



# Africa Oceans Council

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## Concept Note: Maritime Innovation for Africa: hAquathon 2024

**Title: "BlueTech Challenge: Leveraging Technology"**

**Event Date: November 06 - 08, 2024**

**Location: Durban, South Africa**

### Introduction

Africa's maritime industry plays a pivotal role in the continent's economic development, driving trade, transportation, and resource management. However, the industry faces significant challenges, including inefficiencies in port operations, maritime security threats, environmental degradation, and limited access to modern technologies. The "BlueTech Challenge" - hAquathon - seeks to harness the creativity and innovation of students across Africa and the African diaspora to develop solutions that address these challenges and promote a sustainable blue economy. The Africa Maritime Investment Indaba (AMII) Maritime Hackathon is a premier event designed to drive innovation and investment in Africa's maritime sector. Scheduled to take place [Insert Date], this hackathon aims to bring together bright minds, industry leaders, and technology enthusiasts to develop groundbreaking solutions that address key challenges and opportunities in maritime transport and logistics across the continent.

*Africans solving African problems the African way.*

### Objective

The primary objective of the BlueTech Challenge is to foster innovation among African students and students of African descent studying abroad, encouraging them to create and showcase cutting-edge solutions to the maritime and blue economy challenges facing the continent. The event aims to:


- **Promote Investment:** Identify and promote investment opportunities within the maritime industry that can drive economic growth and development in Africa.
- **Foster Collaboration:** Create a collaborative platform for stakeholders including entrepreneurs, investors, and maritime experts to work together and share insights.
- **Promote collaboration among students across the continent** with diverse skills and backgrounds encouraging them to take up challenges in Africa.
- **Encourage the development of practical, scalable prototypes** that can be implemented to solve real-world maritime issues.
- **Highlight the potential of Africa's youth** to drive the continent's blue economy forward through technology and innovation.

### Theme: Leveraging Technology

This year's theme, "Leveraging Technology," focuses on utilizing cutting-edge technological advancements to transform Africa's maritime industry. Participants will explore and create innovative solutions that can enhance efficiency, safety, and sustainability in maritime operations.

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## Focus Areas

Participants are invited to develop solutions within the following key areas:

### 1. Port Efficiency and Logistics Optimization

Challenge: African ports often suffer from congestion and inefficiencies, increasing costs and delaying shipping operations.

Hackathon Goal: Innovate on technologies or platforms that enhance port operations, streamline logistics, and improve cargo handling efficiency.

### 2. Sustainable Marine Resource Management

Challenge: Overfishing, pollution, and climate change are degrading Africa's marine ecosystems.

Hackathon Goal: Create tools or technologies that promote sustainable fishing practices, monitor marine biodiversity, or manage ocean pollution and marine conservation.

### 3. Digital Transformation and Workforce Development

Challenge: The maritime industry is slow to adopt digital technologies, and there is a shortage of skilled workers to manage these new systems.

Hackathon Goal: Develop digital tools for maritime businesses and ports, along with educational platforms to train the next generation of maritime professionals.

## Eligibility Criteria

**Participants:** University students currently enrolled in African institutions for the 2024 academic year, or of African descent studying abroad. Institutions should be accredited/registered as an Institution of Higher learning.

**Team Composition:** Individuals or teams of up to 5 students.

**Project Requirements:** Participants must submit an innovative solution in the form of a working prototype or a detailed concept with a clear implementation plan. Participants should own 51% plus of Intellectual property

## Selection Process

**Application:** Interested participants will submit an online application including their project proposal, team members' profiles, and a brief description of their prototype.

**Shortlisting:** A panel of experts will review all applications and select the most promising projects based on innovation, feasibility, and potential impact.

Prospective applicants may be invited to meet a panel of judges comprising of industry experts and investors who would serve as mentors to help them streamline their pitch

**Final Showcase:** Selected teams will be invited to present their prototypes at the Africa Maritime Indaba in Durban, South Africa, in November 2024.

## Hackathon Structure

**Pre-Hackathon Workshops:** Leading up to the event, online workshops will be held to provide participants with insights into the challenges, guidance on technical aspects, and advice on developing effective prototypes.

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**Virtual Collaboration:** Teams will have access to virtual collaboration tools and mentoring from industry experts throughout the development phase.

**Pitch and Showcase:** At the Maritime Indaba, teams will pitch their solutions to a panel of judges and the audience, showcasing their prototypes and demonstrating their potential impact.

## **Hackathon timelines (12 weeks)**

**Registration sole/team:** Participants will register (see link below), with an opportunity to network and brainstorm initial ideas.

**Idea/Concept Development:** Successful candidates will work intensively on their innovation leveraging provided resources, mentorship and support.

**Pitching and Judging:** Contestants will present their solutions to a panel of judges, including industry experts and investors. Judging will be based on criteria such as innovation, feasibility, and potential impact.

**Awards and Recognition:** Winning Contestants will receive awards and recognition, along with opportunities to further develop their ideas with support from partners and sponsors.

## **Participation**

We invite individuals and teams from diverse backgrounds, including technology, business, and maritime sectors, to participate in the hackathon. To get involved:

**Apply:** Submit your application by 13st September, 2024.

**Form a Team:** Assemble a team with complementary skills or join solely.

**Prepare:** Get ready to tackle maritime challenges with creative and impactful solutions.

## Judging Criteria

- **Innovation and Creativity:** Uniqueness of the solution and the creativity involved in addressing the challenge.
- **Feasibility and Scalability:** The practicality of the solution and its potential to be scaled across the continent.
- **Impact:** The solution's potential to make a significant positive impact on the maritime industry or blue economy in Africa.
- **Technical Execution:** The quality and functionality of the prototype, including how well it addresses the problem.
- **Presentation:** Clarity and effectiveness in presenting the solution and engaging the audience.
- Awards and Recognition

## Prizes

- **Grand Prize:** USD 5,000 for the top winning team, recognizing the most innovative and impactful solution.
- **Investment Packaging:** Winning ideas will receive tailored investment packaging to facilitate further development and commercialization. This may include access to investors, business development resources, and additional support.



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- **Runner-Up Prizes:** Additional prizes will be awarded to the second and third place teams, including access to industry networks and potential investors.

**Special Categories:** Awards will be given for best use of technology, most sustainable solution, and best community impact.

## Call to Action

Join us in shaping the future of maritime investment and innovation in Africa. Apply today (see link below), bring your ideas to life, and contribute to a thriving maritime industry.

[https://www.bit.ly/AMII\\_hAquathon2024](https://www.bit.ly/AMII_hAquathon2024)

## Contact

For more information and to register, visit [www.africamaritimeindaba.com](http://www.africamaritimeindaba.com)  
For any inquiries, please reach out to [elizabeth@afriaoceans.org](mailto:elizabeth@afriaoceans.org)

## More details about the Challenges/focus Areas

### Breakdown of possible Port efficiency & Logistics optimization

#### 1. Advanced Data Analytics and Predictive Modeling

**Digital Twins for Port Operations:** Develop a "digital twin" of port operations—a virtual model that simulates the physical processes of the port. This allows for real-time monitoring, predictive maintenance, and scenario planning to optimize operations and prevent bottlenecks.

**Predictive Analytics for Cargo Flow:** Implement advanced analytics tools to predict cargo flow based on historical data, market trends, and external factors like weather. This can help ports manage resources more efficiently, reduce congestion, and improve turnaround times.

#### 2. Blockchain for Secure and Transparent Transactions

**Blockchain-Based Customs Clearance:** Leverage blockchain technology to create a secure, transparent, and tamper-proof system for customs documentation and cargo tracking. This can streamline the customs process, reduce fraud, and ensure faster clearance of goods.

**Smart Contracts for Trade Agreements:** Use smart contracts to automate trade agreements and ensure compliance with customs regulations. This can reduce the time spent on negotiations and paperwork, improving overall efficiency.

#### 3. AI and Machine Learning for Operational Efficiency

**AI-Driven Resource Allocation:** Implement AI algorithms that can dynamically allocate port resources (e.g., cranes, trucks, storage space) based on real-time data, optimizing the flow of goods and reducing idle times.

**Machine Learning for Predictive Maintenance:** Use machine learning models to predict when port equipment is likely to fail and schedule maintenance proactively, minimizing downtime and disruptions to port operations.

#### 4. IoT for Real-Time Monitoring and Automation

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**IoT-Enabled Asset Tracking:** Deploy Internet of Things (IoT) devices to monitor the location and status of cargo in real-time, providing accurate and timely data to port operators, customs, and shipping companies. This enhances visibility and reduces the likelihood of cargo misplacement or delays.

**Automated Guided Vehicles (AGVs):** Introduce AGVs for container movement within the port. These vehicles can be programmed to transport containers autonomously, reducing the need for human intervention and improving safety and efficiency.

## 5. Port Community Systems (PCS) Enhancement

**Enhanced PCS for Integrated Services:** Develop an advanced Port Community System that integrates various stakeholders—customs, shipping lines, terminal operators, freight forwarders, and regulatory bodies—into a single platform. This system should enable seamless data exchange, real-time communication, and coordinated decision-making.

**Mobile PCS Applications:** Create mobile applications linked to the PCS that allow stakeholders to manage and monitor their operations remotely. This could include tracking cargo, submitting documents, and receiving notifications about port activities.

## Maritime conservation financing through crowdfunding - via Blockchain and Alternative sources


Maritime finance through the pooling of aggregate funds across fintech platforms offers a novel and effective way to address the funding challenges in maritime conservation. By leveraging the strengths of various fintech solutions—such as crowdfunding, microfinance, blockchain, and impact investing—significant financial resources can be mobilized to support a wide range of conservation initiatives. This not only helps protect marine ecosystems but also fosters sustainable economic development in coastal communities, aligning environmental stewardship with economic growth.

### 1. Funding Marine Protected Areas (MPAs)


- **Challenge:** Marine Protected Areas (MPAs) are essential for preserving biodiversity and protecting endangered species. However, they are often underfunded, particularly in developing regions like Africa, where financial resources for environmental conservation are limited.
- **Fintech Solution:** Pooling funds across fintech platforms can create a significant capital base to support the establishment, expansion, and management of MPAs. Platforms could include crowdfunding for conservation projects, P2P lending for sustainable tourism infrastructure within MPAs, and green bonds issued via blockchain for long-term conservation funding.
- **Impact:** Aggregated funding can ensure that MPAs have the necessary resources for effective enforcement, community engagement, and habitat restoration. This approach also allows for the participation of global investors and conservationists, increasing the financial sustainability of MPAs.

### 2. Engaging Local Communities in Conservation

- **Challenge:** Effective maritime conservation requires the involvement of local communities, who are often the stewards of the marine environments. However, these communities may

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lack the financial resources to engage in conservation efforts or develop sustainable livelihoods.

- **Fintech Solution:** Fintech platforms can aggregate funds to empower local communities by:

**Community-Led Crowdfunding:** Local communities can use crowdfunding platforms to raise money for community-driven conservation projects, such as mangrove restoration, ecotourism initiatives, or sustainable aquaculture.

**Microfinance for Sustainable Livelihoods:** P2P lending and microfinance platforms can provide small loans to community members to start or expand businesses that align with conservation goals, such as eco-friendly tourism, sustainable fishing, or handicrafts made from sustainable materials.

**Revenue Sharing via Blockchain:** Blockchain technology can ensure transparent and fair revenue sharing from conservation-related activities, such as tourism or carbon credits, directly benefiting the local communities.


- **Impact:** This approach ensures that conservation efforts are locally owned and managed, which is key to their long-term success. It also provides communities with sustainable income sources, reducing their reliance on practices that harm the marine environment.

## Digital Transformation and Workforce Development

**Problem:** The maritime industry in Africa is often slow to adopt digital technologies, which limits its competitiveness and growth potential. Additionally, there is a need for skilled workers to operate and maintain these technologies.

**Hackathon Focus:** Develop digital tools that can be easily adopted by maritime businesses and ports. This could include apps for digitizing paperwork, platforms for remote training of maritime workers, or AI-driven tools for predictive maintenance of vessels and port equipment. Solutions that also address skills development, such as e-learning platforms or VR-based training simulations, could be particularly valuable.

**Suggestion:** A LMS that enables existing professionals to transition from everyday jobs into jobs in the Blue economy. LMS should inculcate self-paced learning with various levels of certification diploma, certificate, degree etc

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## Terms and Conditions

- The Africa Oceans Council is the owner and Organiser of the Competition.
- These Terms and Conditions (“Terms and Conditions”) shall govern hAquathon the “BlueTech Challenge: Leveraging Technology”
- By registering for the hAquathon, the Applicant (“Applicant”) agree to abide by all the Terms and Conditions of the competition
- The Organiser reserves the right to cancel, postpone, or change the date, venue and time of the hAquathon. There will be no refund of any personal expenses incurred by the applicants if the hAquathon is cancelled due to unforeseen circumstances. The Organiser reserves the right to amend the Terms and Conditions without prior notification, and you agree to be bound by such Terms and Conditions.
- All Applicants must be undergraduate or postgraduate students registered for full-time or part-time qualifications at any registered/accredited higher learning institution in Africa.
- Submissions can be made by individuals or groups (maximum of 5 members).
- The competition accepts entries from existing and research-based businesses only. Existing business refers to a for-profit or non-profit organisation that is already operational.
- Applicants must submit the following:
  - Their business registration certificate,
  - proof of academic registration for the competition year
  - a letter or certificate confirming that the majority shareholders of the business are students to be eligible for participation in the finals.
- The Organiser will not be liable for any technical failure that may result in an entry not being successfully submitted.
- There is no entry fee for the hAquathon, and no payment to the Organizer or any third party is required.
- Applicants must confirm that they are a majority shareholder of the business, alternatively, the combined applicants/student shareholding must be at least 51% or more.
- Applicants must confirm that all intellectual property used in their entry is owned by the business or used with permission and indemnify the Organiser and the South African Government against any third-party claims related to the unauthorised use of intellectual property. Applicants must confirm that all information provided is true and accurate.
- Any Applicant who wilfully and/or negligently misrepresents information will immediately be disqualified.

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- All Applicants must be between 18 – 35 years old or turning 18 within the year of the hAquathon.
- In case of a dispute, an applicant can only request their own judges' scores from the Organiser.
- Applicants are only permitted to request their own judges' scores from the Organiser.

## The hAquathon Process

- Participants are to submit their registration online only using the link provided on the information poster.
- The Organiser is not responsible for:
  - late, lost, damaged, incomplete, or misdirected Entries, responses, or other correspondence, whether by e-mail or postal mail or otherwise;
  - theft, destruction, unauthorized access to or alterations of Entries; or
  - phone, electrical, network, computer, hardware, software program or transmission malfunctions, failures, or difficulties.
- Participants are to pre-select their team names at the time of registration. The team leader will be responsible for submitting his/her team members' names' participation details.
- Team Demonstration and Presentation: The selected team has 5 minutes to present, including a minimum 30-second live demo of working proof of concept/prototype/app, and Q&A session with the judges.

## Rules of Conduct

- Applicants must always comply with these Terms and Conditions during the hAquathon, comply with all legal requirements and refrain from creating content that is unlawful or otherwise objectionable or any content that may be construed as such.
- Applicants must not use any content protected under third-party rights or subject to confidentiality obligations to third parties and must permit the Organiser to use the content for the intended purposes.
- Applicants agree that all Organiser's decisions will be final and binding on all matters related to the hAquathon.
- Applicants agree that all Judge's decisions will be final and binding on all matters related to the hAquathon.

Photographic and video recordings



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By participating in the hAquathon, the Applicant agrees that any photo or video containing his/her likeness or voice, as may be shot or filmed or Recorded during the hAquathon, may be published by the Organiser, in part or in full, with or without stating the Participant's name, on any media, including but not limited to the Organiser's website and social media channels, at the Organiser's sole discretion.


To apply for hAquathon2024 please [click](#) this link [bit.ly/AMII\\_hAquathon2024](https://bit.ly/AMII_hAquathon2024)

For any inquiries, please reach out to [elizabeth@africaoceans.org](mailto:elizabeth@africaoceans.org)

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