



Safety: Risk Assessment

Zoom : Marine renewable energies

• **AI and Technological Innovations:** (IoT) for Maritime Safety and Marine Pollution Prevention in Africa

• **Reducing the carbon footprint:** a challenge for shipowners in the face of tougher international maritime standards

• **African Maritime Cabotage:** A Lever for Economic Independence and Sustainable Development in Africa



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Between Challenges and Opportunities: Maritime Africa at the Crossroads of the Seas

The entire Maritimafrica team is delighted to present you with the sixth issue of Maritimafrica Mag, our media lighthouse illuminating the sometimes turbulent waters of the African maritime industry. This issue, rich in content and perspectives, navigates through the most important currents shaping our sector.

Maritime Africa is at a crossroads. On one hand, we face considerable challenges: the security of port facilities, pollution of our oceans, and the pressing need to reduce our carbon footprint. On the other, we see unprecedented opportunities emerging: the rise of technologies such as the Internet of Things for maritime safety, the untapped potential of African coastal shipping, and the promises of marine renewable energies.

This issue of Maritimafrica perfectly captures this duality. We explore how artificial intelligence and IoT can revolutionize maritime safety and pollution prevention. We examine coastal shipping as a lever for economic independence and sustainable development. And we look at the challenges our shipowners face in light of tightening international standards.

But beyond technologies and regulations, it's the men and women who bring our industry to life. That's why we are particularly proud to highlight the inspiring journey of Ms. Lysney Vanessa NGOUMBA, Ship Captain. Her story reminds us that the African maritime sector is rich with talents just waiting for the opportunity to shine.

Dear readers, as we navigate towards the future, let's remember that the African maritime sector is not only an economic engine but also a guardian of our oceans and a bridge between our peoples. Every innovation, every partnership, every ship that leaves our ports is a promise of progress for our continent.

This issue of Maritimafrica is a compass for all those who, like us, believe in Africa's maritime future. May its reading inspire you, inform you, and guide you in your own professional voyages.

Fair winds and following seas to all!



Pascaline ODOUBOUROU



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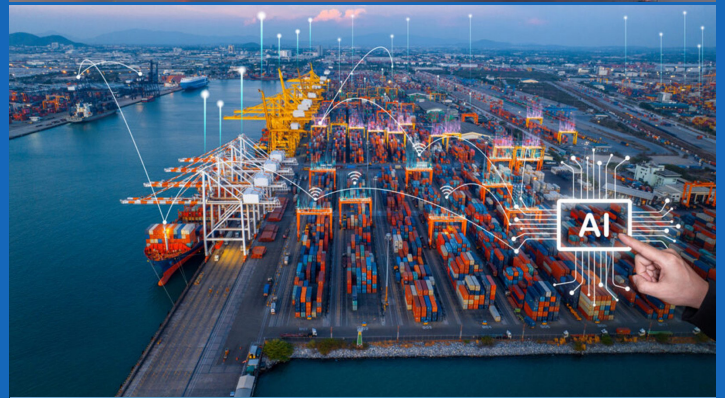
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Environmental Disaster Averted Thanks to Effective Coordination

Situation:

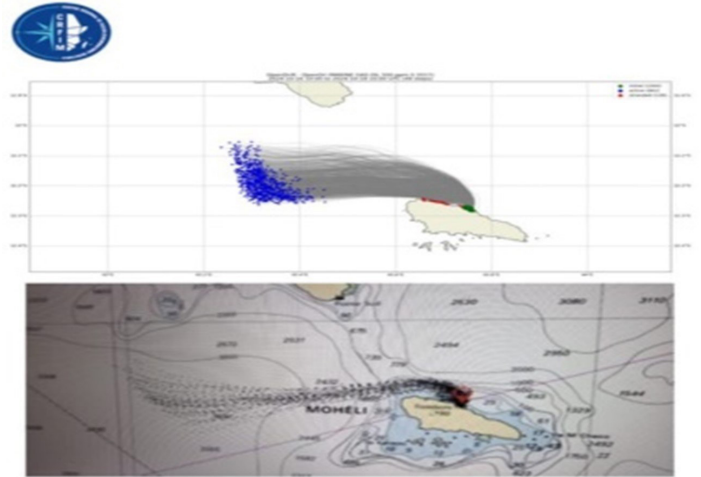
On October 15, 2024, around 2 PM, the SIMA-BE vessel, flying the Comorian flag, ran aground on the coast of Bandar-E Salam. Coming from Mutsamudu and bound for Mohéli, it was carrying two iso-tanks each containing 25 tons of diesel fuel, as well as an additional 20 tons in its ballast tanks. Shortly after the grounding, a hull breach was reported on board, increasing the risk of fuel spillage.



Potential Consequences:

A multi-criteria cartographic analysis carried out by the Regional Maritime Information Fusion Center (RMIFC) in Madagascar, with the support of modeling resources provided by France, established a map illustrating the major pollution risks to which the island would have been exposed.

A fuel spill could have had serious consequences for the environment, particularly for the island of Mohéli, which is home to exceptional marine biodiversity and a national marine park, named in 2015 after its creation in April 2001.



Stakeholders:

To respond to the incident management, a contact group named "COMORES POLMAR 24" was formed. This group brought together representatives from administrations responsible for State Action at Sea (AEM) involved in maritime pollution issues, namely: the Comorian Coast Guard, the National Maritime Affairs Agency, the General Directorate of Civil Protection, and the Comorian Ports Company.

Comorian experts from the Indian Ocean Commission (IOC), the Regional Maritime Information Fusion Center (RMIFC), and the Regional Coordination Operations Centre (RCOC) were also called upon to provide technical and operational advice.

Actions Taken:

The main actions undertaken were as follows:



- Establishment of a crisis management cell on the island of Mohéli, under the authority of Madam Governor.
- Deployment of the AL HIFADHU-2 tug from the port of Mutsamudu, Anjouan to take part in the operations.
- Patching of breaches in the hull of the SIMA-BE vessel to reduce water ingress.
- Pumping of seawater that had infiltrated the SIMA-BE to stabilize the vessel.
- Development of a POLREP form for regional notification of the incident via the Regional Coordination Operations Centre (RCOC).
- Transfer of diesel fuel from the SIMA-BE's iso-tanks to tanks installed on a Coast Guard interceptor. This approach was chosen because other proposed solutions presented high risks due to low tide preventing access for larger vessels.
- Secure transport of the cargo by the interceptor to the port of Mboigoma.

Results:

The rapid response and effective coordination helped avoid a major environmental disaster. In total, 69,700 tons of diesel fuel were recovered without any significant spillage being observed.

Additionally, a POLREP alert was issued at the regional level via the Regional Coordination Operations Centre to inform authorities of the situation in case effective management exceeded the national level. The SIMA-BE vessel was secured, which helped prevent a worsening of circumstances. The next step is to tow the vessel to a port for necessary repairs and to ensure its future safety.

Lessons Learned:

This incident revealed the urgency of revising and modernizing the national maritime pollution response plan (POLMAR). Current equipment, provided under the "maritime highway" project, proved obsolete and insufficient to deal with such situations. Furthermore, the incident highlighted the crucial importance of better coordination between the various national and regional entities involved in marine pollution management. A revision of these mechanisms and the implementation of simulation exercises are now essential to improve response capabilities in the future.



By Lieutenant (EVI) Said LAVANI,
Active officer of the Comorian Coast Guard,
on secondment to the Regional Maritime
Information Fusion Center (RMIFC), based in
Madagascar as an international liaison officer



Promoting Ethics and Integrity in West and Central Africa's Maritime Sector: Key Achievements by MACN



Recent initiatives led by the Maritime Anti-Corruption Network (MACN) and the Abuja Memorandum of Understanding (MoU) on Port State Control (PSC) have significantly advanced efforts to enhance ethics, integrity, and transparency in maritime operations across West and Central Africa.

A major milestone was reached in June 2024 with the successful completion of the Ethics and Integrity

Leadership Training for Port State Control Officers (PSCOs) in Lagos, Nigeria. Held on June 10th and 11th, this groundbreaking training program was the first of its kind and brought together representatives from all 22 Abuja MoU member states. Organized by the Abuja MoU in collaboration with MACN, the training focused on building the capacity of PSCOs to better adhere to laws, regulations, and standard operating procedures.



Aligned with the International Maritime Organization's (IMO) Code of Good Practice for PSCOs, the program offered an interactive platform for participants to discuss real-world cases and explore the compliance landscape in PSC inspections. This initiative is a key step in fostering a culture of integrity, professionalism, and transparency in the region's maritime sector.

Continuing their engagement, MACN was also invited to present at the 5th Ministerial Conference of the Abuja MoU in Brazzaville, Republic of Congo, on September 19, 2024. This high-level conference brought together delegates from 20 member countries under the theme of "Strengthening Ethics and Integrity in PSC Inspections: Regional Cooperation to Eliminate Sub-Standard Shipping." MACN

shared its longstanding commitment to promoting ethical practices and reducing corruption in port inspections, emphasizing the importance of regional collaboration in achieving these goals. The event provided a valuable platform for advancing discussions on strengthening ethical standards in the maritime industry, with MACN expressing gratitude to Capt. Sunday Michael Umoren and the Abuja MoU Secretariat for their ongoing support.

These initiatives reflect the growing momentum to uphold ethical standards in the maritime sector across West and Central Africa, reinforcing a collective commitment to eliminating sub-standard shipping and promoting fair trade through continuous capacity building and regional cooperation.



Strengthening Integrity and Standards in Egypt's Maritime Sector: Key Partnerships and Initiatives



In recent weeks, significant strides have been made in advancing transparency, integrity, and safety within Egypt's maritime industry through collaborative efforts between the Egyptian Maritime Transport and Logistics Sector (MTLS), the Suez Canal Authority (SCA), and the Maritime Anti-Corruption Network (MACN).

The Suez Canal Authority and MACN launched a first of its kind 3-day train the trainer ethics and integrity program in Ismailia. This "Bridge Resources Management including Professional Conduct & behaviour inside the Bridge Course for Pilots and Ships' Masters" course, held from 16 till 18 September 2024, is designed to enhance professional conduct on board and reduce operational risks in one of the world's busiest shipping lanes. This ini-

tiative is aligned with Egypt's broader anti-corruption strategy and further strengthens the maritime industry's capacity to uphold integrity and reduce risks.

On September 19, 2024, Rear Admiral Tarek Abdullah Ahmed, head of the MTLS, signed a Memorandum of Understanding (MoU) with MACN in Alexandria. This landmark agreement establishes a framework for collaboration aimed at promoting ethics and integrity in Egypt's ports and maritime operations. The agreement reinforces the principles of Collective Action, a global initiative that fosters transparency and ethical practices in maritime trade, both in Egypt and globally. The event was attended by representatives from Egyptian Port Authorities and MACN's local partner, Eldib Pandi.



In addition, MACN continues its collaborative efforts by engaging with the Mediterranean MoU on Port State Control (PSC).

During a visit to the Mediterranean MoU Secretariat in Alexandria, MACN discussed its global and regional initiatives focused on eliminating sub-standard ships through harmonized inspection procedures.



The visit highlighted opportunities for further Collective Action, solidifying MACN's commitment to working alongside international bodies to enhance maritime safety and standards.

These recent initiatives underscore Egypt's commitment to fostering ethical practices, capacity-building, and safety in its maritime sector, reinforcing its pivotal role in global trade.

Initiative d'Action

COLLECTIVE

Cbi et MACN travaillent ensemble avec d'autres acteurs maritimes dans une action collective pour renforcer l'intégrité dans les ports et terminaux africains.

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ENHANCE EFFICIENCY

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Fight**

**Against Maritime
Corruption**



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Clearance efficiency



Improve
Turnaround Time



Prevent
Extortion in ports



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resolution mechanism/helpdesk

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Risk Assessment

Assessing the risks relating to a facility or activity

This is a study by which an entity :

- identifies the structural and operational importance of the assets and infrastructure of its operation;
- defines the incidents and events that could pose a threat/danger to people, the environment, property, infrastructure and reputation; and
- makes an inventory of the physical and procedural measures in place to prevent such threats/hazards, in order to identify possible vulnerabilities; and
- estimates the impacts and consequences if these threats/hazards were to occur.

All this will lead to the calculation of the applicable risks and the definition of measures prioritised according to the importance of the risk to control them.

Risk assessment is used in a number of fields, such as :

- the maritime sector
- the airport sector
- the petrochemical industry
- nuclear power plants
- manufacturing and pharmaceutical industries
- mining;
- establishments frequented by the public
- companies transporting hazardous products;
- etc.

It is carried out by a group of experts with skills in risk analysis.

As it is a cross-sectoral study, it has a number of variants which may lead to more specific skills being required, or to the inclusion of an expert specific to the sector of activity to be assessed in the team.



Assessment methodology

This is a study carried out by groups of experts, often approved by the authorities of a country or a standardisation organisation in the sector. It often takes place in three stages:

- **Framing:** this is a meeting between the evaluation team and the resources of the company being evaluated. Its purpose is to validate the timetable and make any necessary changes. It also serves as an opportunity to define the practical organisation in terms of logistics, the communication plan and the stakeholders involved in the evaluation process.
- **Documentary study and interviews with those involved in the implementation of safety measures and operators:** At this stage, the team reviews the policy and the various procedures in place, and interviews the personnel involved on all aspects of the activity that may constitute risks or constitute an aggravating factor. The main objective is to assess legal, regulatory or standards compliance and to identify any organisational, human or procedural vulnerabilities.
- **Visiting and observing the facilities:** This is

the stage when the team is called upon to see whether the physical system in place enables the risks to be managed and controlled effectively, whether the measures set out in the procedures comply with practices in the field, and whether the staff responsible for carrying out these procedures have mastered them.

- **Drawing up the report:** This is the stage that concludes the assessment. It consists of taking stock of all the findings from the three previous stages and proposing recommendations, if any, for better management of the risks identified.

Purpose of risk assessment

To enable a company to map the risks associated with its activities, prioritise them and define priorities for action (preventive measures) to manage and control them (Eliminate; Reduce; Control; etc.) in order to protect people, the environment, property and reputation.

In some business sectors, it is a prerequisite for obtaining a licence to operate, and can be a requirement of business partners, as is the case in the port and oil and gas sectors. It is also a prerequisite for taking out insurance.





When should a risk assessment be carried out?

Often at the start of operations and at regular intervals, as defined by industry standards or government authorities. An assessment can also be carried out when major changes are made to a company's facilities or organisation.

Where is the assessment carried out?

It takes place on the sites operated by the company and any other surrounding area where an incident could have an impact on the site or operations.

What are the risks of not carrying out a risk assessment?

There are several types of risk, which may differ from one industry to another for legal, standards, business insurance, commercial or other reasons.

Here are a few examples:

- Loss of human life or serious injury
- Negative impact on the environment;
- Refusal of approval or certificates or withdrawal if already in operation;
- Refusal to collaborate by certain partners;
- Risk of non-payment of insurance compensation in the event of a claim; and
- Damage to reputation.

What are the implications and challenges?

Carrying out an assessment is a trigger for changing practices and creating new working rules that are not necessarily accepted by all staff.

This is why managers must always adopt a participative approach when it comes to risk issues and measures to control them. This will make it possible to take into account the operational realities of all the company's players, as well as their interests.

Raising everyone's awareness of the risks and getting them to adopt measures to manage them is vital for effective implementation and safety/security performance.

It is also a trigger for heavy investment by the company, which, once the risks have been identified, must acquire the skills and material resources to put in place prevention and management systems in the event of the risk occurring.



*By Odilon Ghislain ANATO,
Maritime, Port and Offshore
Security Consultant*





The 14th Africa PPP Summit 2024

Engage New Partners and Projects to Build an Africa Maritime Hub and Multimodal Transport Corridors for Regional and International Trade



14th AFRICA PPP
PUBLIC PRIVATE PARTNERSHIPS

Morocco, Casablanca
22-24 Oct 2024

Scaling up PPPs to
Address Infrastructure
Investment Gaps

The much-anticipated premier gateway to African infrastructure investment opportunities is set to take place from **22 to 24 October 2024**. The **14th edition of the Africa PPP Infrastructure Investment and Partnerships Summit (Africa PPP)** will return to Morocco at the iconic Hyatt Regency Hotel in Casablanca with key players in Africa's infrastructure development ecosystem—including **project developers, investors, financiers, EPCs, consultants, and government and business leaders** — gathering to explore the theme "**Scaling up PPPs to Address Infrastructure Investment Gaps.**"

The event will pay special attention to Africa's emergence as a key **global maritime and transport hub** for international trade with dedicated sessions on smart, logistical cross border corridors and continental linkages through maritime, road, and rail expansion projects. This is set to be capped off by a **guided tour** of one of Africa's premier transport infrastructure nodes, the **Port Of Casablanca** with the **Port's Director Anouar Harrak** also set to speak at the conference.

In recent years, the continent has experienced a notable increase in investment by global port and terminal operators including **AD Ports Group** whose **Regional CEO Mohamed Eidha Al Menhali** is

expected to outline future major plans. The advent of the African Continental Free Trade Area (AfCFTA) is set to lead to an estimated 28% growth in intra African freight while **maritime freight demand** is expected to rise by about **62%**. Billions in new investments will be needed to build and expand the capacity of the dynamic multimodal transport networks required to help meet this demand cost effectively and efficiently.

Leading transport infrastructure developers and operators active in Africa will be participating at the Africa PPP summit this October sharing insights and updates on their development projects and investment plans. **Mustapha Farès**, Director General of the **National Ports Agency (ANP) of Morocco** will unravel the over a quarter of a billion dollars' worth of business and investment opportunities tied to its 2024-2026 investment program including the port sector's transformative digitalization. **Dr Tryson Yangailo** the Senior Corporate Manager at the **Tanzania Zambia Railway Authority (TAZARA)** will take delegates through the many investment prospects around the billion-dollar revitalization of the Tanzania Zambia Railway which moved a firm step forward when the Memorandum of Understanding for the concession was successfully signed at the recent Forum on China Africa Cooperation.



This vital rail link will be a pivotal node along with the **Port of Dar Es Salaam** where the government of Tanzania is investing heavily to improve clearance procedures with the goal of making the port the main entry point of the Central Corridor and the prime route to Southern Africa. Delegates will gain a forward-looking insight into how to take full advantage of the multimodal investment prospects from port to rail to road and logistics infrastructure.

The Africa PPP summit will cover other key projects and initiatives including the **Lobito Corridor**, **LAPSETT**, **AfCFTA**, the **Ponta Techo-banine Project** and the **Abidjan-Lagos Corridor Highway Project** among others. Notable port and general transport industry speakers confirmed to speak include **Akif Ali Khamis**, Director General of the **Zanzibar Ports Corporation**, **Russell Baatjies**, CEO of **Transnet Freight Rail (TFR)** South Africa, **Charles Obuon**, Head of Private Public

Partnerships, **Kenya National Highways Authority** and **Eng Grace Mutembo**, CEO of the **Road Development Agency of Zambia**. Other industry leading companies and organisations will also bring high level representation including the **Port of Kribi** Cameroon, **Raubex**, **Border Management Authority of South Africa**, the **Trans Kalahari Corridor Secretariat**, the **National Railways of Zimbabwe** and the **Northern Corridor Transit and Transport Coordination Authority**.

Join the Africa PPP Summit 2024 and take this unique opportunity to engage with **prospective partners** and explore lucrative port development projects and transport infrastructure initiatives.

For more information about the conference, including registration details and the full agenda, please visit <https://africapp.com>.

Why Morocco?

- Morocco aims to bridge its projected \$37 billion infrastructure investment gap by 2040 through a focused approach on roads, ports, airports, rail links, and energy, with renewables receiving over half of the upcoming \$4 billion investment.

Infrastructure
- Transportation leads ongoing infrastructure projects in Morocco, comprising 68% of investments.

Transportation
- Strategic plans like the 2040 Rail Strategy and the Noor Ouarzazate solar plan position Morocco as an appealing destination for infrastructure investments.

Strategic Projects
- Morocco's bid to co-host the FIFA 2030 World Cup is driving substantial funding towards vital infrastructure projects in the country.

Funding
- Infrastructure investments in Morocco are propelling growth and development, with energy and transportation emerging as top priorities.

Developments



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Artificial Intelligence and Technological Innovations: Internet of Things (IoT) for Maritime Safety and Marine Pollution Prevention in Africa

1. Introduction

Maritime trade, the true backbone of the African continent's economy, is struggling in a tumultuous ocean of threats. Piracy, illicit trafficking, polluting discharges - all are omnipresent risks fracturing the horizon of African states. In parallel, there is a proven lack of infrastructure and cutting-edge technologies. It is in this storm that artificial intelligence (AI) and disruptive technologies emerge, with surveillance, alert, and maritime safety analysis tools that have never before known such a degree of sophistication.

2. Context of Maritime Safety in Africa

Maritime safety on the African continent faces a complex array of threats that often differ radically from one maritime space to another. The Gulf of Guinea is currently experiencing some of the most worrying piracy incidents in the world, as well as marine pollution, aggravated by industrial or oil activities. Pollution continues to degrade the African coastline - a sometimes inexorable phenomenon for states that are often unable to combat it and enforce maritime legislation, contributing to the acculturation of fishermen.

In response to these stressful pressures, AI appears as a valuable relay, ready to deploy its arsenal of intelligent surveillance tools and predictive and risk analyses.

Maritime Vulnerabilities, Asymmetric Threats at Sea



The vast ocean expanses can also favor the illicit activities of terrorist groups. Arms, drug, and human trafficking, and attacks directed against fishing or commercial vessels constitute real threats. Piracy, hostage-taking at sea, and hijacking are constant and real threats. By exploiting the vulnerabilities of certain port infrastructures and security systems, these threats primarily affect maritime security but equally national economies and regional stability.

3. The Interest of Artificial Intelligence for Maritime Safety and Marine Pollution Prevention

3.1 Improved Surveillance

AI is indeed one of the levers to be activated to optimize maritime surveillance. Machine learning algorithms facilitate the real-time exploitation of enormous quantities of data produced by satellites, drones, and marine sensors. Intelligent systems can accurately detect anomalies, such as suspicious ship movements or illegal fishing activities, allowing authorities to intervene before the situation worsens.



In terms of pollution prevention, AI ensures remote permanent monitoring of water quality and predicts hydrocarbon or plastic leaks in risk areas; these tools also allow for the automation of crisis interventions (triggering containment devices following spills, for example).



3.2 The Transformative Impact of AI on Maritime Transport and the Future of Innovations

One can only note that artificial intelligence has already begun to positively reconfigure maritime transport operations, bringing numerous advantages to the sector. By enabling the management of tasks and processes, these AI systems bring invaluable added value as the world evolves.

Many innovations have already been integrated, and with more than encouraging future prospects, such as autonomous ships taking shape, AI is promising to complete the transformation that is already underway in the maritime transport sector.

4. AI-Based Technological Solutions

4.1 Advanced Detection Devices

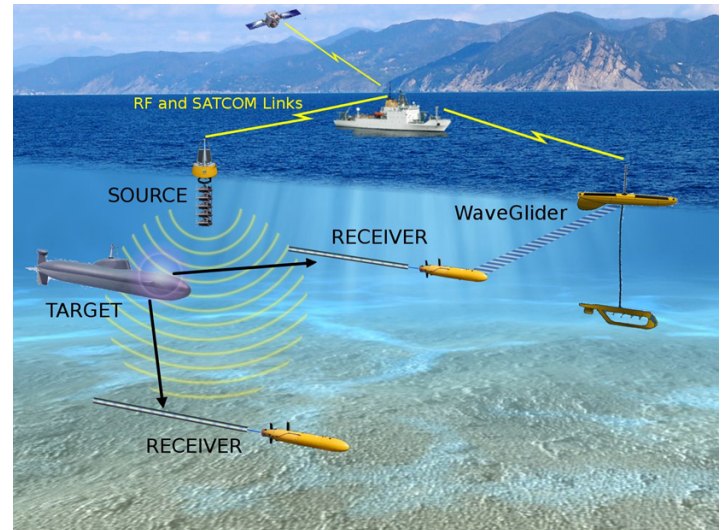
Advanced detection devices play a crucial role in the effective surveillance of maritime activity. Threat detection in complex acoustic environments is facilitated by the use of **state-of-the-art sonar sensors and underwater listening systems**.

Passive and active sonars represent a crucial complementary pair, the former visualizing ambient

noises and the latter emitting waves reflecting off surfaces to deduce the distance and shape of detected objects. The complementarity of these two devices is of strategic importance given the progress made in the field of stealth submarines, allowing to meet surveillance coverage needs.

The **Oscar system**, developed by the Brittany-based company BSB Marine, enables the detection of unidentified floating objects and marine mammals.

The **use of drones** to collect real-time information, monitor, maintain, or alert ports or offshore infrastructures is also developing.



4.2 Acoustic Sensors in Development: Hydrophones

Hydrophones, sensors ultra-sensitive to sound signals emitted underwater, are adapted to monitoring submarine sonar emissions, detecting ship movements, as well as monitoring oil slicks resulting from spills; they play a decisive role in early tsunami warning systems by detecting underwater seismic wavelets.

Highly sensitive, their ability to offer long-duration surveillance makes them sensors of great utility for maritime security.



4.3 Aerial Drones

Autonomous drones (USVs) and aerial drones, equipped with sensors as advanced as they are extensive, are used to monitor maritime areas. In cartography as well as in military plans, underwater drones and aerial drones allow for monitoring environmental emergencies as well as underwater infrastructure inspections.



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4.4 Naval Drones

Naval drones, aerial or surface, prove to be an asset for maritime surveillance in general. Designed as helicopters, aerial drones constitute a flexible tool for remote range and assistance in rescue, inspection, or maintenance operations, whether they are designed in the USV, or Unmanned Surface Vessels,

which are autonomous ships with embedded navigation technology. Unlike manned vessels, USVs accomplish missions such as oceanography, environmental monitoring, and goods transport.



Discreet and autonomous, they will prove to be great allies in maritime and coastal surveillance.

4.5 Underwater Drones

Underwater drones, capable of evolving at several hundred meters depth, prove to be among the most complex technologies. With three cameras or sonars, these preprogrammed autonomous vehicles inspect underwater infrastructures and detect degradations. The ability to operate in hostile environments carrying precise data is of great interest for their underwater surveillance or inspection.



© Naval Group

4.6 Technological Advances in Maritime Communications



The creation of advanced networks at sea will allow ultra-fast and reliable communication between coasts and drones, whether they fly or move on the surface, even over long distances. Currently, **Starlink**'s offer is about to revolutionize these communications. As the number of satellites increases, Starlink continuously improves its coverage and ensures the reliability of connected solutions.

5. Technological Solution for Port Security and Coast Surveillance

The ultimate system to address port and coastal security challenges, SPYNEL, an advanced panoramic infrared security device, is a surveillance system that operates 24/7. It allows capturing a 360° image thanks to a constantly rotating camera.

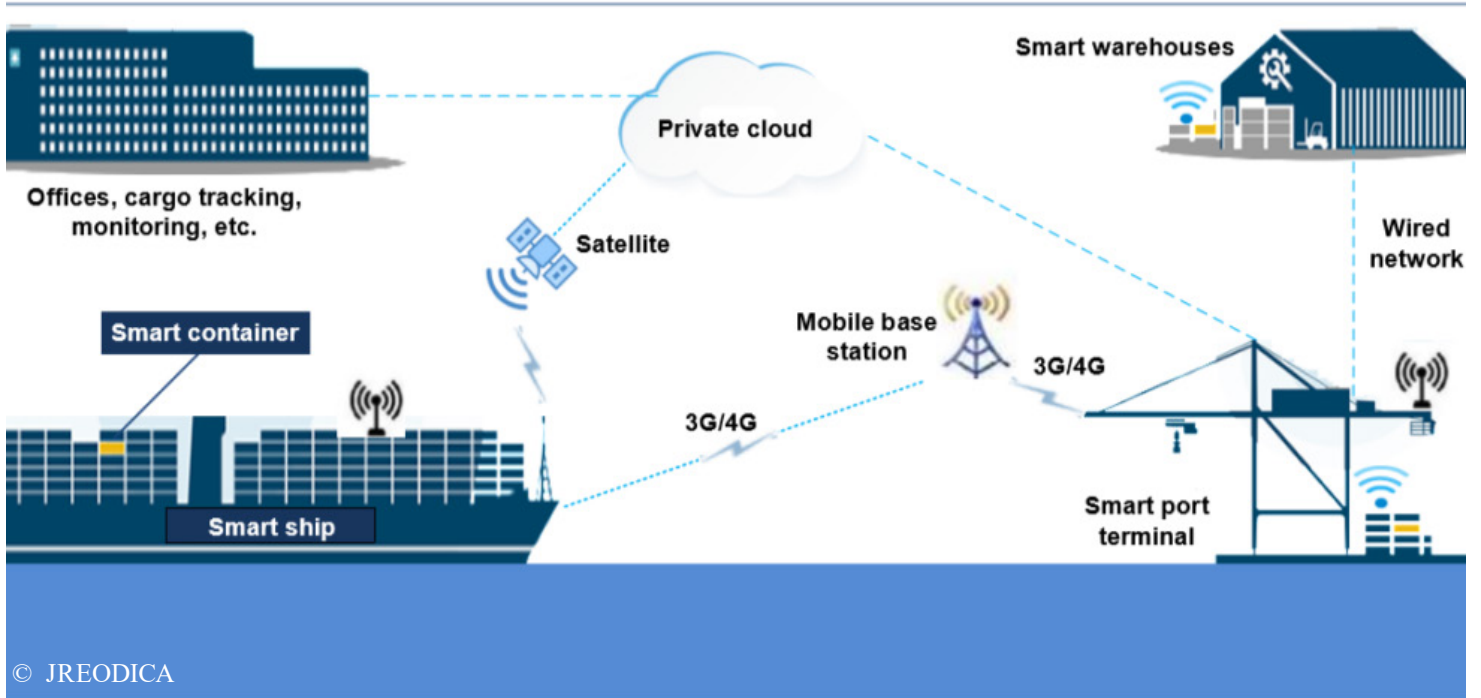
In other words, SPYNEL cameras function as vi-

sual radars, as they allow real-time detection of all intrusions. Their 360° vision compensates for the limitations of traditional cameras, thus enhancing surveillance potential.

Their long-range infrared sensor, in band II or III, is capable of detecting a small craft such as an RHIB or a zodiac-type boat up to the horizon, even at night, in conditions of total darkness, very bad weather, smoke, fog, rain, or snow.

6. The Emergence of Smart Ports: Data Collection and Analysis for Optimized Management

The collection and analysis of data via current tools seem to be giving rise to immense databases processed with a high degree of precision. **The Smart Port, driven by performance**, is held by simplified and automated management systems.



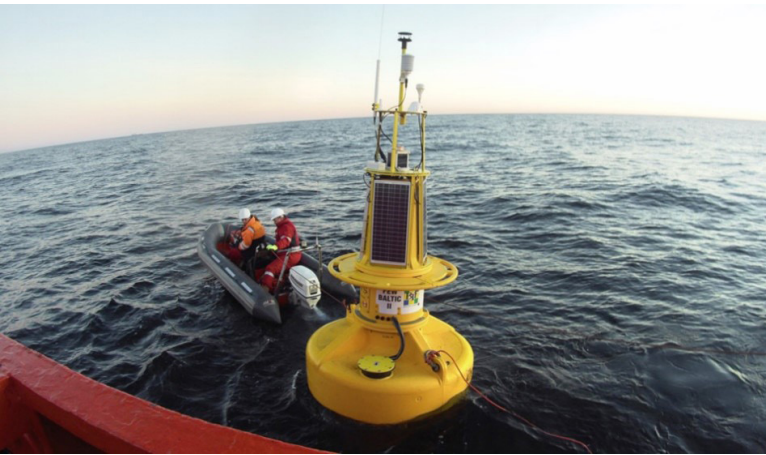
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7. Future Innovations and Challenges

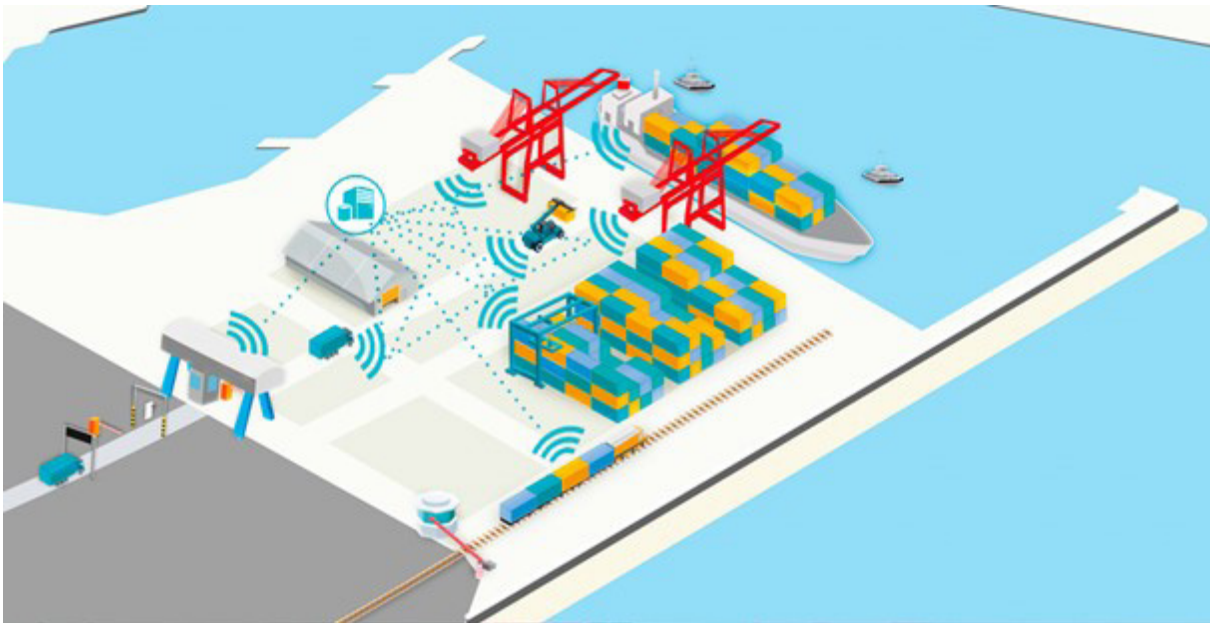
7.1 Internet of Things (IoT) for Environmental Monitoring

The Internet of Things could change the sector of environmental monitoring at sea. Seas can be mo-

nitored in real-time thanks to connected sensors on ships and coastal infrastructures. Projects like Prati Seas are designed to create a dense network of IoT sensors that require constant connection and energy savings to function. The completed information will be used to fight pollution and manage maritime risks.



IoT is revolutionizing port safety by integrating connected sensors for real-time monitoring. These advanced technologies allow for detecting threats, monitoring infrastructures, and improving operations management, thus ensuring enhanced security.



Technical Challenges of New Technologies

Detection devices such as sonars, hydrophones, and drones must have a permanent power supply and high-speed connection to function correctly. The first challenge at sea is energy management, especially for underwater or aerial drones that require autonomy from the coasts. Research on these technologies is the key to long-term success for autonomous energy solutions and offshore recharging devices.

Automated Detection Systems

The integration of machine learning algorithms in

automated detection systems has, on one hand, allowed real-time data processing and, on the other hand, considerably improved the relevance of alerts on maritime threats or accidental pollution. Convolutional neural networks, for example, allow for detecting anomalies in data captured by maritime sensors and thus optimize reactivity.

Artificial Intelligence to the Rescue of Risk Prediction

Predictive algorithms developed partly within the framework of AI have proven to be formidably effective in anticipating a risk of piracy or destruction by analyzing both historical and real-time data. Their abilities to timely conceive risk management



by providing forecasts on potential events and, if necessary, preconfigurations of adapted preventive actions prove to be precious.

Conclusion

Artificial intelligence and cutting-edge technologies are not just simple instruments at the service of maritime safety and security and pollution prevention in Africa. They equally constitute an increased and proactive mastery of the continent's maritime challenges. Their evolution carries promises for the future of a safer and more sustainable sea. The implementation of these technologies in risk management would allow, at least in theory, to increase Africa's resistance to maritime and environmental threats.

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- International Telecommunication Union (ITU) – www.itu.int/en/ITU-T/IoT
- World Maritime University (WMU) – www.wmu.se

- *Global Maritime Forum* – www.globalmaritimeforum.org
- *American Bureau of Shipping (ABS)* – www.eagle.org



By Mohammed HASSANI,
Expert in Global Security and Maritime Prevention, Consultant in QHSE and Professional Security, Specialist in Port Facility Safety and Environmental Risk Analysis, MOROCCO

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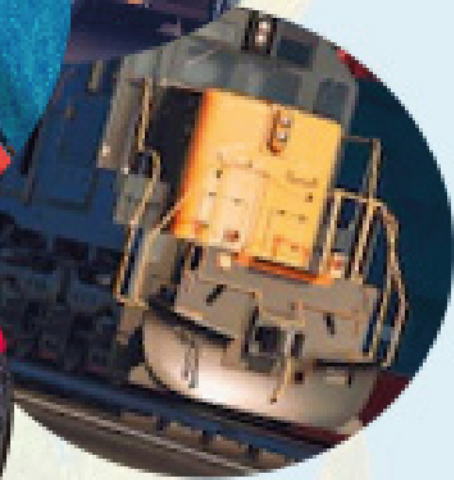
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Interferry Announces Follow-Up Workshop on African Ferry Safety in conjunction with Annual Conference in Marrakech

Building on the success of the April 2024 Africa Ferry Safety Seminar in Dar es Salaam, Interferry, the association representing the ferry industry world-wide, will on October 30th host a half-day follow-up workshop in conjunction with **Interferry2024**, the association's **48th annual conference** to be held in **Marrakech** from **October 26th to the 30th**.

Promoting the highest standards in domestic Ferry Safety has been a key strategic objective of Interferry for many years.

Through collaboration with African ferry leaders, Interferry aims to create a comprehensive African Ferry Safety Program that will improve safety standards across the continent and contribute to reducing the high level of incidents in some of its states.

The workshop in Marrakech will be a strategic planning exercise, utilizing roundtable discussions to prioritize initiatives identified through post-Dar es Salaam surveys.

Participants will then work together to explore ways Interferry can support the implementation of these initiatives.

The invitation-only event brings together African ferry operators and regulators. With a focus on practical solutions, potential initiatives include fostering best practice sharing through networking events, enhancing crew training and capacity building, and supporting the use of technology to improve safety and operational efficiency.



Mike Corrigan, CEO of Interferry, emphasizes the importance of continued dialogue: "The positive spirit and commitment at the Dar es Salaam seminar were truly inspiring," says Corrigan. "This follow-up session allows us to leverage that momentum and work together to tackle the challenges of ferry safety in Africa."

Interferry is a highly respected global ferry trade association with consultative status at the International Maritime Organization and similar influence at the European Union as well as many other maritime governance authorities. With membership exceeding 270 companies in more than 40 countries, its primary purposes are to represent the ferry industry on regulatory and policy matters including safety and sustainability; to speak on behalf of the worldwide ferry sector which provides transport for over four billion passengers and 370 million vehicles annually; and to facilitate networking and communications among its members.

www.interferry.com



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Mike Corrigan – CEO, Interferry



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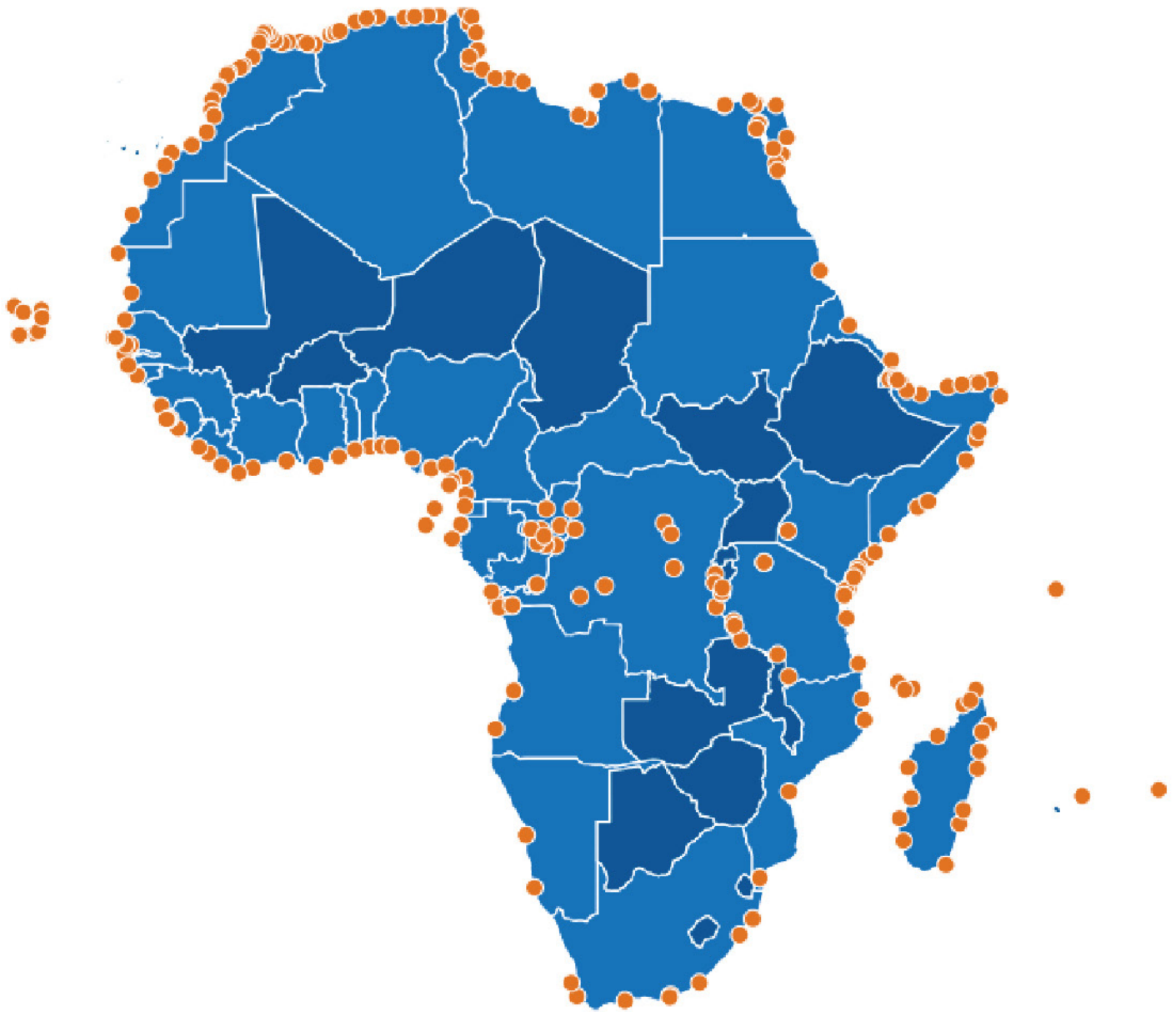


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African Maritime Cabotage: A Lever for Economic Independence and Sustainable Development in Africa



Maritime transport is the main mode of transporting goods to or from an African country with a maritime facade. These goods, regardless of their characteristics, volumes, or sizes, are transported by ships belonging to large foreign shipping companies that serve African ports.

This dependence on foreign shipping companies that possess the means and capacity for intra-African transport raises concerns, notably: the economic autonomy and sovereignty of African countries, regional connectivity, high transport costs, long transport times, etc.

To address these challenges, it is imperative to establish an African Maritime Cabotage (AMC) system.

At the origins of navigation, cabotage was the safest way for ancient mariners to go from port to port without losing sight of the coast.¹

Maritime cabotage, also referred to as "Short Sea Shipping (SSS)", is carried out along the coasts of a continent or between islands.

According to the EU, Short Sea Shipping is defined as "the movement of cargo and passengers by sea, between ports situated in geographical Europe or between those ports and ports situated in non European countries having a coastline on the enclosed seas bordering". Moreover, Short Sea Shipping activity includes "the domestic and international maritime transport, including feeder services along the coast, to and from the islands, rivers and lakes. The concept of short sea shipping also extends to maritime transport between the Member States of the Union and Norway and Iceland and other States on the Baltic Sea, the Black Sea and the Mediterranean."²

¹ <https://leshorizons.net/cabotage/>

² https://fr.wikipedia.org/wiki/Transport_maritime_%C3%A0_courte_distance



However, in Africa, the concept remains non-existent.

It should be noted, however, that the Revised African Maritime Transport Charter of 2010, in its Article 1, briefly mentions the notion of "Trans-African Cabotage", which it defines as "activities relating to maritime transport and related activities between the ports of Member States."

In this article, the author attempts to outline a definition of African Maritime Cabotage (AMC) as "the transport of goods and passengers by sea between ports located in the same African country, within an African sub-region, an African region or the African continent, including African islands".

Even if this African Maritime Cabotage (AMC) system does not yet exist, it is of crucial importance for intra-African trade and Africa's economic growth.

Africa's share in international trade averages 3%, while the average of inter-African trade is around 10% of total African trade. (African Integrated Maritime Strategy - Horizon 2050 (AIM Strategy 2050®) - AU, Version 1.0, 2012. - accessed on August 29, 2024)

The establishment of an African Maritime Cabotage (AMC) would present numerous advantages for the continent and would simultaneously contribute to the achievement of several Sustainable Development Goals (SDGs).

ADVANTAGES OF ESTABLISHING AFRICAN MARITIME CABOTAGE

For the continent, the advantages would be:

JOB CREATION

The establishment of an African Maritime Cabotage (AMC) would create a large number of jobs, both in the maritime transport sector and in related activities, such as shipbuilding and repair, insurance and brokerage, etc. The jobs thus created would contribute to reducing unemployment and strengthening the skilled workforce in Africa.

DEVELOPMENT OF THE MARITIME ECONOMY

The establishment of an African Maritime Cabotage (AMC) would promote the construction and development of African shipyards, which are almost non-existent, and African naval fleets.

African ships represent nearly 1.2% of world maritime transport in number and 0.9% in gross tonnage. (African Integrated Maritime Strategy - Horizon 2050 (AIM Strategy 2050®) - AU, Version 1.0, 2012. - accessed on August 29, 2024)

Shipyards and ships are not the only activities related to SSS that would promote the development of our maritime economy. Their contribution to the turnover of insurance, brokerage, and transit sectors, for example, will also promote the development of our maritime economy.

ECONOMIC INDEPENDENCE

By reducing dependence on foreign shipping companies, AMC would strengthen the economic independence of African countries, allowing them to make autonomous decisions regarding trade and transport.

ADDITIONAL SOURCES OF REVENUE FOR STATES



African Maritime Cabotage would generate additional revenue for governments. Taxes, customs duties, port fees, fees for port and maritime services, as well as other sources of revenue would contribute to public finances, thus strengthening the capacity of states to invest in sustainable development projects.

ATTRACTIVE (LOW) TRANSPORT COSTS

African Maritime Cabotage (AMC) would reduce transport costs for shippers, making trade more affordable and competitive. This would encourage trade and economic growth.

RESPECT FOR THE ENVIRONMENT

Maritime cabotage is considered environmentally friendly, as it would reduce pressure on land infrastructures and mitigate greenhouse gas emissions. Moreover, the establishment of AMC could promote the construction and development of African fleets with ecological ships, using environmentally friendly propulsion technologies, such as wind or electric propulsion.

The African Maritime Cabotage (AMC) system would also facilitate connectivity between African nations and the development of intra-African trade, stimulate economic development, and consolidate trade relations across the continent.

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS (SDGs)

The "Sustainable Development Goals (SDGs)" or "Global Goals", adopted by the United Nations in 2015, are a global call to action to eradicate poverty, protect the Planet and ensure that all human beings live in peace and prosperity by 2030.

The establishment of an African Maritime Cabotage (AMC) would contribute to **9 of the 17 United Nations Sustainable Development Goals (SDGs)**.



GOAL 1: NO POVERTY

Since 2000, Africa has made steady and significant progress in reducing the proportion of the population living below the poverty line. However, multiple crises, including the COVID-19 crisis, have reversed this progress, leading to economic contraction and increased poverty. It is estimated that 55 million Africans fell into poverty in 2020, and in 2022, Africa accounted for more than half (54.8%) of people living in poverty worldwide. The share of the population living below the national poverty line increased from 33.3% in 2013 to 38% in 2023, far from the target value of 23% for 2023 set in Agenda 2063. The number of poor workers in Africa (31.09%) is also higher than the global average (6.38%). (Extract from the Africa Sustainable Development Report, 2024)

Given this situation, it is crucial to consider innovative and sustainable solutions such as African Maritime Cabotage. In this context, the establishment of an African Maritime Cabotage could play a key



role in creating a large number of direct and indirect jobs in the maritime, port, logistics, and related industries, thus contributing to poverty reduction in Africa. These employment opportunities would cover a wide range of skills, thus improving the standard of living of populations and strengthening their purchasing power.

In practical terms, the establishment of an African maritime cabotage system would promote the development of dedicated naval fleets, employing personnel at all levels: captains, officers, mechanics, sailors, etc. Other professions in shipbuilding and repair, maritime administration, port handling, port administration, etc., supply chain management, and other support services would also benefit.

GOAL 2: ZERO HUNGER

The number of people suffering from hunger in Africa has increased by 11 million, from 270.6 million in 2021 to 281.6 million in 2022, and by 61 million since the onset of the COVID-19 pandemic in 2020. (Extract from the Africa Sustainable Development Report, 2024)

This alarming increase is partly exacerbated by post-harvest losses of agricultural food products, which lead to higher food prices by reducing part of the food supply to the market.

In 2011, the Food and Agriculture Organization of the United Nations (FAO) estimated that approximately one-third of global food production was lost or wasted each year, about 1.3 billion tons of food per year. These losses and waste occur throughout the supply chain, from field to plate.³

In Africa, the maritime transport of food and agricultural food products is carried out by ships belonging to large foreign shipping companies that serve African ports.

Indeed, it is noted that this dependence on foreign shipping companies makes the continent vulnerable to logistical disruptions (example: blockage of the Suez Canal), which can lead to delays in the delivery of food and agricultural food products, and consequently, to price increases.

Faced with these challenges, the establishment of an African Maritime Cabotage appears as a strategic solution to facilitate not only the transport of food and agricultural food products at lower costs and in reduced time; But also, to reduce post-harvest losses, while improving access to regional, sub-regional and continental markets, thus strengthening food security and contributing to the fight against hunger on the continent.

GOAL 4: QUALITY EDUCATION

The establishment and operation of an African Maritime Cabotage system would require the use of a large workforce due to the multiple activities (handling, consignment, shipbuilding and repair, insurance, towing, mooring, storage, etc.) associated with it.

To ensure the efficiency, safety, profitability and sustainability of all activities related to this system, it is imperative that this workforce be highly qualified. This implies not only the use of existing local skills, but also their strengthening through quality training, integrating the necessary modules adapted to the specific requirements of activities related to maritime cabotage.

GOAL 5: GENDER EQUALITY

The percentage of women working in the African maritime sector is significantly lower than that of men. However, it is noted that initiatives are being put in place to reduce this gap.

³ <https://news.un.org/fr/story/2017/09/364332>



The International Maritime Organization (IMO), for example, is actively committed to gender equality and women's empowerment, through various programs and training, including scholarships specifically addressed to women, and also allows women to access more easily high-level technical training in the maritime sector of developing countries.

In addition, IMO has created an environment that allows for the designation and selection of women and offers opportunities for career advancement in maritime administrations, ports and maritime training institutions.

IMO also encourages the next generation to enter the maritime sector and supports the establishment of professional associations of women in the maritime sector, particularly in developing countries. These associations include the Network of Professional Women in the Maritime and Port Sectors for West and Central Africa (NPWMP-WCA), the Association for Women in the Maritime Sector in Eastern and Southern Africa Region (WOMESA), the Arab Women in Maritime Association (AWI-MA) and the Women in Maritime of West and Central Africa (WIMOWCA).

Although significant initiatives are in place to promote gender equality in the maritime sector, the establishment of an African Maritime Cabotage could constitute an additional opportunity to strengthen these initiatives and promote gender equality policies.

GOAL 7: AFFORDABLE AND CLEAN ENERGY

The establishment of an African Maritime Cabotage would represent an opportunity to develop African fleets composed of ecological ships using clean energy.

Moreover, investment in modern maritime infrastructures, such as clean fuel refueling stations would complement this initiative.

GOAL 8: DECENT WORK AND ECONOMIC GROWTH

The establishment of an African Maritime Cabotage system would generate the creation of decent jobs in shipbuilding and repair, maritime insurance, brokerage, logistics, etc., offering solid career prospects, with competitive salaries, improved working conditions, and strengthened social rights.

In addition, the establishment of an African Maritime Cabotage would stimulate the continent's economic growth. By reducing dependence on foreign maritime transport services, AMC would strengthen the capacity of African countries to develop their own maritime infrastructure and improve their economic autonomy.

GOAL 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE

The establishment of an African Maritime Cabotage could play a key role in the development of industries and infrastructures in Africa.

On the industrial level, such a system would stimulate the creation of textile, agri-food, etc. processing industries in industrial-port zones. This would reduce post-harvest losses and facilitate the distribution at regional and continental levels of products resulting from this processing. As an illustration, this system would allow the transport of Cameroonian coffee, processed in the Kribi Industrial-Port Complex, to the port of Dakar, Senegal, aboard a cargo sailboat.

For the infrastructural component, the establishment of an African maritime cabotage system would stimulate the creation of infrastructures. For example, the use of ships powered by e-methane could require the development of specific infrastructures to meet their energy and logistical needs.

Also, the establishment of an African Maritime Cabotage system would stimulate innovation



through the use of new technologies such as artificial intelligence, Big Data, the Internet of Things (IoT), blockchain.

GOAL 13: CLIMATE ACTION

Africa accounts for less than 4% of global carbon emissions, but it is highly exposed to their effects. Nearly 52% of African countries have been affected by climate change. More than 110 million people have been directly affected by climate, weather and water-related risks, a situation that has resulted in estimated economic damages of \$8.5 billion in 2022. (Extract from the Africa Sustainable Development Report, 2024)

While Africa, despite its low contribution to global carbon emissions, is bearing the full brunt of climate change impacts, maritime transport is proving to be one of the sectors responsible for these emissions.

Maritime transport plays a significant role in climate change, mainly through greenhouse gas (GHG) emissions from ships. It is estimated that this industry is responsible for about 3% of global GHG emissions, with carbon dioxide (CO₂) being the main greenhouse gas emitted.

In addition to CO₂, maritime transport also contributes to climate change through emissions of black carbon, fine particles produced during fuel combustion, and methane. Ships burning heavy fuel oil generate the largest amount of black carbon particles, which represents 21% of ships' CO₂ equivalent emissions.⁴

Unlike maritime transport, which is by nature international, i.e., it takes place over long distances, maritime cabotage takes place over short distances. This "short distance" aspect of maritime cabotage

represents a considerable advantage for its implementation and development in Africa.

Also, the integration of ecological ships using neutral or low-carbon fuels, such as biofuel, hydrogen, ammonia, fuel cells, wind energy, etc., in the African maritime cabotage system would constitute a significant opportunity to fight against climate change.

Today, several wind-powered ships are used for maritime cargo transport. For example, since 2022, the cargo sailboat of the Breton company **TOWT "TransOceanic Wind Transport"** has allowed the famous chocolate maker C  moi to transport its cocoa between C  te d'Ivoire and France with a minimal carbon footprint and in very short timeframes.

For its part, the cargo sailboat Grain de Sail I, of the Breton company **Grain de Sail**, built entirely in aluminum to be light, strong and recyclable, has been transporting various goods (wine, coffee, cocoa) from one side of the Atlantic to the other since 2020.

Furthermore, **Windcoop**, the first decarbonized maritime transport company in cooperative form, plans to put into service from 2025, sailing container ships to transport goods between France and Madagascar. Windcoop also plans in the future to strengthen this line with a second ship and open other lines to South America and West Africa.

GOAL 17: PARTNERSHIPS FOR THE GOALS

The establishment of an African Maritime Cabotage will require close collaboration between different actors (governments, companies, professional associations, communities, regional and continental institutions, etc.), thus promoting partnerships.

⁴ <https://clearseas.org/fr/insights/changements-climatiques-et-transition-energetique-dans-lindustrie-du-transport-maritime-regard-sur-la-region-du-fleuve-saint-laurent/>



In conclusion, African Maritime Cabotage represents a significant opportunity for Africa. By promoting job creation, the development of the maritime economy, economic independence, revenue for states, competitive transport costs, and respect for the environment, this system is crucial for the continent's development.

The establishment of an African Maritime Cabotage would facilitate connectivity between African nations, stimulate economic development, and consolidate trade relations across the continent.

Moreover, its implementation would significantly contribute to the achievement of several Sustainable Development Goals (SDGs), notably SDGs 1, 2, 4, 5, 7, 8, 9, 13 and 17.

The establishment of such a system is imperative for Africa's future and the realization of its full economic potential.

However, its success will require close collaboration between governments, the private sector and regional and international organizations, as well as a firm commitment to favorable policies and necessary investments.



*By Pascaline ODOUBOUROU,
Specialist in Port and
Maritime Management*



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International Maritime Economy Conference, 4 November 2024, in Algeria



The **International Maritime Economy Conference** will take place on **4 November 2024** in **Algiers, Algeria**, under the theme '**Navigating towards the future: How to build the maritime sector of tomorrow ?**'. This year's theme reflects the conference's commitment to shaping the future of shipping, sustainability and technological innovation.

This annual event, organised by the World Trade Center Algiers and Global Trade Support, is dedicated to advancing the maritime sector through

thought leadership, innovation and collaboration. This year's conference promises to offer an in-depth exploration of the developments and challenges facing the maritime sector.

The International Maritime Economy Conference has established itself as a leading platform bringing together industry leaders, policy makers and experts to discuss the major challenges and opportunities facing the maritime sector. It also serves as a platform to discuss the key issues shaping the future of shipping and industry practices.



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Event

Conference Highlights :

Inspirational Key Speakers: The conference will feature a prestigious selection of speakers, who will share their perspectives on crucial topics such as 'sustainable maritime practices' or 'technological innovations in maritime transport'.

Round Tables and Panel Discussions: Participants will benefit from expert panels and interactive discussions covering a range of topics, from regulatory frameworks and environmental challenges to technological advances and maritime infrastructure.

Networking Opportunities: The International Maritime Economy Conference will offer nume-

rous networking opportunities with industry leaders, policy makers and professionals. Participants will have the opportunity to make valuable connections and explore potential collaborations.

Innovative Exhibits: The conference will showcase cutting-edge technologies and solutions through dynamic exhibits, allowing attendees to discover the innovations shaping the future of the maritime industry.

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The poster features a central circular logo with the text 'CONFERENCE INTERNATIONALE SUR L'ECONOMIE MARITIME' around the top and 'CIEM' in large blue letters at the bottom, flanked by two asterisks. The logo also includes a stylized ship's wheel and a central vertical element. In the top left corner, it says 'WORLD TRADE CENTER ALGIERS' with a globe icon. In the top right corner, it says 'GTS GLOBAL TRADE SUPPORT' with the GTS logo. Below the logo, the text reads 'NAVIGATING TOWARDS THE FUTURE', '4 NOVEMBRE 2024', 'SAVE THE DATE' (in a blue box), and '#CIEM2024'.



GENERAL OVERVIEW OF FISHING



16 activities were recorded by RMIFC during the year 2023 under the theme "IUU Fishing", involving 32 events for the first quarter, 28 events for the second quarter, 29 events for the third quarter, and 27 events for the fourth quarter in the Eastern and Southern Africa and Indian Ocean region, RMIFC's area of interest.

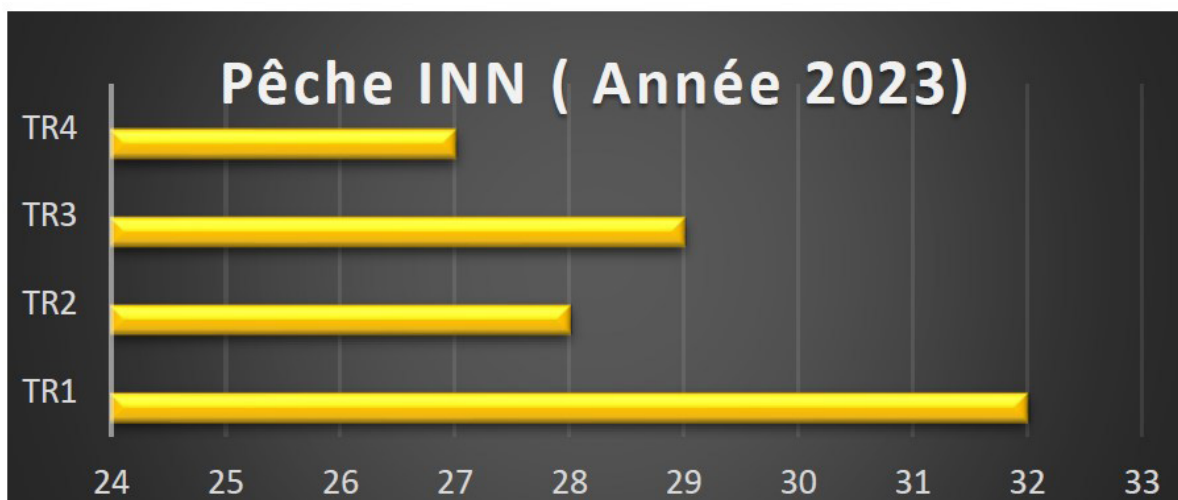
An increase in the number of events has been observed compared to the year 2022 (100 cases). Our monitoring room is tasked with recording all fishing vessels detected daily in our restricted area of interest.

This detection allows us to closely monitor each fishing vessel engaged in IUU fishing activity.



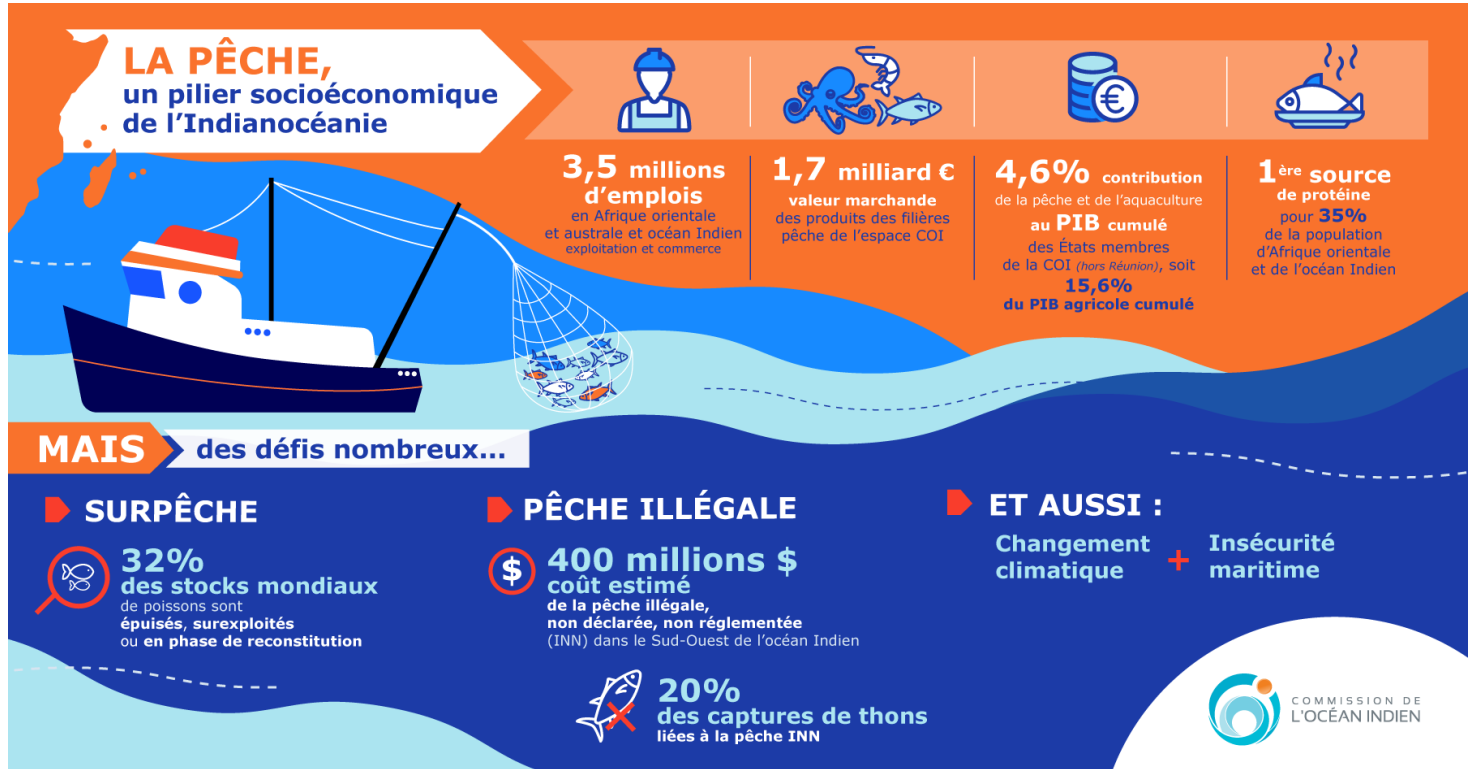
By Lieutenant (EVI) Said LAVANI, Active officer of the Comorian Coast Guard, on secondment to the Regional Maritime Information Fusion Center (RMIFC), based in Madagascar as an international liaison officer

Quarterly comparison of activity volume during the year 2023





GENERAL SITUATION OF FISHING

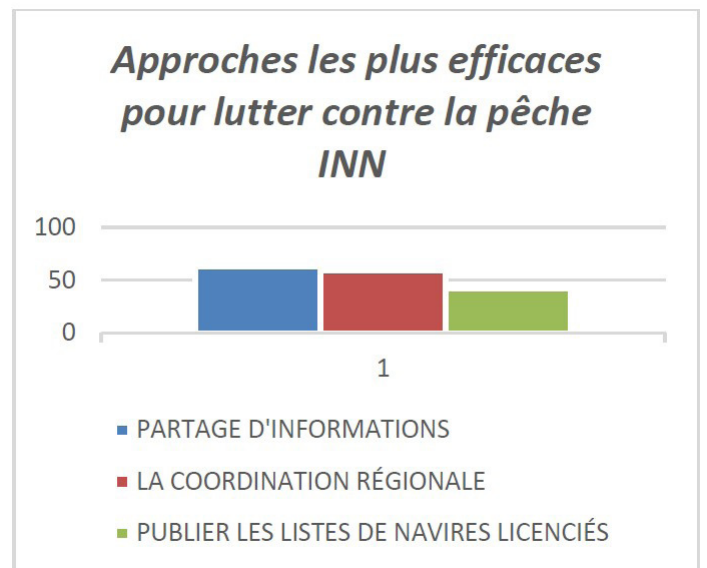


IUU fishing is one of the eleven (11) maritime security themes addressed by RMIFC. In the Eastern and Southern Africa and Indian Ocean (ESA-IO) region, RMIFC's area of interest, it is considered the most significant threat to maritime security. The fishing sector represents a socio-economic pillar in the region but faces numerous challenges.

MOST EFFECTIVE APPROACHES TO COMBAT IUU FISHING

Several national and international approaches have been used to combat IUU fishing in the Indian Ocean. Three of the most effective approaches have been identified by regional Experts in the fight against IUU fishing in all its forms.

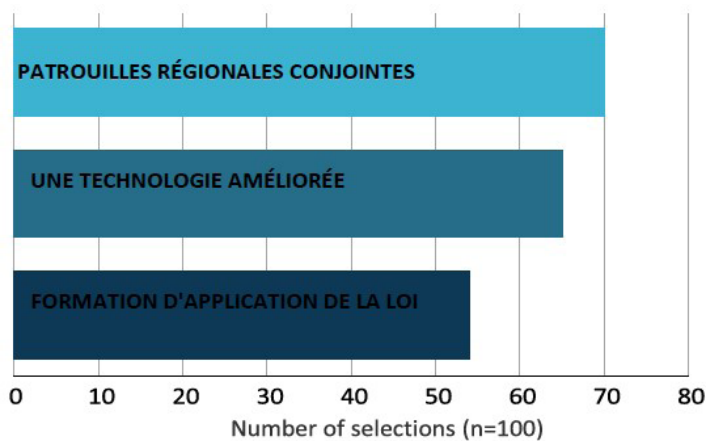
The following figure presents the three most frequently selected approaches:





RESOURCES NEEDED TO COMBAT IUU FISHING

Several gaps in the resources needed to combat illegal fishing have been identified. These three resources have been selected as the most necessary in the fight against IUU fishing in the region. The following figure presents the three most frequently selected resources.



CONCLUSIONS AND RECOMMENDATIONS

Threats to maritime security require international attention and collaboration, but these priorities and solutions should be determined by those most affected. In general, efforts to combat IUU fishing and maritime crime must be conducted collaboratively and under the leadership of local authorities.

The following recommendations are formulated by nearly 300 Experts from different maritime sectors in ten Indian Ocean countries, providing a unique opportunity to understand perceptions of maritime threats, the impacts of these threats, and tangible solutions, by listening directly to those who regularly experience them:

DEVELOP INFORMATION SHARING

Madagascar hosts a Regional Maritime Information Fusion Center (RMIFC) to promote information sharing in the Western Indian Ocean, but partici-

pants stated that information sharing first needed to be improved at the national level. Participants suggested creating national maritime coordination offices with secure online platforms to improve information exchange and analysis between national agencies.

SUPPORT REGIONAL COORDINATION EFFORTS

FISH-i Africa has achieved notable successes in coordinating actions against illegal fishing vessels in the Western Indian Ocean, but its success relies on trust and transparency between member countries. Workshop participants recommended strengthening mandates to ensure information exchange at the regional level and joint law enforcement.

PUBLISH LISTS OF LICENSED VESSELS

Publishing lists of licensed vessels is a cost-effective way to improve transparency and help observers identify illegal vessels. In Somalia, the Ministry of Fisheries and Marine Resources provides a list published on its website.

ESTABLISH JOINT REGIONAL PATROLS

To supplement limited resources and funding for combating IUU fishing, states can pool their resources or collaborate with other organizations such as Sea Shepherd to capture illegal vessels.

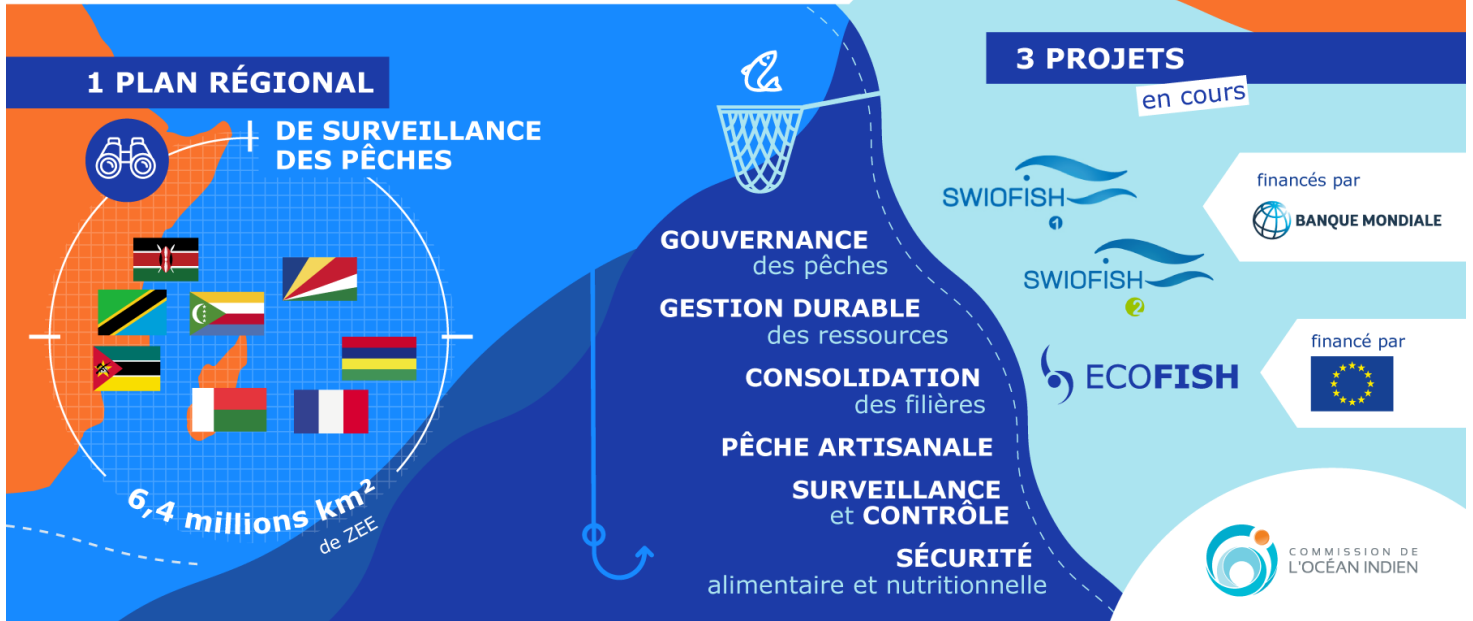
IMPROVE ACCESS TO TECHNOLOGY

Technologies such as AIS, VMS, and radar and optical satellites allow states to better identify and catch illegal fishing vessels, but many developing states do not have access to these technologies.

New public-private partnerships are essential to enable all states to use satellite data in the fight against illegal fishing, and funds must be made available to resource-poor states to allow them to access this data.



La COI et ses partenaires PROMOTEURS D'UNE PÊCHE DURABLE



TRAIN LAW ENFORCEMENT IN INSPECTING AND PROSECUTING ILLEGAL FISHING CASES

Prosecutions against illegal fishers are extremely rare. Local law enforcement officials have requested better training on what to look for when investigating illegal vessels and what information to collect to support prosecutions. (Source: One Earth Future (OEF)/Secure Fisheries)

REGIONAL PARTNERS AND INITIATIVES

For the year 2023, a memorable event that deserves

to be mentioned in the context of IOC efforts and its partners in the fight against IUU fishing in the region.

On August 4, 2023, in Canada, the Indian Ocean Commission (IOC) was awarded a prize by the International Monitoring, Control, and Surveillance (IMCS) Network for its significant impact in the fight against illegal fishing worldwide. A source of pride for the region in general and for our regional institution in particular, which is the pilot body of the regional maritime security architecture known as MASE (Maritime Security).

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Discovering the job of Ship's Captain with Miss Lysney Vanessa NGOUMBA

1. Would you please introduce yourself to our dear readers?

I'm Miss Vanessa Lysney Ngoumba, aged 30, a Gabonese merchant marine captain. I hold a licence 3 in inland navigation obtained in the DRC Congo at the regional training school for inland navigation professions of the International Commission Congo Oubangui Sanga (CICOS), a maritime and coastal navigation captain's diploma and a Brevet de capitaine 500 Ums obtained at the École Nationale de Formation maritime in Dakar, Senegal.

2. Why did you want to become a ship's captain?

The choice to become a captain wasn't a vocation from the start, after I'd passed my baccalauréat. Like everyone else, I wanted to do commercial marketing or logistics and transport, but due to a combination of circumstances, I had to take a competitive examination for the Gabonese merchant navy, which offered training to become a ship's captain. I seized the opportunity that was presented to me. As I live on the banks of rivers and lakes, being a captain was not unknown to me. My grandfather had already been a tugboat captain in the past, so I passed the exam and became a captain today.

3. What do you enjoy most about your job?

In this job I would say that every day is a new challenge, the maritime environment has different working conditions sometimes we have a beautiful sea and sometimes turbulent but we deal with it, and what I appreciate most in this job is: the mix of



cultures on board, the discovery of different horizons, the tranquility of the aquatic environment with its virtues. But also the sense of responsibility that you acquire in this field.

4. What challenges do you face as a woman captain?

There are many challenges I face as a woman captain, but I'm going to focus on a few:

- My young age and the fact that my colleagues are older and less senior than I am (pushed me to develop communication tricks to make myself understood and respected and to be able to listen to everyone's grievances. It's fair to say that we're in an African business environment where birthright plays an important role, so it



Job

took a lot of patience and wisdom as second-in-command to develop a good working atmosphere;

- The marine environment is a male-dominated sector, so it was very difficult for my colleagues to allow themselves to be led by such a young woman, even though I was in charge on board;
- The separation of family life, which doesn't allow me to be with my family all the time, and the demands of professional life.

5. You were recently made a Knight of the Gabonese Order of Merit, for being the 1st woman captain of the Gabonese Merchant Navy. How do you feel about this award?

I was very proud and honoured to receive this award from my country on the occasion of our bank holidays, which is our country's biggest celebration. I'd like to take this opportunity to thank all the Gabonese authorities for awarding me this medal.

6. What advice would you give to your younger sisters who want to enter this profession?



The advice I would give to my young sisters who want to go into this field is to show a lot of courage and self-sacrifice, and to believe in themselves.

7. Your final words

I'd like to thank the Maritimafrica press group for giving me the opportunity to express my views on this fascinating seafaring profession.

I'd also like to thank all those who have supported me up to now (the Gabonese government, my family and friends).

Interviewed by Pascaline ODOUBOUROU

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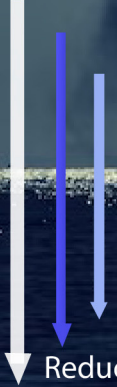
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Reducing the carbon footprint: a challenge for shipowners in the face of tougher international maritime standards



Reduce the carbon footprint

Industrial activities, waste treatment, transportation (maritime, road, air, river) are sectors of human activity that emit atmospheric pollutants. Among these sources, maritime transport occupies a very worrying place. A cornerstone of international trade and the global economy, maritime transport accounts for about 90% of world trade by volume. To carry out this important transfer of heavy flows, more than 90,000 transport ships crisscross the globe.

Among these are container ships, bulk carriers, oil tankers, ro-ro ships, and cruise ships. While navigating, most of these sea giants cause significant air pollution by releasing fine particles of nitrogen oxide, carbon dioxide, and sulfur oxides. This pollution is particularly notable in large ports, due to the fuel used being one of the most polluting in the world: heavy fuel oil. Heavy fuel oil is a liquid fuel extracted from petroleum. It is a viscous fuel, dark brown or black in color. A fuel with high CO₂ content, heavy fuel oil is widely used as fuel for diesel engines in boat machinery. It can contain up to 3.5% sulfur and each year, the sector releases nearly 950 million tons of CO₂, or

2.6% of global emissions according to the Higher Institute of Maritime Economics (Isemar). If shipping were a country today, it would be the 6th largest CO₂ emitter, ahead of Germany and just behind Iran, which is the 5th largest CO₂ emitter.

Carbon dioxide (CO₂), nitrogen oxides (NO_x), and sulfur oxides (SO_x) represent a real danger to human health and ecosystems. When these substances fall back to earth, they attack soils, waters, and buildings. Soil acidification is an important factor in the degradation of forests and aquatic environments. Each year worldwide, pollution related to maritime transport would cause 14 million cases of asthma in children and 400,000 premature deaths. These ultra-fine particles also increase the risk of heart attacks.

These phenomena raise significant concerns among maritime industry actors, but especially for the IMO, which is the United Nations specialized agency responsible for ensuring the safety and security of maritime transport and preventing pollution of the seas and atmosphere by ships.



To combat pollution caused by the maritime transport industry and reduce its greenhouse gas emissions, the International Maritime Organization (IMO) has adopted a series of measures:

- ***The establishment of specific energy efficiency criteria based on the type and size of existing ships;***
- ***Setting a percentage for reducing the carbon intensity of ships by December 31, 2030;***
- ***The ban on using and transporting heavy fuel oil for ships crossing Arctic waters;***
- ***The creation of Sulphur Emission Control Areas (SECAs); to name a few. It should be remembered that the main mission of the IMO is legislation. Its primary role is to establish laws to regulate activities in the maritime sector.***

Among the texts adopted by the IMO, we have the MARPOL Convention (Marine Pollution). This convention aims to prevent pollution from ships. It consists of 6 annexes. Annex VI regulates the pre-

vention of air pollution caused by ships; it entered into force in 2005 and now applies to 96.65% of the merchant fleet.

Since January 1, 2020, the IMO has established a new limit for the amount of sulfur per kilogram of fuel. A limit set at 5000 mg per kg of heavy fuel. Several regions of the world are also designated by the IMO as Sulphur Emission Control Areas (SECAs). In these areas, the authorized rates of sulfur particles are considerably lower (1000 mg per kg). There are currently four SECAs: the Baltic Sea, the North Sea, the American and Canadian Coasts, and the American Pacific Islands.

To enhance maritime transport safety, the International Maritime Organization (IMO) has introduced regulations such as the installation of an automatic vessel tracking system called AIS (Automatic Identification System). AIS is a localization technology used aboard ships to provide identification and





location data to surrounding vessels, port authorities, and other maritime sector actors, thus offering a real-time view of global maritime traffic.

Equipped vessels autonomously transmit identification information and dynamic information (geographic positions, speed, heading, message date and time). This rich and valuable source of information constitutes a prime resource for the maritime community, research, and even the general public.

Thanks to the data provided by AIS (Ship identification, speed, location, ...), it is possible to develop a model for calculating pollutant emissions from maritime traffic. The calculation methodology consists of converting the energy consumption of ships (in kWh) into pollutant emissions (in grams) using an "emission factor" developed by the IMO.

This emission factor is broken down by type of pollutant and takes into account the fuel used, the year of construction of the ship, and the power of the main engine. This calculation methodology allows for establishing an inventory of pollutant emissions from maritime navigation in a given geographical area. These analyses of pollutant emissions could make it possible to evaluate the real impact of implementing a new regulation or a new infrastructure.

All of this is essential for developing decarbonization strategies in the maritime and port domains.

The IMO has not limited itself solely to regulation. The International Maritime Organization (IMO) authorizes States to adapt their regulatory policies in their national waters, particularly in their ports.

It is therefore entirely plausible to make it mandatory for any ship entering a port to declare the level of its tanks and the type of fuel upon port entry and exit, which would determine the amount of fuel consumed at berth and thus estimate emissions. Ports are under pressure to reduce their greenhouse gas emissions and must adapt to trends in renewable energy.

In sum, air pollution is one of the major public health issues in the world, a reason that leads all actors in the maritime industry to work genuinely for the reduction of the carbon footprint to ensure a healthy environment for biodiversity.

Source

- Convention MARPOL
- MARPOL et ses annexes : quelle efficacité ? Ibtissam Bougataya, Cyrielle de Bruyne
- L' AIS COMME OUTIL D'INTELLIGENCE SCIENTIFIQUE, ECONOMIQUE ET STRATEGIQUE (L'INTELLIGENCE PORTUAIRE) ; Ronan KERBIKOU Arnaud SERRY.



*By Fulgence ZINSOU,
Maritime expert, Consultant
in transport and logistics*



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African Coastal Smart Cities: Leveraging ocean resources and coastal tourism across Africa's 39 coastal nations.

Sustainable Maritime Investment: Financial mechanisms and capital markets for maritime growth.

Maritime Skills and Capabilities: Building a workforce to meet global trade demands.

Marine Manufacturing & Special Economic Zones: Investments in maritime manufacturing.

Aquaculture and Fisheries: Addressing the rising global demand for aquatic food.

Commander Tsietsi Mokhele, President of the Africa Oceans Council, emphasizes Africa's under-representation in global trade: *“The African share of global trade remains at less than 3 percent, underscoring the need for African countries to trade more among themselves and with the rest of the world.”*

Jan Hoffman of UNCTAD challenges African nations to seize the moment: *“Can African countries leverage the current disruption and explore how, by enhancing their trade facilitation environment, they can capitalize on the increased traffic passing through their ports?”*

Sponsored by the City of eThekweni and endorsed by organizations across Africa's Blue Economy, including DFF's, private sector stakeholders, trade associations, academic institutions, and maritime bodies, the Africa Maritime Investment Indaba is poised to be a cornerstone for driving collaboration, Trade show and showcasing investment opportunities.

Register today to be a part of shaping the future of Africa's maritime sector. Join us this November in Durban to connect with innovators, discover investment opportunities, and explore how Africa can thrive in the evolving global maritime landscape.



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Port Security Funding (ISPS Code) in West and Central Africa: Challenges and Solutions



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Port security is a crucial issue for West and Central African countries, where ports serve as vital entry points for international and regional trade. The implementation of the International Ship and Port Facility Security Code (ISPS Code) aims to prevent unlawful acts against port facilities and ships. However, adequate funding and effective use of funds for port security remain major challenges. This article, resulting from a discussion among international experts from the "Shangoo" community, examines current issues and proposes solutions to strengthen port security in West and Central Africa.

The Current Situation of Port Security Funding

Currently, funds for port security in West and Central Africa mainly come from fees and taxes imposed on ships. Some port facilities collect taxes while others do not. Implementing a tax is a good thing, but it's essential to ensure that this tax is harmonized and implemented by all. Furthermore, it is crucial to guarantee that the tax revenue is used solely for port security purposes. This would en-

sure that the funds generated by the ISPS Code can reach the main security actors, namely the personnel of security companies, security companies, port facility and port security personnel, designated authorities' security personnel, and authorized security companies for all other security-related services (video surveillance, security equipment and materials, etc.).

Challenges in Fund Utilization

One of the major challenges is the non-transparent use of collected funds. Funds are often absorbed by administrative structures, ports, and intermediaries, without reaching the true targets, which are the actors on the ground. Regular audits, often conducted by international entities such as the US Coast Guard or the European Union, reveal gaps in the application of security standards. These audits are essential as they determine compliance with international standards, but they also highlight resource deficits and sometimes a lack of political will, forcing a re-examination of certain entrenched administrative practices.



Proposals for More Transparent and Effective Management

To improve the management of port security funds, it is necessary to implement transparency and accountability mechanisms. West and Central African countries could draw inspiration from international models of transparent security fund management. For example, Norway and Canada have implemented port security fund management systems that include independent audits and public reports on fund usage. Additionally, initiatives such as the International Maritime Organization (IMO) require regular reports and assessments of compliance with security standards.

The Importance of International Cooperation

International cooperation plays a key role in financing and capacity building in port security. Initiatives such as the SWAIMS (Strengthening West

African Integrated Maritime Security) program, GOGIN (Gulf of Guinea Inter-regional Network), and CRIMGO (Critical Maritime Routes in the Gulf of Guinea) offer valuable support. Similarly, Expertise France offers technical support programs to help African countries strengthen their port security. These programs provide training, equipment, and technical support to improve security infrastructure and practices.

However, it is crucial to adjust these programs so that they truly benefit the appropriate targets. Each country having implemented an architecture required by the ISPS Code, these programs should target the different actors in relation to their missions and objectives for port compliance.

By directly targeting the people and organizations responsible for implementing security measures, the programs could have a more significant and direct impact.





Strengthening Local Capacities

Technical assistance and training programs must be directed towards local actors. Training, refresher courses, and expertise exchanges should focus on the real needs of local security providers. This would reduce costs related to foreign experts and improve the effectiveness of training programs. For example, practical workshops and simulation exercises could be organized regularly to maintain a high level of preparedness. In addition, specific training adapted to each actor's missions should be developed to ensure optimal compliance with ISPS Code requirements.

Proposal for a Common Port Security Agency

An idea that could transform port security in West and Central Africa is the creation of a common port security agency, similar to ASECNA for civil aviation. This agency could centralize security efforts, harmonize pricing and practices, and ensure fair and efficient resource allocation. The Regional Maritime Security Center for West Africa (CRESMAO) could play a key role in this initiative by providing a regional platform for coordination and support. With the support of new regional representatives and leaders, this initiative could become a reality and bring significant improvements to port security in the region.

Conclusion

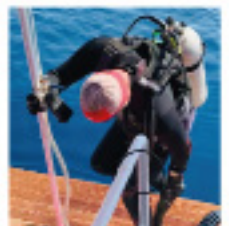
Port security funding in West and Central Africa presents significant challenges, but also considerable opportunities. By adopting transparency practices, strengthening local capacities, and fostering international cooperation, countries in the region can improve the security of their port facilities. The creation of a common port security agency, with CRESMAO's support, could also represent a significant step forward. By working together, African governments and international partners can ensure that port security funds are used effectively to protect ports, ships, and the people who depend on them.



*By Rachid DIOURY,
General Director Al Afya
Qhsse & Consulting, Member
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Co-founder and Executive Director of the Convention on Business Integrity (CBI) Nigeria

Host
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Marine renewable energies

Also known as “blue energy“, Marine Renewable Energies (MRE) are energy sources produced by the oceans, waves, tides, currents, marine biomass, winds and the temperature difference between the surface water and the deep sea.

1. Hydropower

Hydropower is a form of renewable energy generated from the force of moving water, such as ocean currents or tides. The energy is extracted using underwater turbines or similar devices that convert the kinetic energy of the water into electrical energy.



© Minesto kite turbine



2. Tidal energy

Tidal energy is a form of renewable energy that is produced by the force of the tides. It is generated by exploiting the difference in height between rising and falling tides. Tidal energy plants use dams that capture seawater at high tide and release it to produce energy at low tide. This energy is converted into electricity by turbines, which are driven by the force of the moving water.



3. Wave energy

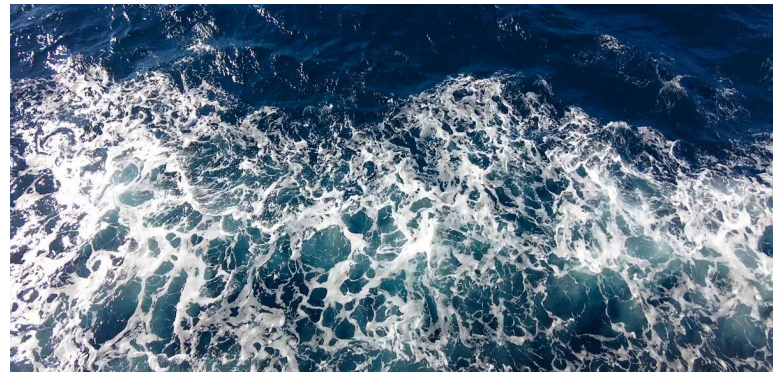
Wave energy is a form of renewable energy that is produced from the force of waves. It is also known as wave energy. The principle of operation is relatively simple: devices are placed in the water to capture the force of the wave and transform it into electricity. There are several types of wave energy devices, such as floats, oscillators, buoys or wave plates. All work in a similar way, using the force of the wave to generate electricity.



Oyster 1 device tested by Aquamarine Power in 2009 in the north of Scotland. © flickr/aquamarinepowerltd

4. Ocean thermal energy

Ocean thermal energy, is a form of renewable energy that exploits the temperature difference between surface and deep seawater to generate electricity. This temperature difference can be caused by ocean currents, winds, air temperature variations, or natural phenomena such as tides.



5. Offshore wind energy

In fact, offshore wind energy is not marine renewable energy. This is because the energy used is not from the sea, but rather from the wind. Offshore wind energy, also known as offshore wind energy, is the use of the wind blowing over the ocean to produce electricity. Offshore wind turbines are installed on floating platforms or on foundations fixed to the ocean floor. This energy is harnessed through the use of turbines and generators, which convert thermal energy into electricity.





6. Marine biomass energy

Marine biomass energy is energy produced from living organisms and organic matter found in oceans, seas and rivers. It is produced from a variety of sources, including algae, macrophytes, micro-organisms and organic waste. There are several methods of harnessing energy from marine biomass.

One of the most common methods is the production of biofuels from algae, which are grown in ponds or photobioreactors. The algae produce oils that can be converted into biofuels such as biodiesel and bioethanol.

Another method is to use energy generators from ocean currents, waves and tides. These generators can produce electricity from the kinetic energy of water movements.



7. Osmotic energy

Osmotic energy is a form of renewable energy that exploits the difference in salinity between seawater and freshwater to generate electricity. This difference in salinity creates an osmotic pressure that can be used to generate energy.

The process of generating osmotic energy involves the use of a semi-permeable membrane that separates salt water from fresh water. Salt water is placed on one side of the membrane, while fresh water is placed on the other side. The fresh water flows through the membrane to dilute the salt water, creating osmotic pressure.

This osmotic pressure can be used to produce electrical energy by passing water through a turbine that is connected to a generator.



Project for a 10 MW ETM pilot plant (©DCNS)

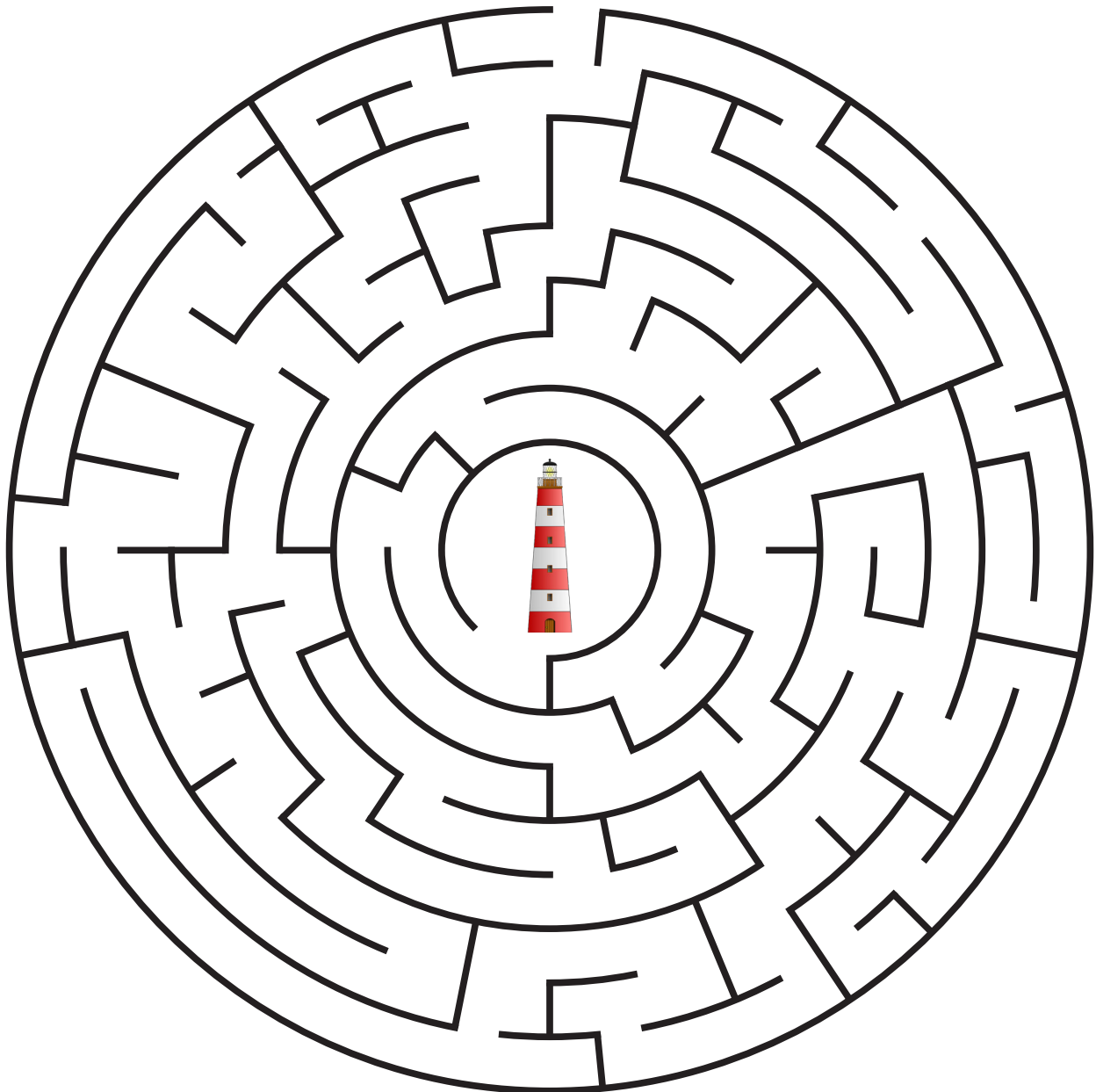


*By Pascaline ODOUBOUROU,
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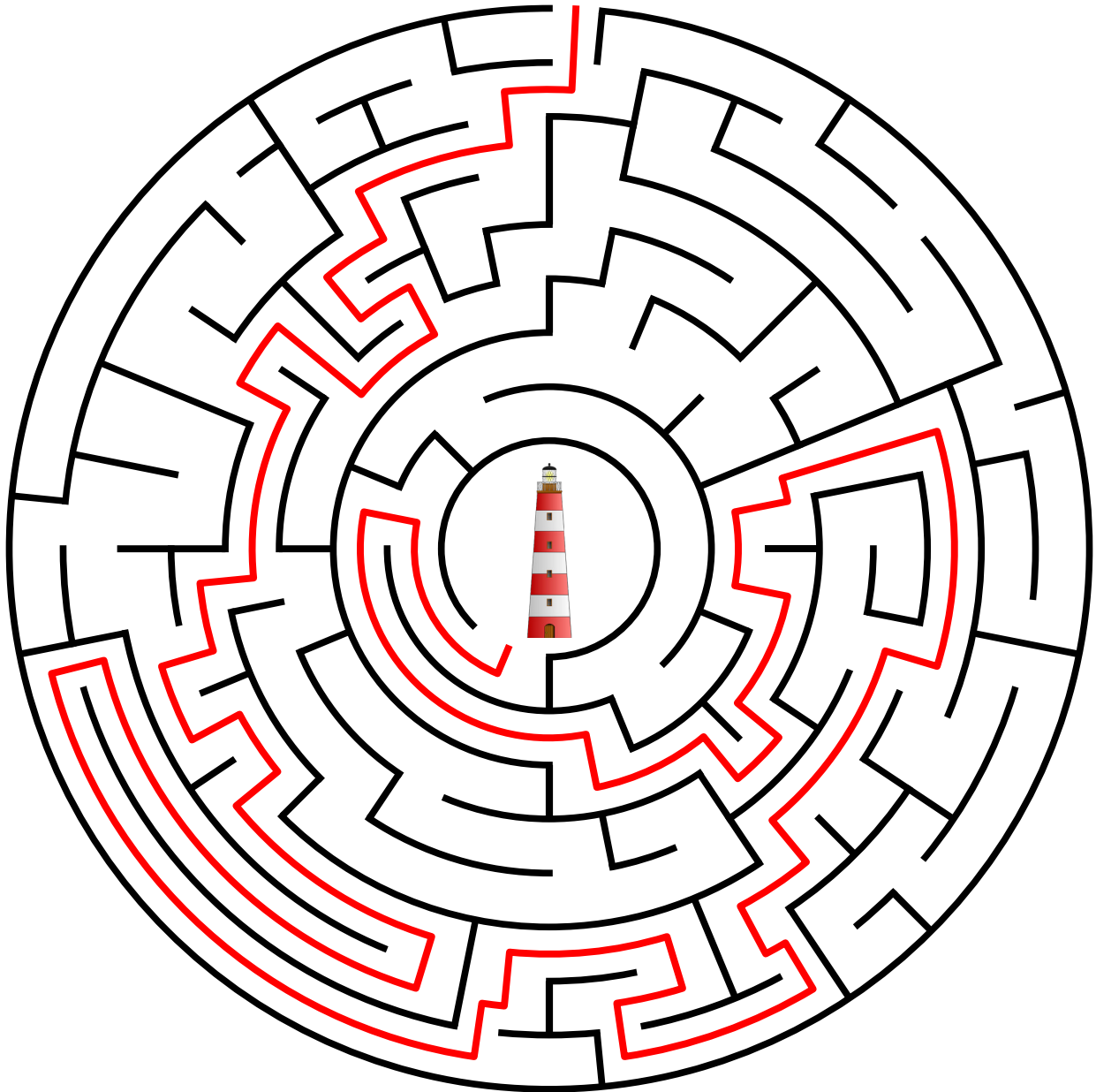
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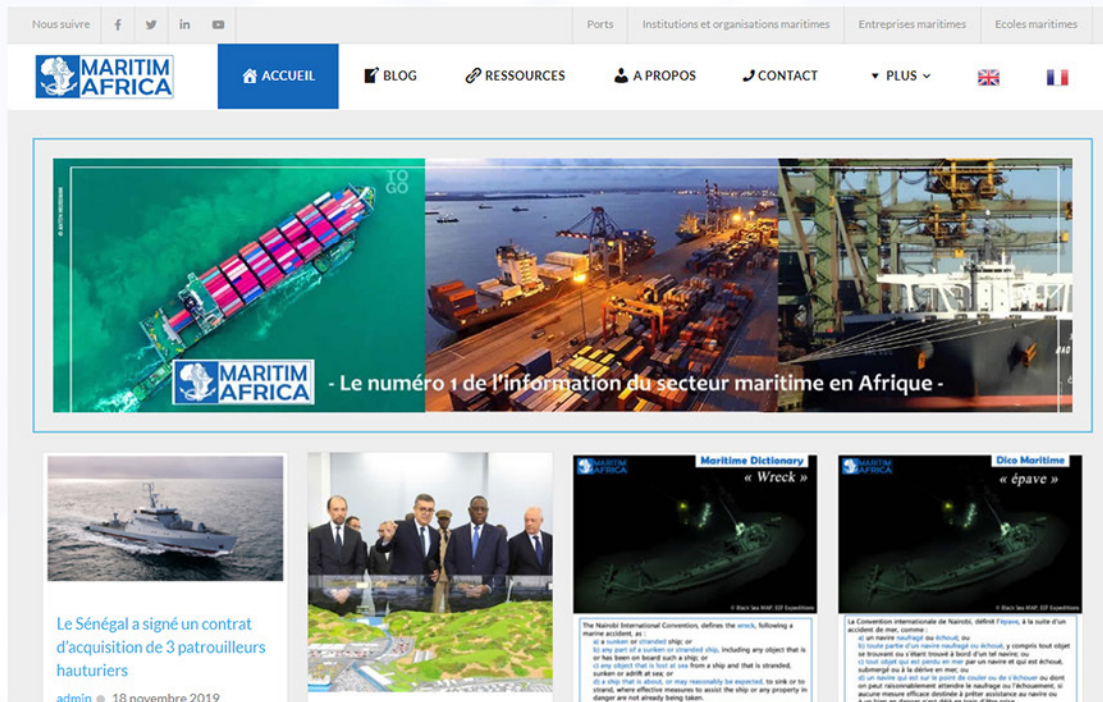
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