'just transition'. In terms of Policy, he advocated for both international and national maritime policies that align with national climate ambition. He communicated the need for public and private collaborative efforts in order to secure effective GHG Policy at the IMO. He concluded by reiterating the urgency of reaching full and equitable decarbonisation and shipping by 2050, as well as achieving commercially viable emissions within the industry by 2030.

Captain Ravi Naicker (South African Maritime Safety Authority - SAMSA)

Captain Ravi Naicker (South African Maritime Safety Authority - SAMSA) began by expressing the need for safe ships and clean seas which MARPOL advocates for. He outlined some of the sea-related risks that MARPOL aimed to minimise including pollution (oil spills and gas emissions). Additionally, as a response to pollution risks, Captain Naicker spoke about preparedness and response plans that have been developed such as the Incident Management Organisation. This organisation, led by the Department of Forestry, Fisheries, and the Environment (DFFE) had already put in place a peace forum to make sure the contingency plans were completed. Such contingency plans include the Oil Spill Incident Management System, which is a handbook that aims to build capacity in order to manage oil spills.

Captain Naicker also mentioned SAMSA's involvement in the Open-loop scrubber project as well as a water quality baseline survey that intends to determine if any discharge of carbon will be allowed in South African ports/waters. He emphasised the need to fast-track maritime decarbonisation and build human resource capacity programmes through programmes such as the course offered by SAMSA. He promoted the use of academia for technical reports or articles on the behaviour of low sulphur fuel and alternate fuels when spilled into the water. Moreover, Captain Naicker encouraged the formation of partnerships with regard to research and development, and provided an example of an existing partnership, "the Green Voyage 2050".

He stated that fast-tracking domestic legislation and enforcing regulations was a necessary consideration and referred to the development of Phase 2 of the Ocean Coast Management System, which is managed by the DFFE. He concluded by recommending the creation of decision support tools (DEST).

KEY OUTCOMES *The Just Transition had to be approached differently by Africa and efforts in this regard needed to be contextualised towards sustainability rather. Accordingly, considering gas as an option was necessary as supported by the statistics that gas has 40% less carbon emissions than coal.*

QUESTIONS ARISING FROM PLENARY 4 **Q:** *An attendee from the fisheries industry raised question including:*

- How much of the billions of Rands or US dollars are Africans going to see after the plans presented during the sessions have been implemented?*
- How are the funds going to be generated from the various programmes highlighted in the presentations channelled back to South Africans?*

A: *Professor Durrheim agreed with the sentiments raised regarding the communities of practice, for increased collaboration between academia, industry, and government. He referred to the current research being done by entities such as the CSIR. Institutions doing research on ocean and maritime sciences included the Walter Sisulu University, Mandela University (Ocean Sciences Campus), University of Pretoria, and the Council for Geoscience (CGS). More needs to be done with particular focus on Africa's marine life sciences.*

Q: *Attendees asked how much of the funds from the multinational companies are rerouted back into the South African economy, and if there are any alternative energy sources linked to ocean energy being explored, such as ocean thermal energy?*

A: *Dr Mubiwa mentioned that the development of ocean thermal energy and biofuels, was explored around 2006-2008 by South African universities (e.g., University of Johannesburg, and other stakeholders). However, the cost of production vis-à-vis the output was a huge challenge that was identified in the study. He further stated that it is not about what we do and do not have, but rather about considering where we are, and which direction we want to go in. Dr Mubiwa ended off by noting that a transition to alternative energy sources is a big task for everyone, not only at national level but at regional and global level as well.*

PLENARY FIVE

INFRASTRUCTURE AND THE OCEANS ECONOMY

IMPROVING INFRASTRUCTURE FOR THRIVING ECONOMIES

Facilitator: Ms. Noxolo Ncayo – SA Port Regulator

INFRASTRUCTURE AND MARITIME: THE VALUE OF PORTS, SEZs IN SUPPORTING GROWTH OF THE SECTOR

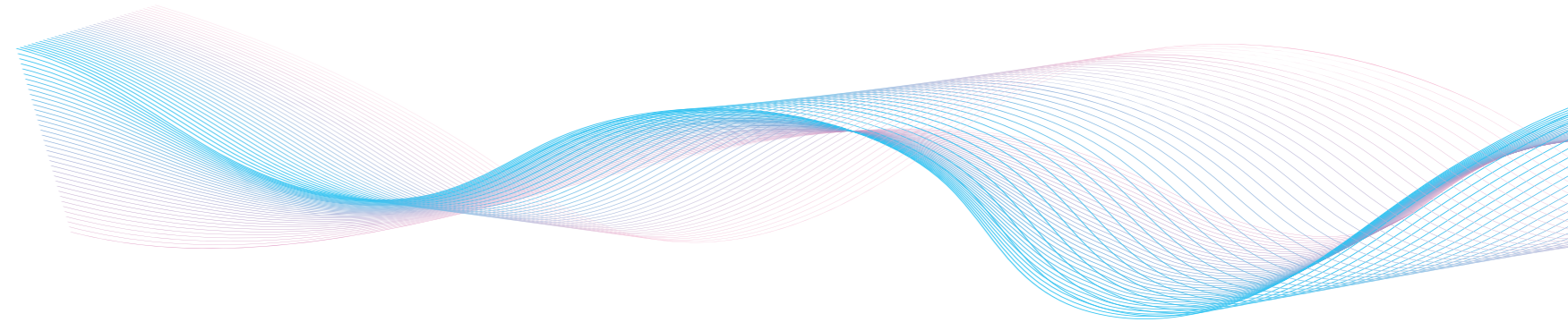
Ms Noxolo Ncayo (SA Port Regulator) stated that they would be discussing infrastructure and the African Oceans Economy. The objective of the session was to explore ways to attract investment for the development of Africa's Oceans Economy. The focus would be on improving and expanding maritime infrastructure, deploying effective strategies, and attracting investment. Previous sessions covered policy, the human element, technology investments, knowledge development, training, and renewable energy.

Mr Ntobeko Bacela (East London IDZ) explained that the East London IDZ was a state-owned entity located along the coast and was focused on attracting foreign direct investment and encouraging export orientation. He discussed the East London Industrial Development Zone (IDZ) and its interface with the Oceans Economy. Mr Bacela then highlighted the importance of industrial-grade electricity supply for the IDZ, and the challenges posed by current power outages. The IDZ had provided incentives to export-oriented enterprises in the IDZ, such as discounted corporate tax and free import duty on equipment. Mr Bacela said the IDZ has faced challenges in attracting investors.

He discussed plans to transfer technology from international partners and focus on the nursery aspect of aquaculture. One of the successful IDZ programmes was by Kingfish Enterprises, a company that invested in yellowtail kingfish production in the IDZ. There was also potential for expansion and the piloting of the Pacific Oyster production project. Mr Bacela further emphasised the importance of public-private partnerships and collaboration for success in the aquaculture sector.

Mr Lindokuhle Ntati (Coega IDZ representative) discussed the importance of collaboration between Special Economic Zones (SEZs). He referred to the experience that the Coega IDZ possesses, which has involved developing and managing the Coega SEZ, as well as assisting the government in various critical projects. The SEZ is fully government-owned and funded by the Department of Trade, Industry and Competition (DTIC) and the Department of Economic Development. The address touched on the global shifts in supply chains due to factors like COVID-19 and the Ukraine-Russia conflict and identified existing opportunities in the energy sector, e-commerce logistics, and the integration of global value chains.

The concept of Port Community Systems was introduced as a strategic initiative that could improve efficiency through digitisation and automation. Mr Ntati stressed the importance of adapting to change and mentioned the significance of decarbonisation and renewable energy in the future and the opportunities they afforded us. He quoted a report stating that trade routes, competitive positions, and distribution ecosystems were all undergoing significant changes, creating opportunities for SEZs and the port system to evolve together. In conclusion, he expressed his belief that collaboration and integration between SEZs, and ports were crucial for future success. He mentioned various government departments and agencies as key players in leveraging these opportunities.



Ms Nozipho Boo (Transnet National Ports Authority - TNPA) explained how the TNPA aims to be financially sustainable, operate with advanced technology, and have a seamless value chain to promote economic growth. The Authority focuses on pillars such as finance, environmental sustainability, operational excellence, infrastructure, and people-centric approaches. It operates under the National Ports Act and provides infrastructure and services according to fair and transparent processes. The TNPA handles various commodities and segments, with different ports focusing on specific cargo types. It also has several game-changing projects to improve infrastructure and operational efficiency, including expanding berths and increasing capacity. It was also working on utilities projects, such as self-generating facilities for renewable energy, and water projects to mitigate the effects of droughts. TNPA is involved in oil and gas initiatives and is negotiating a terminal operator agreement for the Strategic Fuel Fund.

Mr Immanuel Hango (NamPort) stated that Namibia has two commercial ports - the Port of Walvis Bay and the Port of Luderitz. These ports handle a significant volume of goods for the hinterland countries such as Botswana, Zambia, and Zimbabwe. The Port of Walvis Bay is divided into three sections: South Port, North Port, and the fishing harbour, and the current land capacity in the North Port is sufficient for the next 30 to 50 years. The Port of Luderitz is shallow and plans were underway to develop a new port at Angra Fria. Mr Hango referred to their container capacity, the commodities they handled, and private operators for various operations. The NPA was also involved in oil exploration and offshore supply. There were also plans for the development of a waterfront marina and a new container terminal which would be concessioned to a private operator in September to capture transshipment volumes. In the Port of Luderitz, there were plans to develop green hydrogen.

KEY TAKEAWAYS FROM PLENARY 4 *The technological revolution in the maritime sector has brought with several new opportunities for particularly the maritime transport sector including in areas such as energy, e-commerce, and logistics to name a few. These opportunities in turn required investment in infrastructure and meant that SEZ's and the Ports system had to adapt accordingly to be able to successfully take advantage of them. Additionally, collaboration between SEZ's and Ports was also crucial.*



CONCLUSION

***“By failing to prepare,
you are preparing to fail.”***

~ (Benjamin Franklin)

The African Maritime Leadership Conference provided the platform for such preparation. With its emphasis on the need for effective policies, strategies, and agreements at the national, regional, and multilateral levels in the African Maritime Sector, it affirmed the importance of a roadmap to get the Continent to the desired end state of a successful and sustainable International Maritime Centre that will catalyse sustainable economic growth and development in Africa.

The Oceans Economy encompasses various sectors such as maritime transport, offshore oil and gas, fisheries, coastal tourism, and marine bioprospecting, and holds immense potential for the Continent’s economic growth and recovery. Therefore, the coordinated development of the strategies, policies and general regulatory framework that govern this sector, would help provide, maintain, and bolster the maritime industry and support the Continent’s economic recovery and development.

Seafarer development and skills training were identified as some of the essential elements that will enable Africa to take advantage of the opportunities present by the Blue Economy. Done effectively, they will allow the Continent to leverage the global demand for seafarers, thereby creating employment opportunities, and enhancing Africa’s competitiveness in the international shipping labour market. The new technology, innovation, and infrastructure development that is currently taking centre stage and

underpinning the growth of the maritime industry, also makes it necessary for industry leaders to ensure that Seafarer education and skills development are appropriate for these new technologies. A strategic alignment with the rest of the Continent to ensure uniformity in the quality of Seafarers produced by Africa is also imperative.

Emphasis was placed on the need for improved infrastructure, including the development of ports and trade corridors, to enhance trade and connectivity within the Continent. If Africa is to realize the goals set in the AfCFTA agreement, then investment in these becomes imperative. International policy, strategy development and cooperation now also must be cognisant of the drive to decarbonise the oceans and be fit for the purpose of addressing the impacts of climate change on marine ecosystems in order to achieve zero emissions in the maritime sector. Speakers and delegates at the AML Conference were unanimous in their calls for safeguarding the marine ecosystem and addressing issues such as pollution and climate change. They urged the Continent to work collaboratively to protect its marine resources and explore sustainable practices in the maritime industry.

Conference delegates discussed the multitude of opportunities presented by the new technology and innovation in the Oceans Economy. There was an opportunity for Africa to embrace these changes and identify areas where they could lead the charge to become an International Maritime Centre. Some of these areas

included the alternative energy space which provided an opportunity for Africa in particular because of the Continent’s endowment in green energy resources.

The exploration of green energy resources was juxtaposed with that of oil and gas – a subsector that also needed to be explored to support Africa’s growth and development. This continued use of fossil fuels was necessary, especially in the context of Africa which was grappling with an electricity supply crisis. Speakers emphasised that there was a need to balance what we aspired to have with what was available, but that this needed to be done in a responsible manner that ensured the protection of the environment.

Most importantly though, consensus was reached that we need to move forward in complete accord as a Continent, with the primary goal of fortifying our position in the global maritime sector and reaping the maximum economic benefits from it for the people of Africa. This can only be done if African leaders in the maritime space embrace the changes taking place in the sector, and quickly adapt to them, while simultaneously pre-empting those that are yet to come. As Charles Darwin once said, “It is not the strongest of the species that survive, not the most intelligent, but the one most responsive to change.” Africa, therefore, needs to continuously be crafting that roadmap to a change that will advance Africa’s Oceans Economy.



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