

The background of the cover is a photograph of a man, likely a diver, emerging from the water. He has a determined expression and his face is wet with water droplets. He is wearing a black wetsuit, and a yellow and silver scuba regulator is visible to his right. The water is dark blue with some ripples. The top of the cover features a vertical color bar with three sections: dark blue on the left, yellow in the middle, and light blue on the right. The letters 'a', 'd', and 'f' are printed in white, each within its respective colored section.

# adf

AFRICA

DEFENSE

FOR

## A MARITIME MISSION

Security Forces Join to Protect an  
Ocean of Opportunities

PLUS

A Conversation with Nigeria's Chief of Naval Staff

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## ON THE COVER:

A Kenyan diver trains at Cutlass Express 2022 in Mombasa, Kenya. This type of specialized training and the international cooperation on display during the exercise are key to maritime security.

CHIEF PETTY OFFICER JUSTIN STUMBERG/  
U.S. NAVY

As world leaders look to jump-start economic growth, many are turning to the so-called blue economy. African nations are poised to benefit from this focus on maritime commerce and security.

The continent has 38 coastal countries and sits at the intersection of major trade routes connecting Europe, Asia and the Americas. By 2030, Africa's ocean economy is expected to double compared to 2010 and employ millions more people.

But this growth is not guaranteed. Piracy and armed robbery at sea derail trade. Illegal fishing plunders valuable natural resources. Pollution destroys marine ecosystems and scares away tourists.

Security professionals know the high stakes and have begun to notch some victories. In 2021, pirate attacks sank to their lowest level in 27 years. Attacks dropped by more than half in the Gulf of Guinea, which had been the world's worst piracy hot spot. In the Gulf of Aden and off the coast of Somalia, piracy dropped even further with only one recorded attack.

This success is due to close cooperation between coastal nations and international partners. Nations are investing in maritime domain awareness tools to provide a better picture of the vessels operating off their coasts. They also are sharing information so vessels cannot cross maritime borders to evade capture or exploit areas of weak enforcement. Some are updating laws to make sure pirates can be prosecuted once they are caught.

Countries must apply this same resolve to other threats. Illegal fishing costs the continent billions of dollars each year. Large foreign trawlers are decimating fisheries with harmful and unsustainable practices. Stopping it will require high-tech surveillance and stronger laws. Likewise, narcotics trafficking in West Africa has returned to levels not seen since the mid-2000s. Coastal nations targeted by traffickers are facing rising levels of violence, corruption and addiction. Reversing this trend will require international intelligence-sharing and domestic cooperation among military, police and government agencies.

None of this will be easy. For the continent's navies to defeat maritime threats, they must commit to careerlong training, technological superiority, and maintaining and expanding their fleets. But the payoff will be worth the effort. Securing the seas opens the door to new investments. Protecting marine ecosystems today offers hope for tomorrow.

U.S. Africa Command Staff



Senegalese Marines prepare to land a combat rubber raiding craft on the beach in Dakar during an amphibious landing drill. LANCE CPL. ETHAN ROBERT JONES/U.S. MARINE CORPS



## Maritime Security Volume 15, Quarter 3

U.S. AFRICA COMMAND



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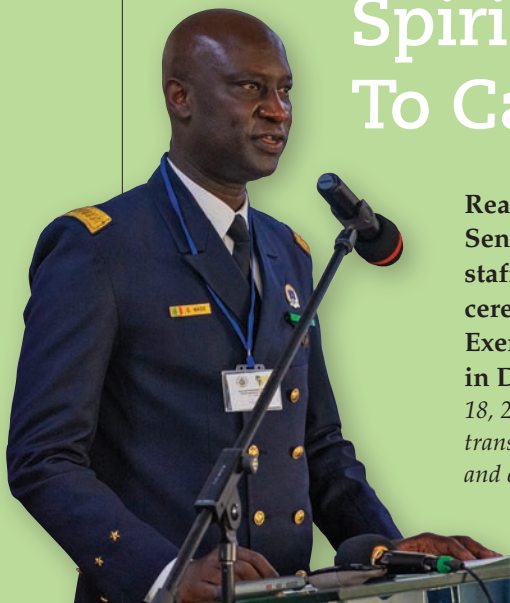
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ADF is a professional military magazine published quarterly by U.S. Africa Command to provide an international forum for African military personnel. The opinions expressed in this magazine do not necessarily represent the policies or points of view of either this command or any other U.S. government agency. Select articles are written by ADF staff, with credit for other content noted as needed. The secretary of defense has determined that publication of this magazine is necessary for conducting public business as required of the Department of Defense by law.



# Nations Must Mobilize Spirit, Cooperation To Calm Seas



**Rear Adm. Oumar Wade, Senegalese Navy chief of staff, spoke during the closing ceremony of the multinational Exercise Obangame Express in Dakar, Senegal, on March 18, 2022. His remarks have been translated from the original French and edited for space and clarity.**



The Senegalese color guard stands at attention at the Naval Headquarters in Dakar during Obangame Express 2022.

PHOTOS BY PETTY OFFICER 2ND CLASS PETER TICICH/U.S. NAVY



I am again very happy to meet you this morning for the closing ceremony of Exercise Obangame

Express. In a year when some 18 countries from the Gulf of Guinea have taken part, not to mention our partners, the number of attendees bears witness to our countries' commitment to promote and improve maritime security in the Gulf of Guinea.

Obangame Express is an important event for the National Navy of Senegal, for all navies of the Gulf of Guinea and for the subregion. It has enabled us to acquire, test, and assess the techniques and the crews, and it thus represents an appropriate indication of the progress that we are making in strengthening and conducting our maritime missions.

Obangame Express is of particular interest to us, as it enables us to develop an interoperability among the various naval forces in the subregion and the Gulf of Guinea. I am therefore pleased to commend such an effort to conduct training activities and drills on a subregional scale with the support of our American, European and Brazilian partners.

The various scenarios that we conducted enabled us to develop the capabilities of the coordination centers, as well as the capabilities to plan and conduct marine operations, and the capabilities to lead naval units and on-board teams performing ship visits, and to work with aircraft. They have emphasized the means for information-sharing; I believe this is an essential factor on which we should all work together in the subregion.

Despite these improvements, it is clear that there still remains some way to go, which is recognized by everyone. We still have some work to do, and this is why we need again to really mobilize the interministerial spirit, mobilize enough resources in our countries to be able to work together, and contribute the efforts that are required for securing our waters and maritime domains.

We can see this at the national level: Various improvements have been mentioned during this gathering concerning the equipment, the training, and the interministerial efforts enabling the creation of appropriate bodies, in order to spark a synergy within our countries.

I would like to thank in particular the military commander of U.S. Africa

Command for holding the series of Express exercises since 2011 with the participation of our European and Brazilian partners. I would also like to congratulate all participants who came here to share their experiences in conducting maritime security missions under the direction of our respective countries. Your dedication, your exemplary commitment and your team spirit have all contributed to the success of this exercise. You have given here the proof that a cooperation among the naval forces of all countries provides the best defense in order to thwart the various maritime threats. Current events in our subregion require that we work together and adopt an operationally vigorous and permanent stance at all levels.

Officers, noncommissioned officers, quartermasters and seamen, all that remains for me to do is to convey my best wishes as you return to your various countries. I hope that the achievements of this exercise will benefit the conduct of future operations.





# ENDANGERED PANGOLINS

GET FRESH CHANCE AT SOUTH AFRICAN CLINIC

AGENCE FRANCE-PRESSE

The hospital room is air-cooled to feel like a pangolin's burrow. The patient, Lumbi, is syringe-fed with a protein-packed smoothie, given a daily dose of medicine and has his vital signs checked.

Lumbi is being treated for a blood parasite after he was rescued from traffickers in South Africa's northern Limpopo province.

He and several other pangolins are patients of Johannesburg Wildlife Veterinary Hospital, founded in 2016 to treat and rehabilitate indigenous wildlife.

They were confiscated from poachers in South Africa and neighboring countries, including Mozambique, Namibia and Zimbabwe.

Many pangolins are in a horrendous state when rescued. They often need medical care after being kept in sacks and car trunks for weeks with no food or water.

"It's like an ICU (intensive care unit) for pangolins," said Nicci Wright, the wildlife rehabilitation specialist attending to Lumbi.

The pangolins are kept at a secret site during treatment. It can be weeks to months before they are ready to be released.

Wildlife rehabilitation specialist Nicci Wright gives oral medication to a pangolin rescued from traffickers. AFP/GETTY IMAGES

Vets administer standard treatments used on other mammals such as cats and dogs. Often they work.

"It's just a leap of faith every time you try something," said vet Kelsey Skinner after giving Lumbi his daily dose of meds.

The scaly, insect-eating mammals are solitary and nocturnal. "They are like people. They have just the most unique little personalities. Some of them are shy. They don't want to be touched," Skinner said. "Others are very out there and play a lot in the mud."

Pangolins are believed to be the most trafficked mammals on earth. They're prized for their scales — made of keratin, like human nails — which are used in Asia for their supposed medicinal properties.

Found only in the wild in Asia and Africa, their numbers are plummeting under pressure from poaching. Some species are listed as critically endangered. No one knows how many are left.

Freeing them into the wild is a crucial process to ensure that the endangered mammals survive after the huge investment poured into their treatment and rehabilitation.

They can be released only into a relatively safe area, such as a well-patrolled private game reserve, to avoid them falling into the poachers' clutches again.

In addition, the habitat has to be right. "We need to be absolutely sure they are finding the right food, they are finding the burrows," Wright said. "Otherwise they will simply die."



# CÔTE D'IVOIRE

## WALLS UP FOREST

*to fend off encroaching city*

AGENCE FRANCE-PRESSE

**C**onstruction workers in Abidjan, Côte d'Ivoire, are building a barrier around a primary forest in the center of the city to protect the endangered green space from urban expansion.

When finished, a cement block fence 10 kilometers long will run along the edge of Banco National Park to prevent it from being swallowed up.

Along with the Tijuca National Park in Rio de Janeiro, Brazil, the nature reserve is one of just two virgin forests worldwide to have survived in the heart of a metropolis.

Ivoirian ecologist Tom Thalmas Lasme said the wall is crucial in a country that has lost a huge swath of forests in the past 50 years.

The nature reserve of 3,474 hectares is home to about "30 flora species in danger of extinction in West Africa," he said. But in six years, population and construction growth have eroded its boundaries.

Those who live along its borders regularly slip in to chop down trees for firewood or hunt animals for food, locals say. Drivers speeding along its western edge also have started fires with discarded cigarette butts.

Côte d'Ivoire has lost as much as 80% of its natural forests in just 50 years due to agriculture, bush fires, illegal forest exploitation and artisanal mining, according to the International Union for Conservation of Nature.

Of the 3 million hectares of forests the country has left, 2 million have been designated as 14 separate nature reserves, the Ivoirian Office for Parks and Reserves (OIPR) says. Every year 300,000 more hectares of trees vanish.

The OIPR is building the barrier around the western and northern boundaries of Abidjan's forest with government and Japanese funding to help halt the destruction.

"The Banco forest absorbs carbon dioxide and emits essential oxygen for Abidjan's 6 million inhabitants," said the office's head, Adama Tondossama. "We have erected this concrete fence to avoid this green lung from disappearing due to deforestation."

Fousseni Coulibaly, a lieutenant colonel in charge of the park, said preserving the reserve also helps regulate rainfall and recharge the underwater reserves feeding the nearby city with drinking water.

Workers build a fence around Banco National Park in Abidjan, Côte d'Ivoire, to protect it from urban encroachment. AFP/GETTY IMAGES



AFP/GETTY IMAGES

## BURKINABE ARCHITECT

# WINS TOP PRIZE

ADF STAFF

**D**iébédo Francis Kéré of Burkina Faso has won the 2022 Pritzker Architecture Prize, making him the first African architect ever to win the prestigious international award.

Architect Diébédo Francis Kéré, a native of Gando, Burkina Faso, is the first African to win the prestigious Pritzker Architecture Prize.

Kéré works mostly in challenging locales using local materials that serve entire communities, according to a report for the website ArchDaily.

"Through buildings that demonstrate beauty, modesty, boldness, and invention, and by the integrity of his architecture and geste, Kéré gracefully upholds the mission of this Prize," according to the official statement of the Pritzker Architecture Prize.

In mid-March 2022, Kéré was in Porto-Novo, Benin, where his firm, Kéré Architecture, was working on a new parliamentary building based on the palaver tree, which "is a tree under which people come together to make decisions, to celebrate," he told NPR.

Kéré had an oasis in mind as he designed Naaba Belem Goumma Secondary School and Gando Primary School in his native Burkina Faso, NPR reported. Kéré was born in Gando.

His designs are a harmonious blend of practicality, function and local materials. Gando Primary School, for example, mixed indigenous clay and cement to form bricks that have "bioclimatic thermal mass," according to the prize announcement. This lets them keep cooler air inside while warmer air flows out through a brick ceiling and a wide, overhanging roof. The result: ventilation without mechanical air conditioning in a harsh climate.

Kéré's innovations helped the school increase its enrollment from 120 to 700 students.

"I am hoping to change the paradigm, push people to dream and undergo risk," Kéré said, according to the prize announcement. "It is not because you are rich that you should waste material. It is not because you are poor that you should not try to create quality. Everyone deserves quality, everyone deserves luxury, and everyone deserves comfort."



# Waves of Opportunity and Risk

ADF STAFF

As nations emerge from the pandemic, they are trying to boost economic growth wherever possible. One focus is the “blue economy,” made up of the businesses that rely on water to thrive. This sector, which includes energy, tourism and fishing, is projected to double from 2010 to 2030, when it will employ 40 million people globally. Africa’s 47,000 kilometers

of coastline ideally positions it to capitalize on that growth. But this prosperity faces threats from piracy, trafficking and illegal fishing. Security professionals will need to protect the continent’s fisheries, trade routes and ports so that the economic windfall can become a reality. These charts illustrate the promise and threats to Africa’s blue economy.

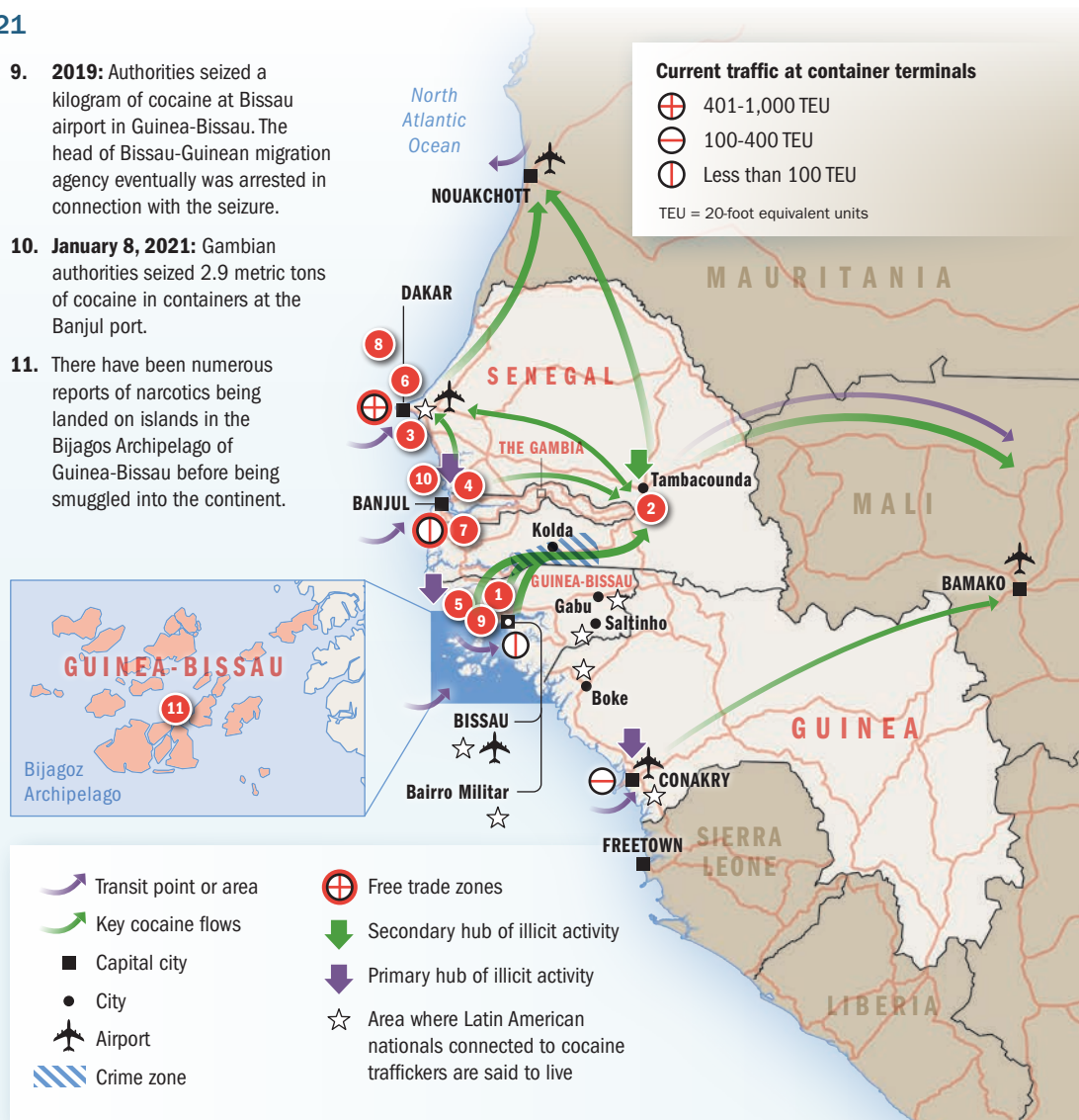
## Drug Trafficking

In the early 2000s, authorities noticed larger volumes of cocaine trafficked from South America through West Africa to Europe. This peaked in 2007 when an estimated 47 tons of cocaine were trafficked through the region. West African security forces worked with international police organizations to decrease that volume for more than a decade. However, authorities

now warn of a resurgence. There were record-breaking cocaine seizures in West Africa between 2019 and early 2021. Traffickers now target maritime ports, airports and ungoverned land routes to move drugs across the continent. Much of the product also is infiltrating West African communities, leading to addiction, corruption and violence.

### Major Seizures from 2019 to 2021

- March 2019:** Authorities seized 789 kilograms of narcotics from a truck that had traveled from Dakar, Senegal, to Bissau, Guinea-Bissau. It was the first major seizure in Guinea-Bissau in more than a decade.
- April 2019:** Authorities seized 72 kilograms of narcotics in Senegal at the Dam of Gouloubu.
- June 2019:** Officials discovered more than 1.3 metric tons of cocaine over four days in Senegal. The cocaine was hidden in two Italian-flagged ships. The second shipment was the largest in the country since 2007 and was found inside 15 cars on a ship from Brazil.
- 2019:** Gambian authorities seized a large volume of cocaine at Banjul port.
- September 2, 2019:** Cocaine was seized in Caió and Canchungo, Guinea-Bissau.
- September 17, 2019:** Authorities seized 4 kilograms of cocaine in the port of Dakar.
- October 2019:** Two Bissau-Guinean nationals were arrested with cocaine pellets at the Giboro border post by Gambian authorities.
- November 6, 2019:** The Senegalese Navy seized 750 kilograms of cocaine aboard an intercepted fishing boat.
- 2019:** Authorities seized a kilogram of cocaine at Bissau airport in Guinea-Bissau. The head of Bissau-Guinean migration agency eventually was arrested in connection with the seizure.
- January 8, 2021:** Gambian authorities seized 2.9 metric tons of cocaine in containers at the Banjul port.
- There have been numerous reports of narcotics being landed on islands in the Bijagos Archipelago of Guinea-Bissau before being smuggled into the continent.



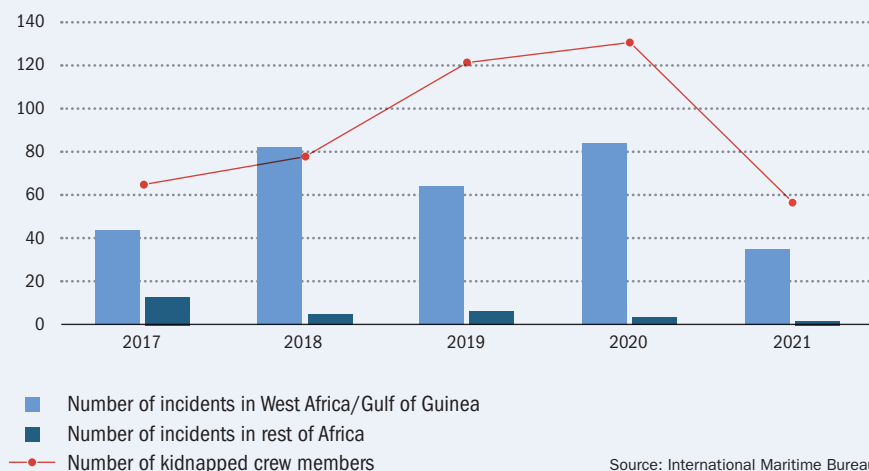
Source: Global Initiative Against Transnational Organized Crime



## Piracy

Piracy declined globally and across the continent in 2021. In the Gulf of Guinea, the world's worst piracy hot spot, there was a 60% drop in incidents compared to the previous year. Nigeria recorded no successful kidnapping incidents in its waters in 2021 for the first time in recent years. Similarly, piracy in East Africa has dwindled from its peak a decade ago. In 2021, there was only one piracy incident reported in the Somali Basin or the Gulf of Aden. Continued security in the continent's coastal waters is vital to maritime trade and tourism.

### Declining Incidents



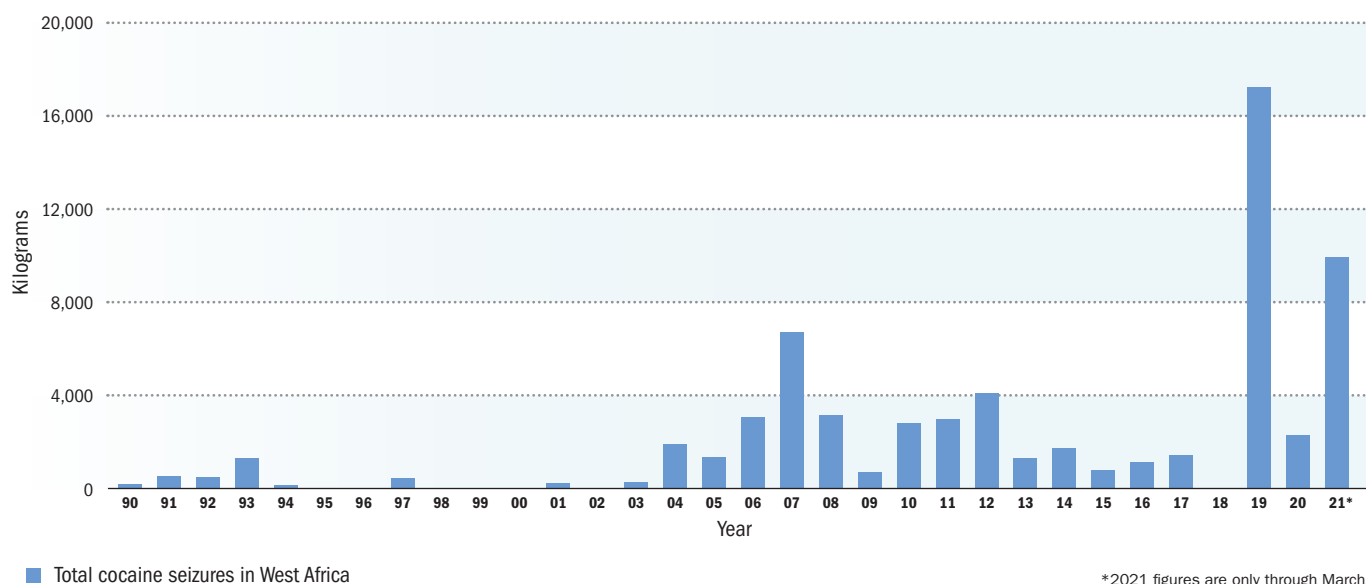
### Kidnapping Incidents in the Gulf of Guinea in 2021

Date	Country	Location	Vessel Type	Crew Kidnapped
Jan. 23	São Tomé and Príncipe	98 nm NW of São Tomé Island	Container ship	15
Feb. 8	Gabon	83 nm WSW of Port Gentil	Fishing vessel	10
March 11	Benin	212 nm South of Cotonou	Chemical tanker	15
May 19	Ghana	66 nm South of Tema	Fishing vessel	5
May 31	Benin	104 nm South of Cotonou	Fishing vessel	5
Sept. 5	Gabon	At Owendo Inner Anchorage	Offshore supply vessel	1
Dec. 13	Equatorial Guinea	46 nm SW of Luba	Container ship	6

nm = nautical miles

Source: International Maritime Bureau

### West African Cocaine Seizures by Year







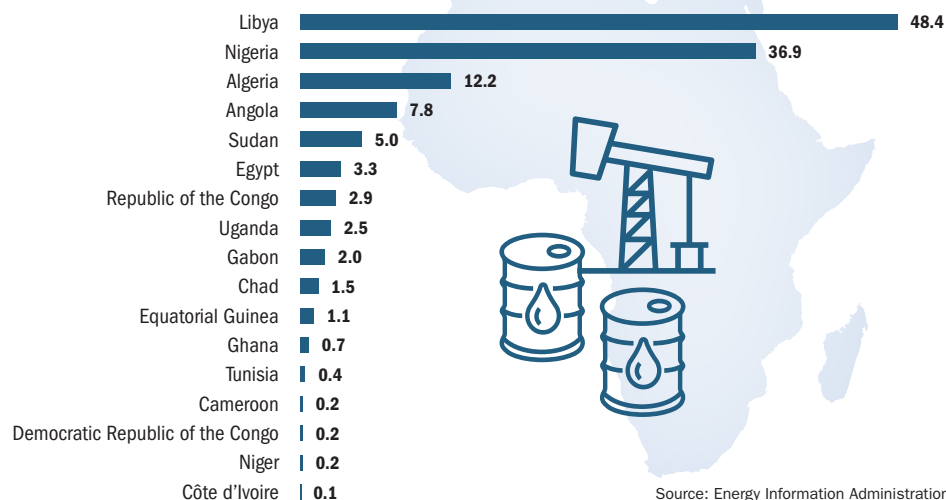
A federal firefighter carries a hose and nozzle while fighting a fire from a ruptured pipeline vandalized by oil thieves in Lagos, Nigeria. AFP/GETTY IMAGES

## Oil Theft

Coastal waters near many parts of the continent sit atop immense oil and natural gas reserves. Africa has an estimated 203 billion barrels of recoverable oil resources. Between 2009 and 2014, it accounted for 30% of global oil and gas discoveries. But insecurity and theft threaten this natural wealth. From small-scale bunkering to organized attacks on ships, criminals have disrupted oil and gas production, costing national economies billions of dollars. Many countries view protecting energy infrastructure as a vital national interest.

### Africa's Largest Proved Oil Reserves

In billions of barrels, 2021



Source: Energy Information Administration

### By the Numbers



**200,000** barrels of oil are lost each day in Nigeria due to illegally tapped pipelines.



As much as **80%** of oil does not make it to terminals due to theft along transportation networks in Nigeria.



**\$133 billion** in fuel is stolen or adulterated worldwide each year.



**\$4.8 billion** is lost each year in Nigeria due to oil theft.



**30%** of Nigeria's refined fuel is smuggled into neighboring states for sale.

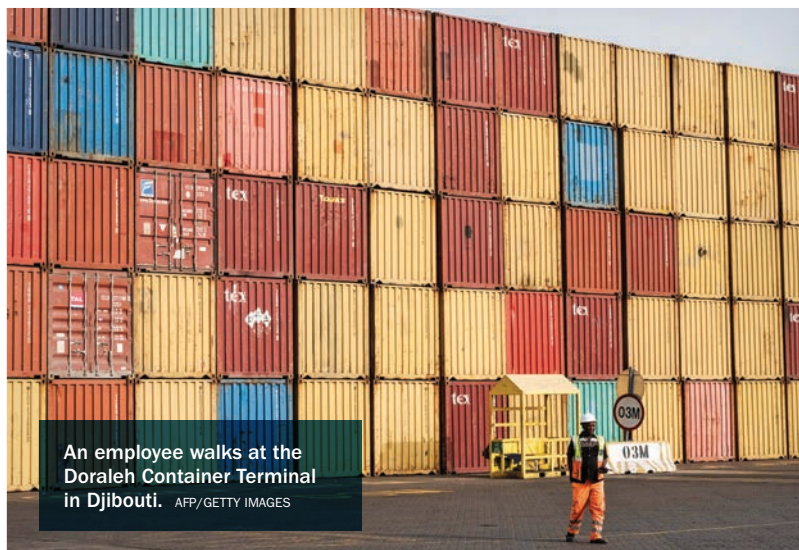


**Two-thirds** of all energy supplies globally are transported by sea.

Sources: Nigerian National Petroleum Corp., Business Insider Africa, Tracit.Org, Stable Seas

## The Blue Economy

With 38 countries touching the ocean, Africa's potential to expand the sectors that make up the blue economy is enormous. In its Integrated Maritime Strategy 2050, the African Union prioritized protecting and expanding these businesses. One major goal is investing in African ports, which, on average, are underused and take longer to process shipments than ports in other parts of the world. But the potential economic growth engine faces an array of threats including environmental degradation, foreign exploitation and domestic insecurity.



### An Economic Force



Africa has more than **100** ports.



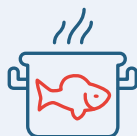
**90%** of the continent's imports and exports are moved by sea.



African-owned ships make up only **1.2%** of the global fleet.



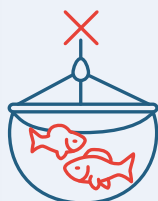
**10 million** people rely on fishing or the fish supply chain for income.



**200 million** people on the continent rely on fish as a major part of their diet.



Fisheries generate **\$24 billion** for national economies.



Illegal fishing costs the continent more than **\$1 billion** each year.

Sources: Institute for Security Studies, African Union

### Ocean Economy Sectors by Percentage

The value of the ocean economy was \$1.5 trillion in 2010, 2.5% of the world's gross domestic product. Between 2010 and 2030, the global ocean economy is projected to double to \$3 trillion.



Maritime and coastal tourism  
**26%**



Offshore oil and gas  
**21%**



Port activities  
**16%**



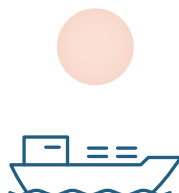
Maritime equipment  
**10%**



Industrial fish processing  
**9%**



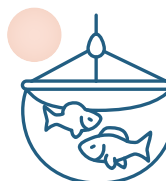
Offshore wind  
**8%**



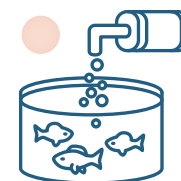
Water transport  
**4%**



Shipbuilding and repair  
**3%**



Industrial capture fisheries  
**2%**



Industrial marine aquaculture  
**<1%**

Source: Organisation for Economic Co-operation and Development



# 'IT'S OUR NAVY'

NIGERIA'S CHIEF OF NAVAL STAFF RELIES ON  
TECHNOLOGY, COOPERATION AND DISCIPLINE  
TO DEFEAT MARITIME CRIME

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## **Vice Adm. Awwal Zubairu Gambo**

has served in the Nigerian Navy for more than 30 years. His career includes time working on naval strategy, intelligence, training and as a defense attache. In 2017, he was the security coordinator for the Presidential Relief Committee on North Eastern Nigeria and was chief staff officer at Headquarters Naval Training Command. In 2018, he was appointed director of procurement at the Defence Space Administration. In January 2021, he became the 21st chief of naval staff. This interview has been edited for space and clarity.

**ADF:** *In 2021, piracy incidents in Nigerian waters fell to their lowest levels in 27 years. How do you explain this drop?*

**Gambo:** It is well known that the nation's maritime domain is replete with criminal elements and economic saboteurs who had freedom of movement and action. This freedom hindered the conduct of legitimate economic activities, which, of course, caused attendant negative perception of the country. According to the International Maritime Bureau, there were 135 kidnapping cases recorded in 2020 worldwide, and 130 of these took place in the Gulf of Guinea. It became expedient for the Nigerian Navy to take drastic measures to reverse the unfortunate trend. The first line of action for me was to bolster the Nigerian Navy presence to dominate the space through aggressive patrols to deny these economic saboteurs freedom of action. Therefore, last year, Nigerian Navy ships were at sea for 32,665 hours compared to the 25,932 hours recorded in 2020. This eventually resulted in a significant decline in criminal activities in the nation's maritime domain. I would say this is strongly attributable to the uncommon support of the Commander in Chief of the Armed Forces of the Federal Republic, President Muhammadu Buhari.



Vice Adm. Awwal Zubairu Gambo, chief of naval staff

Through aggressive recapitalization of the Nigerian Navy we have added over 100 platforms, including flag capital ships, fast patrol boats, in-shore patrol craft and air assets. There has also been the indigenous construction of a seaward defense boat.

**ADF:** *How do you plan to prevent a resurgence in piracy?*

**Gambo:** Of course, to keep piracy at these low levels, the Navy must sustain an operationally efficient fleet with robust logistic support. This includes the upgrade of facilities at the Naval Dockyard Limited in Lagos, the Naval Shipyard in Port Harcourt as well as the fleet maintenance groups and fleet support units and our engineering college in Delta State. Additionally, the Navy has revamped the moribund apprenticeship school in the Naval Dockyard in Lagos to further enable the Navy to meet her technical manpower needs and the needs of the maritime industry, which is highly depleted. Lastly, I must not fail to highlight the contributions of my officers and ratings deployed on various ships and shore bases. They are availing themselves of professional training across various specializations, and there are diverse efforts to enhance living conditions and improve infrastructure at our bases, schools and hospitals. The personnel have demonstrated renewed focus in line with my mantra: "It's our Navy." This means we have to do it; nobody will do it for us. So, all hands are on deck.





“The first line of action for me was to bolster the Nigerian Navy presence to dominate the space through aggressive patrols.” — Vice Adm. Awwal Zubairu Gambo

**ADF:** *Nigeria has sought to improve its maritime domain awareness (MDA) through use of the Falcon Eye surveillance and intelligence system. This includes radars, cameras, sensors and satellite monitoring of the country's coastline and up to 200 nautical miles seaward. Can you explain how this system works?*

**Gambo:** I would say the Falcon Eye is state-of-the-art MDA and surveillance infrastructure. The system has sensor sites strategically placed to cover the nation's territorial waters and exclusive economic zone. These sensors cover the entire nation's maritime border and further stretch over the maritime boundaries of our neighboring states in the Gulf of Guinea. The Falcon Eye system enables the Navy to monitor real-time activities of vessels within and around the nation's maritime domain. It always continuously tracks vessels to identify those engaging in illegal activities and, thereafter, our naval vessels are vectored to undertake interdiction operations. Between June 2020 and April 2022, about 7,826 vessels have been tracked with some arrested using the MDA system. The system was instrumental to the arrest of two merchant vessels. We

Vice Adm. Gambo visits the Nigerian Navy Centre of Education Training Technology at Ile-Ife, Osun State, in February 2022.

had the MV Chayanee Naree and the MV Karteria. These vessels were tracked and diligently monitored from their ports of departure in Brazil following reports by Interpol that they are involved in smuggling cocaine into Nigeria. There was also the arrest of the Motor Tanker Queen of Peace on March 15, 2022, which was carrying over 3 million liters of stolen crude oil from Nigeria. It is pertinent to state that prior to the arrest, the vessel's suspicious movement was monitored by the Falcon Eye for a month. So this system serves as a veritable force multiplier, which ensures that our operational patrols are intelligence driven, results oriented and cost effective.

**ADF:** *In West Africa, illegal, unreported and unregulated (IUU) fishing costs the region \$2.3 billion per year and has contributed to the loss of 300,000 jobs. Much of this IUU fishing is done by large, foreign trawlers. What is your strategy to clamp down on this harmful activity?*

**Gambo:** The Nigerian Navy collaborates with relevant government agencies to assist in the enforcement of laws related to fishing within the nation's maritime environment, particularly the Department of Fisheries under the Ministry of Agriculture. The Navy set up a task force in 2016 named Operation Tsare Teku, which has the mandate to combat maritime crimes to create an enabling environment for safe shipping, oil and gas production, and other economic activities. The task force also tackles IUU fishing within Nigeria's maritime environment. Nigeria has some of the best shrimp fishing in the world, which is found around the Bakassi Peninsula shared between us and the Republic of Cameroon. I'm pleased to say that the Nigerian Navy vessels interrogate fishing trawlers within the maritime domain regardless of size to ensure that they are legitimate. Most of the criminal vessels come with fishing carriers where, within hours of fishing, everything is processed and packed for sale outside our territory. So it is a very serious issue globally. I don't want to mention the big players in this IUU fishing, but I'm sure we know. For diplomatic reasons I won't mention any specific country.

**ADF:** *Nigeria modernized its maritime legal framework with the 2019 Suppression of Piracy and Other Maritime Offences Act. Since then, the law has been used to convict pirates captured in Nigerian waters. How important is it to update laws, and do you hope other countries in West Africa will follow suit?*

**Gambo:** Legal framework is central to successfully combat maritime crime. Prosecution of maritime offenses involves several law enforcement agencies. These agencies have diverse rules guiding their respective conduct of operations. This gap was identified, as was the need to review, re-strategize and develop a unifying document. Consequently, enactment of the Suppression of Piracy and Other Maritime Offences Act, which we call SPOMO, has bolstered the Navy's collaboration with other law enforcement agencies to criminalize and prosecute maritime offenders. It has also further assisted to streamline and harmonize actions and procedures of maritime-related agencies regarding the handling of evidence and suspects of crimes. One notable conviction is the piracy case last July [2021] in which 10 pirates were sentenced to 12 years of imprisonment and financial fines. However, most Gulf of Guinea countries do not have laws to prosecute pirates, while some only allow prosecution of their own citizens. In July 2021, I was in Ghana for an international maritime exhibition and seminar. During the side talk with the heads of navy of ECOWAS [Economic Community of West African States] and ECCAS [Economic Community of Central African States], I presented the template, and they are already reengineering that to situate it to the particularities of their environment for adoption. The European Union

visited the naval headquarters a few weeks ago, and we presented this to them as part of their inquiries. They have taken that template with the view of developing a legal framework in line with their own particularities in Europe. There is a lack of legal framework in some countries of the Gulf of Guinea at addressing maritime insecurity, especially when other nationals are involved in these crimes. To this end, we have championed the advocacy regarding the Gulf of Guinea states adopting these acts in tune with the realities of their own situation.

**ADF:** *You have emphasized the importance of ethical behavior in the Navy. In a speech in 2022 you warned commanders of "severe sanctions" for violations. Since becoming chief of naval staff, what have you done to promote accountability and crack down on misconduct in the Navy?*

**Gambo:** The importance of ethical behavior and accountability in the Nigerian Navy cannot be over-emphasized. My commanders have been enjoined to acquaint themselves with my strategic directives and other relevant Navy statutes guiding their responsibilities. Commanders have been warned of sanctions for acts of indiscipline or connivance with criminal elements in the performance of their duties. Accordingly, they are assessed periodically and assigned key performance indicators to determine efficiency and effectiveness. There are also strategies in place for the judicious and legitimate use of allocated resources. These and other efforts have culminated in the significant reduction in crimes within the nation's maritime domain. I would say everybody is whipped into line, and they know the expectations from the leadership of the Navy and, at the grand strategic level, the leadership of the country.

**ADF:** *What are your hopes and goals for the future of the Nigerian Navy and maritime security in the region more generally?*

**Gambo:** The Nigerian Navy is constitutionally saddled with the responsibility of protecting the nation's territorial integrity by sea. My agenda for securing this maritime domain is captured in my vision statement, which is "to leverage on all factors of national location, technology, training, teamwork and synergy to reenergize the Nigerian Navy and enhance her as a well-motivated and ready naval force." The focus is to sustain the Navy's presence at sea and enhance our capacity to undertake cost-effective and result-oriented patrols by leveraging the potentials of MDA facilities. We want to cultivate robust, collaborative engagement, both within and without, with maritime stakeholders. These measures will bolster efforts in actualizing maritime security applications for socioeconomic activity, the well-being of Nigerians and national prosperity. □



# Putting the Pieces Together



# Nigeria's Deep Blue Project Integrates Air, Land and Sea Assets to Secure the Nation's Maritime Domain

ADF STAFF | PHOTOS BY NIMASA

**A**s 2021 drew to a close, the once-perilous waters off Nigeria's coast were showing signs of becoming uncharacteristically calm. In fact, the entire Gulf of Guinea region had shown a steady decrease in pirate attacks and armed robberies.

From Senegal to Angola, the actual and attempted incidents had fallen from 82 in 2018 to just 35 in 2021. For Nigeria, which has long had some of the most dangerous territorial waters in West Africa, the news also was promising.

Actual and attempted incidents off Nigeria's coast had dropped precipitously from 48 in 2018 to just six in 2021, according to the International Maritime Bureau (IMB).

However, complacency has not taken hold in Nigeria. "We are not sleeping," Bashir Yusuf Jamoh, director-general and CEO of the Nigerian Maritime Administration and Safety Agency (NIMASA), told ADF.

In fact, Nigeria is wide awake.

As the threat of international maritime crime, including piracy, oil theft, drug trafficking and illegal fishing, persists, Nigeria is responding with the Integrated National Security and Waterways Protection Infrastructure, also known as the Deep Blue Project.

The project, recognizing connections between land- and sea-based criminal elements, knits together coordinated air, land and sea assets for a comprehensive view of the maritime domain.

"The presence of the Deep Blue Project sent very good signals to those criminals to know that we are now fully ready for them," Jamoh said.

## THE PROJECT'S COMPONENTS

The equipment and personnel committed to the \$195 million Deep Blue Project are significant. Air, land and sea assets will work together to acquire, consolidate, analyze and share information for effective maritime security.

The project relies on civilian and military cooperation. For example, NIMASA is a civilian agency that focuses on security for commercial vessels, maritime labor regulation, pollution prevention and control, shipping registration, and training and certification of seafarers, among other things.

The Nigerian Navy is responsible for securing and protecting territorial waters. For that reason, the Navy staffs Deep Blue sea assets. Air Force personnel will do the same for air assets.

Jamoh, as NIMASA director-general, directs the project, and the agency provides logistics and management support.

The air component consists of two special-mission Cessna CJ3 Citation jets

From left, Ekiti State Gov. Kayode Fayemi, President Muhammadu Buhari, Speaker of the House of Representatives Femi Gbajabiamila, Minister of Defence Bashir Salihu Magashi, NIMASA Director-General and CEO Bashir Yusuf Jamoh, and Minister of Transportation Chibuike Rotimi Amaechi inspect one of several unmanned aerial vehicles to be used in the Deep Blue Project.



Helicopters and fast interceptor boats demonstrate air and sea capacities as part of the Deep Blue Project.





Two Cessna CJ3 Citation jets form the centerpiece of the Deep Blue Project's air component.



The air component includes three special-mission helicopters.

equipped with multimode radar, a satellite communication system, an operator workstation and a 10-person crew capacity. There also are three helicopters and four sets of three unmanned aerial vehicles. On the water, Deep Blue will deploy two special-mission vessels — DB Lagos and DB Abuja — and 17 interceptor boats. Finally, land equipment consists of 16 armored vehicles and 600 Navy special forces personnel.

As of early May 2022, all but 10 of the interceptor boats and eight armored vehicles had been received, Jamoh said. Air Force personnel were expected to complete training by the end of May. All 600 land-based Navy special forces personnel and the sea-based personnel have been trained. NIMASA expected the Deep Blue Project to be fully equipped and operating by mid-June 2022.

One part of the land-based component is the Command, Control, Communication, Computer and Intelligence Centre (C4i). “That is the brain behind the Deep Blue Project,” Jamoh said.

As land, sea and air personnel observe the maritime

space, they collect data, which is fed to the C4i by satellite. The center’s staff includes NIMASA, Navy, Army, police, civil defense and Air Force personnel.

“The men that control the center now control the information data and send it to the appropriate channels,” Jamoh said. “The C4i center works with the satellite system and coordinates the entire operations in the situation room. That situation room has the computers, and has the control and has the communication system that can transmit to the land, air and the sea operations.”

So, for example, a patrolling plane could observe a problem at sea, transmit the information to C4i and have interceptor boats dispatched to investigate. At the same time, C4i coordinates with other authorities, such as the IMB, to share data and coordinate assistance in areas that Deep Blue assets cannot access.

## LAW BRINGS ORDER

Equipment and technology are valuable, but there is more to maritime security than personnel, gadgets,

intelligence, planes and ships. To have a lasting effect, assets must be backed by effective laws that help nations such as Nigeria ensure that arrests lead to effective prosecutions in court, and, if necessary, incarceration.

That is why part of Nigeria's success is embodied in the Suppression of Piracy and Other Maritime Offences (SPOMO) Act, which President Muhammadu Buhari signed into law in June 2019. In the past, many nations were forced to release pirates and thieves after capture because they had no effective laws under which to prosecute them.

Jamoh told ADF that the law has been effective. Since its inception, Nigeria has successfully prosecuted 20 criminals under the law, with all of them getting prison sentences.

In fact, the law first was used to successfully prosecute 10 pirates in the case of the Hailufeng 11, a Chinese-flagged vessel attacked on May 15, 2020, in Ivoirian waters. The pirates turned off the vessel's automatic identification system, which broadcasts location, leaving authorities to manually plot the ship's location.

As the vessel passed through Ghanaian, Togolese and Beninese waters, authorities exchanged information until it reached Nigerian territorial waters. At that point,

the Nigerian Navy Ship Nguru pulled alongside the boat about 140 nautical miles south of Lagos, and Sailors boarded it and subdued the pirates.

According to a July 23, 2021, report in The Maritime Executive, the 10 pirates each were sentenced to 12 years in prison and ordered to pay fines.

"That particular law changed the risk-reward calculus for piracy in Nigeria," said maritime expert Ian Ralby, CEO of I.R. Consilium. Other regional nations with similar laws also began to try cases, changing the dynamic for organized criminal groups in the region.

In the past, there was little fear of getting caught, much less prosecuted, but now "all of a sudden there's a risk that not only you, but your entire network, may end up getting in trouble for it, with some serious consequences of going to jail for a very long time, that changes the risk tolerance for piracy," Ralby told ADF. "So I think that combination of procurement and prosecution has had a significant effect."

### **'STICK AND CARROT APPROACH'**

The potential for punishment often is best contrasted with an attractive opportunity to avoid prosecution. Jamoh calls it the "stick and carrot approach."

Deep Blue and the SPOMO Act constitute the "stick." The "carrot" consists of an effort to provide opportunities to young people who might otherwise be enticed to join

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Special-mission vessels DB Abuja and DB Lagos will patrol Nigerian waters.







These are some of the 17 armored vehicles that form the land component of the Deep Blue Project.

Bashir Yusuf Jamoh, director-general and CEO of the Nigerian Maritime Administration and Safety Agency, said Nigeria is “not sleeping” when it comes to maritime security.

illicit maritime networks that participate in piracy, theft or illegal fishing.

In October 2021, Nigeria selected 200 young people to send for training at maritime institutions in India, Greece, the Philippines and the United Kingdom. The effort is part of the third phase of the Nigerian Seafarers Development Programme (NSDP), according to The EyeWitness News, a Nigerian online news site.

The NSDP, which NIMASA manages, was established in 2008 to train people ages 17 to 22 in practical and theoretical skills at maritime institutions around the world to build a pool of capable seafarers, Jamoh wrote for Nigeria’s *The Guardian* newspaper.

“The aim is for us to see that we keep the children, those idle children, away from the streets ... so that they can have something to do instead of them looking at the maritime business as a source of making illegitimate wealth,” Jamoh told ADF.

Students who come back to Nigeria will be trained to help “reposition the country for the Blue Economy that

is being championed by NIMASA, which is aimed at diversifying the national economy,” Jamoh wrote.

## STAYING VIGILANT

Despite a relatively quiet 2021 in the Gulf of Guinea, one incident in 2022 underscored the continued need for maritime security vigilance. In early April, pirates boarded the cargo ship *Arch Gabriel* 278 miles south of Lomé, Togo, as it idled, presumably waiting for its next contract. It was the first such boarding attack in the region in more than three months.

The Maritime Executive reported that crew members sought refuge in a citadel room and that after several hours, the pirates left the vessel, which is registered in the Marshall Islands. An Italian Navy ship secured the *Arch Gabriel* and escorted it to Nigerian waters, where another vessel escorted it to Lagos.

By the second half of 2022, Nigeria is expected to have all of its equipment, personnel and training in place under the Deep Blue Project. The project is expected to



**The Command, Control, Communication, Computer and Intelligence Centre, known as C4i, is the brain of the Deep Blue Project.**

increase security in Nigerian territorial waters. But experts warned against complacency.

“The IMB welcomes all initiatives designed to enhance maritime security in the region,” Michael Howlett, director of the IMB, told ADF in an email. “The Deep Blue Project is a positive initiative, but it needs to take leadership, liaise and cooperate with other regional initiatives to ensure the waters of the Gulf of Guinea are safe for innocent seafarers and trade.”

Nigerian authorities are mindful that their increased capacity could push maritime criminals into the waters of neighboring countries, such as Benin or Cameroon. It has happened before. In 2013, the navies of Benin and Nigeria joined in Operation Prosperity. Headquartered in Cotonou, the bilateral effort gave Nigerian vessels permission to enter Beninese waters to enforce maritime security.

Rear Adm. Boniface Konan, former acting director of the West Africa Regional Maritime Security Centre in Abidjan, Côte d’Ivoire, told ADF by email that neighboring nations “can capitalize [on] Nigeria’s achievements through sharing of information, best practices and cooperation.”

The Yaoundé Code of Conduct, signed in 2013, which set up maritime zones along West Africa’s coast, helps do that. Nigeria is part of Zone E, along with Benin, Niger and Togo. Konan said a memorandum of understanding signed in 2018 by those nations is being acted on now, which allows for joint patrols among the nations’ waters.

A bilateral agreement between Cameroon and Nigeria also would help, as would similar legal processes across the zone, Konan said.

Nigeria also will try to improve knowledge and cooperation across the region with the establishment of a regional maritime security and safety training center that will open in Lagos in 2022 and eventually move to Delta State, Jamoh said. The center will attempt to examine the maritime security terrain to identify common elements of regional crime and help countries form effective responses. Nigeria’s interest is not just security in its own territorial waters, but for its neighbors as well, Jamoh said.

“If Ghana is not free, Nigeria will not be free,” Jamoh said. “If Nigeria is not free, Togo will not be free.” □





# POWER PLAY

# RUSSIA'S AND CHINA'S DESIGNS ON NAVAL BASES COULD IMPERIL THE CONTINENT'S MARITIME SECURITY AND SOVEREIGNTY

ADF STAFF

**As** Russian armored personnel carriers and tanks trundled into Ukraine carrying more than 100,000 conscripts, Sudanese Gen. Mohamed Hamdan Dagalo, known as Hemedti, was meeting with Russian Foreign Minister Sergey Lavrov in Moscow.

Hemedti, deputy chief of Sudan's sovereign council, and other national leaders arrived willing to bolster cooperation between the two nations — one, which is prosecuting a brutal war against civilians and the other, which recently dislodged a move toward democratic rule with a coup.

During the eight-day visit, Hemedti reportedly renewed the prospect of Russia establishing a naval base on the Red Sea coast north of Port Sudan, giving President Vladimir Putin a coveted African naval presence in an increasingly strategic and crowded region.

Across the continent in the Gulf of Guinea, the Chinese government has engaged for decades with Equatorial Guinea, chiefly through infrastructure projects. It now appears to be working to establish a permanent naval base, most likely at the port of Bata on the nation's mainland.

The Bata port has two commercial piers, either of which could handle any ship from the People's Liberation Army Navy (PLAN), according to a December 2021 article by the Center for Strategic & International Studies (CSIS).

The port is tailor-made for Chinese use. An adjacent oil facility makes refueling convenient, and warehouse space eases resupply work. In fact, the China Communications Construction Co.'s First Harbor Engineering Co. built the port in 2014. The China Road and Bridge Corp. later upgraded it. The Export-Import Bank of China provided funding.

China even built the hydroelectric plant that supplies most of the port's power.

"China has strengthened defense and security ties with Equatorial Guinea directly through bilateral engagements and indirectly by increasing its activities in the Gulf of Guinea," the CSIS report states. "In 2014, the PLAN began port calls with Gulf countries and launched its first anti-piracy drills with local navies. From 2014 to 2019, China engaged in 39 military exchanges with Gulf counterparts, many involving PLAN vessels conducting anti-piracy operations."

A Chinese naval base on the West African coast would complement its military base in Djibouti, established in 2017. In Djibouti, China joined France, Germany, Italy, Japan, Saudi Arabia, Spain, the United Kingdom and the United States in establishing bases along the strategic Suez-Red Sea-Gulf of Aden corridor.

Russian and Chinese efforts to bolster their naval presence along the continent's coastline raise serious questions about how nations can control their exclusive economic zones, especially as it relates to the fishing industry, the extraction of natural resources and other financial concerns. National governments will have to consider long-term ramifications of such deals as efforts continue to make the continent ground zero among great power competitors.

## RISKS TO SOVEREIGNTY

Any time a foreign government finances, builds and operates a major infrastructure project in another



Sudan's military leader, Gen. Mohamed Hamdan Dagalo (Hemedti), gives a news conference at the airport in Khartoum upon his return from Moscow. AFP/GETTY IMAGES



Fishermen work the coast in Dakar, Senegal. GETTY IMAGES





Ferry passengers enter the port of Bata in Equatorial Guinea. China has designs on a naval base in this area. GETTY IMAGES



country, there are inherent risks. Much has been written in recent years about how China uses its Belt and Road Initiative (BRI) to strike one-sided infrastructure deals that provide major projects using Chinese labor while building up billions of dollars in crushing debt for host nations. Such BRI projects already exist across the continent and in Asia.

Base and port deals open nations to vulnerabilities on at least three levels, according to “Influence and Infrastructure: The Strategic Stakes of Foreign Projects,” a study for CSIS by Jonathan E. Hillman, a former senior fellow.

**Financing** is the broadest category of potential influence. As a project is negotiated, the lending country can win concessions and set repayment conditions. As funding is disbursed, the lender holds the power of reward or punishment. Debt, which can be profound and outside a host nation’s ability to repay, can be leveraged against the infrastructure if the recipient can’t meet payment terms. Countries such as China or Russia could exert unwelcome control over infrastructure if payments aren’t made.

Intelligence-gathering is among the risks at the **design and construction** stage, Hillman wrote. “For example, Soviet intelligence agents produced highly-detailed maps that included not only a bridge’s basic location and dimensions, but also its height above water, the construction material used, its weight limit, and other details,” he wrote. Risks also could include the installation of surveillance equipment.

Such was the case with the African Union headquarters building in Addis Ababa, Ethiopia, which China built as a “gift” for the AU. Authorities learned in 2017 that each night between midnight and 2 a.m., confidential data was being transferred from AU servers to servers in Shanghai, a charge China denied. Three years later, Chinese hackers were found to have rigged a system to copy surveillance video footage from AU headquarters, Reuters reported.

Finally, **ownership and operation** can limit competitors’ access to strategic areas and help owners accrue regional influence “as they own and control a broader network of infrastructure assets,” Hillman wrote. Again, this can aid in intelligence-gathering.

“There is a long history of countries using commercial ports for intelligence operations, whether to gain information or conceal the movement of goods or people,” he wrote.

Ownership also affords logistical advantages. The potential for such advantages would be profound for China were it to succeed in establishing a naval base in Equatorial Guinea, or anywhere along the West African coast.

## EXPLOITING RESOURCES

China and Russia are known to sponsor vessels that fish illegally off the African coast. But China’s distant-water fishing fleet (DWF) is in a class by itself. It’s not clear how many ships the DWF comprises, but most





A Sudanese demonstrator waves a flag in January 2022 while protesting the October 2021 coup that deposed civilian rule.

AFP/GETTY IMAGES

conservative estimates put it at 3,000 or so.

The fleet already has siphoned away a substantial quantity of West Africa's fish stocks, and a naval base in Equatorial Guinea — or anywhere on the Gulf of Guinea coast — would make enforcement efforts nearly impossible. Maritime law expert Ian Ralby, CEO of I.R. Consilium, said the addition of a Chinese naval base in the tiny West African nation would result in a "really grim picture."

"It's already a cataclysmic situation vis-a-vis Chinese illegal fishing across almost all of West and Central Africa," he told ADF. "If they then also have the naval assets to protect that from any interference, there's just no hope."

With Chinese ships stationed at the center of the Gulf coast, nations such as Cameroon, Gabon, São Tomé and Príncipe, and others would be hard-pressed to stand up to a great power navy if it sought to protect its nation's fishing vessels.

The potential problems don't stop with just fishing. Ralby said a heightened Chinese naval presence also could harm economic development in Equatorial Guinea and the region. The effects could extend to marine and coastal tourism, and they could affect blue economy



Russian President Vladimir Putin, left, meets then-Sudanese President Omar al-Bashir in Sochi, Russia, in November 2017.

THE ASSOCIATED PRESS

efforts such as the harvest of seaweed or other marine resources for use in soap, cosmetics and medicines.

Across the continent, Russia's relationship with Sudan threatens to plunder other resources, chiefly those from Africa's interior.

Sudan's ties with Russia are nothing new. When Putin invited African leaders to a summit in Sochi in 2017, Sudan's then-dictator Omar al-Bashir said "Sudan would become Russia's key to Africa," Mohammed



The Russian Navy frigate RFS Admiral Grigorovich anchors in Port Sudan. Russia wants a naval base on Sudan's Red Sea coast. AFP/GETTY IMAGES



Elnaiem, a London-based Sudanese activist, told German media service Deutsche Welle.

Sudan is strategically important for Russia because it “stands at the confluence” of the Sahel, Horn of Africa and the Red Sea basin, Sudan expert Kholood Khair said. Such a base would afford the Kremlin a range of new geopolitical advantages, she said.

“A Red Sea base for Russia would allow it to have a presence between two international chokeholds — one, the Suez Canal and the other, the Bab el Mandeb Strait between Yemen and Somalia,” Khair, a founder and managing partner of Insight Strategy Partners, a Sudanese policy think tank in Khartoum, told ADF. “And so it will allow it to be able to potentially control, if not influence, some of the trade that goes through there and also allow it to expand its trade, including, of course, bringing in resources into Russia — for example gold coming out of not just Sudan, but Central African Republic, Mali, etc.”

The proposed base reportedly would accommodate nuclear-powered vessels and be available to Russia for 25 years with built-in renewal opportunities. It could refuel Russian and allied vessels. Perhaps most important, said Khair, it offers a sea outlet for the extraction of mineral resources by Russia’s Wagner Group private mercenary force.

Wagner operatives are active in the Central African Republic, Mali and Sudan. “Wagner is a military asset that is there for economic reasons,” Khair said. It is used to funnel resources such as gold out of landlocked countries to bolster President Vladimir Putin’s war chest. A base on Sudan’s coast significantly eases that task.

Aligning with an increasingly isolated Russia represents a gamble for Sudan. The Kremlin saw



Port Sudan is on the Red Sea. AFP/GETTY IMAGES

renewed opportunity in Sudan with generals such as Hemedti and Abdel Fattah al-Burhan calling the shots. And Russia offers Sudan a significant ally that won’t pressure it to pursue human rights or democratic governance, Khair said.

The military regime is losing money and access to debt relief and financing, so Russia offers markets for gold and bolsters Sudan’s financial standing. It is, Khair said, a reversion to al-Bashir-era politics.

However, now that Russia is facing global isolation, the initial calculus might not pay off as expected. The Ukraine invasion has made Putin a pariah. Sudan’s military wants legitimacy, but it also wants to maintain power. Those two desires, mixed with Russian ties, are difficult to reconcile. The prospects for lasting civilian rule also suffer as a result.

“For the pro-democracy movement, it’s bad news,” Khair said. “It means that the generals’ role is sort of externally strengthened by a patron such as Russia that also sees no reason to cultivate any kind of democratic will.” □



# CHANGING WITH THE TIMES







## AS MARITIME SECURITY COMES TO THE FOREFRONT, THE GHANA NAVY MUST EVOLVE AND BUILD NEW PARTNERSHIPS

BY DR. KAMAL-DEEN ALI, GHANA NAVY (RET.)  
AND DR. HUMPHREY ASAMOAH AGYEKUM

Since independence, Ghana's Navy has been the sole seagoing state institution with responsibility for securing the nation's waters. Today, its mission has expanded, as have the security threats in the Gulf of Guinea. Piracy, illegal fishing, illicit trafficking and potential maritime terrorism are all major concerns for Ghana's citizens, business owners and elected officials. And the Navy is no longer alone in its responsibilities. It must work alongside government ministries, other security institutions and private entities to fulfill its mandate.

As Ghana seeks to achieve financial benefit from the "blue economy" while protecting precious natural resources, key questions arise. How will the role of the Ghana Navy evolve in line with its expanded maritime security profile? Can Ghana's naval capability and equipment keep pace? And how can the Ghana Navy use new vessel acquisitions, technology, training, and domestic and international security partnerships to respond to the threats?

### FOUNDED, THEN UNDERFUNDED

The Ghana Navy was founded in 1959 by an act of Parliament. This was part of the post-independence nation-building effort to complement the Army, which already existed, and the Air Force, which was in its formative stage. Ghana's first president, Kwame Nkrumah, had a grand scheme of establishing a world-class Navy to demonstrate the nation's political independence, development and prestige. This drive was in tandem with his Pan-African and nonalignment ideologies. A strong Navy was aimed at supporting his vision of an African High Command, which would unify the nations' defenses and prevent conflict on the continent. The toppling of Nkrumah in 1966, however, meant that his vision, as well as the agenda of equipping and building a high-class Navy, were no longer national priorities. For instance, contracts for two ordered frigates for the

Ghana's Chief of Naval Staff holds an inspection and fleet review at Western Naval Command. GHANA NAVY



# GHANA'S MARITIME DOMAIN HAS CHANGED DRAMATICALLY SINCE INDEPENDENCE, BRINGING DIFFICULTIES AND OPPORTUNITIES.

Ghana Navy were promptly annulled. In subsequent years, vessel acquisition for the Navy became rare.

In the first decades after independence, threats arising from the maritime domain were relatively sparse. This meant there was less focus on the maritime environment, maritime security and the Ghana Navy. However, the conflicts in Liberia and Sierra Leone in the 1990s, which led to an influx of refugees to Ghanaian seaports, changed the narrative. The refugee situation presented an early discourse on the maritime domain and potential threats arising from the sea. Since then, developments including the discovery of offshore oil and gas in 2006, the return of piracy, and the rise of drug trafficking in the Gulf of Guinea have underscored the importance of a well-resourced Navy.

## GREATER RESPONSIBILITIES, NEW COMPETITORS

For many years, there was little public debate on the concept of maritime security. Even when piracy

increased across the Gulf of Guinea in the early 2000s, the issue did not receive much attention in Ghana's policy space. In some cases, Ghanaians apparently believed that they were protected from sea-based threats. For instance, Ghana's deputy minister of the interior asserted that the security measures put in place along Ghana's coast made it "too dangerous for pirates to operate." Yet, piracy in Ghana's waters was increasing. By the summer of 2014, two high-profile incidents off Ghana's coast made it evident that the country had to address the challenge of piracy.

A Ghanaian special forces team approaches a pier during an exercise in Nutekpo. PETTY OFFICER 1ST CLASS FRED GRAY IV/U.S. NAVY



A Ghanaian Sailor assigned to GNS Chemle removes a mooring line while getting underway in Tema during a maritime exercise. PETTY OFFICER 3RD CLASS HANNAH FRY/U.S. NAVY



The attacks, as well as illegal fishing by foreign trawlers, highlighted the need to structure Ghana's maritime security governance framework and capability to respond to the emerging complexity of maritime threats and their potential harm to the economy.

Although the Ghana Navy once was the country's only seagoing institution, the increasing threats triggered calls for a multiagency approach. This led to the 2011 reestablishment of the Ghana Marine Police, a unit that had been disbanded in 1942. Additionally, new assignments were added to the Ghana Navy's package. The Ghana Navy defines its role and operational mandate to include:

- Ensuring maritime presence in West African waters and provision of naval support when necessary.
- Surveillance, patrol and control of Ghana's territorial waters and exclusive economic zone (EEZ).
- Combating crime, such as piracy/armed robbery at sea, smuggling of illicit drugs, stowaways and dissident activities.
- Disaster and humanitarian relief operations and search and rescue.

It also assists other state authorities, such as the Ghana Maritime Authority (GMA) and Ghana Ports and Harbours Authority, in fulfilling their mandates. Lastly,

it works to protect the country's fisheries and enforce pollution laws in collaboration with Ghana's Fisheries Commission and the Environmental Protection Agency.

Although the multiagency approach to maritime security is a positive development for the country and its Navy, it also means that the hegemonic role of the Ghana Navy in the maritime domain has changed. For example, it remains unclear what the respective seaward limits of the deployments of the Ghana Navy and the Ghana Marine Police are. In practice, the Marine Police lack the capacity to conduct deep-sea operations, but no limit has been placed on them by law or policy. This has the potential to create clashes and conflict between the two entities. Another issue is the institutional conflict between the Ghana Navy and the GMA. The general view is that since the 2004 enactment of the Ghana Maritime Security Act, which was meant to implement the International Ship and Port Facility Security Code in Ghana, the GMA has been claiming a lead institutional role for maritime security in the country. However, this approach raises considerable concerns from the Ghana Navy and other stakeholders, an issue that has lingered for more than a decade.

Finally, the Navy is increasing coordination with the private sector. The Ghana Navy has begun collaborating with offshore oil and gas companies, and entered into agreements to protect critical infrastructure. The Navy signed a five-year memorandum of understanding



in January 2022 to provide security for oil infrastructure and personnel at the Jubilee Oil Field, 60 kilometers off its coast. Exercising this responsibility while avoiding clashes with civilians and without diverting attention from other key duties will be a challenge for the Navy. For example, it will pit the Navy against artisanal fishermen who regularly enter safety zones and exclusive areas around offshore oil and gas installations in search of fish stocks, which the fishermen report have been depleted in recent years.

## INCREASING PRESENCE

Despite the addition of players in Ghana's maritime domain, the Ghana Navy remains an important actor in the maritime security governance framework due to its institutional role, expertise and experience at sea.

Ensuring maritime security requires effective surveillance and maritime domain awareness (MDA). The Ghana Navy depends on a number of MDA platforms to monitor Ghana's coast and to sustain its operations. Two of these are worth highlighting. It relies on SeaVision, an unclassified maritime surveillance application created by the U.S. in 2012 and used by about 25 West and Central African countries. SeaVision draws from automatic identification systems (AIS) data that is processed to provide users a picture of vessels operating in their region. Relying on AIS means that it is vulnerable to missing some threats. The Ghana Navy also uses the Vessel Traffic

Management and Information System (VTMIS) procured by the GMA. The satellite system of the VTMIS is supported by coastal radar-based technology with radars deployed along the coast of Ghana. Coastal radar-based surveillance platforms have limitations, including reach/range and the occurrence of dark zones where coastal radars poorly interlock. The system also is greatly impacted by sea and weather conditions.

An obvious challenge for all navies, including advanced navies, is the high cost of vessels and the ability to procure enough platforms to cover vast areas. Most analysts of the Ghana Navy observe that it was better equipped in the first decade of its establishment, suffered a decline in capability in the following decade, and was reinvigorated in the 1980s through the 1990s with the acquisition of the Achimota and Sebo classes of ships. After long service to Ghana, these ships were decommissioned, reverting the Ghana Navy to a state of insufficient platforms for a long while. Despite ship donations from the U.S., the Ghana Navy still suffered capability challenges. The discovery of oil and gas in commercial quantities and the expanded tasks of the Ghana Navy have resulted in more attention to the institution, with Ghana steadily introducing new vessels into service in the past decade.

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Ghanaian Sailors assigned to GNS Chemle man the rails while getting underway in Tema during a maritime exercise.

PETTY OFFICER 3RD CLASS HANNAH FRY/U.S. NAVY



Ghana Navy ships cross the equator in a symbolic act allowing the crew to be awarded the King Neptune Badge. The tradition of marking the crossing dates back 400 years. GHANA NAVY



In October 2017, it commissioned four patrol boats. In February 2022, the Ghana Navy commissioned four new Flex Fighter vessels, while the Ghanaian government revealed that it is acquiring two new offshore patrol vessels. The four vessels, acquired with the support of the oil and gas industry, are christened GNS Volta, GNS Densu, GNS Pra and GNS Ankobra. Despite adding these new ships to its fleet, the Ghana Navy is stretched thin as it seeks to uphold its responsibilities along a coastline that stretches 550 kilometers and an EEZ spanning 235,000 square kilometers.

## THE WAY FORWARD

Ghana's maritime domain has changed dramatically since independence, bringing difficulties and opportunities. The Ghana Navy collaborates with various governmental agencies and international partners to tackle security challenges. As the concept of maritime security expanded in the past decade, Ghana's Navy has had to deal with traditional stakeholders and "newcomers" in the country's ocean governance architecture, some posing challenges to the Ghana Navy's historical position as the lead maritime security and enforcement agency. The Ghana Navy is adapting to this.

Although the Ghana Navy has challenges relating to MDA and being an effective presence at sea to respond to threats, it still is one of the most capable navies in the region. With rising insecurity in the Gulf of Guinea,

Ghana is strengthening its Navy with new naval infrastructure, including multiple forward operating bases along its coastline and vessels to cover more area. The new vessels will enable the Ghana Navy to safeguard its maritime interest, including the protection of oil and gas activities and fisheries. Figuring out how to best use its limited resources and build effective security partnerships inside and outside the country will be the difference between success and failure in the coming years. By learning from its history and embracing new technology and partnerships, the Ghana Navy is well positioned to meet these challenges. □



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# TIME *to* ACT

NATIONS CAN TAKE PROACTIVE  
MEASURES TO DETER ILLEGAL FISHING

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ADF STAFF

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An artisanal fisherman in Nigeria  
casts his net. AFP/GETTY IMAGES

Foreign fishing fleets have targeted the African continent's coast for decades, devastating fish stocks, depriving millions of income and food, and destroying marine ecosystems.

But experts say there are several ways nations can fight back.

When the Fisheries Committee for the West Central Gulf of Guinea (FCWC) established a Regional Monitoring, Control and Surveillance Centre (RMCSC) in May 2021, experts saw it as a way to counter illegal, unreported and unregulated (IUU) fishing.

Headquartered in Tema, Ghana, the center helps FCWC member countries Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria and Togo manage their fishing sectors. The center is equipped with vessel-tracking systems and can collect data on authorized fishing vessels across the region.



Fishing boats are docked at the harbor in Zhoushan, China.

REUTERS

"The RMCSC's establishment brings us a step closer to having coordinated approaches to joint action, including patrols for better security in the maritime domain of our region," Seraphin Dedi, secretary-general of the FCWC, told GhanaWeb.

Developing databases to track the shadowy world of flagged vessels is one way to combat IUU fishing. Chinese vessels are notorious for flying "flags of convenience," which is the use of African open registries to fish in waters beyond the jurisdiction of African nations, and "flagging

in," which pertains to the use and abuse of local rules to flag a foreign-owned and operated fishing vessel into an African registry.

China is the world's worst IUU fishing offender, according to the IUU Fishing Index, and commands the world's largest distant-water fleet.

Illegal marine trade costs West Africa almost \$1.95 billion across the fish value chain and \$593 million per year in household income. IUU fishing also has been linked to piracy, kidnapping and drug trafficking, among other crimes.

In 2021, the Environmental Justice Foundation and fisheries intelligence analysis company Trygg Mat Tracking (TMT) joined forces with Senegal on a program to promote transparency among the nation's fisheries and rid the country of illegal fishing.

The nearly \$1.2 million, three-year project publishes up-to-date fishing license lists and vessel registries online. It also empowers artisanal fishermen to help monitor the port of Dakar, and participate in government fisheries-related decisions.

"Unlike some other coastal countries in the region, Senegal has experience in participatory surveillance, and its authorities acknowledge its importance," Steve Trent, the foundation's CEO and founder, told ADF. "Small-scale fishers and local surveillance units work hand in hand to prevent, deter and eliminate IUU fishing. This work faces operational, technical and funding limitations, which the project will help overcome."

In March 2021, Kenya ratified the Cape Town Agreement and the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel.

Adopted by the International Maritime Organization in 2012, the agreement outlines fishing vessel standards and regulations to protect crews and fisheries observers, according to the Pew Charitable Trusts. Chinese vessels engaged in IUU fishing are known for not providing crews with food, medicine and adequate shelter, and crew members often are forced to work long hours in deplorable conditions.

There are several other measures nations can take to deter illegal fishing.





Fishermen pull an artisanal fishing boat to shore in Mauritania.

AFP/GETTY IMAGES

## ENHANCE LOCAL MARITIME LAWS

It might seem simple, but it takes political will, maritime domain awareness and input from local fishing communities to advance legislation that effectively tackles IUU fishing.

Increasing fines for IUU violators is one effective deterrent, Ian Ralby, a maritime security expert who has written extensively on fishing issues, told ADF.

"I think one of the things that has to be done is to change the penalty dynamics, because it's a risk-reward calculus," said Ralby, CEO of I.R. Consilium. "Let's say a state actually has the political will to arrest and prosecute IUU fishing violators. If the cost of these violations is so low that it's just the cost of doing business, then it won't make a big difference to actually deterring the activity. The laws have to be recalibrated, given

the immense economic benefit that comes with engaging in illegal fishing."

Ralby cited Senegal as an example of a country that dramatically increased its penalty for illegal fishing to \$1.8 million. In one case, the country collected \$5 million in fines, enabling it to buy a new patrol boat. The action led to fewer foreign industrial trawlers fishing illegally in its waters.

Other West African countries that have had success in this area include Cameroon, Côte d'Ivoire, Gabon and Ghana.

"The biggest thing is really to team up [law enforcement efforts] between fisheries and the Coast Guard, and do more interagency patrolling that would actually mimic the success that the likes of Sea Shepherd have had," Ralby said, referring to the nonprofit organization that has partnered with several nations to combat illegal



It might seem simple, but it takes political will, maritime domain awareness and input from local fishing communities to advance legislation that effectively tackles IUU fishing.



**Above:** Fish are displayed for sale in Dakar, Senegal. AFP/GETTY IMAGES

**Left:** Artisanal fishermen in Côte d'Ivoire carry fishing nets to shore. AFP/GETTY IMAGES

fishing. “The other thing is that when fisheries arrests occur, how do the penalties that are collected get divided among the parties involved?”

Equitable distribution of fines will serve as an incentive for navies to work with coast guards and fisheries to bust IUU fishing operators, he added.

### PROSECUTE IUU OPERATORS IN INTERNATIONAL COURT

This is easier said than done. It involves a lengthy, complicated and expensive process, and political will.

Ralby, who is an attorney, said seizing a vessel, building a prosecutable case, then proving it in international court is a process that must be coordinated by politicians, prosecutors, navies and coast guards.

“It’s a very, very tough ask,” he said. “It can be done to a certain degree, but it is definitely not the most efficient or likely the most effective way of combatting the actual operational issues of IUU issues on the water.”

Ralby said he believes a more efficient way to deter IUU fishing is to offer incentives to fishing companies that are “extra compliant,” perhaps by offering an extra day of quota “for essentially rapping on the people who aren’t compliant.”

That would give legal operators a vested interest in a well-run regulatory system and create a de facto arm of law enforcement.

“They’re saying, ‘Look, nobody’s going to undermine the benefits that we get legally by operating illegally, so we’re going to make sure we share information that comes to us about anyone who’s undermining the rule of law.’”



## NAME AND SHAME

Publicly naming companies charged with illegal fishing is widely viewed as an effective deterrent. TMT, for example, maintains an online “most wanted vessel” list.

Using advanced software and its own credibility, the company “brings to light the activities of both vessels and fleets and operators themselves, and in some cases flag states,” Ralby said. The company exposes entities that “either directly engage in or enable IUU fishing around the world,” he added. “That is helping. That is changing things.”

TMT’s free website — [www.tm-tracking.org/combined-iuu-vessel-list](http://www.tm-tracking.org/combined-iuu-vessel-list) — offers the best available, up-to-date information on all fishing vessels that appear on the IUU lists published by Regional Fisheries Management Organizations (RFMO).

The site includes information regarding changes to vessel identity, flag state, ownership and location. Information on the site is derived

from a range of sources, including the original RFMO IUU lists, online vessel databases, national fisheries authorities, TMT’s investigations, and intelligence gathered by its partners and sources around the world.

## IMPLEMENT CLOSED FISHING SEASONS

Ghana has imposed closed fishing seasons of two months for industrial fishermen and one month for artisanal fishermen since 2019.

Godfrey Baidoo-Tsibu, the FCWC’s regional monitoring, control and surveillance coordinator, acknowledged that the region’s most important fish stocks “are fully exploited or over exploited due to overcapacity, overfishing and IUU,” according to a report by Ghanaian newspaper Daily Graphic.

Ghana’s small pelagic fish populations, such as sardinella, have dropped 80% in the past two decades. One species, sardinella aurita, is fully collapsed.

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Fishing trawlers, including two Chinese boats accused of illegal fishing, are moored in Côte d'Ivoire. AFP/GETTY IMAGES



# ILLEGAL FISHING TACTICS

Illegal fishing vessels are known to use an array of tactics. Here are some of the most common:



Flying a “flag of convenience,” which is when a company uses open registries to fish in waters beyond the jurisdiction of coastal nations.



Using illegal gear, such as nets with the wrong mesh size, lets fishermen catch more fish than allowed.



Fishing in protected waters and underreporting catches.



Ramming smaller artisanal boats at sea and damaging their equipment.



“Saiko,” the transshipment of fish at sea, which typically occurs when fish are transferred from a trawler to a large canoe to hide the origin of the catch. The canoes can carry about 450 times more fish than an artisanal fishing canoe.



Bottom trawling involves dragging a net across the ocean floor and scooping up all manner of marine life, which destroys ecosystems.



Fishing with cyanide, which stuns fish and makes them easier to catch.



Using explosives, such as dynamite, which kill fish that then float to the surface, where they are easily scooped up with nets.

## APPLYING THE RULE OF LAW

**There are several measures nations can take to deter illegal fishing:**

- Develop databases to track the shadowy world of flagged vessels.
- Strengthen local maritime laws.
- Prosecute illegal fishing operators in international court.
- Publicly name companies arrested for illegal fishing.
- Implement closed fishing seasons.



Small-scale fishing boats are beached at Nouakchott, Mauritania. AFP/GETTY IMAGES

“The looming crisis of the artisanal fishery threatens economic growth in the sector and presents a potential internal security problem that directly affects the livelihoods of as many as 150,000 people involved in the marine fishery sector,” Nana Jojo Solomon, secretary of the Ghana National Canoe Fishermen’s Council, told the United States Agency for International Development.

In December 2021, Ghana urged Benin, Côte d’Ivoire, Liberia, Nigeria and Togo to implement coordinated closed fishing seasons to help replenish the region’s stocks.

Paul Odartei Bannerman, deputy executive director of Ghana’s Fisheries Commission, said the impact to fish stocks in the region would be insignificant if only Ghana observed a closed season, according to a Daily Graphic report. Bannerman added that closed fishing seasons in other parts of the world have effectively protected fish populations.

Ralby agreed but said that closed seasons require the scientific knowledge of which fish stocks need to be protected and how best to do so. He added that maritime security must stay vigilant during closed seasons, as IUU fishing companies routinely ignore all regulations.

“Closing the season but allowing somebody else to milk the fishery is not a good solution,” he said. □



# EYES IN THE SKY



**NATIONS ARE TURNING TO DRONES AS AN  
INEXPENSIVE WAY TO SECURE THE MARITIME DOMAIN**



Maritime drones like the DPI Unmanned Multirotor Aerial Relay make it easier for coast guard and naval vessels to monitor the sea. DRAGONFLY PICTURES



ADF STAFF

A common practice for vessels fishing illegally is to park themselves outside a country's protected waters during the day and move in at nightfall. Vessels with 300-ton capacity or more are required to have an automatic identification system (AIS).

It's a major red flag when a vessel turns off its AIS.

But sending out a patrol vessel every time that happens is difficult. Flying a helicopter or airplane may be too costly. Weather conditions can be too dangerous to risk lives.

Most coastal countries on the continent have limited patrol capability, and many lack maritime aerial assets entirely, according to researcher Denys Reva of the South Africa-based Institute for Security Studies.

"A drone can fill in this niche, being a somewhat cost-effective solution, especially with the right equipment on board," he told ADF. "The simple fact of having this capability may serve as a deterrent and decrease illegal activity."

More African countries are using unmanned aerial systems, or drones, to address a range of maritime security challenges — surveillance, border control, port and coastal security, search and rescue, maritime patrols, and inspections of ships and cargo.

Defending against piracy and terrorism has risen to the forefront of coastal security issues.

An abundance of unsecured natural resources is just off the continent's coast, as U.S. Naval officers Capt. Chris Rawley and Lt. Cmdr. Cedric Patmon wrote in a 2018 article for the Center for International Maritime Security:

**"The simple fact of having this capability may serve as a deterrent and decrease illegal activity."**

*~ Denys Reva, Institute for Security Studies*

"Africa's maritime economy is absolutely critical to the continent's growth and prosperity during the next few decades. On the edge of the Eastern Atlantic the Gulf of Guinea is bordered by eight West African nations and is an extremely important economic driver.

"More than 450 million Africans derive commercial benefit from this body of water. The region contains 50.4 billion barrels of proven petroleum reserves and has produced up to 5.5 million barrels of oil per day. Additionally, over 90% of foreign imports and exports cross the Gulf of Guinea making it the region's key connector to the global economy."

More countries need to invest in maritime security, Reva said, but Africa has had what he calls "sea blindness."

"The maritime sector in Africa has been historically overlooked, leading to underdevelopment," he said. "This trend has changed somewhat in recent years, but many African states to this day do not have even the most basic maritime security capacity and capability in place





The Seychelles Fisheries Authority bought two long-range drones with artificial intelligence to perform fisheries surveillance in 2021. ATLAIN SPACE

to respond to maritime insecurities, let alone investing millions of dollars in drones and related equipment.”

#### An Island State at the Forefront

The Seychelles exemplifies Africa’s changing approach to protecting its waters.

An archipelago composed of 115 islands in the western Indian Ocean about 1,100 kilometers northeast of Madagascar, the Seychelles has an exclusive economic zone (EEZ) of 1.3 million square kilometers.

Until the country’s recent acquisition of eight drones, illegal fishing ran rampant.

The country’s fisheries authority bought two long-range drones equipped with artificial intelligence in 2021. In 2022, the Seychelles Coast Guard acquired two compact quadcopter drones from the United Kingdom, purchased in conjunction with the United Nations Office on Drugs and Crime.

“While the threat of piracy in the Western Indian Ocean may have receded, we have become increasingly aware of the challenges posed by illegal, unreported and unregulated (IUU) fishing, trafficking in people and arms, and, perhaps most damaging for Seychelles, trafficking in illicit narcotics,” British High Commissioner Patrick Lynch said during a ceremony on February 15, 2022.

The vastness of the ocean surrounding Africa makes drones an excellent complement to available resources, Rawley and Patmon explained. They also highlighted the Gulf of Guinea, where illegal fishing has cost the region’s economies between \$2 billion and \$3 billion annually.

“Key to enforcement is the ability to identify, track, and prosecute nefarious actors on the high seas and in coastal



areas,” they wrote. “So-called maritime domain awareness is gradually improving in the area, but current options for maritime surveillance are limited.

“The largest local navies have offshore patrol vessels capable of multi-day over-the-horizon operations, but even these vessels have limited enforcement capacity. Patrol vessels face maintenance issues and fuel scarcity. Shore-based radar systems at best reach out 30 or 40 nautical miles but are plagued by power and maintenance issues.”

The Seychelles has several patrol boats but just one or two planes that can execute reconnaissance or surveillance flights.

Experts say many countries would be wise to follow the Seychelles’ example — exploring the use of drones to combat illegal fishing, then expanding their use to other maritime security issues.

“While addressing IUU fishing is important, issues such as maritime terrorism and terrorist travel, piracy, and drug-trafficking are seen as a much bigger security priority,” Reva said. “Until relatively recently, African countries did not even take IUU fishing seriously, unknowingly losing millions in revenue. Today it is still arguably treated as a ‘second-tier’ issue.



Members of the Nigerian military are shown a drone defense system during an exhibition in London. GETTY IMAGES

“However, countries that are expanding their capabilities to deal with ‘first-tier’ maritime security issues can then use existing equipment to address additional issues, such as IUU fishing.”

The use of maritime drones in Africa also can include:

#### Anti-Piracy and Counterterrorism

In recent years, a stretch of the Atlantic Ocean that borders about 20 West African nations has become known as “pirate alley.”

It’s an area of more than 2.35 million square kilometers where nearly all the world’s kidnappings at sea now take place. Pirates abducted a record 130 Sailors in 2020, compared with five in the rest of the world.

Drones were part of a \$195 million Nigerian initiative known as “Deep Blue.” The first integrated maritime security strategy in West and Central Africa, Deep Blue aims to tackle piracy, theft and other maritime crimes.

#### Marine Monitoring and Inspection

Trafficking of narcotics, people and wildlife products is a constant problem across African waters.

Many countries effectively outsource maritime security to foreign naval missions, Reva said, also noting the important roles played by international actors and regional maritime security operations.

“They conduct extensive counternarcotics naval patrols in international waters,” he said. “That takes some pressure off African countries, as they can focus their investment to some areas, while relying on cooperation with international partners in other areas.”

Drones, he said, are another cost-effective way to bolster law enforcement.

#### Surveillance

Detecting threats on open waters can be like finding a needle in a field of haystacks.

Equipped with night vision, infrared or thermal imaging, land- and ship-launched drones can improve a nation’s intelligence, surveillance and reconnaissance capabilities over its waters.

The U.S. Navy uses drones for asset protection, deploying the MQ-4C Triton to ensure near-constant maritime surveillance around key naval bases.

Among their many missions, the European Maritime Safety Agency deploys drones to help with border control.

#### Search and Rescue

Drones have shown they significantly increase the effectiveness of search and rescue missions, especially at sea.

A drone equipped with VIDAR (visual detection and ranging) can locate hundreds of large and small objects at sea.

Drones with VIDAR have been able to identify objects such as stationary personal watercraft and buoys at distances of up to 9 kilometers.

#### Challenges Remain

Ian Ralby, a maritime security expert who has written extensively on fishing issues, said nations face several hindrances in deploying drones.

They are difficult to maintain in tropical weather conditions. It may be difficult to deploy smaller drones long enough to provide adequate monitoring. Some drones can’t go beyond 22 kilometers, making it difficult to cover a country’s EEZ.

“Even when you have everything working, the drone is maintained and covers the area that’s needed, you do run into the issue that not every state can admit [IUU] evidence obtained through a drone,” he told ADF.

Still, Ralby said he thinks drones can be useful in countering IUU fishing and other maritime crimes in Africa.

“We’ll likely see more of it in the years to come,” he said. □



# PROTECTING

## *Inland Waterways*

### Major Rivers and Lakes Are a Priceless Resource When Used Properly

— ADF STAFF —

**B**efore South African officials could tear down a makeshift bridge across the Limpopo River, they had to deal with the crocodiles.

Parts of the Limpopo have been infested with Nile crocodiles since 2013, when 15,000 of them were accidentally released into the river from floodgates at a nearby crocodile farm.

Locals shot at them, eventually driving them away on a Thursday afternoon in September 2021. With that, they set about destroying a smugglers' bridge linking South Africa with Zimbabwe. Military personnel later helped them finish tearing it down.

The bridge was a byproduct of the COVID-19 pandemic. Due to the pandemic lockdown, the two

countries set up blockades at the bridges crossing the Limpopo beginning in March 2020.

Even with air patrols over the 250-kilometer border, smugglers moved goods such as food, fuel, vehicles, diapers and electrical equipment into Zimbabwe. Going the other way, cigarettes, minerals, wildlife and explosives made up the bulk of items smuggled into South Africa, The Chronicle of Zimbabwe reported.

Because of the smuggling, the two countries lost thousands of dollars in import duties. The situation was worse during the dry season, when some of the riverbed could be crossed on foot. Zimbabwe's side of the river had few vehicle patrols, and security personnel could cover only about 30 kilometers per day on



Victoria Falls

## Major Waterways



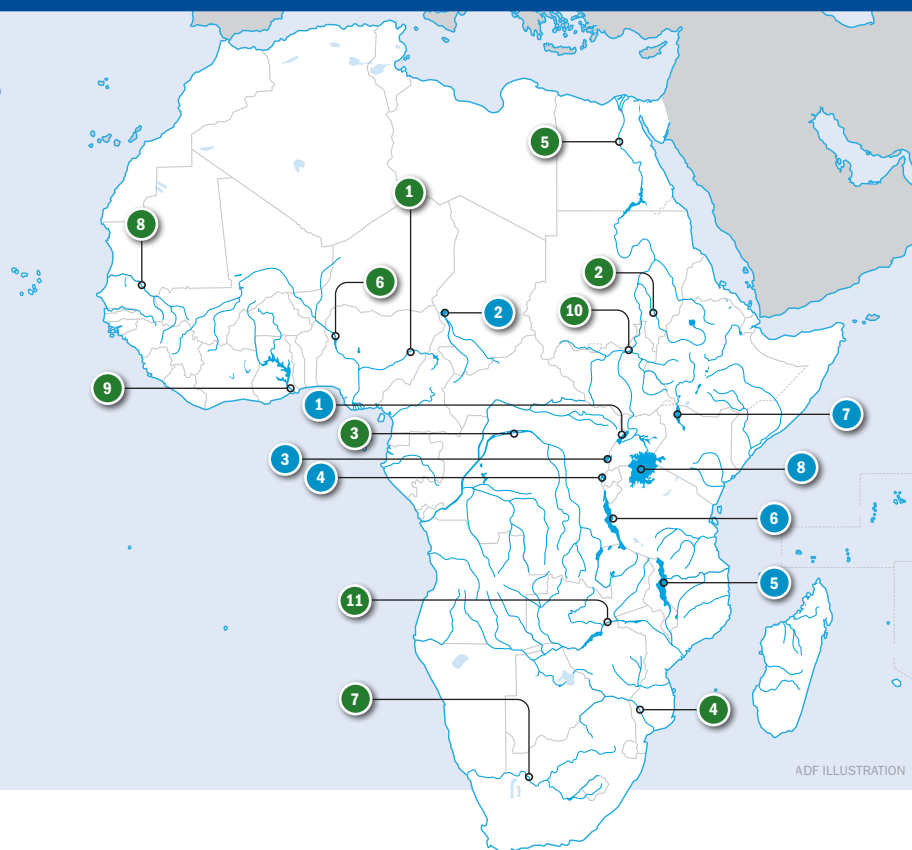
### Lakes

1. Lake Albert
2. Lake Chad
3. Lake Edward
4. Lake Kivu
5. Lake Malawi
6. Lake Tanganyika
7. Lake Turkana
8. Lake Victoria



### Rivers

1. Benue River
2. Blue Nile River
3. Congo River
4. Limpopo River
5. Nile River
6. Niger River
7. Orange River
8. Senegal River
9. Volta River
10. White Nile River
11. Zambezi River



foot. Nonetheless, in eight months in 2021, Zimbabwean security agents arrested more than 46,000 people for border crimes.

### The 16 Major Waterways

The Limpopo, which begins in South Africa and flows 1,750 kilometers past Botswana, Zimbabwe and Mozambique before reaching the Indian Ocean, is a vital part of the lives of the millions of people of the four countries. It is one of Africa's 19 major inland waterways — 11 rivers and eight lakes. They are:

- Africa's Great Lakes: Albert, Edward, Kivu, Malawi, Tanganyika, Turkana and Victoria
- Lake Chad
- The major rivers: Benue, Blue Nile, Congo, Limpopo, Niger, Nile, Orange, Senegal, Volta, White Nile and Zambezi

These waterways provide priceless resources, including fish, drinking water, transportation, irrigation, shipping and electricity. But their resources are frequently abused.

In a 2022 report for the Institute for Security Studies, researcher David Willima wrote that, "The continent's lakes and rivers are increasingly threatened by illicit fishing, depredation of marine resources, illegal immigration and territorial disputes emanating from unclear borderlines."

The threats, Willima said, include:

- Illicit fishing and the plundering of fish stocks.
- Illegal immigration.
- Territorial disputes from unclear borderlines.

- Boating accidents, made worse by crowded, unsafe boats.
- A lack of search and rescue and lifesaving aid.
- Disputes over ownership of newly discovered energy resources.

Some of the waterways, such as the 1,400-kilometer Benue River flowing through Cameroon and Nigeria, are especially dangerous during the rainy season. When a church outing on the Benue in July 2020 ended with 20 people drowned, officials cited high water levels as a contributing factor.

Crowded ferries also are a consistent factor in waterway accidents, such as a December 2014 ferry capsizing on Lake Tanganyika, with more than 120 lives lost.

Fishermen return to a beach in Burundi after fishing overnight on Lake Tanganyika. AFP/GETTY IMAGES





Rescue workers examine a capsized passenger ferry on Lake Victoria near Tanzania in 2018. More than 200 people died. THE ASSOCIATED PRESS



**“The continent’s lakes and rivers are increasingly threatened by illicit fishing, depredation of marine resources, illegal immigration and territorial disputes emanating from unclear borderlines.”**

*~ David Willima, Institute for Security Studies*

### The Freshwater Giant

With a surface area of more than 60,000 square kilometers, Lake Victoria is Africa’s largest lake. It is the world’s second-largest freshwater lake after Lake Superior in North America. It has an average depth of 40 meters and is twice that deep in some areas. Its shoreline is 7,142 kilometers. The lake is divided among Kenya, Tanzania and Uganda.

The fishing industry on Lake Victoria employs about 800,000 people, with 70,000 locally made small fishing boats operating in its waters. The small-scale fisheries sector alone brings in about \$300 million in annual revenue among the three countries. Illegal, unreported and unregulated fishing by organized crime syndicates endangers the livelihoods of communities around the lake.

The lake has endured years of mismanagement. In the 1950s, the British introduced the nonnative Nile perch to the lake as a food source. Initially, the plan worked, but the perch wiped out other fish, perhaps even hundreds of species. The perch eventually were overfished, ruining the economies of villages that had become dependent on them.

Today, the lake is plagued with pollution that is killing the fish. In just two months in 2021, more than 100 tons of mostly Nile perch washed up on the shores of the three countries, according to a report by the African Arguments website. At up to about \$4,000 per ton, it was the equivalent of about \$400,000 in potential lost revenue. Local industries are being blamed for the pollution.

Regional authorities estimate that at least 200,000 vessels operate on the lake, engaging in transport and fishing. The lake has an enduring problem with boat safety. Negligence by boat owners is considered the main cause.

The Standard newspaper of Kenya has reported that barely a month passes without a fishing boat capsizing.

In September 2018, a ferry capsized on the lake near Mwanza, Tanzania. More than 200 people died, even though the vessel officially had only a capacity of 100 people. The Lake Victoria Basin Commission says that an average of 5,000 deaths are reported each year.

The Standard reported in May 2022 that the three countries were establishing search and rescue centers and a “strong communication system.” Elias Bahanda of the commission said that improved safety will boost regional trade.

“The project has been endorsed by all the three partner States,” he said. “Navigation will also be improved.”

Kenya will host one of the rescue centers in Kisumu. Uganda’s center will be in Entebbe. The regional rescue coordination center will be based in Mwanza. All the centers will be equipped with rescue boats that have medical equipment. Officials said that fast boats also will be used for patrols. According to Bahanda, the project could be ready in 2023.

A lack of equipment in weather stations makes it difficult to predict weather patterns on the lake in order to take precautions. The commission has prioritized modern technology to help locate vessels on the lake.

### Death on The Congo

The Democratic Republic of the Congo (DRC) is one of the world’s poorest countries and has few paved roads compared to its enormous size. For most people, the Congo River is the only real highway. The barges that travel the river are like “floating villages crowded with up

International students participate in mud boat familiarization exercises at the John C. Stennis Space Center in the United States.

ANGELA FRY/U.S. NAVY

# U.S. Trains Forces To Combat Lake Chad Extremists

ADF STAFF |

**L**ake Chad is critical to the lives of millions of people in Cameroon, Chad, Niger and Nigeria. It provides drinking water and supports fishing, agriculture and livestock.

But it also is shrinking. Today, it is only about 1,500 square kilometers — a mere 10% of the size it was as recently as the mid-1960s. The United Nations has described the crisis of water loss as “one of the worst in the world.”

The United Nations has been monitoring the situation for decades.

“The shrinking of the lake has also caused several different conflicts to emerge, as the countries bordering Lake Chad argue over the rights to the remaining areas of water,” the U.N. noted in a 2012 report. “Along with international conflicts, violence between countries is also increasing among the lake’s dwellers. Farmers and herders want the water for their crops and livestock and are constantly diverting the water, while the lake’s fishermen want water diversion slowed or halted in order to prevent continuing decline in water levels resulting in further strain on the lake’s fish.”

Into this already critical situation comes the terrorist group Boko Haram. The group is believed to be responsible for at least 35,000 deaths and has forced 2.5 million people from their homes.

In an effort to improve security around Lake Chad, the U.S. Naval Small Craft Instruction and Technical Training School established the Lake Chad Basin Initiative at its facilities at the John C. Stennis Space Center in the U.S. state of Mississippi.

In its inaugural session in December 2017, the school worked with almost 50 security professionals from Cameroon, Chad and Niger.

Offering 20 formal courses of instruction for the Lake Chad Basin Initiative, the Naval Special Warfare Command incorporated seven tactical, operational and strategic courses into the training. In



Students, including those from Cameroon, Chad and Niger, study outboard motor maintenance and overhaul at the John C. Stennis Space Center. LEAH BOURGEOIS/U.S. NAVY

addition to leadership training, the courses included such instruction as outboard motor maintenance, welding, boat hull repair, instructor development and small arms maintenance.

The classes include in-residence training at the center and mobile team training engagements in Cameroon, Chad and Niger.

About 600 foreign troops get training at the facility each year. Representatives from 124 countries have trained there.

The second year’s session had more than 90% of the students coming from the Lake Chad region. Because the region’s primary language is French, the school again partnered with interpreters from Belgium, Canada and France. The permanent staff now includes an officer from Cameroon.

Along with partner nation instructors and interpreters, observers from the United Kingdom Royal Marines participated as role players in a surveillance and reconnaissance insertion exercise during the school’s Patrol Craft Officer Riverine course. Commandos from the Royal Netherlands Army, who were training at the school in support of another operation, played the role of opposition forces.



# How to Protect, Improve Africa's Water Supplies

ADF STAFF |

**B**efore such issues as security, overfishing and water safety can be addressed, nations first must protect their water supplies and keep them clean.

A United Nations study titled “Africa Water Atlas” makes these recommendations for Africa’s freshwater resources:

**Make safe drinking water available to more people.** Improving access to drinking water also reduces the incidence of water-related and waterborne diseases such as cholera. One means of making drinking water more accessible is to encourage entrepreneurs to get into the water purification and water bottling business. Governments should promote water disinfection technology.

**Ensure access to adequate sanitation.** Many waterways in Africa also serve as wastewater dumps. Governments and private enterprise should recognize the potential for revenues generated by sanitation technologies. Experts say that a cultural shift in personal sanitation is needed throughout Africa.

“Learn from the extraordinary expansion of mobile phones,” the U.N. study noted. “Encourage and support simple solutions from entrepreneurs; introduce urban water tariffs; increase sanitation’s share in total aid; adopt system financing.”

**Reduce potential conflicts over water by improving cooperation at transboundary water sources.** Africa has 63 shared water basins. Although there is the potential for conflict over water resources, there already are almost 100 international water agreements in place on the continent. Nations need to recognize and build on water as a binding factor in transboundary cooperation.

**Provide water for food security.** Agriculture is the greatest user of water in Africa. Even so, a great percentage of Africans live with chronic hunger. Africa’s irrigation capacity is greatly



underdeveloped. The challenge is to invest in simple and inexpensive irrigation technologies, avoid the pitfalls of overirrigation, and tie irrigation development to environmental sustainability.

**Develop hydropower.** Africa has enormous hydroelectricity potential. The Congo River alone is a source of vast untapped power. Developing hydropower will boost the economy and improve people’s lives. Bringing electricity to rural areas will slow the migration of young people to the slums of the big cities.

**Prevent land degradation and water pollution.** The Sahel in particular has suffered from land degradation with saltwater intrusion polluting groundwater. The solution is to foster the greening of the continent by encouraging adaptation to droughts and support scientific assessments of land degradation and water quality.

**Improve the capacity to address water management and shortages.** Reform water institutions, improve public-private partnerships and educate the public on how to manage water supplies.

to 2,000 people, mainly traders and their goods, from bags of sorghum to barrels of palm oil,” NBC News reported.

Travelers and traders making their way to the capital, Kinshasa, can spend weeks on the river on crowded barges and boats. A January 2022 accident on the Congo River in the DRC claimed 50 lives. In a single weekend in 2010, an estimated 270 people died in two accidents. In one accident, a boat caught fire and capsized. In the other accident, a boat running without lights hit a rock and capsized.

Such accidents on the Congo and its nearby lakes are common, officials say, because many boat owners cannot afford to keep their crafts maintained. It is common for

boat owners to bribe navigation department agents when inspections show problems.

With a length of 4,800 kilometers, the Congo is the continent’s second-longest river, after the Nile. It is the world’s deepest known river, with depths in excess of 220 meters. It is up to 16 kilometers wide at some points. Nearly the entire river above Livingstone Falls is navigable in sections, especially between the river ports of Kinshasa and Kisangani in the DRC.

The Congo’s three major waterfalls now are bypassed by railways, making the river more useful for travel and trade. A large amount of Central Africa’s trade passes through it, including coffee, cotton, copper, palm oil and



A fisherman steers his dugout on the Congo River. The river is a lifeline for millions of people who depend on it for trade and transportation.

AFP/GETTY IMAGES

sugar. The river has the continent's most potential as a source of electric power but so far remains underused.

Researchers say that as useful as the Congo River is for transportation and shipping, it remains inherently dangerous to navigate. Most observers say that the solution to the perils of the river is to build more roads so that people can stay on land.

### Stopping Illegal Fishing

Lake Nyasa, also known as Lake Malawi, is the ninth-largest lake in the world and the third-largest in Africa. Lake Malawi is home to more species of fish than any other lake in the world.

Tanzania has come to recognize that its fish are critical to the country's economy and is working to protect them.

In 2022, Tanzania acquired 16 speedboats to monitor fisheries in the country's lakes and in the Indian Ocean. Mashimba Ndaki, the country's minister for Livestock and Fisheries, said the boats will be used to monitor and control illegal fishing.

The boats will be allocated in Lake Victoria, Lake Tanganyika, Lake Nyasa and in the Indian Ocean to manage, protect and develop the country's fisheries resources. Ndaki urged leaders in regions and districts near lakes and rivers to support the government in its fight against illegal fishing.

Lake Nyasa has shoreline in Malawi, Tanzania and Mozambique, and who owns what parts of the lake is a source of consistent dispute. Malawi maintains that it owns the entire lake.

Malawi has a \$660 million tourism investment master plan to ramp up infrastructure development.

Like Lake Nyasa, the Zambezi River has problems with overfishing. The river is sometimes referred to as "The Great Zambezi River" because of its power and its features, which include Victoria Falls, one of the Seven Natural Wonders of the World. It is the fourth-longest

river in Africa at 2,574 kilometers. The river begins in Zambia and touches six countries before flowing into the Indian Ocean.

Riverside communities fish the Zambezi for food, and game fishing is a tourism attraction, featuring safari lodges. But parts of the upper river have been heavily overfished. Officials have outlawed most types of nets and imposed an annual three-month fishing ban to allow the fish to breed. In recent years, floods and droughts have made fishing difficult, and now, the locals say, lower water levels seem to be a permanent thing.

Protecting Africa's inland waterways from extremists, overfishing, illegal immigration and territorial disputes will require a variety of approaches. Researcher Willima noted that Tanzania established mobile courts to prosecute illegal fishing in its seas, lakes and at dams. He noted that law enforcement in the continent's inland waterways was only as strong as its weakest link, "as weak efforts in one might undermine progress in another."

"Legal frameworks exist that oblige African countries to improve maritime security and safety standards," he wrote. "But most have not yet come into force due to insufficient ratifications."

The legal documents include the 2010 Revised African Maritime Transport Charter and the 2016 African Charter on Maritime Security and Safety and Development in Africa, which is also known as the Lomé Charter.

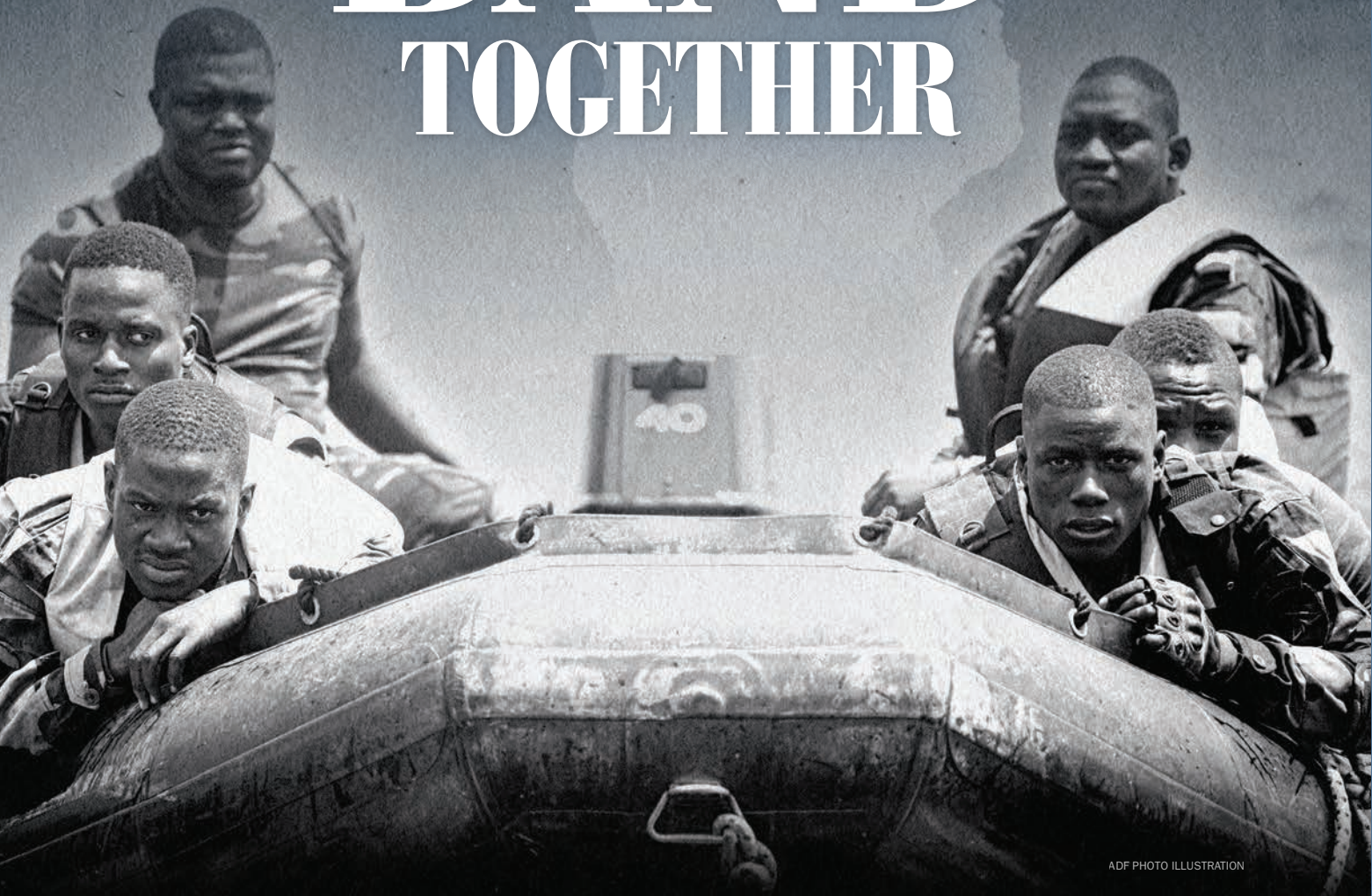
Willima urged the continent's nations to "throw their weight behind" such charters and legal instruments.

Nations, along with the African Union, "must be capacitated to help states resolve existing and emerging maritime border disputes," he wrote. "Policies and regulations on illegal fishing need to be implemented not just in Africa's seas but also inland waterways.

"Failure to do so will mean that blue economies along the continent's rivers and lakes will be neither sustainable nor benefit Africans." □



# COASTAL NATIONS BAND TOGETHER



ADF PHOTO ILLUSTRATION



# Countries Are Organizing in Regional Groups to Fight Maritime Crime

ADF STAFF

**T**he war between Russia and Ukraine should be a wakeup call for the 38 coastal countries of Africa to prioritize maritime security, according to the chief of the South African Navy.

Vice Adm. Mosiwa Samuel Hlongwane spoke in April 2022 at the fourth Maritime Security Conference in South Africa. He said the conflict in Europe has forced “our European and Global partners” to reconsider and reprioritize national and maritime security, DefenceWeb reported.

Fighting, ship deployment and sea mines threaten Black Sea trade routes. In March 2022, Russian authorities said 420 mines were drifting freely in the Black Sea after breaking loose in a storm.

Even without the European conflict, Africa’s coastal nations face an array of threats, including piracy, robbery, drug and human trafficking, oil bunkering, pollution, and illegal, unreported and unregulated fishing.

Although the Gulf of Guinea has been a hot spot for maritime crime, it’s not alone. The Gulf of Aden and the Mozambique Channel, and the Mediterranean and Red Seas, also have security issues. Many of the continent’s coastal countries struggle to deal with maritime threats and must work with neighbors in a unified effort.

The countries recognize the need to work together and resolve their differences, such as what their borders are in terms of security and fishing rights. But many countries face challenges in enacting laws and rules that are compatible with those of their coastal neighbors. Even cooperating on bringing criminals to justice is complicated by incompatible laws in differing countries.

The African Union and Africa’s regional economic groups are the logical parties to help improve and enforce maritime security, but they have had mixed results so far. In a report for the Institute for Security Studies (ISS), researcher Timothy Walker pointed out how seldom these groups get involved.



A Senegalese service member plays the bugle at the Senegalese Naval Headquarters in Dakar during the closing ceremony for Exercise Obangame Express 2022. PETTY OFFICER 2ND CLASS PETER TICICH/U.S. NAVY

“Major maritime crimes in African waters are often transnational in origin and impact, defying simple, unilateral solutions,” Walker wrote. “Yet the African Union and regional structures for mobilising joint action among African states seldom prioritize maritime issues or their consequences for the continent.”

Walker said that although Africa is “taking stock” of its distinctive maritime security issues, it seldom takes collective action. He noted that when

**Senegalese Marines conduct amphibious drills on a rubber raiding craft during Obangame Express 2022.**

LANCE CPL. ETHAN ROBERT JONES/U.S. MARINE CORPS



the African Union (AU) Peace and Security Council (PSC) discussed maritime security in a July 2021 meeting, “it was only its seventh meeting on maritime safety out of the more than 1,000 the council has convened after its doors opened in 2004.”



**A Gambian Sailor boards a U.S. ship during Obangame Express 2022.** LANCE CPL. EMMA GRAY/U.S. MARINE CORPS

This inaction has led to African countries taking their maritime issues to the United Nations Security Council (UNSC) instead of the PSC. “This gives the impression of a PSC unmoored and marooned from African states’ maritime security policies and interests,” Walker noted. “In the world’s eyes, this is making the UNSC, rather than the PSC, the leading forum for determining how best to fight maritime crime around Africa.”

## 2050 AIM STRATEGY

In January 2014, the AU adopted the 2050 Africa’s Integrated Maritime Strategy, also known as the 2050 AIM Strategy, a continentwide integrated maritime plan. The goal is to approach maritime security at all levels, not just piracy and armed robbery at sea. While it addresses illicit activities at sea, it also focuses on sustainable development of the African blue economy.

A report in a 2018 Horn of Africa Bulletin noted that the strategy had to go beyond security and protecting trade interests. “Such a bi-dimensional approach would not address other maritime security threats and concerns that may adversely impact the blue economy developmental growth of African states,” the report noted.

Researcher Brigid Kerubo Gesami published a study in 2021 entitled, “Maritime Security in Africa: The African Union’s Challenge in Implementing the 2050 AIM Strategy.” She said that putting the strategy into operation has proved difficult.

“The AU 2050 AIM strategy ... is characterized by a variety of linked but separate, disconnected, and uncoordinated policies, resolutions, regulations, and activities that are not coordinated with one another,” Gesami wrote. “In addition to the 11 strategic programs, the Plan of Action offered 21 objectives, 61 action targets, and 65 output metrics to assist, quantify and monitor the effect of the 2050 AIM strategy on the regional and national levels.”

## REGIONAL GROUPS FORMED

In 2004, African and European officials began discussing a partnership that led to the 5+5 Defence

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Somali marine forces patrol the Indian Ocean after a ruling in a boundary dispute with neighboring Kenya. REUTERS







A Kenya Defence Forces warship patrols near the Somali port town of Kismayo. REUTERS

Initiative, a collaboration between five African countries (Algeria, Libya, Mauritania, Morocco and Tunisia) and five European countries (France, Italy, Malta, Portugal and Spain). The group's goal, its organizers say, is to "significantly contribute to the solutions that address common concerns in the security and defense field."

European members of the cooperative regularly conduct three military exercises — Canale, Seaborder and Circaete. For the past few years, the Canale exercise has been open to all the 5+5 initiative member countries.

The initiative's areas of cooperation are maritime surveillance, air security, education and research, and armed forces' contribution to civil protection.

"By associating their efforts through close cooperation, the ten countries of the 5+5 Defence Initiative aim to improve their effectiveness in keeping the Mediterranean Sea a safe and secure area of exchange," the initiative reports.

North African political instability, particularly in Libya, has undermined African participation in the initiative in recent years.

## DEALING WITH PIRACY

In January 2009, representatives of Djibouti, Ethiopia, Kenya, Madagascar, Maldives, Seychelles, Somalia, Tanzania and Yemen signed what is commonly

known as the Djibouti Code of Conduct.

Comoros, Egypt, Eritrea, Jordan, Mauritius, Mozambique, Oman, Saudi Arabia, South Africa, Sudan and the United Arab Emirates have since signed.

Under the code, participating countries declare their intention to cooperate fully to combat piracy and armed robbery against ships. The International Maritime Organization, a special agency of the United Nations, notes that signatories agreed to cooperate in:

- The investigation, arrest and prosecution of people who are reasonably suspected of having committed acts of piracy and armed robbery against ships, including those inciting or intentionally facilitating such acts.
- The interdiction and seizure of suspect ships and property on board those ships.
- The rescue of ships, people and property subject to piracy and armed robbery.
- The proper care, treatment and repatriation of seafarers, fishermen, other shipboard personnel, and passengers subject to piracy and armed robbery, particularly those subjected to violence.
- The conduct of shared operations, both among the participating countries and with navies from countries outside the region.



The code provides for the sharing of piracy-related information through a network established in 2011. The network has three information-sharing centers: in Mombasa, Kenya; Dar es Salaam, Tanzania; and Sana'a, Yemen. The network exchanges information on piracy across the region and other relevant information.

The United Nations says that the information-sharing network has played a significant role in countering piracy.

In 2017, the initiative adopted the Jeddah Amendment to broaden the scope of the code. The amendment covers measures for suppressing a range of illicit conduct, including piracy, arms trafficking, trafficking in narcotics, illegal trade in wildlife, illegal oil bunkering, crude oil theft, human trafficking, human smuggling, and illegal dumping of toxic waste.

### WEST AFRICA'S REGIONAL CODE

Taking inspiration from the Djibouti Code, the states of the wider Gulf of Guinea, from Senegal to Angola, formed the Yaoundé Code of Conduct in 2013. The nongovernmental organization Stable Seas notes that the Yaoundé Code's goal is to get member countries to cooperate in fighting all forms of maritime crime, from piracy to trafficking to oil theft to illegal fishing — the same measures the Jeddah Amendment addressed later in the Djibouti Code.

The Yaoundé Code took advantage of the maritime zones already established by the Economic Community of West African States (ECOWAS) and the Economic Community of Central African States (ECCAS). These institutions cover the coastal and landlocked states of the two regions.

The code has led to the development of two regional information-sharing centers. The Regional Centre for Maritime Security in Central Africa is based in Pointe-Noire, Republic of the Congo, to assist ECCAS countries. The West Africa Regional Coordination Centre for Maritime Security, based in Abidjan, Côte d'Ivoire, serves ECOWAS countries. Coordinating both centers is the Interregional Coordination Centre in Yaoundé, Cameroon.

ECCAS has had some successes in maritime security cooperation. ECCAS Zone D, consisting of Cameroon, Equatorial Guinea, Gabon, and São Tomé and Príncipe, conducts combined operations at sea “virtually every day of the year,” according to the Africa Center for Strategic Studies.

Obangame Express, an annual military exercise organized by U.S. Naval Forces Africa, is designed to improve regional cooperation in support of the Yaoundé Code of Conduct. The exercise focuses on maritime domain awareness, information-sharing and tactical interdiction expertise.

Obangame Express 2022 concluded its 11th iteration in March 2022. The exercise took place across five zones in the Atlantic Ocean and Gulf of Guinea, stretching from Senegal to Angola.



Members of Ghana's Special Boat Squadron document and detain a mock "person of interest" as part of visit, board, search and seizure training in the Gulf of Guinea during Obangame Express 2022. CHIEF SPC. BLAKE MIDNIGHT/U.S. NAVY





## ECOWAS MARITIME CENTER

ECOWAS has been developing an integrated maritime strategy for several years.

Kamal-Deen Ali, executive director of the Centre for Maritime Law and Security Africa, has reported that 13 nations exchange information, handle challenges to their maritime domains, and administer three shared operating zones in a collaborative effort.

The West Africa Regional Maritime Security Centre in Abidjan, Cote d'Ivoire, opened in March 2022 in a ceremony organized by ECOWAS in collaboration with the Ivoirian government.

Established by a decision of the Authority of Heads of State and Government on July 31, 2018, the center will be an essential tool for implementing the ECOWAS Integrated Maritime Strategy, which was adopted in 2014.

The center provides information management and sharing, operational monitoring, crisis coordination, and training and capacity building. The center and others like it will make up the regional maritime safety and security architecture.

## MORE COMMITMENT NEEDED

The Djibouti Code, the Yaoundé Code and the 5+5 Defense Initiative combined include every coastal state in Africa except for Namibia. But experts agree that more work needs to be done to get coastal

A Senegalese service member restrains a mock detainee during a visit, board, search and seizure drill for Obangame Express 2022. PETTY OFFICER 2ND CLASS TREY FOWLER/U.S. NAVY

nations working together to guarantee security. In particular, they say, the AU needs to get more involved.

"The 2050 AIM Strategy is an impressive document that emphasises the multidimensionality of maritime security," the 2018 Horn of Africa Bulletin study concluded. "However, for it to move from 'paper to practice' it must be implemented in a coherent and consistent manner. Thus, it is crucial that there is effective administrative coordination by an established department, proper information flow to relevant officials and stakeholders and that the nexus between the different aspects of the strategy is highlighted and properly communicated."

In his 2021 ISS study, Walker noted that countries need to cooperate more.

"Insecurity at sea makes it difficult for states to secure trade routes, protect and harness the benefits of their blue economies, and ensure economic growth and social development for coastal communities," Walker wrote. "The PSC and AU member states should begin crafting and implementing plans that cross-cut national, regional and continental levels." □





## A RIVALRY FUELED BY FOOTBALL AND RICE

ADF STAFF | PHOTOS BY THE ASSOCIATED PRESS

**W**hen it comes to bragging rights, Nigeria and Ghana are rivals in many things. These days, it's football and a festive rice dish.

The latest edition of the intense rivalry came at the end of March 2022, when Ghana's national football team defeated Nigeria to advance to the 2022 World Cup in Qatar.

Any rivalry between the two countries might seem unlikely. In terms of population, Nigeria is the continent's largest country, with 206 million residents. Ghana is the continent's 13th-largest country, with 31 million residents.

Their rivalry dates to 1957, when Ghana gained independence three years before Nigeria. The two countries have been competing ever since.

These days their rivalries are football and competing versions of Jollof rice, a spicy West African dish used in parties and celebrations. August 22 is Jollof Rice Day in both countries, with contests comparing the two versions side by side. The football competition between the two countries has been dubbed "The Jollof Wars," and the 2022 World Cup qualifier was dubbed "The Jollof Derby."

The football rivalry started while both countries fought for independence. The BBC reported that Ghana won its first nontournament games in the 1950s, including a 7-0 thrashing of the Red Devils, as the Nigerian team was then called, in June 1955.

As of April 2022, Ghana had the edge in their games: 4-3 in Africa Cup of Nations trophies, a World Cup quarter-final appearance, and a 22-10 advantage in head-to-head

meetings, which include the 2022 World Cup qualifier.

Most of those victories came during the '70s and '80s, but in 1992, Ghana returned to form when the Black Stars inflicted a come-from-behind 2-1 victory over the Nigeria Super Eagles in the Africa Cup of Nations semifinal.

Nigeria since has gone on to claim continental success in 1994 and 2013, to add to its 1980 title, while Ghana — four-time African champions — has not won the trophy since 1982.

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Ghana faced Nigeria in a 2022 World Cup qualifier match.





# Thousands of Mali's Ancient Manuscripts GO DIGITAL

ADF STAFF

Google has partnered with Mali's traditional leaders to digitize tens of thousands of ancient manuscripts from the city of Timbuktu.

Political unrest in the nation's north has endangered the manuscripts. In 2013, extremists burned two libraries in Timbuktu. Many manuscripts were reported destroyed, along with many other monuments of Islamic culture. However, librarians had secretly moved most of the manuscripts ahead of the attacks.



The Ahmed Baba Institute of Higher Learning and Islamic Research in Timbuktu, Mali, is home to thousands of ancient manuscripts.

AFP/GETTY IMAGES

Timbuktu was founded as a commercial center in West Africa 900 years ago. Dating from the 16th to the 18th centuries, the ancient manuscripts cover many elements of knowledge including mathematics, medicine, science and astronomy. They provide a picture of the complex society and daily life in the region during the Middle Ages.

The digitization project showcases work done over the past seven years to preserve the documents. Up to 40,000 pages of the documents will be available online. The collection, known as Mali Magic, also contains online interactive tours of some of the country's most significant historic sites using Google Street View, the BBC reported.

Google is not the first company to try to digitize Mali's vast archives. The Tombouctou Manuscripts Project began doing so in 1999. The project by the University of Oslo worked to physically preserve the manuscripts, digitizing them and making them accessible for research. The project ended in 2007.

## TANZANIA'S FIRST NETFLIX FILM GIVES WOMEN A VOICE

ADF STAFF

Tanzanian filmmakers have released the country's first film to be streamed on Netflix. "Binti" is a story about the lives and struggles of four women surviving extreme hardship in Dar es Salaam.

The film is about the painful circumstances that some women find themselves in as they pursue a "perfect" life.

"We have dealt with so many obstacles, including post production in different countries during a pandemic, just to be seen, and this is only the beginning," Angela Ruhinda, who co-founded the film's production company with her sister, Alinda, told OkayAfrica.

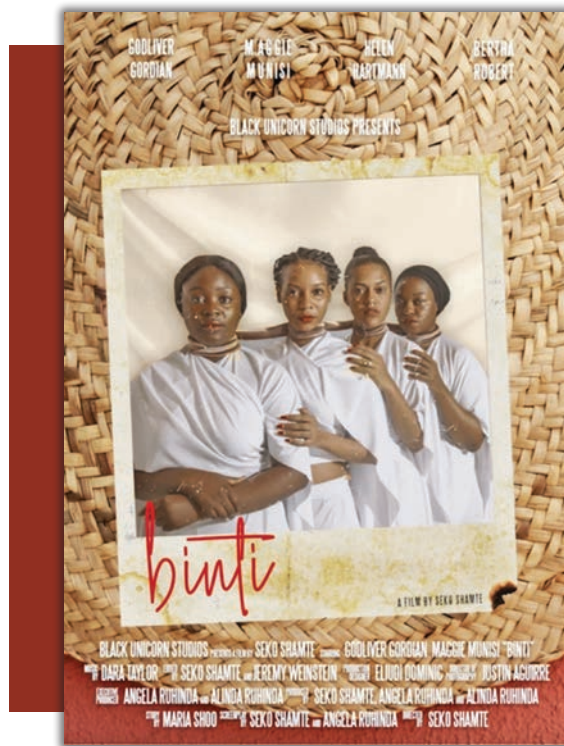
Godliver Gordian, one of the film's actors, said the film shows the pain that women in families silently deal with.

"'Binti' has given a voice to those who cannot speak," she told BBC News Swahili. "There are some things that families or couples will go through but one of the partners does not get help or talk about what they are going through."

"We had a screenwriting competition in late 2018 called 'Made In Africa,' where we asked Tanzanian writers to submit original stories with the theme of female empowerment," Alinda Ruhinda told OkayAfrica. "In 2019, they picked the winning screenplay, which was titled 'Her Life' by Maria Shoo.

"We loved the story because it highlighted contemporary Tanzanian women, and it just felt like we had never really seen it before," added Alinda Ruhinda.

"Binti is the first Tanzanian film to get on Netflix as a global acquisition!" director Seko Shamte told The Citizen, South Africa's national newspaper. "We are elated and deeply humbled by this honour. We have worked so hard to get Binti onto the screen — and to bring Tanzanian stories to a global audience."





# Nigeria-EU Event Underscores Maritime Partnership

DEFENCEWEB | PHOTOS BY EUROPEAN UNION

Naval leaders from the European Union and Nigeria met to pledge a strong partnership to combat threats at sea.

Held on April 7, 2022, the first-ever Joint Event on Strengthening Nigeria-EU Cooperation on Maritime Security took place at the Nigerian Navy's Western Naval Command in Lagos. It included port calls from the Italian Navy frigate ITN Luigi Rizzo and the Spanish Navy offshore patrol vessel ESPS Serviola. The Nigerian Navy, the EU Delegation to Nigeria and EU Member States operating under the EU Coordinated Maritime Presences initiative organized the high-level event. It included two days of joint training and capacity demonstration events.

"The security partnership goes beyond Africa, embracing the European Union and other key international players geographically outside the Gulf of Guinea because the Gulf of Guinea is of global importance as a crucial maritime route," said Rear Adm. Saidu Garba, Nigeria's chief of Policy and Plans, Naval Headquarters.

The EU said that relations have deepened between the partners in recent years through enhanced operational cooperation, joint exercises, training and increased

information-sharing. The EU praised Nigeria's leadership role in the Gulf of Guinea Maritime Collaboration Forum on Shared Awareness and Deconfliction and regional initiatives such as the YARIS information-sharing platform.

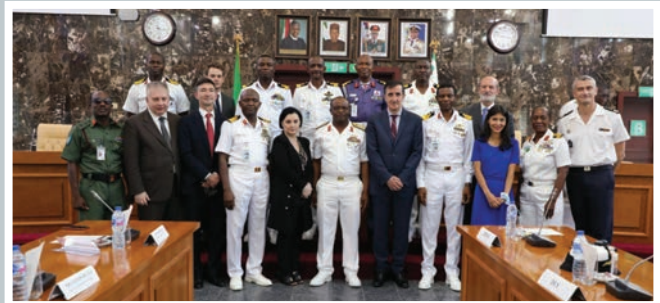
"It is good that we coordinate internally and engage strategically with the Nigerian Navy," said EU Senior Coordinator for the Gulf of Guinea Nicolas Berlanga. "Because freedom of navigation and investment of economic activities is also our freedom."

More than 1,500 tankers, cargo ships and fishing vessels navigate the waters of the Gulf of Guinea each day. The ships have origins and destinations that span the globe, making intercontinental coordination among security professionals and information-sharing important.

"Working together is sine qua non in the zeal to defend the seas by enhanced maritime security and safety needed to promote international trade, protect the environment and guarantee use of the sea for legitimate businesses," said Rear Adm. Yakubu Wambai, flag officer commanding Nigeria's Western Naval Command.



The Italian Navy frigate ITN Luigi Rizzo makes a port call in Lagos, Nigeria.



Participants attend the Joint Event on Strengthening Nigeria-EU Cooperation on Maritime Security in Lagos, Nigeria.







# Somali Police Force Inaugurates \$3 Million Maritime Facility

U.N. ASSISTANCE MISSION IN SOMALIA | PHOTOS BY EUCAP SOMALIA

**S**omalia's maritime capabilities received a boost on March 30, 2022, with the inauguration of a state-of-the-art facility for the Somali Police Force (SPF) in the capital, Mogadishu.

The \$3 million project was funded by the European Union and implemented by the U.N. Office for Project Services (UNOPS) and the U.N. Office on Drugs and Crime (UNODC). The facility will provide a base from which the SPF can operate around Mogadishu Port and along the Somali coastline.

The facility, under construction since 2018, is made up of a furnished headquarters block with information technology equipment, a detention facility, a floating jetty and boat ramp, and an accommodation unit. It also has been equipped with maritime communications equipment to support operational readiness. As part of the project, 60 police officers were trained and attended workshops on maritime law enforcement, marine engineering and maritime communications.



Dignitaries participate in a ribbon cutting at the new Somali Police Force maritime facility in Mogadishu.

"The SPF maritime law enforcement component will have a much, much more effective ability to operate and interact offshore and within the coastal areas of Somalia to ensure maritime crime is reduced," UNOPS Country Director for Somalia, Tim Lardner, said at the inauguration.

Somalia's 3,300-kilometer coastline extends along strategic international shipping routes. Somali leaders hope

to spur innovation and growth in the coastal, marine and maritime sector in coming years.

"For Somalia to continue expanding its 'blue economy' and benefit from wealth-generating opportunities its vast coast offers, maritime security and law enforcement will need to continue playing an enabling role," said Anita Kiki Gbeho, the U.N. secretary-general's deputy special representative for Somalia.

Also at the event, UNODC's Regional Representative for East Africa, Neil Walsh, highlighted that the facility will strengthen Somalia's fight against transnational and maritime organized crime.

"We're able to help police and investigators visit, board, search and seize in keeping maritime security to the highest possible capability," Walsh said. "Doing this together, there is no more important partner for us than the federal government of Somalia, and working with our partners across the U.N. and across the EU, we can make a real difference."



Sailors assigned to the Expeditionary Sea Base USS Hershel "Woody" Williams haul contraband from a rigid-hull inflatable boat after it was seized from a fishing vessel near Cabo Verde.

PETTY OFFICER 1ST CLASS FRED GRAY IV/U.S. NAVY

## Cabo Verdean, U.S. Authorities Make Major Cocaine Bust

DEFENCEWEB

**C**abo Verdean and U.S. forces made a major drug bust after intercepting a suspicious vessel during a joint maritime law enforcement operation.

On April 1, 2022, Cabo Verdean authorities and U.S. Sailors aboard the Expeditionary Sea Base USS Hershel "Woody" Williams intercepted a vessel smuggling 6,000 kilograms of suspected cocaine. The illicit cargo has an estimated street value of more than \$350 million. Cabo Verdean law enforcement arrested seven people during the operation, which was supported by Interpol.

The Brazilian-flagged fishing vessel was stopped as the African Maritime Law Enforcement Partnership conducted operations in international waters near the west coast of Africa. The U.S. personnel worked in tandem with the Maritime Analysis and Operations Centre-Narcotics and Cabo Verde's national Maritime Operations Center.

The U.S. Navy and U.S. Coast Guard have a strong relationship with Cabo Verde and a bilateral law enforcement agreement that allows support to counter maritime crime in waters surrounding the archipelago, the Navy said.



"This operation is an excellent example of strong and mutually beneficial partnership between the governments of the United States and Cabo Verde," said Vice Adm. Steven Poulin, commander of the U.S. Coast Guard Atlantic Area. "Bilateral agreements such as this allow the U.S. Coast Guard, U.S. Navy and other agencies to work alongside partner nations in addressing their unique and shared challenges through a collaborative effort."

The U.S. Navy said that in the past decade it has steadily increased maritime security cooperation with partners on Africa's Atlantic coast to improve maritime domain awareness to help them protect their sovereign waters.

"The United States has a longstanding commitment supporting African states to address their security challenges in the maritime domain," said U.S. Army Maj. Gen. Gregory Anderson, director of operations for U.S. Africa Command. "Our long-term partnerships with African states, including Cabo Verde, are vital for addressing threats such as terrorism, illicit trafficking, and piracy, and building capacity in the region to ensure long-term security and stability."



# Tanzania Shows Off Double-Barreled ‘Snake’ Rifle

DEFENCEWEB

**T**he Tanzania People's Defence Force (TPDF) is turning heads with the use of the Israeli Gilboa DBR Snake double-barreled assault rifle. The TPDF is the first military known to use such a weapon, according to a report by Janes, an intelligence company.

The Gilboa DBR Snake combines two 5.56 millimeter AR-15-type rifles into a single weapon, fed by two standard magazines. Both barrels fire when the single trigger is pulled. The idea behind the weapon's construction is to provide a rapid burst of fire to increase hit probability and faster target incapacitation with a single trigger pull.



**Gilboa DBR Snake**  
SILVER SHADOW

The weapons were displayed during a January 12, 2022, parade to mark the anniversary of the 1964 Zanzibar Revolution.

Also displayed were Type 63A light amphibious tanks, a SCORPION tracked reconnaissance vehicle, motorized barges, bridge layers, P-15 radar systems, BM-21 multiple rocket launchers and H225 helicopters.

Tanzania spends \$742 million annually on its armed forces, making it one of the most well-funded militaries in East Africa. It has sent peacekeepers to the U.N. mission in the Democratic Republic of the Congo and the Southern African Development Community mission in Mozambique.



**Tanzanian Soldiers parade with new double-barreled assault rifles during an event to mark the anniversary of the 1964 Zanzibar Revolution.**  
TANZANIAN OFFICE OF THE PRESIDENT



## Protecting Military Weapons Key to Defeating Extremists

ADF STAFF

**W**hen the extremist group Ansar al-Sunna began spreading terror in the Cabo Delgado province of northern Mozambique in 2017, its fighters brandished machetes. Today, the insurgents carry assault rifles and rocket-propelled grenades.

Analysts say a major reason for this is extremists have captured equipment from the Mozambican military.

Militant groups throughout the continent have armed themselves this way.

“Contingent-owned equipment (COE) loss has become a critical vulnerability for national armies and peace operations in Africa,” arms expert Eric G. Berman recently wrote for the Africa Center for Strategic Studies. “Non-state armed groups have regularly targeted and overrun peacekeepers and national armed forces to seize lethal and non-lethal material.”

Over the past 10 years in Africa, armed groups have targeted and taken millions of rounds of ammunition, thousands of small arms and light weapons, hundreds of heavy weapons systems, vehicles and motorcycles, uniforms, communications equipment, and fuel.

“Armed groups use this material against peacekeepers and armed forces in complex ambushes, perpetuating the cycle of munitions loss,” Berman wrote. “Platoons have been targeted at outposts. Companies have been targeted at forward operating bases. Battalions have been targeted at sector headquarters. And dozens of supposedly secure

Officials seized a large cache of weapons and ammunition from armed groups in the eastern Democratic Republic of the Congo.

SYLVAIN LIECHTI/MONUSCO

sites, both small and large, have been overrun and their stores looted.”

In addition to battlefield loss, the study revealed that illicit weapons came from national stockpiles and from peacekeeping forces due to corruption, mismanagement and theft.

Multiple studies emphasized the following as among the best practices for securing weapons and preventing them from falling into enemy hands:

- Security around weapons depots and for stockpile transportation.
- Permanent records in a registry of weapons, ammunition and related materiel for all military and peacekeeping forces. This includes weapons-marking programs, pre-deployment assessments, post-deployment stock recording and investigations into reported losses.
- Weapons recovery programs — amnesties, exchanges, militant reintegration.
- Participation in international information-sharing platforms to access weapons-trafficking intelligence.
- Sharing regional and subregional arms-control standards.

Experts also said leaders should prioritize morale, transparency, and payment and benefits for Soldiers to combat corruption and theft.





# Ghana's Farmers Guard Against Shortages With Crop Insurance

THOMSON REUTERS FOUNDATION

**A**s the sun slid toward noon, Adam Fuseina's daughter jumped off a bicycle at their home in Nafaring village in northern Ghana. She called out to her mother to say that she was back from shopping with a basket full of cooking oil, flour and greens.

"This will keep us going for a week," said the 43-year-old mother of five, standing amid the village's mud-walled shelters with fraying thatched roofs.

Things were different a year earlier, when Fuseina's family could sometimes manage only one meal a day.

Ghana's worsening floods and droughts have made growing fruit and vegetables harder, and when the staple maize and rice crops are hit as well, families like Fuseina's are left with meager yields of grains.

But in March 2021, Fuseina joined a free crop insurance project that tries to ensure that farmers aren't thrown into poverty by extreme weather, pest infestations and crop disease outbreaks.

Now when long dry spells destroy a share of the

Adam Fuseina works on her farm in Nafaring village, northern Ghana.

KAGONDU NJAGI/THOMSON REUTERS FOUNDATION

crops on Fuseina's 2.6-hectare farm, her family still can eat a healthy diet, she said.

Part of a larger initiative by Roots of Change, under the charity Opportunity International, the insurance program uses farmland and crop data collected by the agriculture ministry to help cover about 1,360 farmers in northern Ghana.

The Ghana Agricultural Insurance Pool, a group of 15 insurance providers, compares data on historical farm yields to actual harvests to verify insurance claims that enrolled farmers make.

Since it launched in 2021, the project has paid out 7,000 cedis (\$1,120) to more than 300 farmers, according to Ebenezer Laryea, Ghana's head of agricultural businesses at Opportunity International, which pays the farmers' insurance premiums.

Some farmers invest the money into community savings plans where people pool their funds so individual members can use it when they need it.



# Kenya Protects Rare Bongos

ADF STAFF

**K**enya has released the first group of mountain bongos into a sanctuary to save the rare forest antelopes from extinction in the wild.

The two males and three females were released near Mount Kenya. The country is the last place where the species is found in its native habitat. Fewer than 100 are believed to exist.

“Every subsequent year, an additional 10 mountain bongos will be translocated into the sanctuary in groups of five every six months,” Tourism Minister Najib Balala told the BBC.

The animals taken to the sanctuary are selected from breeding herds and allowed to roam and mate randomly in the sanctuary. Preparing the captive bongos for the wild has taken nearly 20 years.

As wild populations collapsed, conservationists in Kenya bred bongos with the aim of returning a select few to nature to give the vanishing antelopes a shot at survival. Officials hope to have 50 to 70 fully “rewilded” mountain bongos in the sanctuary by 2025.

This rewilding strategy is difficult. Captive bongos must be totally weaned off human contact.

The animals were a highly prized trophy for colonial-era hunters. In more recent years, the bongos have been threatened with habitat loss, diseases introduced by cattle and poaching for meat.



Two young male mountain bongos are released into a sanctuary in Kenya. AFP/GETTY IMAGES

The last wild bongo sighting in the highlands around Mount Kenya — one of their historic rangelands, along with the Aberdares and the Eburu and Mau forests — was a carcass found in 1994. A decade later, with their extinction looming, some captive bongos were brought from zoos in the United States and placed in a rewilding program run by the Mount Kenya Wildlife Conservancy.

## UGANDAN TEACHER TURNS HOME INTO CLASSROOM DURING PANDEMIC

ADF STAFF

When COVID-19 hit Uganda in March 2020, teacher Ocwee Irene Trends knew she had to take drastic action. The country entered a strict lockdown and closed all schools. The teacher had a feeling it would be a long time before her students returned.

As director of Hilder Primary School, in a poor neighborhood in Gulu, north Uganda, she knew her oldest pupils, who were between the ages of 13 and 17, were at great risk of dropping out.

She brought 30 boys and girls to live in her family home, where she home-schooled them for free.

“The past two years were crazy,” she told ADF with a laugh. “But I loved the craziness. I didn’t know how hectic it would be to have 30 teenagers.”

The government offered no funding. Most of the parents were too poor to provide assistance.

At first, Uganda’s Ministry of Education offered remote learning options with lessons broadcast on TV, radio and in print. But the funding ran out, and about 15 million children nationwide put their education on hold.



Ocwee Irene Trends is happy to be back at Hilder Primary School in Gulu, Uganda. OCWEE IRENE TRENDS

But education did not stop at the teacher’s family’s 6-hectare farm. The students helped convert her five-bedroom house. One bedroom became a classroom, and three others turned into dorms for the students.

Breakfast was at 9 a.m. Three lessons a day were taught in the classroom. The students washed clothes, fetched water, and helped farm peanuts, soy, cassava and beans. In the evenings, the students bonded by discussing their parents, their home lives and the community.

That kind of perseverance during the pandemic has inspired Uganda’s

Minister for Primary Education, Joyce Moriku Kaducu, who attended secondary school in Gulu.

“I don’t accept that there is a lost generation,” she told The New York Times. “What I agree to is [that] there’s a percentage of our children who have gotten pregnant, the young boys have gotten into the moneymaking economy and others have gone into things. That does not mean that we have lost the generation completely.”

In January 2022, Uganda ended the world’s longest pandemic-related education closure. It lasted 22 months. Hilder Primary School reopened, and the teacher’s home-schooled students took their national exams. All 30 will attend secondary school and Hilder, which is ranked among Uganda’s top 20 schools.

The students were recognized on the radio. Their pictures appeared in newspapers.

“Everyone was talking about them,” the teacher said. “It was then that I started realizing what I did. We did something good.”



# African Union Plans To Train Thousands Of New Medical Workers

ADF STAFF

Community health worker Mariam Traoré spends her days going door to door in Yirimadio, just outside Bamako, Mali, treating her neighbors for everything from malaria to diarrhea and even providing immunizations. On days when she can't visit, some patients come to her.

Traoré belongs to the network of community health care workers serving on the frontlines of Africa's health care system. Like her fellow community health care workers, Traoré is overstretched and needs support.

The World Health Organization estimates Africa needs 2 million community health workers to meet the demands of its rapidly growing population. A shortage of community health care workers is just one part of Africa's medical shortfalls. On average, the continent has about 1 doctor for every 3,000 patients, about one-third the ratio the World Health Organization recommends. It also has about one-third of the 6,000 epidemiologists the population needs, according to experts.

"If we really want to be prepared for the next pandemic, we really need to expand that," Dr. John Nkengasong, former director of the Africa Centres for Disease Control and Prevention, said during a news briefing.

To confront Africa's shortage of health workers, the African Union launched the Health Workforce Task Team

with the goal of rapidly expanding the ranks of medical personnel. The unprecedented effort seeks to attract billions of dollars in funding to train thousands of new health care workers and help Africa close the gap.

The team has a lot of work ahead of it. Sub-Saharan Africa has about 145,000 doctors for a population of 821 million — a ratio of 18 doctors per 100,000 residents, according to a study by researchers at George Washington University.

"A health system is not a health system without health workers. But Africa has remained short-changed on the numbers, the training, the skills training, the availability of health workers across the continent," said Dr. Githinji Gitahi, CEO of Amref Health Africa in a video in April 2022. "This must be addressed if we are going to be ready for universal health coverage and also ready for the next pandemic."

The WHO estimates that Africa needs more than 1 million doctors to meet international standards.

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Africa has about one-third the number of doctors it needs to treat its growing population, a problem the African Union hopes to address by expanding the ranks of health care workers.

AFP/GETTY IMAGES



# NIGERIA UNVEILS RICE PYRAMIDS

ADF STAFF

Nigeria has unveiled what have been described as the “world’s largest rice pyramids,” made with a million bags of rice, in the capital, Abuja.

The temporary pyramids were aimed at showcasing the country’s efforts to boost rice production and to make Nigeria self-sufficient in food.

It was one of the main promises that Nigerian President Muhammadu Buhari made when he took office in 2015.

Nigerian officials said the initiative has sharply reduced Nigeria’s annual rice import bill, from \$1 billion in 2015 to \$18.5 million in 2021.

The price of rice, a staple food in Nigeria, began to climb when the government closed the Seme border between Nigeria and Benin in August 2019. Nigeria said the decision was to strengthen the agricultural sector and curb extensive smuggling, especially of rice. The border was reopened in December 2020.

The increase in rice production came through the Central Bank of Nigeria’s Anchor Borrowers’ Programme, launched in 2015 to boost agricultural production and reverse Nigeria’s negative balance of payments on food. Buhari said the measure will help reduce rice prices.

“The significance of today’s occasion can be better understood by looking at the various economic strides the administration has achieved through agriculture,” he said, as reported by the Premium Times, Nigeria’s national newspaper.

Rice has a special place in Nigerian culture, with it and other countries in the region boasting that they make the best Jollof rice, a staple at celebrations.

People gather to see rice pyramids in Abuja, Nigeria.

AFP/GETTY IMAGES



## Rail Projects Signal New Era of High-Speed Travel

ADF STAFF

Governments are developing modern high-speed railway infrastructure to replace outdated diesel-powered locomotives with electric trains.

Two Al Boraq high-speed trains in Morocco

Trains arrived in Africa in the 1850s, with the first railway built in Egypt. Over the years, railways sprouted up across the continent, but mostly for industry, not passengers.

Now, with interregional trade becoming more common, railways are seen as a way to move people and goods at a large scale. These are some of the new railway developments on the continent:

- **Al Boraq, Morocco:** Morocco debuted its first high-speed train in November 2018. The continent’s first bullet train has a top speed of 320 kph. Morocco says it has reduced travel time from Casablanca to Tangier to 50 minutes from slightly over three hours, with 3 million passengers as of 2022.
- **Suez Canal on rails, Egypt:** Egypt signed a \$4.45 billion deal with transportation company Siemens Mobility in September 2021 to build an electric rail line with a top speed of 250 kph. The train will travel on an 1,800-kilometer rail line linking the Red Sea and the Mediterranean starting in 2023. The full project will take 15 years.
- **Regional Express Train, Senegal:** Senegal launched the final phase of its \$1.3 billion project in late December 2021 to limit traffic jams in Dakar. Construction began in December 2016. The final phase is expected to be completed in early 2024, according to Railway-Technology.com.
- **Bullet train, Tanzania:** Tanzania is introducing 160 kph trains that will be the fastest in East Africa by 2024. South Korea’s Hyundai Rotem is developing a 546-kilometer, high-speed electric line. In March 2021, Tanzania started testing the electrical systems for the new standard-gauge railway.
- **Gautrain, South Africa:** The Gautrain is South Africa’s fastest train, with a maximum speed of 160 kph. It began service in June 2012 on an 80-kilometer commuter rail system linking Johannesburg, Pretoria, Ekurhuleni and Tambo International Airport.



# The Great Zimbabwe

ADF STAFF

Great Zimbabwe is mostly deserted now, but in its time it was a wondrous place.

Historians believe that members of what is now the Shona tribe began work on the city-state Great Zimbabwe in the ninth century, with its heyday from about 1200 to 1300. It covered 720 hectares and was home to an estimated 10,000 people at its peak.

Its centerpiece is a structure called the Great Enclosure. Craftsmen built it, stacking more than a million stones, with no mortar, with a precision that is evident to this day. It is the largest ancient structure in all of Sub-Saharan Africa.

Its elliptical outer wall is 250 meters in circumference and is 11 meters high at its tallest point. An inner wall running parallel to the outer wall forms a narrow passage, 55 meters long, leading to a conical tower. The tower, 10 meters high and 5 meters across, may have symbolized a grain bin. Or it may have had no meaning other than as an embellishment, like the row of chevrons nearby.

It was such a source of pride to the region that when Rhodesia gained independence in 1980, Prime Minister Robert Mugabe changed the name of the country to Zimbabwe, which translates as “house of stone.”

At its peak, it was a thriving city, known for its gold mining and as a regional trading hub. But for all of its influence, it could not sustain itself. People began deserting the region about 1450. It was abandoned within a few years.



Zimbabwean archeologist Shadreck Chirikure has made it his life's work to prove that Great Zimbabwe is an important part of history. His findings have been recognized and honored internationally.

Several theories exist for the decline and eventual abandonment of Great Zimbabwe. Some say the area became overpopulated and could not produce enough food. Although it once was a trading mecca, it might have lost its business to trading regions further north. Another theory is that it was supported by gold mining and could not sustain itself after the mines were exhausted.

Some researchers have suggested that famines, water shortages and political instability caused Great Zimbabwe to outlive its usefulness. Most of the theories point to evidence that Great Zimbabwe ran out of resources.

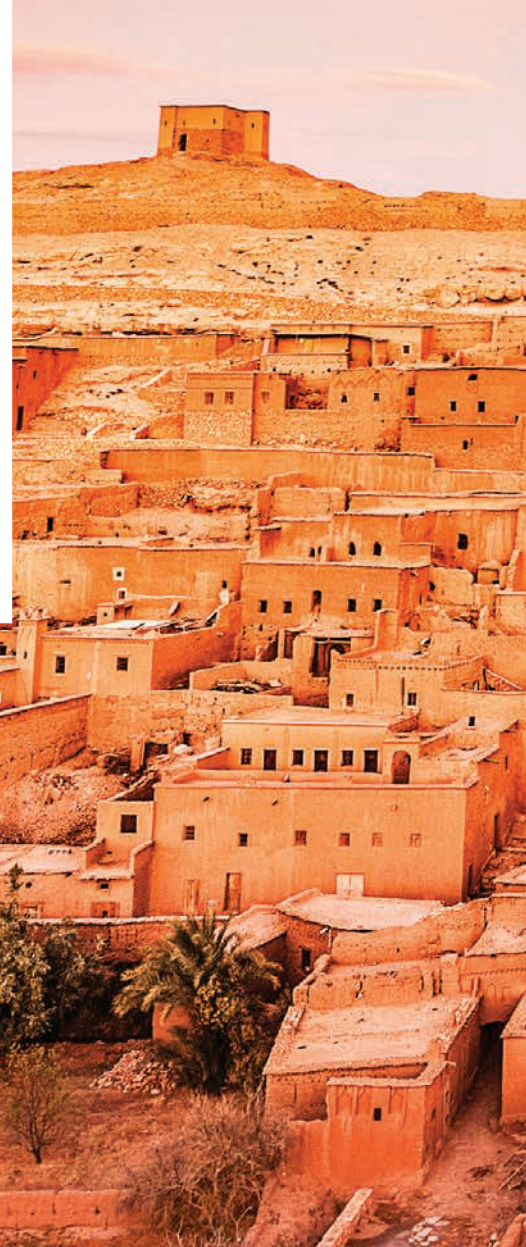
“We don’t learn from the past as much as we should,” Chirikure told *The Economist* in 2021. “Here is a place that was occupied by people who were heavily invested in production, who developed regional links, who were also interacting with other parts of the world — and they built a place with such strength and resilience.”





# CLUES

- 1 This fortified village is made up of a group of earthen dwellings.
- 2 Some structures date to the 17th century.
- 3 The site was one of many trading posts along the route leading to ancient Sudan.
- 4 Community areas include a public square, mosque, grain-threshing floor and two cemeteries — one Jewish and one Muslim.





# SHARE YOUR KNOWLEDGE

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