

# adf

A F R I C A   D E F E N S E   F O R U M

## SECURING THE FUTURE

**UAVs Enhance  
Peacekeeping  
Missions in Africa**

## PLUS

**A Conversation with  
MONUSCO Force Commander  
Lt. Gen. Derrick Mgwebi**

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***Africa Defense Forum  
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**ON THE COVER:**

Unmanned aerial vehicles and other high-tech tools are changing the way Africa's security forces protect civilians.

ADF ILLUSTRATION

**T**he future of warfare and peacekeeping is all about finding smarter, more precise and more effective ways to use military might. Technology will play a major role in this. Tech tools that are new today will become integrated into the daily life of the warfighter tomorrow.

Change is constant. Cellphones, computers and GPS devices were unheard of on the battlefield 20 years ago. Now they are essential to the planning and execution of military missions. The next generation of technology will be no different.

It is incumbent on Soldiers, peacekeepers and police officers to embrace this technology. If they don't, their adversaries will.

In many places, technology already is making a difference. In the United Nations mission in the Democratic Republic of the Congo, unmanned aerial vehicles (UAVs) are giving peacekeepers an eye in the sky, allowing them to better use limited resources to protect civilians. Along many of the continent's rugged borders, guards are using radar, cameras and satellites to stop illegal crossings. In peacekeeping missions, Soldiers and police are using high-tech tools such as small quadcopter UAVs for surveillance.

Although technology can serve as a force multiplier, one thing is clear: There is no substitute for well-trained security personnel. These new tools will not replace Soldiers; they simply will help them do their jobs more effectively. By learning about tomorrow's technology today, we all can be prepared for the challenges and the opportunities of the future.

U.S. Africa Command Staff



Members of the Kenya Defence Forces Military Intelligence Battalion set up the computer system for the AeroVironment RQ-11 Raven, an unmanned aerial vehicle. STAFF SGT. TIFFANY LUNDBERG/U.S. ARMY



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# Peacekeepers Must Earn Trust, Rise to Challenges



**Nosiviwe Mapisa-Nqakula,**  
*minister of defence  
and military veterans  
of the Republic of  
South Africa, spoke  
on May 29, 2017, the  
International Day  
of United Nations  
Peacekeepers, at the De  
Brug military facility  
near Bloemfontein,  
South Africa. Her  
remarks have been  
edited to fit this format.*

**As we mark International Peacekeepers' Day, you must rededicate yourselves to your declared professional mission and values as encapsulated in our Code of Conduct. You need to ensure that you consistently strive to deserve the trust that the people of our country and wherever you are deployed beyond our borders granted you. Through your dedicated work and discipline, rise to the challenges before you.**



Warfighting places the greatest demand on military forces. The conduct of military operations is demanding in

the physical, psychological, mental and moral sense, and that is why forces are trained and equipped for that. Therefore, it is imperative that the way the South African National Defence Force is organized, structured, trained and equipped takes these factors into account.

The present battlespace requires rapid, appropriate and proportional use of force. The experience we have garnered confirms that such force must also make provision to operate in a multinational context, which we are doing.

You are entrusted with the responsibility to safeguard our people and better the lives of millions on the African continent. Therefore, your professional status is not an inherent right but is granted through a contract with the society within which we operate. Its maintenance depends on the public's belief that professionals are trustworthy. To remain trustworthy, professionals must meet the obligations expected by society. It is this theme of professionalism that I call on you to demonstrate in moving forward as Soldiers deploying in peace support operations.

The values that you have must epitomize professionalism — service, altruism, duty,

legality, responsibility, discipline and accountability. Like other professions, we, too, have a responsibility to ensure that these values and principles endure so as to maintain the trust of the public, which we are expected to serve. In so doing, these values must be continually taught and reinforced at all levels of our organization.



**South African peacekeepers patrol Goma in the eastern Democratic Republic of the Congo.** REUTERS

Ensure that you consistently strive to deserve the trust that the people of our country have granted you. Through your dedicated work and discipline, rise to the challenges before you. Through your achievements, prove to our president and the nation that they can truly value your contribution to making Africa a safer, more secure and better place to live for generations to come.

Convey my best wishes and gratitude to your loved ones and tell them the following: "A true Soldier fights not because he hates what is in front of him, but because he loves what is behind him!"

*Nigeria Exchanges  
Prisoners for 82*  
**CHIBOK  
GIRLS**

REUTERS

Boko Haram militants in May 2017 released 82 schoolgirls who had been kidnapped from the northeastern Nigerian town of Chibok.

The terrorist group, which kidnapped about 270 girls in April 2014, has killed 20,000 people and displaced more than 2 million during a seven-year insurgency aimed at creating an Islamic caliphate in northeastern Nigeria. Dozens escaped in the initial melee, but more than 200 remained missing for more than two years.

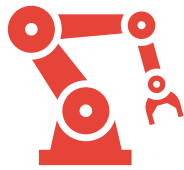
Nigeria thanked Switzerland and the International Committee of the Red Cross (ICRC) for helping to secure the release of the 82 girls after "lengthy negotiations," the president's office said in a prepared statement. The release was part of a prisoner exchange. Nigeria did not say how many Boko Haram prisoners were released.

More than 20 girls were released in October 2016 in a deal brokered by the ICRC. Others have escaped or been rescued. Many remain in captivity.

Although the Army has retaken much of the territory initially lost to Boko Haram, large parts of the northeast, particularly in Borno State, remain under threat. Suicide bombings and gun attacks have increased in the region since the end of the rainy season in late 2016.







# WEST AFRICAN GIRLS SHINE *in Senegal Tech Battle*

AGENCE FRANCE-PRESSE

**W**est African schoolgirls, some not yet teenagers, have taken a starring role at an engineering competition in Senegal, crushing stereotypes with their robotics expertise.

The Pan-African Robotics Competition in Dakar, Senegal, in May 2017 reflected the growing importance of science education as a way to spur the economy and spark development.

Rows of young women from Senegal, The Gambia and Mali screamed for their teams as robots picked up plastic cones and dropped them onto markers.

Senegal's Mariama-Ba all-girls academy won the high school category for a "made in Africa" pump solution to flooding, and girls were well-represented in the winning 11-to-15 age group after showing off their robotics skills.

"Our generation is definitely the one," said Umu Tarawally, a 14-year-old Gambian who aspires to be a doctor and explained to an audience how groundnut shells could be converted into fuel.

The event attracted 250 boys and girls ages 11 to 19 who are studying science, technology, engineering and mathematics.

Senegal is trying to open the sector by backing girls'

coding clubs and math teaching in schools. A technology hub is being constructed near the capital for research and training as part of broader efforts to fill domestic skills shortages.

"As Senegal wants to become an emerging nation, we have to master the sciences, technology, engineering sciences and maths so we have the expertise to manage our own natural resources and also to create the innovations to construct our future," said Mary Teuw Niane, Senegal's minister of higher education and research.



AFP/GETTY IMAGES

A flood of new engineers would be timely, with Senegal on the cusp of a potential oil and gas boom from deposits being found off its coast.

For Aminata Ndiaye, 15, battling machines in a Senegalese stadium was a foundation of something much larger as she took the prize with her school in the northern city of Saint-Louis.

"It has changed my future," she said. "It is not just a robotics competition."



AFP/GETTY IMAGES

## MOROCCO FIGHTS *to Save*

# *Iconic Monkey*

AGENCE FRANCE-PRESSE

Ahmed Harrad spends his days crisscrossing northern Morocco trying to persuade locals to protect the endangered Barbary macaque monkey. "If nothing is done, this species will disappear within 10 years," warns a poster on his aging four-wheel-drive vehicle.

The only species of macaque outside Asia, it lives on leaves and fruits and can weigh up to 20 kilograms. The species once lived throughout North Africa and parts of Europe.

Having disappeared from Libya and Tunisia, it now lives in mountainous areas of Algeria and Morocco's northern Rif region. Another semiwild population of about 200 in Gibraltar are the only free-ranging monkeys in Europe.

Today, the only native primate north of the Sahara, apart from humans, is in danger of extinction, according to the International Union for Conservation of Nature.

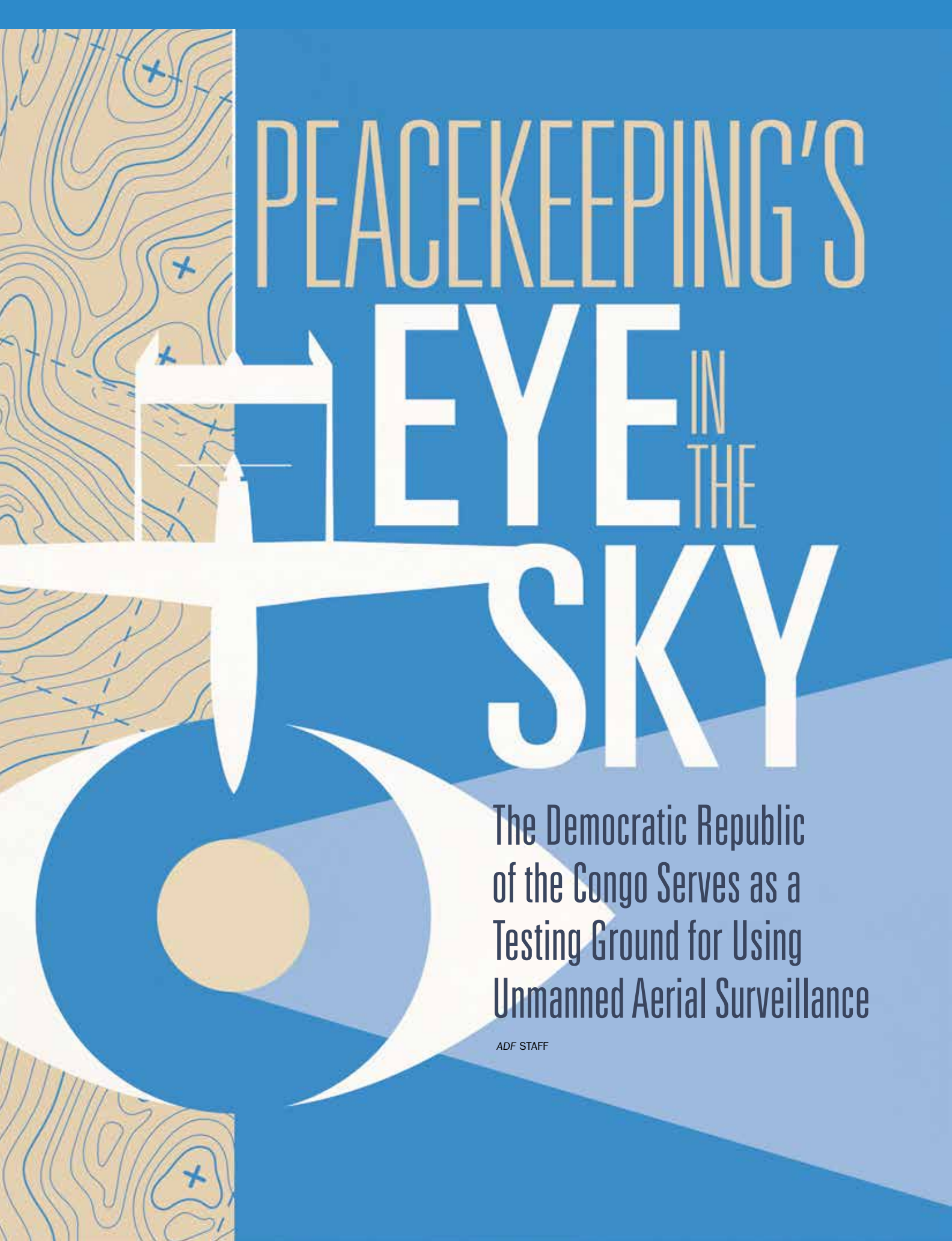
Conservationists blame poaching, tourists who feed the monkeys, and exploitation of the cedar and oak forests that form the species' natural habitat. In response, Morocco has launched a campaign to save the Barbary macaque. "We are working on two areas — monitoring and making a census of the species in the Rif and raising awareness among locals so that they actively help rescue it," Harrad said.

As head of a local association, Barbary Macaque Awareness & Conservation, Harrad has become a tireless advocate for the animal. He says it is often sold to buyers in Europe for between \$110 and \$330 despite laws forbidding the trade.

The North African kingdom never has conducted a nationwide census of the macaque, but scientists believe its numbers fall every year. They estimate that Morocco is home to between 3,000 and 10,000 macaques today, compared with 17,000 three decades ago.

They believe Algeria had about 5,500 Barbary macaques in the late 1980s. Since then, the zones in which they live have been reduced by about half.

Anouar Jaoui, director of Talassemtane National Park in northern Morocco, home to several dozen macaques, said the conservation strategy includes measures to "rehabilitate and rebuild the species' habitat." That requires "reducing the pressure from overexploitation of natural resources," he added.

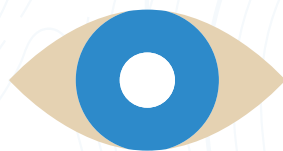


# PEACEKEEPING'S THE EYE IN THE SKY

The Democratic Republic  
of the Congo Serves as a  
Testing Ground for Using  
Unmanned Aerial Surveillance

ADF STAFF





**T**he blue, mineral-rich waters of Lake Kivu separating Rwanda and the Democratic Republic of the Congo (DRC) form a busy trade route. Merchants load goods into canoes, motorboats and ferries. The route is vital to local commerce, but all involved know the risks. The lake is not always calm, and the boats are not all sturdy.

On May 5, 2014, a type of boat known locally as a “canot rapide” capsized in strong winds. About 24 were aboard — most without life vests — and all were thrown into the choppy waters. It was the third such incident on the lake in a month. Typically, this would have meant certain death.

But on this day, two contingents of the United Nations Organization Stabilization Mission in the DRC (MONUSCO) were holding a military exercise nearby. The mission’s unmanned aerial systems (UAS) team and the Uruguayan Riverine Company were practicing coordination between small speedboats and overhead aircraft.

When a distress call came in, an unmanned aerial vehicle (UAV) took off to scan the waters. Remote pilots quickly located the capsized vessel, and the UAS team relayed coordinates to patrol boats. Within 15 minutes rescuers arrived and pulled 14 people from the lake.

This search and rescue operation is not a typical use of a UAV, commonly called a drone, but it helps illustrate why the aircraft are becoming more widely used in peacekeeping missions.

“UAVs do a better job in protecting civilians because they provide real-time pictures of situations as they develop on the ground,” said Hervé Ladsous, undersecretary general for peacekeeping operations at the U.N. “You can act more quickly and more decisively.”

#### HELP FROM ABOVE

MONUSCO became the first peacekeeping mission to use UAVs in 2013 when it took delivery of five Italian-made Selex ES Falco aircraft. The UAVs have a wingspan of 7 meters and can fly for 14 hours with a range of 150 kilometers. They are operated remotely by pilots at ground control stations and are never armed.

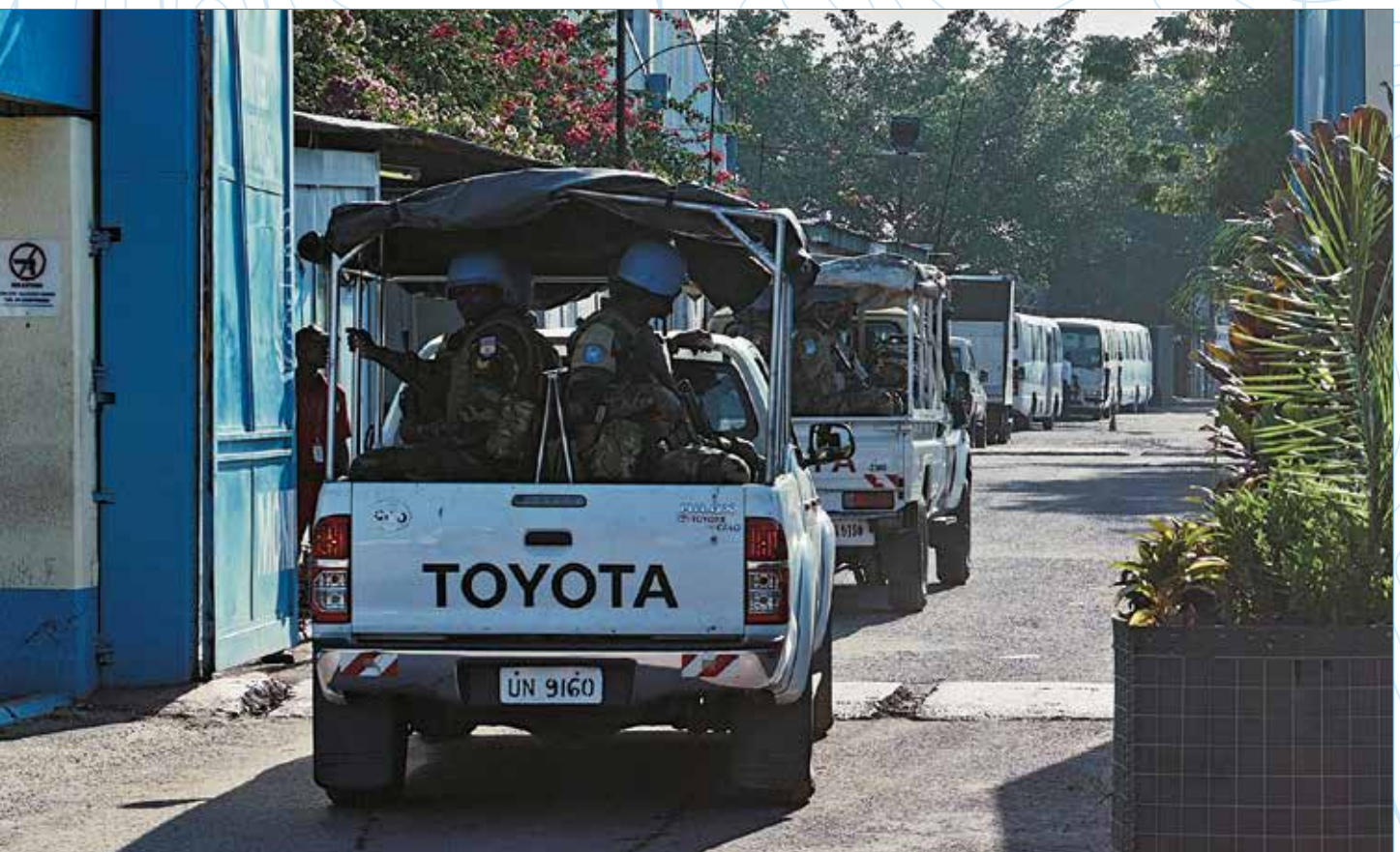
Painted bright white and emblazoned with the letters “U.N.,” the Falcos have night-vision cameras with electro-optical and infrared thermal technology. They can detect



Uruguayan Soldiers serving in the U.N. mission in the Democratic Republic of the Congo patrol near the shores of Lake Kivu.

UNITED NATIONS









An Italian-made Selex ES Falco aircraft sits in a hangar in Goma, Democratic Republic of the Congo. The UAVs have a wingspan of 7 meters and can fly for 14 hours with a range of 150 kilometers.

AFP/GETTY IMAGES

Aerial footage released by the U.N. shows a vessel capsized in Lake Kivu on May 5, 2014. Response teams were able to rescue 14 people, thanks, in part, to information gathered by the U.N.'s unmanned aerial systems program.

UNITED NATIONS

Peacekeepers serving in the U.N. Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) enter the compound in Kinshasa. MONUSCO was the first U.N. mission to use unmanned aerial vehicles.

REUTERS

body heat through heavy cloud cover or a forest canopy. Former MONUSCO UAS Chief Lt. Col. Tony Kerbey said the unmanned devices are ideal for peacekeeping's most "dull, dirty and dangerous" tasks.

"UAS have proven to be part of the solution to an intractable set of problems," Kerbey wrote. They "save time, energy and money whilst allowing ground forces to concentrate on what's important and avoid unnecessary deployments into potentially dangerous situations." The DRC mission has been a perfect testing ground for unmanned aerial surveillance. The mission is tasked with maintaining peace in a country measuring nearly 1 million square kilometers with a mere 2,250 kilometers of paved roads. The UAVs were first stationed in Goma, in the restive North Kivu province where an assortment of militias fight for control. Belligerents include the FDLR, a group of Hutu extremists who carried out the genocide in Rwanda; the M23 rebels, a group of former Congolese soldiers; and the Allied Democratic Front, a group of Islamic extremists.

Monitoring this area is difficult, and responding to distress calls is nearly impossible. Often, peacekeepers find themselves reaching villages that have already been left in ashes.

Early on, the UAV program registered some successes. Between May 2014 and January 2015, 438 FDLR members surrendered to U.N. and Congolese forces. MONUSCO leaders attributed this, in part, to a perception among militants that the peacekeepers had gained a tactical advantage through aerial surveillance. The drones operated "unmuffled," meaning the loud buzzing sound could be heard from the ground and instilled fear in militia groups.

"They have also a psychological effect," said Martin Kobler, former head of MONUSCO. "Everyone knows they are flying."

MONUSCO also used the UAVs to track illegal mining operations, illegal weapons smuggling, road conditions and displaced people.

Perhaps most important, the MONUSCO UAVs were paired with the mission's Force Intervention Brigade. The FIB includes about 3,000 people and represents one of the most active, offensive military efforts in the history of the U.N. Adding the UAVs allowed commanders to monitor rebel groups in remote areas and order rapid response by the FIB when civilians were threatened. FIB commanders have reported that once they locate an enemy position on the ground, they call in the UAV for "target verification" to confirm that the enemy is not embedded in a civilian area. Once they confirm the target, they either call in attack helicopters or ground forces. This eye in the sky helps minimize civilian deaths.

"We get much better information about what is happening on the ground," Ladsous said. "We can see groups on the prowl. We now have a knowledge of what is happening on the ground and how to mitigate or to proactively intervene."

## RAPID AND FLEXIBLE

UAV use is becoming more common in Africa and only promises to increase.

Algeria, Botswana, Nigeria and South Africa are among the countries operating surveillance UAVs in their national militaries. The U.N. mission in Mali flies UAVs over its vast and dangerous north, and the U.N. mission in the Central African Republic uses them to monitor rebel activity and warn civilians of possible attacks.

Peacekeepers see the tools as a low-cost force multiplier. In MONUSCO, for example, the U.N. pays Selex \$13 million annually to operate the UAVs. Although this may sound costly, it is a fraction of the mission's \$1.2 billion annual budget.

Dr. Ralph Rotte, a professor of international relations at RWTH Aachen University in Germany, has studied the use of UAVs in Africa. He told *ADF* that UAVs give peacekeepers two main military advantages: First, they offer improved situational awareness of enemy movements and concentrations. Second, they suppress enemy activity in certain areas and may dissuade or demoralize enemy fighters.

The key for peacekeepers, he said, is translating the data collected from UAVs into action.



A U.N. base near the village of Kibumba, North Kivu, Democratic Republic of the Congo. The U.N. has used unmanned aerial vehicles to monitor rebel activity in North Kivu.

AFP/GETTY IMAGES

“Data obtained has to be analyzed effectively and fast, and has to lead to rapid, flexible reaction of forces on the ground or in the air by highly mobile and air-deployable forces or attack helicopters,” Rotte said. “So you have to have the analytical capabilities as well

as combat forces available to take advantage of superior situational awareness, and certainly the political will and military leadership qualities to act with resolution.”

This has been a challenge in the DRC. Although Selex sent 10 contractors to maintain and operate the UAVs, the U.N. didn’t have enough people to analyze the images. According to a report by *African Defence Review (ADR)*, only about 15 people were reviewing the UAV images and recommending action.

“It’s fascinating, but it’s also frustrating,” Lt. Col. Matt White told *ADR*. “You know you could do more.” White is a British artillery officer who was head of UAS operations for MONUSCO until October 2015.

The mission has suffered other setbacks. Due to logistical and manpower constraints, only one of the five UAVs could be flown at a time, according to *ADR*. The UAVs cannot fly in bad weather, which has frustrated U.N. personnel who have asked for help only to be told to wait. In 2014, one of the UAVs crashed during landing in Goma and needed significant repairs.

## GETTING IT RIGHT

As UAVs become more common in peacekeeping and military operations in Africa, Rotte said it is imperative to better understand the importance and the limitations of the aerial surveillance systems. He offered several guidelines:

**Manage expectations:** The announcement that UAVs will take to the skies as part of a peacekeeping mission will generate a lot of hope from civilians. They might expect UAVs to stop every attack or to be used in ways that are not part of the mission mandate. When these hopes are not realized, it may engender anger toward peacekeepers. Therefore, Rotte said, it is important to explain clearly to the public the limitations of UAVs and how they will be used. Transparency is key.

**Not a replacement for troops:** It is tempting to view UAVs as a substitute for traditional forces. This is not the case. UAVs are only effective when the situational awareness advantage they offer makes traditional forces faster and more effective.

**Dialogue on data:** Civilians and their elected representatives need to make clear how and when UAVs should be used and how the data collected should be managed. This could come in the form of a national, regional or continental policy on UAV use. Open conversations are needed on the subject. Organizations such as the U.N.





An unmanned aerial vehicle took this image above a village near Goma, Democratic Republic of the Congo.

UNITED NATIONS

between civilians and the military. Furthermore, the high-profile deployment of UAVs in peacekeeping missions could generate an arms race among countries or even between military branches in the same country. Some civilians in the DRC already have come to mistrust UAVs, and some aid agen-

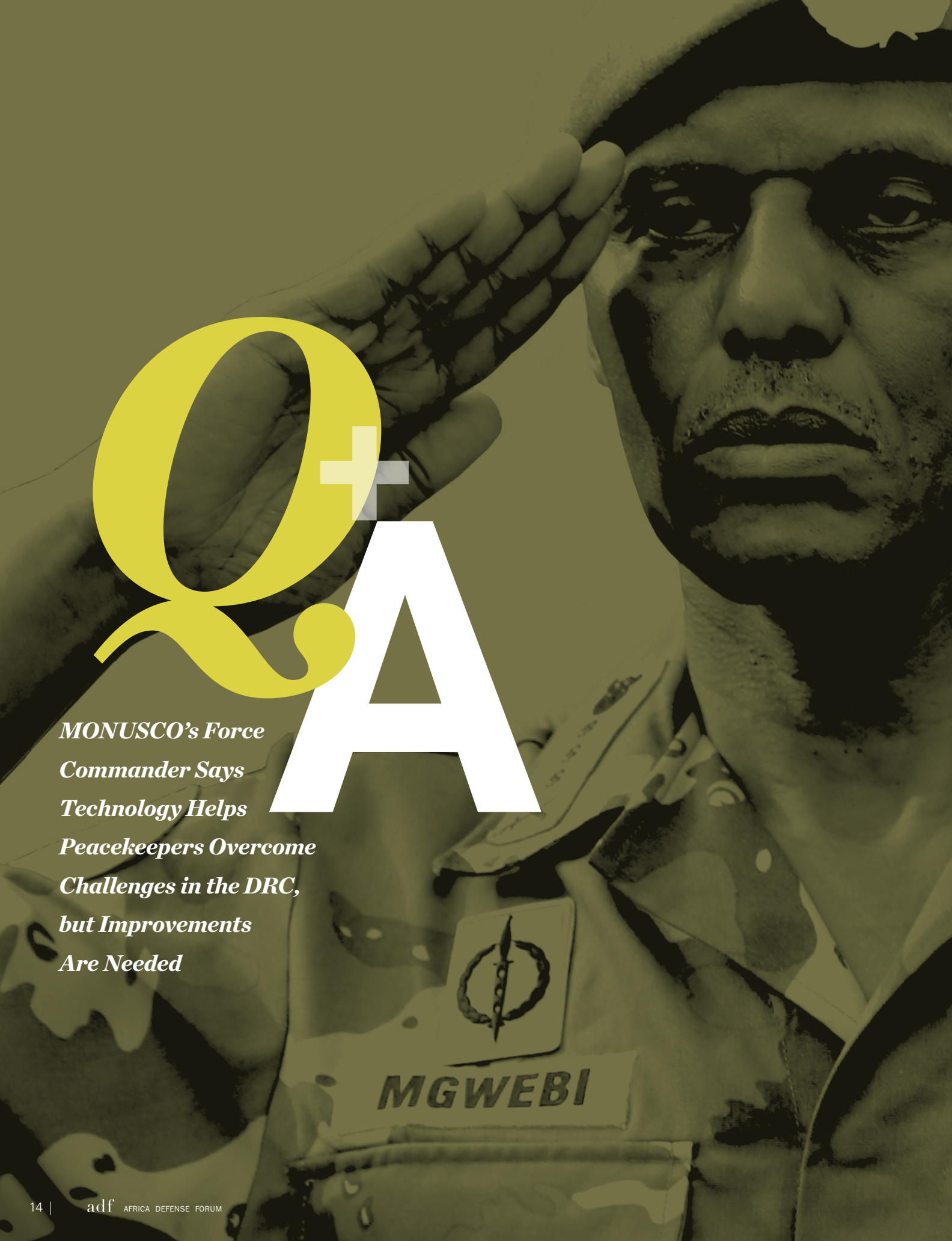
cies have refused offers of assistance from MONUSCO to avoid being linked to the program. This should be addressed, Rotte said.

In the end, the lesson from the first years of UAV use in the DRC is that the information they provide is only valuable when it is acted on. MONUSCO leaders believe the early returns have been positive.

"If we are deaf, if we are blind, how can we do our job?" Ladsous said. "It's simply a matter of acquiring the right tools." □

and the African Union also must decide whether the increased information provided by UAVs gives them new responsibilities to intervene in more humanitarian events such as the Lake Kivu boat accident. Better situational awareness also will make decisions about the use of force and target selection more complicated.

**Mind the civil-mil gap:** Rotte said he fears that UAVs concentrated in the hands of elite units within national militaries or foreign peacekeepers will widen a gap



# Q+A

*MONUSCO's Force  
Commander Says  
Technology Helps  
Peacekeepers Overcome  
Challenges in the DRC,  
but Improvements  
Are Needed*



# PROJECTING FORCE TO PROTECT A COUNTRY

PHOTOS  
BY MONUSCO

*Since 2016, Lt. Gen. Derrick Mbuyiselo Mgwebi of South Africa has served as force commander of the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO), the largest U.N. peacekeeping mission in the world. Mgwebi has more than 35 years of military experience and has held multiple senior posts for the South African National Defence Force (SANDF), including his current position as chief of joint operations. Previously, he served as the SANDF director of special forces, director of training and operations, military secretary at the Ministry of Defence, and director of the South African Army Infantry Formation. From 2004 to 2006, he served as force commander for the U.N. Operation in Burundi. He spoke to ADF from MONUSCO headquarters in Kinshasa. This interview has been edited to fit this format.*

**ADF: The Democratic Republic of the Congo (DRC) poses unique challenges due to its size, difficult geography and the fact that it has only 2,250 kilometers of paved roads. How have you worked to overcome these daunting challenges?**

LT. GEN. MGWEBI: For the past 15 years or so we have, as a MONUSCO force, been more static in the sense that we've been occupying certain hot spots where we put up company operating bases, and we operate from those bases. But with the reduction of the force, we are required to work a little bit smarter. We've been

directed by the Security Council through the secretary-general that we need to be flexible, we need to be versatile. Now, that flexibility demands that the forces must be able to have information through the use of technology and in terms of situational awareness, not only using the UAVs (unmanned aerial vehicles), but we're going to have to collect intelligence and be able to monitor the geolocation of those who are communicating with bad intention and

Lt. Gen. Mgwebi visits villagers in North Kivu province in the eastern Democratic Republic of the Congo.



be able to have an idea of where they're operating. Then, to be more flexible and agile, you need air assets. You must be informed by the intelligence, get it in time, and conduct intelligence-driven operations using helicopters. That means your forces must be trained in conducting heliborne operations: rappelling, fast-roping and be able to sustain themselves for 14 or 15 days without being resupplied. You need to be able to be there and do what needs to be done with less effort in terms of traveling by road. So we are looking at air assets, we're looking at technology, we're looking at a different type of force. Of course, it speaks to training and it speaks to attitude. The protection of civilians is going to be done through the projection of force.



**ADF:** In 2013, MONUSCO became the first peacekeeping mission in the world to use UAVs when it took delivery of five Italian-made Selex ES Falco aircraft. Has this tool helped you fulfill your mandate to protect civilians?

LT. GEN. MGWEBI: It has. First of all, you've got different armed groups in the Congo operating in remote areas. The UAV saves you the time and effort and resources to go everywhere. The UAV can scan the environment, it can take pictures, regardless of if it's during the day or during the night. Then you can be able to examine the object you are seeing. Is it a base of an enemy armed group or is it a base of the government armed forces? You can confirm that. Once you can determine whether they are armed people or if they're women and children, your targeting is assisted and simplified by the UAV. Then when you go out there, you know what kind of force you need to apply depending on your analysis of the target.

**ADF:** MONUSCO became a different type of U.N. mission in 2013 with the creation of the Force Intervention Brigade (FIB), a 3,000-troop unit that is authorized to use force to neutralize enemy armed

**groups. How has the FIB been used, and how has it helped your ability to take the fight to militia groups? Has it worked as intended?**

LT. GEN. MGWEBI: Has it had its intended effect? The answer is yes and no. The yes part of it is when it was formed it was quite clear that there was the M23 rebel group sitting out there overseeing Goma. It was wearing quite clear defense uniforms. No women, no children. It was a classical enemy that everyone could see. Therefore, coming up with the FIB, that was a good idea and that was a good tool to deal with the M23. They did very well. Since then, they came to realize that the remaining armed groups, especially the foreign ones, like the [Allied Democratic Forces], the FDLR, the LRA, they're a different kettle of fish. They are wearing FARDC (Armed Forces of the DRC) uniforms, they have children in the army, they have women in the army. They tend to mix with the various communities. When you are ready to attack them, sometimes they change uniforms and present themselves as ordinary farmers. So it becomes more of an asymmetric kind of war, which then changes totally the attitude and the culture and the equipment and the training of the original FIB. So, in 2016, when I came on board as the force commander, I realized this. We have gone back to the member states, those who contribute to the FIB, and said let's look at the culture of the FIB, let's look at the training, the equipment, and begin to say: "Are they really ready to engage in this asymmetric war?" We all agreed that something needs to be done. Hence, we have begun to look at a different culture and different equipment to deal with what's facing us. That's why I said, 'Yes, they've been successful,' but now they've come up against an asymmetric situation, which we need to analyze to make sure it can be used effectively.

**ADF:** During the last reporting period, the secretary-general said 85 percent of "protection of civilian" alerts were responded to either by MONUSCO or the FARDC. What does this mean, and is it good enough?

LT. GEN. MGWEBI: There's a challenge that speaks to the chain of defense in the troop-contributing countries. If this is what you'd call a war, peacekeeping more belongs to platoon commanders and company commanders. The people must respond in time at that level. There is a challenge in terms of some not responding as soon as possible. We have also designed a tool to measure their effectiveness and their performance. It just gives us an example to say to the battalion commanders: "You are lagging there." Because of the issue of possible reduction of forces, we are saying that if you are found wanting, we will be recommending that any battalion commander and his forces should be sent home because they are not effective, they are not performing, they are not responding. We are trying to encourage



“WE ARE REQUIRED TO  
WORK A LITTLE BIT  
SMARTER. ... WE NEED TO  
BE FLEXIBLE, WE NEED  
TO BE VERSATILE.”





Tanzanian special forces Soldiers serving in the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo communicate with partner forces during an operation in the forest of Kalima.





them, we are trying to assist them, but also we are trying to tell them that at the end of the day there must be consequences for not responding. So, 70 to 80 percent, these are not the results we are happy with. We should be able to respond, if possible, 100 percent of the time. We are not perfect, but we are striving for perfection.

**ADF: Should the FIB model be replicated in other peacekeeping missions?**

LT. GEN. MGWEBI: If you look at South Sudan, they've also come up with a regional protection force of 4,000 troops, so the U.N. is following that route. It's good but there are things we need to fine-tune. One of those is the issue of command and control and the issue of unity in terms of the bigger force of the U.N. and the cohesion, which must be there. It's a big challenge because you have a sense that some of the forces tend to look at the structure of a force like the FIB in a different manner, and the FIB themselves tend to look at the others as if they're not here for real commitment and readiness to do what needs to be done. So the command and control structures, the working relationship, it needs strong leadership and, of course, it needs planning in terms of how you write your mandate and the rules of engagement. You need to develop a working relationship with all those serving. Because you'll find the FIB working in an area of another brigade and they need to be supported by that brigade, but if the working relationship is not good, if command and control lines of communication are not clarified, then there's going to be a challenge in terms of support and it can lead to dysfunction. It's a very sensitive and very complex arrangement we have.

“WE ARE NOT PERFECT, BUT WE ARE STRIVING FOR PERFECTION.”

**ADF: You restarted the cooperation agreement with the FARDC. How would you describe the cooperation between MONUSCO forces and the FARDC? Have there been successes? Are there areas that need improvement?**

LT. GEN. MGWEBI: The process is advanced. We're probably on the third year. Initially it was reviewed on a six-month basis, but we felt that six months is too short a time, so we moved to an annual basis. We are now looking at what has worked and what is not working. I think, in the main, it's working very well when we talk about joint planning, joint operations, coordinated operations. Of course, you have a challenge with the human rights due diligence policy that once you start working with the non-U.N. forces we need to make sure that the forces we're working with are

not involved and have never been involved in human rights abuses. Some of the commanders of the FARDC on the ground are a little bit sensitive to this. But we try to indicate to them that this is not only applicable to them, it is applicable to all of us and therefore it is also part of informing and educating them about the human rights due diligence policy. It facilitates our working, it also reduces some of the human rights violations by some of their junior commanders and their folks on the ground. As I'm speaking to you we are also conducting joint planning. That will cover us all the way from the northern border of DRC, which is bordering the Central African Republic, South Sudan and Uganda, and it goes all the way south into Uvira, which is bordering Burundi and Tanzania. So if you look at that Eastern front, we are conducting joint planning, which is going to lead to us conducting operations in a coordinated, joint way for the next three months; therefore there is improvement.

**ADF: In April 2017 you were asked to stay on for a second term as force commander. Looking forward at the rest of your tenure, what do you think is going to be the most important thing you and MONUSCO can do to lay the groundwork for a lasting peace in the DRC?**

LT. GEN. MGWEBI: I think the most important thing for the DRC is that the politics must align, and there must be good governance. All that we are doing is trying to create a conducive environment for those things to happen. We are not going to succeed unless and until the leadership, the general populace and the civil society agree that there needs to be good governance, and they need to respect the people. For me, I would love to see

that the security sector reform is taken seriously. You're giving people skills to do the right things, but if the direc-

tion they are getting at a political, strategic level is not a good direction or a good policy, then you are going to be challenged for the rest of your life. So, for me, the thing I am going to be working very hard for is that the MONUSCO security sector reform is strengthened and also work very closely with the Congolese in uniform so they begin to understand that they can get out of this challenge only if they look at how they do their administration, how they govern and manage their forces. This includes payment, taking care of the sick, and making sure that those who are deviating from the good policy direction, they take them to task, and if it comes to it, punish them for their deeds as a lesson to the others. That is what I will try to do while I am around here. At the end of the day, we want the security forces of the DRC to do it on their own, without us. □

# COMPLEX MISSIONS

SIMPLE TECHNOLOGY





# U.N. Police and Soldiers Can Enhance Peacekeeping With Off-the-Shelf Tools

ADF STAFF

As the summer heat baked the Central African Republic (CAR), tensions between ex-Séléka and Anti-Balaka forces boiled near the town of Kaga-Bandoro in August 2016. Clashes continued in September, killing four and displacing more than 3,000 people in nearby Ndomété. By October, the region was a powder keg.

Peacekeepers dismantled illegal checkpoints around Kaga-Bandoro, angering ex-Séléka forces, who had used them as a source of income. Security began to deteriorate, and nongovernmental organization (NGO) staffers became targets of violence. By October 11, about 2,000 Muslims demonstrated peacefully, denouncing mistreatment at the hands of CAR Armed Forces.

Then the body of a Muslim man was found in the nearby Travaux Publics community on October 12. Armed men, blocking access to United Nations peacekeepers, carried the man's body toward a bridge in Kaga-Bandoro.

"Afterwards, armed Muslim youth and ex-Séléka emerged from different neighborhoods and moved towards the Evêché Internally Displaced Persons (IDP) camp and the prefect's office, and clashed with Anti-Balaka and MINUSCA Forces," according to a report by the

Senegalese peacekeepers patrol streets in Gao, Mali, in May 2017. Night-vision equipment is a valuable low-cost tool for peacekeepers.

HARANDANE DICKO/  
UNITED NATIONS



ADF ILLUSTRATION

United Nations Multidimensional Integrated Stabilization Mission in Central African Republic (MINUSCA).

The violent clashes resulted in the deaths of 37 civilians, many other injuries, and the burning of houses, NGO property and churches. The violence also forced IDPs toward the MINUSCA base in search of protection. Peacekeepers there — particularly U.N. police forces — used simple, off-the-shelf technology to help handle the unfolding crisis.

Forces deployed a small \$2,000 quadcopter unmanned aerial vehicle (UAV) to get a wide-ranging picture of the area. The quadcopter went up about 70 meters and gave authorities a view that stretched out 2 kilometers in all directions. Peacekeepers assessed the crowd, saw

how many people were seeking refuge, where they were coming from, and how many houses were burning. This situational awareness helped them plan where to position police and military forces. “We were able to send our formed police unit (FPU) based in that area to places to protect the people and to take action to disperse or divert people that were actually chasing IDPs,” said Widmark J. Valme, former chief of Geospatial, Information and Telecommunications Technology Section at MINUSCA.

In one incident, police learned that an armed group was in a house near the mission camp. “We sent the quadcopter to have a look,” Valme said. “As we were observing from above, our FPUs came down and encircled the place, and indeed there were people there with weapons with ill intent. They were quite surprised that we were there in such a number, and they were able to be apprehended, lessening the likelihood that they would do further damage to the existing situation.”

**“THE U.N. IS NOW PUTTING TECHNOLOGY IN THE FIELD AT A LEVEL THAT THEY NEVER HAVE BEFORE.”**

~ Dr. Walter Dorn, professor of Defense Studies at the Canadian Forces College

#### A LEADER IN PEACEKEEPING TECHNOLOGY

The story of Kaga-Bandoro is one of many examples of the effective use of technology in Africa in recent years. But technology hasn’t always been a hallmark of U.N. peacekeeping missions. Dr. Walter Dorn, professor of Defense Studies at the Canadian Forces College, has a temporary appointment to the U.N. to work on peacekeeping technology. His 2011 book, *Keeping Watch: Monitoring, Technology & Innovation in UN Peace Operations*, makes clear that the use of technology — even

inexpensive, readily available items — is a relatively new development for the U.N.

Since the 21st century began, most uniformed peacekeepers — about 70 percent — are from the developing world and often have little technology to contribute to missions. The U.N. often is underfunded and underresourced, especially for the multidimensional missions common in Africa. But since *Keeping Watch* was published, the U.N. has made technology and innovation a priority. “There are

Peacekeepers and U.N. Mine Action Service personnel investigate a mortar impact at the U.N. camp in Kidal, Mali, which was attacked June 8, 2017, by al-Qaida insurgents.

SYLVAIN LIECHTI/UNITED NATIONS





structural improvements and cultural improvements and also really practical, pragmatic improvements where the U.N. is now putting technology in the field at a level that they never have before,” said Dorn, who spoke to *ADF* as an academic, not on behalf of the U.N.

“The good news is that Africa is leading in terms of the use of technology in peacekeeping,” Dorn said. “We have the mission in the Central African Republic and in Mali as being the cutting edge of technology in the field. So we saw new technologies deployed in CAR and Mali, including aerostats and UAVs. In the Congo, the U.N. had its first mission assets UAV, which was deployed in 2013. And now the U.N. has more than 50 UAVs in Mali.”

Aerostats are tethered balloons equipped with cameras used in CAR and Mali. MINUSCA has used a HoverMast, which is a mini-quadcopter UAV. It is tethered to a truck and can be deployed up to 50 meters high and slowly driven along to give personnel a bird’s-eye view of an operations area.

Aerostat and HoverMast technology was essential in providing a secure environment when Pope Francis visited CAR in 2015.

A June 8, 2017, incident in the northern Mali city of Kidal underscored the importance of technology in peacekeeping missions when insurgents launched a nighttime mortar and rocket attack on the United Nations Multidimensional Integrated Stabilization Mission in Mali camp. A radar ground alert system detected incoming rocket and mortar fire, giving personnel a chance to scramble into bunkers.

Al-Qaida’s affiliate in Mali claimed responsibility for the attack, which killed three peacekeepers from Guinea and wounded eight others, according to Voice of America. Still, without the warning system, the outcome could have been catastrophic. “You would have had many fatalities as a result of that mortar barrage,” Dorn said.

#### TECHNOLOGY BENEFITS U.N. POLICE

United Nations Police (UNPOL) officers typically protect U.N. personnel and facilities, and sometimes maintain law and order by reinforcing and re-establishing domestic law enforcement. UNPOL officers also advise, train and support local police forces. UNPOL officers usually are deployed as individuals or as FPU, which consist of a cohesive 140-person force.

A number of low-cost pieces of technology could benefit UNPOL, Valme said. For example, body cameras attached to helmets or uniforms could help officers scan their surroundings and be useful in training. The same is true of dashboard cameras for police vehicles.

Night-vision goggles are helpful, and equipping officers with tablet computers allows for immediate on-site data entry. Information could be fed into a central database for analysis at headquarters. Multipurpose UHF radios also would be ideal.

Dorn said the use of hand-held technology is growing, but there is room for improvement. “In terms of body

*Continued on page 25*

# Peacekeeping and Technology

## The MINUSCA Deputy Force Commander’s Perspective

ADF STAFF

In his 16 years serving in peacekeeping missions across Africa, Maj. Gen. Sidiki Daniel Traore has seen a lot of changes.

Traore, deputy force commander of the United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA), said peacekeepers no longer stand between two clearly defined warring groups. Instead, peacekeepers now face fighters who hide among civilians and use asymmetric tactics, such as suicide bombing.

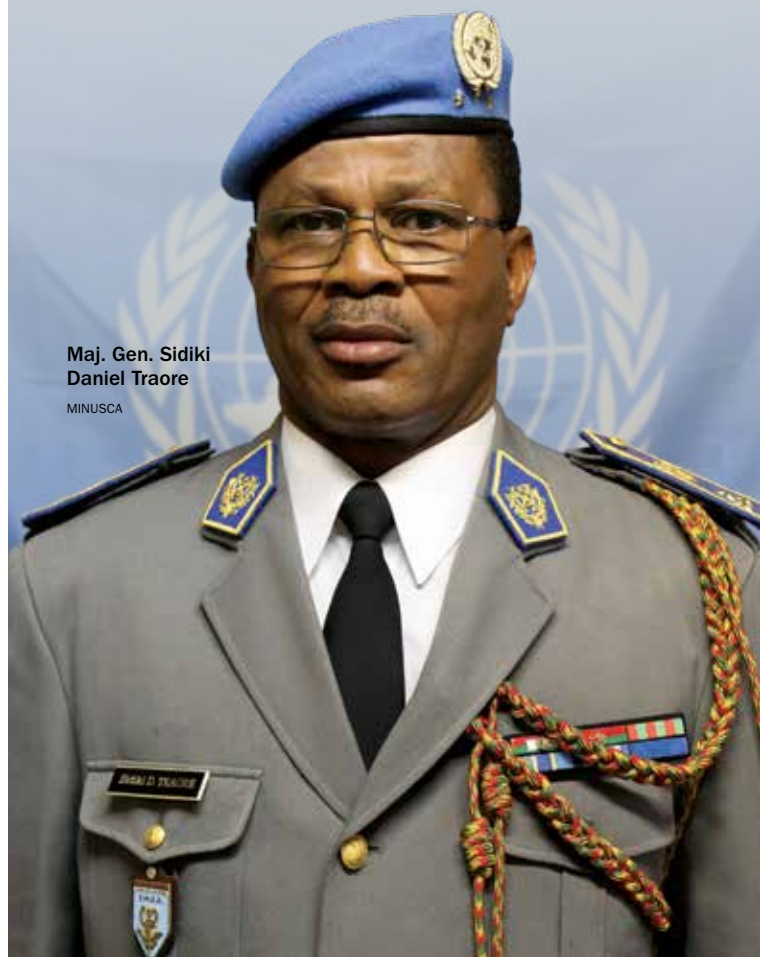
Adapting to these challenges will require training and technology.

“New challenges in peacekeeping justify the use of new means,” he told *ADF* in an email interview.

MINUSCA is at the forefront of peacekeeping technology in Africa. The mission uses seven quadcopters, an unmanned aerial vehicle (UAV), and monitoring and surveillance technology, such as aerostat balloons, a HoverMast tethered quadcopter and more. This allows MINUSCA to assess the

Maj. Gen. Sidiki Daniel Traore

MINUSCA



environment, identify where attacks are most likely to happen, and put its resources there.

“Ultimately, it helps to better protect the civilian population and save their lives, to improve the security of U.N. peacekeepers and their camps, but also to provide an environment for humanitarian agencies, where they can work safely [and] enhance their situational awareness,” said Traore, who is from Burkina Faso.

The quadcopters have a track record of success in MINUSCA. The mission uses them to identify threats and security shortfalls in areas surrounding MINUSCA and camps for internally displaced people. Two quadcopters help convoys see potential ambushes, route obstructions and key infrastructure damage.

A French UAV unit helped MINUSCA forces learn about damaged bridges and potential ambush locations in key areas, Traore said. “Also, it helped to identify armed groups’ activities in mining sites and to provide early warning of malicious activities prior to high delegation visits,” he said. “During a zone reconnaissance, the UAV identified a suspicious activity of armed elements. A patrol conducted subsequently on the spot discovered a pharmacy with ties to a specific armed group well known for the use of narcotics and medications altering the mind.”

In Bangui, capital of the Central African Republic (CAR), officials used an aerostat balloon, a HoverMast

tethered quadcopter and a medium-range fixed electronic observation system to spot and disperse an October 2016 youth demonstration before it could spread violence, Traore said. A month earlier, the fixed observation system helped rescue a U.N. staffer in danger of being attacked by a hostile crowd after a traffic accident. Authorities used all of these technologies to secure Pope Francis’ two-day visit to the CAR in November 2015.

Establishing standards for technology across different U.N. peacekeeping missions will be a challenge because each mission operates in a different environment, Traore said. “However, the embedding of small UAV systems into military units would bring a lot of improvements,” he told ADF. For individual peacekeepers, night-vision equipment is essential, as well as “any other tool that could improve the day and night surveillance capacity of troops.”

Technology, he said, is not a luxury; it’s a necessity. “Technology can no longer be dispensed with in today’s peacekeeping missions because, wherever these tools have been used, they have demonstrated their relevance and, in particular, have put the force a step ahead of armed groups (or terrorist organizations) and eventually helped to better protect civilian populations, peacekeepers themselves and U.N. staff at large.”

## The Well-Equipped Police Officer

A number of relatively inexpensive hand-held and body-mounted tools can significantly enhance police officers’ capabilities in peacekeeping missions.

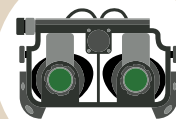
**Multipurpose UHF radios** allow for effective communication between personnel and bases.



**GPS tracking systems** let officers effectively navigate in areas where roads and landmarks are absent.



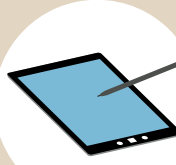
**Tasers** enable United Nations police officers to use nonlethal force if necessary.



**Night-vision goggles** allow police officers to see clearly in the dark.



**Body cameras** can be attached to helmets or uniforms to record interactions, scan surroundings and help with training.



**Tablet computers** can instantly collect data and feed it to sector headquarters.



**Cellphones and smartphones** give police email, internet, camera, voice recording, GPS and social media applications in the field.

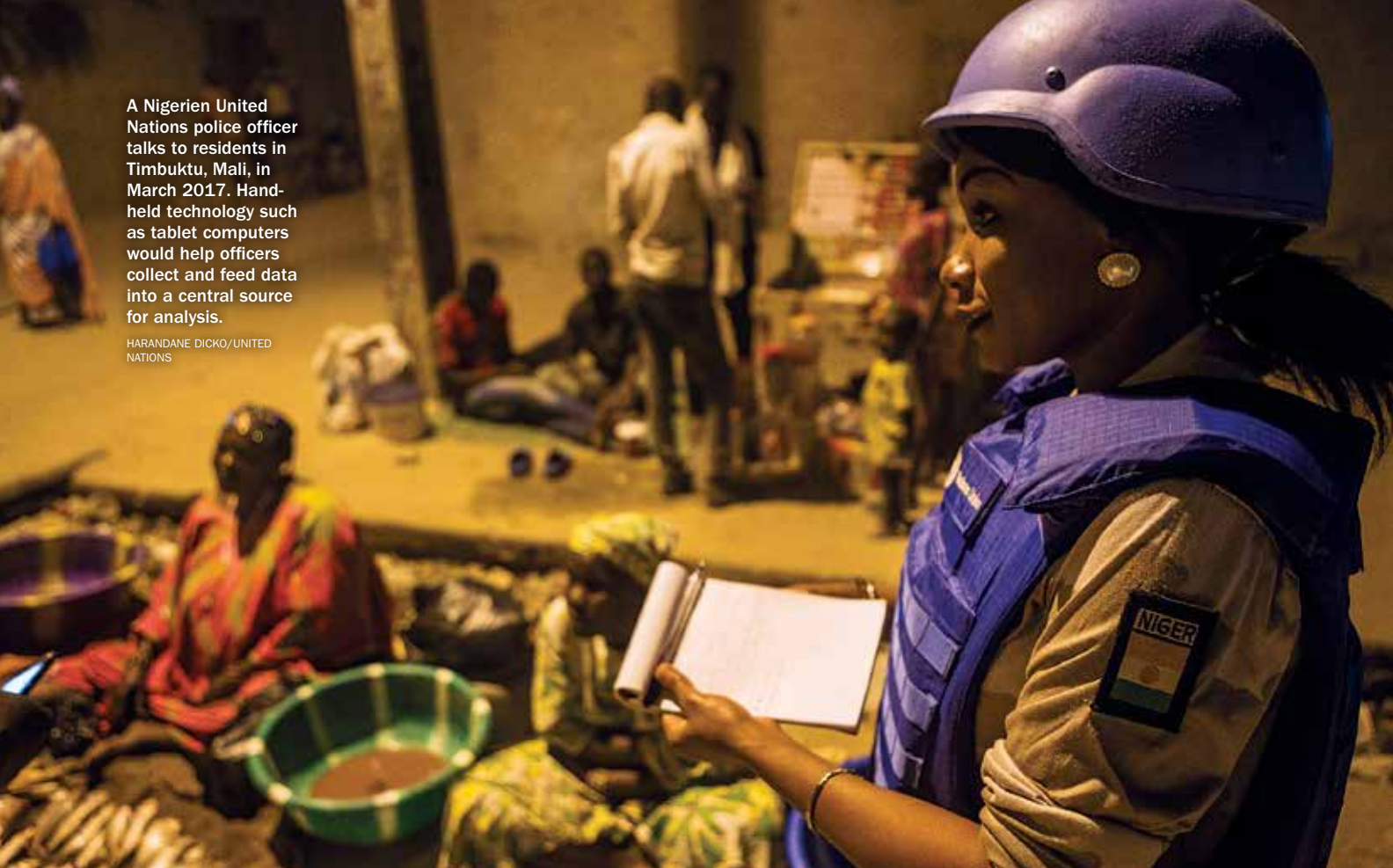


ADF ILLUSTRATION



A Nigerian United Nations police officer talks to residents in Timbuktu, Mali, in March 2017. Hand-held technology such as tablet computers would help officers collect and feed data into a central source for analysis.

HARANDANE DICKO/UNITED NATIONS



*Continued from page 23*

cameras, the U.N. is just starting to play around with that idea," he said. GPS tracking is widely used now and can be helpful in desert areas where roads and landmarks are absent. The U.N. also is looking at certain nonlethal weapons, such as Tasers, which would more likely be a tool for UNPOL officers.

License plate recognition (LPR) systems can be at fixed locations or placed in police vehicles. Fixed systems can detect and report individual vehicles that travel through specific zones, such as secured areas. Data can be stored and are helpful in detecting stolen vehicles. Dorn wrote in *Keeping Watch* that UNPOL officers would benefit from LPRs because "vehicles approaching checkpoints or known hotspots would have their license plate recorded and queried to reveal any enforcement action pending against the owner of the vehicle or simply to identify vehicles frequenting particular trouble areas for intelligence-gathering purposes."

The system also could help police with counterterrorism. "In urban areas if you know that certain vehicles are used by terrorists, then you can definitely spot where they are from their license plate in the city and be able to take action, so it could be very useful," Dorn told *ADF*.

#### KEEPING IT SIMPLE

The African Union/United Nations Hybrid operation in Darfur (UNAMID) is one of the largest peacekeeping missions in the world. It also has the distinction of

operating in a nation, Sudan, that has not always been supportive of its mandate. Given the vast spaces covered by the mission and its more than 50 deployment locations, lack of monitoring is a problem. Yet the Sudanese government does not permit UAVs.

Still, there are simple, inexpensive devices that could be useful to the mission. Dorn said he recommends motion-detected night lamps, some of which are solar-powered. They cost less than \$20 and could be purchased in bulk and put outside refugee tents and dwellings to add a sense of security.

Cellphones and smartphones could put a range of capacities in the hands of peacekeeping Soldiers and police. Email, internet, cameras, voice recorders, GPS and various social networking applications provide guidance and communications capability. "Smartphones can instantaneously transmit images, sound recordings or video voicemail to secure servers and can have this information 'stamped' with the time, the date and GPS coordinates," Dorn wrote in *Keeping Watch*. "This can be used to show the location of human rights violations and allow the information to be placed in a geo-referenced database."

The availability of multiple-use technology has exploded in recent years, and peacekeeping missions are moving to take advantage of them. Valme said officials are looking at consumer technology to make a difference in the field. "I think it's safe to say that this is the new innovative realm." □

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# THE INVISIBLE WALL



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*SURVEILLANCE TECHNOLOGY HELPS  
SECURE BORDER ZONES*

ADF STAFF

ADF ILLUSTRATION



**As** Tunisia emerges from the most tumultuous period in its history, one thing has become clear: It must secure its borders.

This fact was illustrated during a bloody attack in March 2016 in which dozens of ISIS-aligned fighters entered the country from Libya, overran the border town of Ben Guerdan, and opened fire on police and Army buildings. After a gunbattle that lasted hours, more than 50 people lay dead, including 36 militants.

The incident grew even more disturbing when the attackers were identified, and most were found to be Tunisians. Some of the young men had grown up in the city they attacked.

As many as 7,000 young Tunisians have left the country to join extremist groups in recent years. As Libya has become lawless, traffickers in drugs, arms and people have crisscrossed the 459-kilometer border the two countries share.

"The Armed Forces and citizens must show vigilance, particularly in the face of the persistent crisis in Libya," said Tunisian Minister of Defense Farhat Horchani during a tour of the border area. "The resolution of the crisis in Libya will allow Tunisia to secure its borders."

Tunisia has worked to defend itself. In 2016, engineers used excavators to pile mounds of dirt and dig trenches filled with saltwater to form a 250-kilometer natural barrier along the border. With the help of the U.S. Defense Threat Reduction Agency, Tunisia is launching a \$25 million border surveillance program that will include motion sensors, thermal cameras and a central monitoring station. The system is expected to be operational in 2018.

"Border surveillance is the framework that supports our security system," said Tunisian Minister of the Interior Hedi Majdoub.

Like Tunisia, other countries with porous borders are turning to technology. Although there is no simple solution, new low-cost technology is making it easier to gain an advantage over intruders and improve situational awareness at the border. Here are some tools that help:

## **RADAR**

Radar technology dates back to the 1930s. It works by producing electromagnetic radiation that flows out in waves. By tracking how these waves bounce off objects, the user sees a picture of the landscape. Ground-surveillance radar used at night can pinpoint the location of a person from a distance of 10 kilometers.

Radar is a valuable tool to build a complete picture of the border environment. It gathers information from 360 degrees, it can penetrate most weather conditions and it has a low latency period, which means it collects information quickly and it can monitor thousands of objects at once.

Radar also is versatile. It can be placed on a tower or on a moving vehicle.

Some countries, including South Africa, are experimenting with mounting radar on aerostat blimps for wider coverage. A blimp flying at 1,500 meters can cover up to 150 kilometers for a month at a time, according to South Africa's Council for Scientific and Industrial Research (CSIR).

"Persistent wide area surveillance systems utilizing radar technology to monitor the situation day and night as well as in all weather conditions, can go a long way to keep an eye on our borders and assist the South Africa National Defence Force and other law enforcement agencies to deploy forces efficiently and effectively," wrote Francois Anderson of the CSIR.

In South Africa's Kruger National Park, rangers use a wide area surveillance system known as the Meerkat to detect people and animals, particularly at night. Kenya also is using strategically deployed radar systems to monitor its troublesome border with Somalia.

Radar can be deployed in other unconventional ways. Ground-penetrating radar can find buried weapons or improvised explosive devices, and artillery-locating radar can track the locations of mortar rounds, rockets or missiles. Newer radar systems can penetrate the thick foliage of forests, which had previously posed a problem.

*"The Armed Forces and citizens must show vigilance, particularly in the face of the persistent crisis in Libya."*

— Tunisian Minister of Defense Farhat Horchani

*“Near real-time reconnaissance is now possible.”* — Walter Dorn, expert on technology and peacekeeping



A Kenya Defence Forces Soldier launches an AeroVironment RQ-11 Raven unmanned aerial vehicle during training with the U.S. Army.

A police officer participates in a military operation to eliminate militants in a village 50 kilometers from Ben Guerdan, Tunisia, near Libya.



REUTERS

## SATELLITES

Although many believe satellite technology is only available to wealthy nations, this is no longer the case. The cost of buying surveillance imagery from commercial satellites or launching a satellite has dropped greatly.

Walter Dorn, an expert on technology and peacekeeping, said high-resolution satellite imagery of a precision of 0.2 meters is now within the reach of many organizations and countries.

“The prices are falling, as are latency periods and delivery times, meaning that near real-time reconnaissance is now possible,” Dorn wrote in his paper “Smart Peacekeeping: Toward Tech-Enabled UN Operations.”

Small, off-the-shelf satellites known as “CubeSats” that are assembled from kits cost \$10,000 or less.

South Africa is one country taking advantage of

this technology. It uses satellite surveillance to track migrants, poaching and trafficking, particularly near its border with Zimbabwe. Although a satellite may only pass over an area once or twice per day, it can help security professionals identify things such as walking paths, breaks in a fence line, temporary settlements or other indicators of human activity.

Additionally, programs can use geographic information systems to overlay images from other sources, including positioned cameras or crowdsourced photos. “Such data fusion can help give advance warning of attacks or rebel movements across the borders with neighboring countries,” Dorn wrote.





**Checkpoint:** Technology can include license plate scanners, internet to receive alerts and biometric tools, such as fingerprint scanners.



**Natural barrier and fencing:** Prevents incursions at remote areas.



**Aerostat- or blimp-based radar:** At a height of 1,500 meters certain radar devices can monitor up to 150 kilometers in any direction.



**Ground-penetrating radar:** Can find buried weapons or improvised explosive devices.



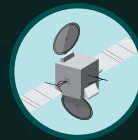
**Artillery-locating radar:** Can track the locations of mortar rounds, rockets or missiles.



**Ground-surveillance radar:** Used at night it can pinpoint the location of a person on foot from a distance of 10 kilometers.



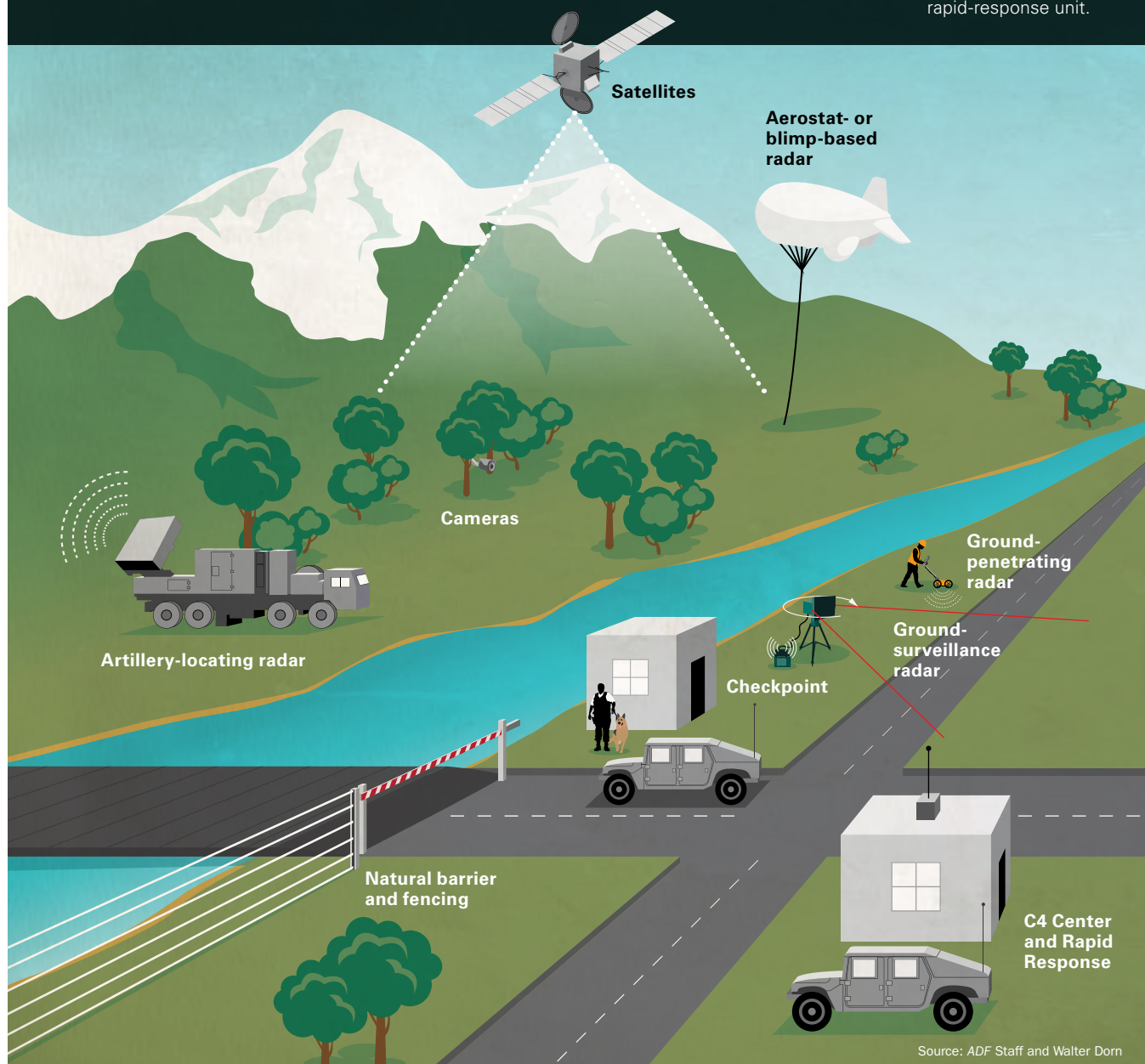
**Cameras:** Digital and thermal surveillance cameras monitor activity day and night and can be motion-activated.



**Satellites:** Can monitor border areas for things such as weapons movements, breaks in a fence line, temporary settlements or other indicators of human activity.



**C4 Center and Rapid Response:** A command center near the border will be able to integrate data from all sources, allowing security professionals to monitor activity and dispatch a rapid-response unit.



Source: ADF Staff and Walter Dorn

# TRAINING BOOSTS FEMALE PEACEKEEPERS' SKILLS

UNITED NATIONS SUPPORT OFFICE IN SOMALIA

In a unique event, 39 female military and signals personnel from 17 countries took a two-week course on information and communications technology. The course was held at the United Nations Signals Academy at the U.N. Regional Service Centre Entebbe, Uganda, in November 2016.

Skills taught at the course will allow female military and police personnel to play a greater role in peacekeeping operations. Several of the women who participated were serving in the African Union Mission in Somalia.

Samuel Leal, U.N. Signals Academy Programme manager, expressed the academy's dedication to promoting gender equality and women's empowerment in peacekeeping.



U.N. SUPPORT OFFICE IN SOMALIA

He cited U.N. Security Council Resolution 2122 (2013), which encourages troop- and police-contributing countries to increase the number of women in peacekeeping operations.

The training combines theoretical and practical modules on U.N.-owned equipment, standard operating procedures, gender issues and familiarization with the larger U.N. operational environment.

To date, the U.N. Signals Academy has trained 87 women out of a total of 1,222 signals personnel. The U.N. Signals Academy was founded in 2015 as an outcome of the First International Symposium on Technology in Peacekeeping in Brindisi, Italy, through a strategic partnership between the U.N. and supporting member states.

The academy provides standard and mission-specific training to military and police signals experts from troop- and police-contributing countries and regional organizations such as the African Union.



Tactical mobile radar used by the South African Air Force

WIKIMEDIA COMMONS

## CAMERAS AND SENSORS

In recent years, digital surveillance cameras have become lighter and cheaper, while offering higher resolution. Remote video surveillance systems on towers or mobile platforms can send video to a control room so agents can track or identify suspicious figures in a border zone.

Many cameras also are being paired with sensors to track motion, acoustic activity or seismic sensors used to monitor explosives. Perhaps most exciting is the increasing availability of sensors that can monitor the spectrum of light that is invisible to the human eye. The infrared light, which includes heat or thermal radiation, enables night vision. Like other technology that once was the exclusive domain of the military, thermal imaging cameras are becoming mainstream.

"Breaking the night barrier is essential," Dorn wrote. "Because many nefarious activities in war-torn areas are done using the cover of darkness, including attacks (or preparations for dawn attacks) and smuggling of illicit arms and human beings. Since many atrocities are committed at night, peacekeeping cannot be a daytime-only job."





## INTEGRATION

When using different tools to monitor borders, it's important to integrate data to form a complete operating picture. "These are systems of systems," said Dr. Thomas Jacob, who served as the vice president in charge of border security and integrated systems at Airbus. "It's not just sensors. You have to integrate a lot of systems."

When this integration is done effectively, a command, control, communications and computer (C4) center near the border will be able to monitor all activity and dispatch a rapid response unit to investigate anything suspicious.

This "becomes the nerve center of a mission where various sources are integrated into a single comprehensive view," according to a CSIR paper on surveillance technology. "Information from diverse systems such

as radar, satellites and video feeds from unmanned aerial telemetry systems, communication devices and others can be displayed on screens to provide an integrated overview of a defence scenario."

By building a full picture of the border and identifying areas of weakness or concern, security professionals are better able to use their limited resources. By targeting these weak spots, they can close the gaps in their coverage.

"This means improved surveillance — without sending armies of patrol staff — and the information as a deterrence mechanism or best-suited combat tactics is available to commanders," the CSIR paper states. "Combining various surveillance and detection technologies in integrated communication and command systems [improves] the ability to watch over the country's territories." □

Tunisian police officers patrol the roof of a police station after a 2016 attack at an Army and police barracks in Ben Guerdan.

REUTERS

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# MOMENTUM BUILDS FOR **PEACE** IN CASAMANCE

AGENCE FRANCE-PRESSE

There is reason for hope in Senegal's Casamance region. New houses dot a landscape once dominated by abandoned ruins full of bullet holes, though the specter of a 35-year conflict still haunts its villages.

Separatist rebels of the Mouvement des Forces Democratiques de Casamance (MFDC) began fighting for independence more than three decades ago but have long ceased once-frequent attacks on the Senegalese Army.

As residents return to previously unsafe areas, many are asking when a conflict that is technically ongoing, if all but invisible, officially will end.

"I fled to [regional capital] Ziguinchor in 1991 and came back in 2006. We aren't frightened anymore. Peace has returned," said Yaya Sane, as a new earthen hut covered by palm wood was erected in his village, Toubacouta.

Casamance is a culturally distinct area of southern Senegal. Today, daily life in the region feels a long way from the conflict's height when thousands were killed, maimed by mine explosions or displaced by fighting.

Driving to Toubacouta from Ziguinchor, one still passes Senegalese Army roadblocks along the edge of the area's plentiful rice fields, but the troops have little to do these days. "The last attack on the village was in 2000," noted Lamine Sane, who lives in the same hamlet.

Those who have long negotiated for peace say there is little stopping the two sides from holding talks, but with a tentative detente, nothing formal progresses.

"Today, there aren't any robberies or clashes between the Army and the MFDC," said Moussa Cisse, a community figure involved in peace efforts. "There's nothing left but to just sit down and negotiate ... to come to a definitive peace deal."

Dakar's interest in ending the conflict has grown since the election of President Macky Sall in 2012. The outlook for resolving Casamance's situation permanently also has improved with the departure of Gambian strongman Yahya Jammeh in January 2017, experts say. Jammeh, whose country is surrounded by Senegal, was long accused of harboring and funding MFDC rebels.

"Certain factions don't see eye to eye," a source close to the rebels told Agence France-Presse, "but the majority of the MFDC has also shown willingness to bring together all of these factions and negotiate together."

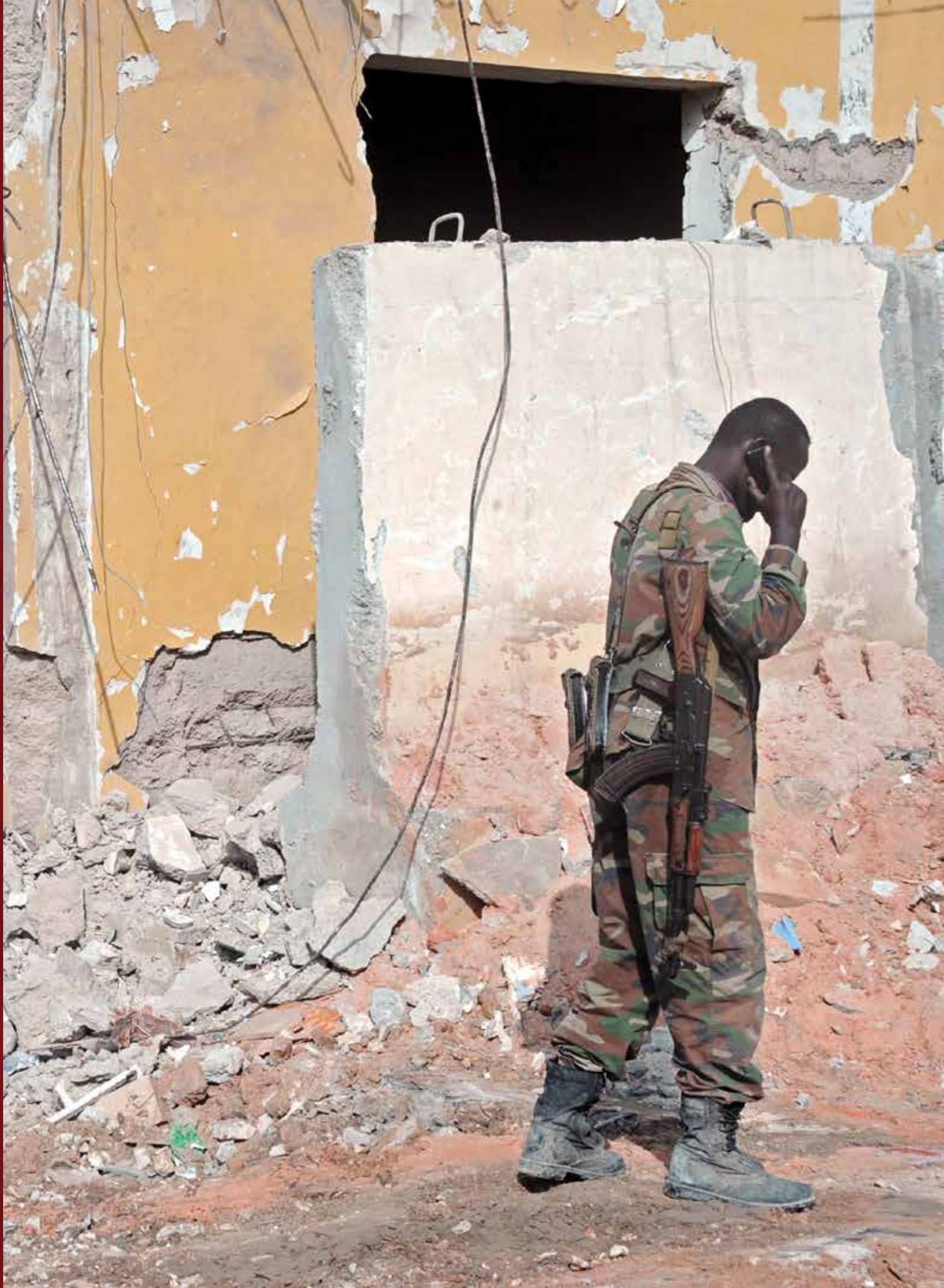
A local official told AFP that road, education and agriculture projects were all underway, with more homes and businesses on the grid than ever before. The momentum of peace, he said, was "irreversible."













# HELP

## IS A CALL AWAY

ENLISTING THE SUPPORT OF CITIZENS, AND REWARDING THEM, CAN PAY OFF IN THE FIGHT AGAINST TERRORISM

ADF STAFF

*As Somalia's national elections took place in February 2017, government and African Union forces took action to head off violence aimed at spoiling a peaceful transfer of power. Officials moved the election, in which members of Parliament voted for president, from a police academy in Mogadishu to an aircraft hangar at Aden Adde International Airport.*

A Somali Soldier speaks on the phone at the scene of a 2016 terror attack on a hotel in Mogadishu.

AFP/GETTY IMAGES



Security measures included a ban on flights to and from the airport, a traffic shutdown and a no-fly zone over the city, the BBC reported. Even so, al-Shabaab militants fired mortar rounds that landed close to the election site.

In the end, the election occurred peacefully, and a new president took office. In addition to public security measures, some important things went on behind the scenes. In one instance, a single phone call may have saved hundreds of lives.

A woman called 990 on her phone to report that men living nearby were acting suspiciously. The men in the home were not talking

to neighbors and not leaving the house during the day. Her call went into a special tips line set up in 2016 by Somalia's National Intelligence and Security Agency (NISA) to let the public report suspicious activity. As a result, authorities arrested 12 al-Shabaab members who were planning an attack using vehicle-based improvised explosive devices and suicide vests.

"The program was very successful," said Ismail D. Osman, former first deputy director of NISA. "We have received for those eight, nine months period nearly 5,000 calls." Officials started off receiving 20 calls per day and at times got as many as 500 a day.





The NISA tips line, which ran from June 2016 into 2017, was just one element of a rewards program aimed at making Somalia safer. In addition to the tips line, Somalia employs a defector program. In it, al-Shabaab militants can accept government amnesty and enter a two-year program at a secure facility, where they are trained to re-enter society as part of the government's National Programme for the Treatment and Handling of Disengaged Combatants.

"Part of the rewarding was schooling them, feeding them, rehabilitating them, and giving them some sort of technical training that they can go into society and get a job, whether it's welding,

mechanics, stuff like that," Osman said. "When they were leaving the facility, we would give them some sort of pocket money to go through a few months, basically. But first and foremost, the reward to them was safety."

#### A VARIETY OF PHONE PROGRAMS

Rewards programs in the fight against terrorism and violent extremism can come in many forms, even when employing primarily simple toll-free phone-based operations.

In Somalia, the 990 tips line offered small monetary rewards to people with actionable information who were willing to come forward.



Ugandan Soldiers patrol with dogs in search of the Lord's Resistance Army in Nzacki, Central African Republic. Authorities relied on tips from villagers in these operations.

THE ASSOCIATED PRESS

Small stations such as Radio Zereda, which means Radio Peace, helped transmit information about Lord's Resistance Army activity in the Central African Republic.

THE ASSOCIATED PRESS





Osman said the program paid out about \$50 to \$100 for tips that panned out. He said about half of those who called in tips never came forward because it could be dangerous to be seen consorting with the government.

Counterterrorism rewards programs also exist — at varying stages of development — in Kenya, Libya, Mauritania and Niger.

Niger is working toward a call-in rewards program similar to what was used in Somalia, and Libya is in the early stages of setting up its own rewards program. Niger's program evolved out of a test effort at Exercise Flintlock a few years ago, which brought in more than 1,000 calls the first week. Authorities there are still working on setting up a formal system.

Mauritania's Army also operates a national tips line with calls going into a centralized headquarters. Authorities there advertised the program but chose not to offer rewards. Civilians already were willing to supply information because they opposed terrorism.

Kenya National Police service is in the process of establishing a national call center in Nairobi. Officials are renovating office space and procuring computer equipment. Then staffers will be trained on how to operate the equipment, which includes a cloud-based computer service. Once it's ready, a national advertising campaign will put the word out that people can call a toll-free phone number to report terrorist activity. Calls will go into the police headquarters in Nairobi.

The Uganda People's Defence Force has handed out mobile phones to commanders and unit leaders. This makes an array of miniature tips lines possible when officers give the phone numbers to villagers and civilians to call if they have information. The phones can be switched off at times as long as voicemail is enabled. Commanders can listen to voicemails every few days to evaluate tips.

## ENLISTING CIVILIANS IN FORCE PROTECTION

Programs are not limited to call centers, nor must they focus exclusively on counterterrorism operations. A force protection program aimed at safeguarding forces hunting Lord's Resistance Army (LRA) leader Joseph Kony wound down in the Central African Republic, the Democratic Republic of the Congo, South Sudan and Uganda in the spring of 2017.

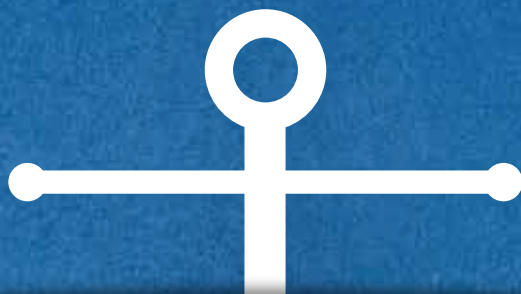
Even though no longer active, the Kony operation offers a simple, but effective, model for enlisting help from civilians. Special forces troops were stationed in various rural outposts throughout the four countries, so a single phone line or call center would not work. Instead, groups already broadcasting information about LRA activity installed new FM radio towers and boosted the reach of existing towers.

Also, many small towns and villages would have community centers, such as a small pavilion with a bulletin board where information could be posted about extremists being sought, whom to talk to if you have information, and what kinds of rewards might be offered in exchange for useful information. Anyone with information typically would visit a village elder, share the information, and that community leader would be in contact with one of the military outposts involved in the Kony search. Once information was collected and validated, then a payment could be made to the informer.

Rewards were not limited to cash. Military authorities could offer in-kind rewards, such as school supplies, medical supplies, even livestock. These kinds of rewards can help militaries and police win the hearts and minds of the communities they serve while preventing adversaries from providing for those needs.

The process also underscores the value of cultivating personal, trusting relationships with community leaders, which establishes credibility and legitimacy with the people security forces are trying to protect. □





*MARITIME*  
*THREATS*

— REQUIRE —

*UNIFIED*  
*NAVIES*



ADF STAFF



## Pirates are attacking ships in Somalia and the Gulf of Guinea, and coastal nations will have to work together to stop them.

**I**n February 2016, 14 Nigerian and Ghanaian pirates hijacked the *Maximus*, a Panama-flagged oil tanker, about 100 kilometers off the coast of Côte d'Ivoire. Eighteen crew members, representing six countries, were aboard. The pirates planned to sell the ship's 4,700 tons of diesel fuel on the black market.

The pirates even changed the ship's name to *Elvis 3* to avoid being tracked.

The navies of several countries in the region, including Côte d'Ivoire, Ghana and Togo, tracked the *Maximus* for a week, and in a daring nighttime attack, Nigerian Sailors boarded the ship. One hijacker was killed, six were captured, and the rest escaped, taking two crew members with them. The two crew members were rescued later.

Authorities said it was the best example of the potential power of a cooperative inter-regional maritime security framework put in place in June 2013. In other words, navies in the region had pooled their expertise, intelligence and ships to rescue the ship and crew.

The American nongovernmental organization (NGO) Oceans Beyond Piracy reported that there were 95 pirate attacks in the Gulf of Guinea in 2016, compared with 54 the previous year. The pirates are going after cargo and kidnapping for ransom. In 2016, 96 crew members were taken hostage, compared to 44 in 2015.

DefenceWeb noted that West Africa has a somewhat shallow coastline, making oil and gas extraction relatively easy — and therefore, making tankers easy targets for pirates. East Africa's off-coast oil and gas

reserves are deeper and farther out to sea, making tankers operating there less accessible to pirates. Even so, piracy is increasing off the Horn of Africa.

In the first three months of 2017, armed pirates hijacked two ships off the coast of Somalia, where no ship had been hijacked since 2012. At their peak in 2011, Somali pirates attacked more than 200 ships and held hundreds of hostages. The attacks stopped after ship owners began posting armed guards on their ships and avoided the Somali coast. The return of the Somali pirates in 2017 was partially caused by the severe drought in Somalia.

"The resurgence coinciding with an economic downturn occasioned by the drought is not a coincidence," Raymond Gilpin, academic dean at the Africa Center for Strategic Studies, told *ADF*. "Socio-economic and governance investments are both urgent and vital."

As pirates continue to operate in the Gulf of Guinea and off the coast of Somalia, there has never been a time when cooperation among Africa's navies was more critical. Dr. Andre

Wessels, head of the Department of History at the University of the Free State in South Africa, said piracy is just one of the challenges facing Africa's navies.

"Piracy has become a problem in several regions," he said. "Drug smuggling and other forms of criminality have expanded to the oceans, and in several places refugees use boats to flee conflict areas to seek a better life in another country."

There are other reasons for improving Africa's fleets. Illegal fishing remains a major problem. And Hein van den Ende, of the defense company Saab, said new



Arrested pirates who hijacked the oil tanker *Maximus* are shown to the media in Lagos, Nigeria. THE ASSOCIATED PRESS

offshore oil and gas discoveries are driving the need for better maritime security, while the drop in oil prices means protecting the supplies is more important than ever, because “there is less margin for loss.”

Wessels said Africa’s navies need a particular type of ship. In a study titled “Building Right-sized Navy Capacity,” Wessels outlined the direction Africa should pursue to improve its naval capacity.

“Although cruisers, destroyers, frigates and support ships (and even submarines) can be used in carrying out counter-piracy patrols to intercept smugglers and illegal immigrants, and to render assistance to refugees at sea, it is very expensive to keep these sophisticated ships operational,” he wrote. “Smaller and less-sophisticated ships can indeed be deployed just as successfully. Consequently, there has been a greater emphasis on designing and building many new types of patrol ships across the globe, with many navies expanding their fleets of offshore patrol vessels, or, for the first time ever, acquiring this type of ship.”

### **HISTORICALLY SMALL NAVIES**

In 1998, Col. Louis du Plessis, then director of the Centre for Military Studies at the University of Stellenbosch in South Africa, said there were legitimate, explainable reasons for Africa’s small navies.

“The maintenance of a navy, by its very nature, is a capital-intensive and technology-intensive undertaking,” he told DefenceWeb. “The intense civil strife in African societies that threatens state security is rooted in economic causes.

Armies and air forces are needed to maintain domestic order, whereas the irrelevance of navies in this context has made them appear a somewhat less-pressing national priority to many national policy-makers.”

Wessels noted that when most African countries gained independence in the 1960s, they invested in their land forces. Because of its close ties to the then Soviet Union, Egypt

built up a sizable naval force in the 1960s and 1970s and later acquired some ships from the United States. The Soviet Union supplied ships and submarines, mostly secondhand, to Algeria, Ethiopia and Libya. Most of the vessels were patrol ships.

Patrol ships are at least 32 feet long and are generally

classified as fast-attack craft — small, agile warships armed with missiles, guns or torpedoes. They are generally operated close to land because they lack deep-water capacities. Patrol ships designed to operate in blue water are called offshore patrol vessels. By the mid-1990s, Africa’s navies had about 200 patrol ships, none of which had deep-water capability.

The increase in piracy has served as a wake-up call to Africa’s militaries, particular Nigeria’s. Since about 2004, Wessels said, Nigeria has acquired 15 small “Defender” response boats, 20 small patrol ships, two large (but old) cutters, and at least 14 other patrol ships, including two built in Nigeria. Kenya and Mozambique also have dramatically expanded their navies in the 21st century.

For decades, Wessels noted, the South African Navy was underfunded compared to other branches of the armed forces. After a 1998 arms deal, the Navy acquired three new submarines and four new frigates, all from Germany. The frigates restored the Navy’s blue-water capability, but it became clear that the country’s aging patrol ships would need to be replaced.

South Africa is trying to become a hub for ship maintenance and repair to augment its ports industry. It has invested heavily in its ports, which require harbor security and the ability to track vessel movements along the coast.

### **IMPROVING MARITIME SECURITY**

Gilpin wrote a study in 2016 titled “Examining Maritime Insecurity in Eastern Africa.” In it, he made recommendations for improving the region’s navies, and told ADF that the suggestions apply equally well to other parts of the continent. They included:

**Strengthen regional capacity to prevent and deter maritime crime:** “Naval and coast-guard capacity should be strengthened by focusing on training, doctrine, equipment and human resources,” Gilpin wrote. “Current approaches focus on a ‘train and equip’ model that is often short-sighted and short-term. National governments and their

international partners should embark upon a long-term transformation of naval capacity that would ensure effectiveness, efficiency, flexibility, accountability and sustainability at all levels.” He added that the strategy would “expedite the sharing of information, doctrine and assets.”



A Nigerian Navy officer stands on duty aboard a warship during international naval exercises off the coast of Lagos. THE ASSOCIATED PRESS





#### **Support regional organizations and initiatives:**

The African Union and the continent's regional organizations, such as the Intergovernmental Authority on Development in East Africa, have taken "bold steps" to lead maritime reform in East Africa, Gilpin wrote. "It is important to distinguish maritime crime from piracy," said Gilpin. "They require different remedies. Maritime crime demands much more attention to the maintenance of law and order on land and sea — not just naval security."

**Africa's countries should make their codes and regulations compatible and implement them:** East African countries are signatories to most relevant maritime codes and conventions but need the political will to enact them. "Harmonization is a useful first step, ensuring that all parties are on the same page," Gilpin wrote.

**International support must be adequate, coordinated and time-bound:** International support for maritime security in East Africa has included capacity-building help, economic development programs, security assistance and naval deployments. But some of the international partners might have conflicting objectives. Coordinating international support would help minimize gaps and ensure that essential functions are maintained for as long as necessary. Gilpin recommended establishing a coordination and communications cell, preferably in a regional organization. And, he added, "External partners should consider articulating an exit strategy, so they are not viewed with suspicion as a permanent fixture."

Members of the Ivoirian Navy take part in a multinational naval exercise off the coast of Abidjan in March 2017. REUTERS

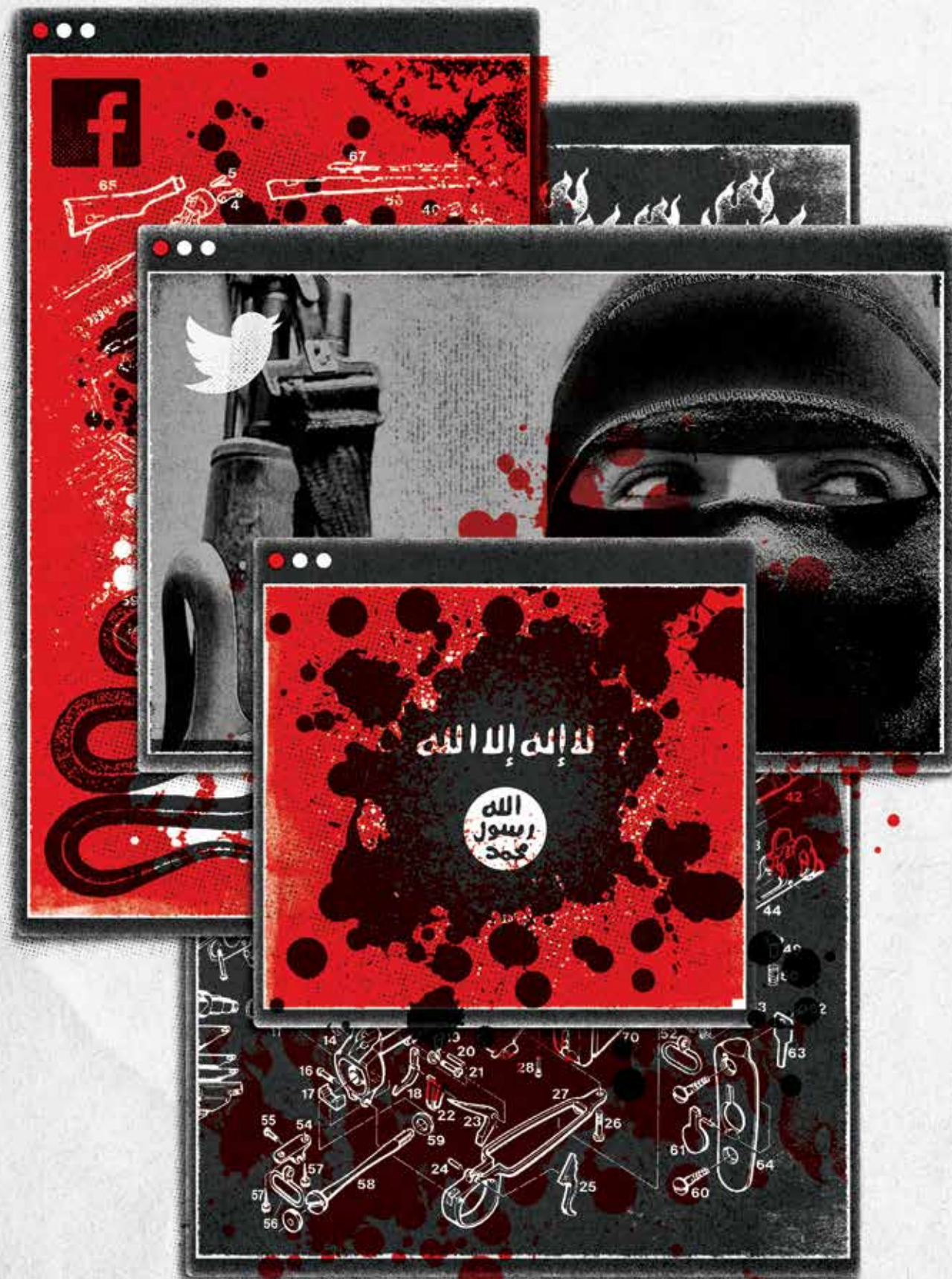
By necessity, Africa is already sharing naval resources, as evidenced by the patrols of the Gulf of Guinea. Throughout 2016, Oceans Beyond Piracy reported, at least 60 Nigerian Navy vessels were deployed in the Gulf, joined by vessels from Benin, Cameroon, Côte d'Ivoire, Ghana and Togo. At any given time, the NGO said, there were six regional vessels on duty. Although the true costs of the counterpiracy operations cannot be known, the NGO said that, at minimum, the cost of the operation was about \$20 million per year.

But money and ships alone won't open the door to regional cooperation. Africa's coastal nations also will need the proper maritime laws and agreements in place for true teamwork.

Rear Adm. Henry Babalola of Nigeria directed the Maximus rescue in 2016. He told The Associated Press at the time that the operation was made possible by a maritime agreement allowing Nigeria to patrol São Tomé and Príncipe's waters. When his Sailors challenged the pirates, he said, they responded that they were in international waters with the law of the sea on their side. But the agreement allowed the Nigerians to storm the ship after eight hours of negotiations.

"International cooperation is the new mantra for maritime security," Babalola said. "We cannot go it alone." □





ADF ILLUSTRATION



# PATROLLING CYBERSPACE



New laws and tactics are needed to catch extremists online

ADF STAFF

**I**n July 2017, as Iraqi forces were pushing ISIS out of the city of Mosul, authorities found a 16-year-old girl hiding in a tunnel. She had run away from her home in Germany a year earlier to join the extremist group. She had gotten her plane ticket by posing as her mother.

Pictures of the sad, frightened-looking girl, surrounded by her smiling captors, were published and posted on the internet all over the world.

The girl had been raised in a Protestant family but had shown little interest in religion. Then, in the spring of 2016, she told her parents she was interested in Islam. She began teaching herself Arabic, carrying a copy of the Quran to school, and wearing conservative clothes.

Authorities said she was initially recruited by ISIS in online chat rooms. One of her recruiters persuaded her to join him in Syria. She was convinced she was in love with him. Her mother later said her daughter had been “completely brainwashed” by ISIS recruiters.

Hers is not an unusual story. All over the world, if people have access to the internet, they

have access to extremists and their propaganda. ISIS and other extremist groups have been using the internet, along with social media, to recruit members for years — and authorities have been grappling with ways to stop them.

During an ISIS offensive in Iraq in 2014, the BBC reported, a number of Twitter accounts claiming to represent ISIS in Iraq and Syria included live updates on the group’s progress. Some of the feeds included photographs that were taken and posted with cellphones.

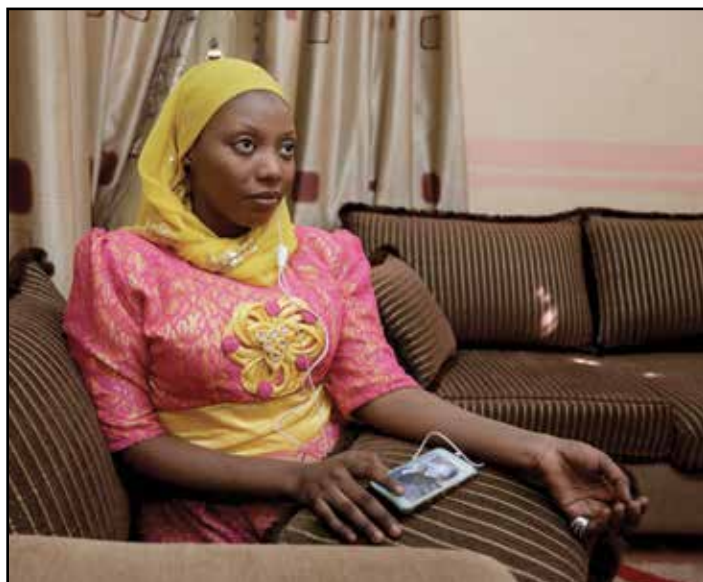
ISIS has been using Twitter since at least 2012. The group uses it for recruiting, planning, issuing threats and taking credit for its attacks.

In late January 2017, *The Sun* of Nigeria reported that the extremist group Boko Haram was refocusing its resources to a media and propaganda campaign against the nation. The revised strategy was discovered in materials left behind by extremists who had been routed from a stronghold in the northeast part of the country. The materials included documents, phones and computers “that contained detailed information on the Boko Haram media and propaganda strategy,” the newspaper reported.

"The documents, written in Arabic, also outlined the media strategy that Boko Haram Commanders should employ and how the surviving members should ensure the propagation of the Boko Haram doctrine using Social Media," said Alhaji Lai Mohammed, Nigeria's minister of information and culture, in a statement to the press.

The minister said the recovered materials confirmed the announcement of a new media wing of Boko Haram called "Wadi Baya," or "Clear speech."

It is hard to overestimate the importance of social media in Africa. Throughout the continent, social media is used for far more than just recreation and communication. It's a primary source of news. The newsgroups in WhatsApp alone are a major news outlet in Africa.



A Nigerian woman listens to a daily radio talk show on her cellphone. Cellphones are the fastest-growing form of media throughout Africa.

THE ASSOCIATED PRESS

Many parts of Africa are without newspapers, and in some countries, the press has been muzzled. Mobile phones have a higher penetration than television in Sub-Saharan Africa, and smartphone use more than doubled from 2014 to 2016.

One way for countries to block extremists' messages on social media is to shut down the internet during certain times. But that approach is open to abuse, and many countries have blocked access to social media to keep legitimate information from the public. As of mid-2017, the digital news outlet Quartz reported, at least seven African nations had

blocked access to social media during elections and at other politically sensitive times.

## RAMPING UP IN AFRICA

David Fidler of the U.S.-based Council on Foreign Relations said there is no doubt that ISIS and other extremist organizations are ramping up their efforts in Africa.

"Following its online playbook, the Islamic State is trying to harness social media to strengthen its power and position in Libya," wrote Fidler for the Defense One website.

"Other groups, particularly al-Shabaab in Somalia and Boko Haram in Nigeria, are copying the Islamic State's social media strategies. Such cyber-facilitated extremism is unfolding as African cyberspace undergoes rapid changes, including efforts to expand Internet access and increase use of social media."

Spokesmen for Twitter, Facebook and other social media acknowledge that their services are being abused by extremist groups, including ISIS and Boko Haram. But critics say that by not doing more to shut down the accounts of extremists, the social media are, in fact, abetting them.

It's not as if social media services are encouraging the extremists. Twitter guidelines, as an example, include a specific reference to extremists: "You may not make threats of violence or promote violence, including threatening or promoting terrorism." Facebook's rules include a provision banning hate speech and anything that incites violence. Instagram says it is "not a place to support or praise terrorism, organized crime, or hate groups." WhatsApp, which is owned by Facebook, says its services cannot

be used in ways that are "illegal, obscene, defamatory, threatening, intimidating, harassing, hateful, racially, or ethnically offensive, or instigate or encourage conduct that would be illegal, or otherwise inappropriate, including promoting violent crimes." YouTube bans the posting of videos that contain "hate speech, including verbal attacks based on gender, sexual orientation, race, ethnicity, religion, disability or nationality."

The terrorist who killed four people and wounded dozens more in a March 2017 attack in London reportedly used the messaging service WhatsApp. Britain's Home Secretary



# NIGERIA CONFRONTS BOKO HARAM



TOMMY VICTOR UDOH | NIGERIAN DEFENSE SPACE AGENCY

Since 2009, the extremist group Boko Haram has killed 20,000 people in Nigeria and displaced 2.3 million more. The group, which has pledged its support to ISIS, has used social media to recruit Nigerians to its cause. Nigeria has taken positive steps to undermine the group and its use of social media:

- **Financial intelligence gathering:** The Bank Verification Number (BVN) program strengthens the security of banking transactions and improves national financial intelligence collection. This government initiative improves the detection of laundered money and shares information on emerging risks. Unique BVNs in Nigeria make it easier for banks to manage depositors' identities regardless of the number of accounts they have. The program has reduced the practice of depositors using multiple identities to launder money through various banks and accounts. With the BVN, banks can track irregularities within accounts. BVNs allow law enforcement agencies to focus on the recipient of the funds, rather than just the source.
- **Cyber security program:** Nigeria has championed a national cyber security program that encompasses the Cyber Security Policy and Strategy and the Cyber Crime Law. The Cyber Crime law provides an effective, unified and comprehensive framework for the prohibition, prevention, detection, prosecution and punishment of cyber crime in Nigeria. This law ensures the protection of critical national information infrastructure, and promotes cyber security and the protection of computer systems and networks, electronic communications, data and computer programs, intellectual property, and privacy rights. It mandates that service providers retain all traffic data and subscriber information with regard to an individual's constitutional right to privacy and take appropriate measures to safeguard the confidentiality of the data retained, processed or retrieved.
- **Computer emergency response team:** The Nigeria Computer Emergency Response Team was established to monitor and respond to security incidents within the nation's cyberspace. The proactive service protects and secures Nigerian cyberspace in anticipation of attacks, problems or events. The services include technology watch, intrusion detection services, vulnerability assessment and penetration testing. The reactive services are designed to respond to requests for support against any threats or attacks on information systems in Nigeria's cyberspace.
- **Strategic online narratives:** The strategic online narrative is a statement of identity, cause and intent, which the Nigerian government, the people and the armed forces are uniting behind in the fight against terrorism. The counternarrative for Boko Haram members, which is consistently disseminated, promotes a moderate form of Islam. It states that the Holy Prophet never killed innocent children or kidnapped women to promote the Islamic cause. It further enjoins them to be true Muslims and surrender or submit to the authorities, who will embrace and treat them well.
- **Social media crisis communication centers:** They can monitor social media activities. The center involves civil society, the press, social media enthusiasts, young people, and nongovernmental organizations that share ideas and provide information to counter violent extremist ideology.
- **Detecting and preventing online terrorist activity:** Nigerian security agencies have acquired modern technology to help collect information on terrorism. This technology enables the lawful interception of electronic communication when there are reasonable grounds to suspect that the content is required for the purposes of a criminal investigation or proceedings.
- **Public education:** The government urges Nigerians to be vigilant and volunteer information to authorities to enable security agencies to prevent Boko Haram attacks. Similarly, tips for spotting a terrorist and forwarding information that can lead to an arrest are circulated online. Social media platforms are littered with sponsored dramatic sketches, as well as the use of comedy, musical clips, jingles, testimonies from surrendered and deradicalized Boko Haram members, and documentaries. Additionally, leaflets and factual press releases are distributed in Boko Haram-controlled areas and at civil-military cooperation activities, at the operational and tactical levels, in the areas of health care and infrastructure.

Amber Rudd said she wants WhatsApp and other social media services to make their platforms more accessible to authorities in cases like the London attack.

"We need to make sure that organizations like WhatsApp — and there are plenty of others like that — don't provide a secret place for terrorists to communicate with each other," she said in an interview.

**"Cyber-facilitated  
extremism is  
unfolding as  
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— David Fidler of the U.S.-based  
Council on Foreign Relations



WhatsApp is particularly useful to extremists, because it is "end-to-end" encrypted, meaning the only people who can read WhatsApp messages are the sender and specific recipients. It has become particularly popular in countries where governments have blocked other messaging services to clamp down on dissent.

Government officials have been pressuring social media companies and cellphone manufacturers to provide them a "back door," or secret entrance, to bypass encryption. Software and cellphone companies maintain that if you give a back door to a legitimate government,

oppressive governments will demand them as well.

Most of the social media services say they are trying to police themselves. In March 2017, Twitter announced that it had suspended 636,248 accounts from August 1, 2015, through December 31, 2016, for "violations related to promotion of terrorism." The website Naked Security reported that in June 2017, Facebook was developing artificial intelligence to detect extremist postings and employing 150 experts to make the platform "a hostile place for terrorists." About the same time, Google announced that it would use more artificial intelligence software, also known as "machine learning technology," and was adding 50 expert nongovernmental organizations to the 63 organizations that were already part of YouTube's Trusted Flagger program.

Critics want more. In January 2017, family members of terrorist victims sued Twitter, alleging that through neglect, Twitter was providing support and resources to ISIS. "We believe that Twitter doesn't do enough to proactively monitor, identify and remove terrorist-related accounts and hasn't made an effective or prolonged effort to ensure that the accounts are not re-established," wrote the plaintiffs, according to *The New York Times*. "In short, Twitter's actions are too little, too late."

## WHAT TO DO

Although policies and approaches vary from country to country, critics are unanimous in saying that countries should be more demanding about the transparency of social media platforms operating within their borders. They contend that such sites need to be more engaged in looking for extremist postings and that governments should push them in that direction.

Hany Farid, chairman of the Computer Science Department at Dartmouth College in the United States, has developed software that can block extremist-related posts on the internet, including social media. The software could be used to create a database of known extremist content and prevent such content from being posted. The social media services, he said, have so far been reluctant to aggressively employ his software.

"The problem I have with the tech companies is, whenever they want to do something unpopular that's in their financial interest, they hide behind their terms of service," Farid told *Enterprise* magazine. He said he believes that increasing pressure from governments, the media and the public will force tech companies to do their part.





**The proliferation of cellphones in Africa makes it crucial to rid social media of extremist propaganda.**

THE ASSOCIATED PRESS

The family of a woman killed in the November 2015 Paris terror attacks is trying to get the courts to make social media more proactive in dealing with extremists. The parents of Nohemi Gonzales have sued YouTube and Google in United States federal court, saying the two media giants were complicit in the attack and deaths. YouTube, they said, repeatedly allowed ISIS and other groups to post videos, sometimes with paid advertisements for legitimate products. YouTube has acknowledged that it did, in fact, inadvertently post the ads alongside the terrorist videos but said it is working to make sure it won't happen again.

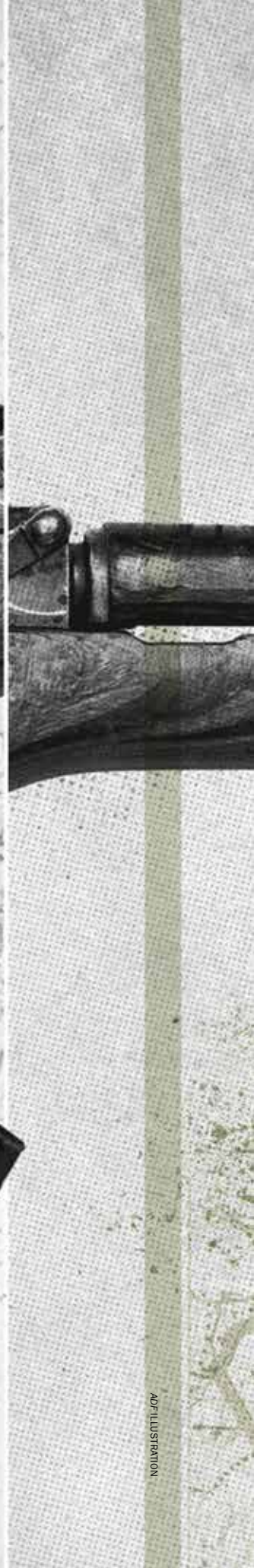
Google, the parent company of YouTube, is relying on the U.S. Communications Decency Act, a 1996 law that was passed before most social media services were invented. The law

says operators of websites are not publishers and cannot be held liable for things posted and viewed by users.

It's clear that the world has changed significantly since the Communications Decency Act and other restrictions became law. Robert Tolchin, a lawyer for the parents in the suit, said, "The things that we are seeing in terms of the way that the internet is being used were not even imagined by the people that created that Communications Decency Act."

Fidler said that Africa, and the world, face a new era that will require new strategies and new policies: "With the Islamic State bringing its cyber-facilitated extremism to Africa and with African terrorist groups adopting the Islamic State's online playbook, the need for a comprehensive approach to the cyber components of violent extremism in Africa is becoming a more pressing policy issue." □







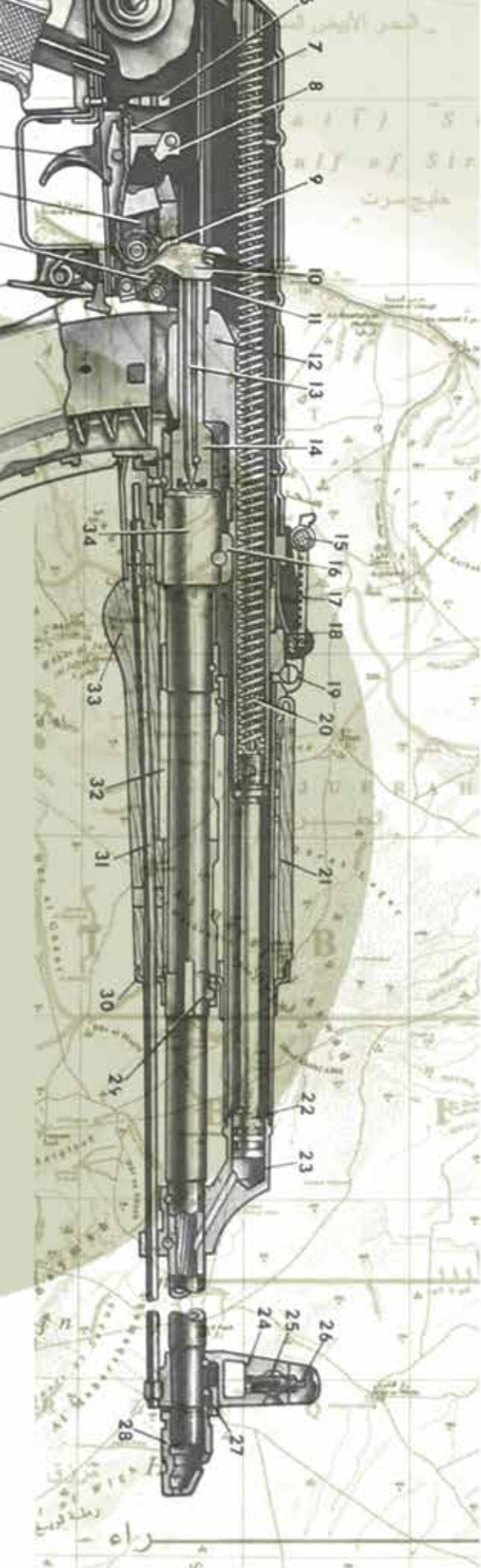


# WEAPONS *on the* WEB

*Facebook struggles to control  
a black market in Libya.*

— ADF STAFF —





***With nearly 2 billion active accounts, Facebook has something for almost everyone. That includes black market rocket launchers and anti-aircraft missiles.***

Such weapons are offered on Facebook in Libya, where dictator Moammar Gadhafi accumulated more than \$30 billion in arms before he was overthrown in 2011. After he was killed, officials, rebels and looters found weapons stashes all over the country, not only in military depots, but also buried in the Sahara desert. The weapons have spread throughout the continent on the black market. A 2014 United Nations report said extremist groups from Boko Haram in Nigeria to Syrian rebels have purchased weapons from sellers in Libya.

There is a large demand inside Libya for small arms, including handguns and AK-47 assault rifles. Because of the country's continued lawlessness, Libyans fear for their safety, and many feel compelled to carry concealed guns. Carjacking is a major problem in Libya's cities, with Tripoli alone reporting at least seven carjackings per day. It is no wonder that Libyans want firearms and sometimes buy them on Facebook.

What Libyans pay for handguns is indicative of the demand. One researcher said that in 2017, handguns were selling on Facebook for \$2,000 to more than \$7,000.

Reports in April 2017 indicated that the black market for Libyan weapons sold outside the country was growing significantly, and dealers were selling large, more sophisticated weapons — ones used by militant groups. They had become particularly common in regions where ISIS has a presence. The United Nations has reported that Libyan arms have been sold in at least 14 countries.

In addition to Facebook, WhatsApp, Instagram and the encrypted messaging service Telegram are used for arms negotiations. Facebook and other social media prohibit the sale of weapons and close down users involved in arms dealing. But as soon as one arms seller's account is shut down, another one opens, sometimes within a matter of minutes.

In a prepared statement, a Facebook official said: "It's against Facebook's Community Standards to coordinate private sales of firearms, and we remove any such content as soon as we become aware of it. We encourage people to use the reporting links found across our site so that our team of experts can review content swiftly."

David Fidler of the U.S.-based Council on Foreign Relations said the arms sales reverberate throughout the international market.

"Using social media platforms creates a number of problems, including the problem of flow and accessibility of weapons in the international market," he told *The Christian Science Monitor*. "It's not just a law enforcement problem; it is a national security problem."





## Arms sales studied

Armament Research Services (ARES), a private consulting group, studied the sale of arms on social media and came up with several conclusions:

- **Just about any type of conventional weapon is available:** ARES and journalists, including reporters for *The New York Times*, found Facebook postings for guided anti-tank missiles, heat-seeking missiles, grenade launchers and heavy machine guns used to shoot down aircraft. Sellers often post photographs of the weapons in question.  
Generally speaking, most of the anti-aircraft weapons, regardless of their size and power, are older technology and a lower threat to modern military jets compared to current generation surface-to-air weapons. But even the older-technology weapons pose a threat to helicopters, slower-moving commercial planes and Soviet-era jets used by the Libyan National Army.
- **Some post-embargo weapons are available:** ARES documented three French-made

anti-tank missiles, probably from a 2007 contract with Libya, for sale online.

- **The main trafficking is in handguns and assault rifles:** A particularly common weapon for sale is the AK-47 assault rifle.
- **The use of social media for arms sales is relatively new to Libya:** Before the overthrow of Gadhafi, the country's arms market was tightly controlled, and there was little access to the internet or smartphones.
- **Libya is not the only social media market for arms sales:** It seems that wherever there is armed conflict, a social media market for arms emerges. Similar Facebook markets have been found in Iraq, Syria and Yemen, according to ARES. Weapons trafficking is particularly prevalent in countries with armed extremists.
- **New Facebook features have unintentionally made it easier to sell arms:** When Facebook began, a company official told *The New York Times*, the site contained no provision for buying and selling. But the service can now process debit card payments through its Messenger instant-messaging

Members of a Libyan armed group hold up AK-47 rifles in Benghazi in July 2017. The AK-47 is commonly sold on the black market.

AFP/GETTY IMAGES



Armed Libyan militia members parade through Tripoli. The United Nations says that Libya's weapons are so freely available that they have been sold in 14 countries.

THE ASSOCIATED PRESS

service. The message service includes an icon for typing in a debit card number.

- **Business is brisk:** In Libya, ARES has documented 250 to 300 posts for arms sales each month on social media sites. ARES Director N.R. Jenzen-Jones said that by early 2017, his group had documented 6,000 arms trades, "but it's probably much bigger than that."
- **Facebook wants your help:** Facebook has made it easy for users to report suspicious activity on the site. There is a "Report" option on each Facebook post. Facebook has Community Operations teams that review the reports and can remove offending content.
- **Extremists aren't just buying weapons on Facebook:** Markets exist for related items, including ammunition, bulletproof jackets, two-way radios, uniforms and night-vision cameras. The sale of such items does not typically violate Facebook's rules, unless it can be shown that the same groups selling such items also are selling weapons.

### ***Relatively low percentage***

Researchers say that online weapons trading in Libya makes up a relatively small percentage of overall sales. And online or not, an estimated 80 percent of the weapons sales in Libya are in and around Tripoli. Still, online trades offer unique challenges to law enforcement officers and the military. The Facebook pages where weapons are sold are usually secret or closed to the public, meaning they can attract thousands of members and conduct business for months before being ferreted out.

During the Arab Spring, social media, including Facebook, were vital tools in spreading reform and rebellion.

"In Libya, Facebook was used to articulate medical needs, post important phone numbers, and place messages from hospitals in need of blood donations," reported the Consortium Against Terrorist Finance. "It brought people together, mobilized them around a cause, and encouraged social responsibility and accountability."



Today, things have changed. In September 2013, *The Independent* of Great Britain told of a young Libyan who needed a gun and found one advertised. The man responded in the comments section of the post, giving his phone number. The posting indicated that the vendor could deliver the pistol anywhere in Libya, suggesting an organized entity behind the sale. The buyer received a call a few days later to confirm the deal, and a delivery boy showed up in the center of Tripoli with the gun.

***The Facebook pages where weapons are sold are usually secret or closed to the public, meaning they can attract thousands of members and conduct business for months before being ferreted out.***

Draft emails also can be used for weapons trading and information exchanges. Two or more parties will share the sign-in information for a common email account, where they can write drafts of emails without actually sending them. Because two people share the account, both can see the messages. Such emails leave such a faint data trail, they can be virtually undetectable.

As social media sites work to stop extremists from using their services, the extremists are becoming more sophisticated in their techniques. Computer experts say that it is one thing to hack an extremist website — it is more difficult to track extremists who move about on different Facebook pages or post hundreds of videos on YouTube. On Facebook, a group of core members moves among trading groups regularly. Although there is ongoing monitoring for weapons sales on Facebook, some groups can continue selling weapons undetected for extended periods.

Critics say the social media companies can do a better job of policing their sites. In Libya, for instance, most weapons sales communication is in Arabic, with hardly any effort made at all to hide its purpose. One former site was named “The Libyan Firearms Market.” In response, social media companies are trying harder to moderate and restrict weapons sales and other extremist activity. As the companies develop tougher policies, better policing and more effective countermeasures, the extremists can be expected to refine their techniques.

Researchers say the online weapons trade in Libya will require a public-private partnership to resolve. Facebook and other internet services have their work cut out for them in forming any partnership with Libya. As of 2017, the country had two rival parliaments and three governments. The newest government was organized in talks brokered by the United Nations in hopes of replacing the other two.

Without some sort of partnership, the online arms sales will continue to flourish. As Fidler told the *Monitor*: “This connects to a larger set of problems where we see that companies and governments have to respond to the negative externalities of cyberspace.” □



# New Tournament Schedule Will Help African Players

BBC NEWS AT BBC.CO.UK/NEWS

African players will have a better chance to play for European clubs now that the Africa Cup of Nations will take place in the summer, say leading agents.

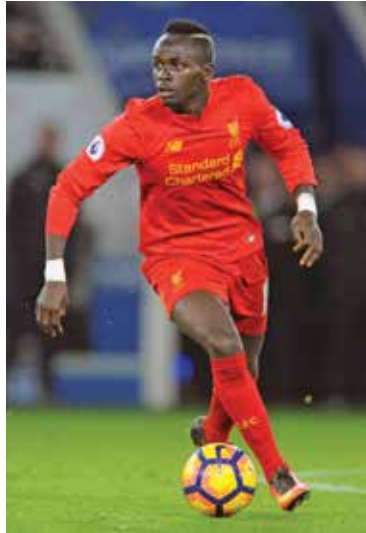
The tournament, held every two years, is being moved to June and July from January and February. Previously, Premier League clubs were among those who faced losing players midseason for weeks as they went to play for their home nations.

"It'll make my job easier as an agent. Clubs use it as an excuse not to sign African players," said Papa Agyemang. "They will become more attractive because teams won't be thinking about losing them every two years."

Changes to the competition, which will increase from 16 to 24 teams, were approved by the Confederation of African Football at a conference in Morocco.

Players have previously been caught between duty for their national team and clubs that employ them.

Saif Rubie, another agent who specializes in brokering deals for African players, said the tournament's timing had a bearing on transfer deals.



Sadio Mane of Senegal  
THE ASSOCIATED PRESS

"Some clubs 100 percent told me they would not bring in a player if they were tied to the Cup of Nations. Now it will mean they don't have that concern," Rubie said. "The flip side is they will be playing in the summer, so could be late for the start of the season, though it's better to have a player missing part of August than most of January and February."

For example, Liverpool was so keen for Senegal striker Sadio Mane to return from the 2017 Africa Cup of Nations, it arranged for a private jet to fly him back. Mane was away for four weeks before he missed the crucial spot-kick as Senegal lost to eventual champions Cameroon on penalties in the quarter-finals.

Liverpool won only one game of eight while he was away on international duty.

Former Cameroon goalkeeper Joseph-Antoine Bell believes the switch is not being made to satisfy European clubs, but makes sense. "It is good for our players, our people and the game," he said. "You cannot keep saying players should come to play for their home team while they are being paid by somebody else."

## West African Countries are Rice Rivals

AGENCE FRANCE-PRESSE

In Nigeria, jollof rice isn't just a tasty dish — it's a national obsession. Dozens of top Nigerian chefs gathered for Lagos' inaugural jollof festival in August 2017, showcasing their personal twists on the tangy, tomatoey rice to a crowd of hundreds of hungry foodies.

Imoteda Aladekomo, a 31-year-old chef who has been making jollof for four years, has led the way in reinventing the national staple, creating several variants through her company, Eko Street Eats.

"It's so popular because it's easy

to customize," she said while preparing take-away boxes at the jollof fair. "Rice is really easy to get here, whereas other ingredients aren't. Every party has to have jollof rice, and every Sunday people will have it, having looked forward to it all week."

The origins of the distinctive, deceptively simple West African dish are hotly contested.

The word jollof is related to Wolof, a language spoken in Senegal where the dish is also popular. Variants of the recipe are enjoyed across West Africa.

"There's this big battle about where it came from," said chef Mo Alatisie. "I've tried jollof from Senegal, and it wasn't great. I think ours is best — but I'm a little biased."

The "jollof wars" reached fever pitch in 2016 when Ghanaian singer Sister Deborah released a song called *Ghana Jollof* that accused the Nigerian recipe of "tasting funny."

Controversies aside, fair organizer Ozoz Sokoh said the universal affection for the dish helps to unite the Nigerian diaspora and people with West African roots around the world.





## The Race is on to Save Congolese Languages

AGENCE FRANCE-PRESSE

"I haven't once spoken my mother tongue Kilokele in the 62 years I've lived in Kinshasa," says Charles Tongohala. "None of my nine children speak it."

Tongohala's native tongue is one of 450 spoken in the Democratic Republic of the Congo, the sprawling nation of 71 million people whose languages — almost all of them spoken, not written — account for 9 percent of the world's 5,000 languages.

He was a boy when he moved to the capital from a northeastern village that is home to the Lokele fisher people, who live along the banks of the giant Congo River and speak Kilokele.

These days in Kinshasa, a teeming city of 10 million,

people generally speak French or Lingala. When the former Belgian colony became independent in 1960, authorities chose French as the official language, though even today not all of the population understands it.

Later on, during an official "return to authenticity," the authorities promoted the use of four "national" languages for primary schooling — Lingala (a language used by the Army and in Kinshasa and the northwest), Kikongo (west), Tshiluba (center) and Swahili (east).

Those languages are also used in regional courts and alongside French in some media.

But Lingala and Swahili, which are also spoken in neighboring countries, are far more widely used today than the other two.

In 2000, French linguist Claude Hagege warned in a book that pushing regional languages, such as Swahili, over lesser-known tongues could wind up killing minor indigenous languages. Upwardly mobile people often will teach their children only French — or French and English.

The death of a language "is due to the rural exodus and the demographic, economic and cultural weight" of its speakers, said linguist Kadima Nzuji of Brazzaville's Marien Ngouabi University. So although there are relatively few speakers of Kinande and Kitetela, both have a good chance of survival because they are spoken by a dynamic trading community, he said.

Kambayi Bwatshia, who lectures in history at Kinshasa's UPN University, said "old people speak in the language of the village to survive" while young people, "especially in big urban centers, adapt to their environment."

Hailing the work of the Christian missionaries who chronicled local languages from the 19th century on, both academics said the documents they penned soon will be all that remain of dying minority tongues.

"It brings many countries together," she said. "It's not just West Africa, but countries where the slaves went, like the American South and parts of Mexico."

Although food delivery services offering international favorites, such as sushi and pizza, are expanding rapidly in Nigeria's big cities, jollof has retained a special place in the hearts of the country's huge youth population.

"Most of us young people forget about our traditional food," said Jane Ibitola, a 32-year-old financial advisor from the southern oil city of Port Harcourt. "But whenever you move away from it, you cherish it again."



AFP/GETTY IMAGES



# AU MARKS PROGRESS IN ESTABLISHING PEACE FUND

SABC

The African Union announced it has begun collecting funds from member states as part of a larger effort to pay for peace-keeping on the continent.

Dr. Donald Kaberuka, AU high representative for the financing of the Peace Fund, delivered an update on the fund to the United Nations Security Council. The fund is projected to be responsible for 25 percent of AU peace operations and support costs by 2020.

Predictable financing for peace efforts on the continent has long been an AU goal. Members of the Heads of State Summit of the organization first endorsed the AU Peace Fund in Kigali, Rwanda, in 2016, where

they decided to endow it with \$400 million by 2020.

"With these new governance arrangements, the AU Peace Fund will provide a more effective instrument, via which the AU and her partners in the international community can work together to promote the cause of peace and stability in Africa and the world," Kaberuka said.

The fund is expected to get \$65 million annually from each of the continent's five subregions, a provision that will increase to \$80 million per region by 2020. The fund will pay for mediation and preventive diplomacy, institutional capacity building, and peace support operations.

The AU wants to show the U.N. and the world that it is ready to share the burden for funding African peace operations as it works toward a stated goal of "silencing the guns" in Africa by 2020.

AU Commissioner for Peace and Security Smail Chergui said attracting resources to the fund is crucial to long-term peace. "The most central issue confronting the African Union at this stage is the need to mobilize resources from African member states into the peace fund," Chergui said. "At this stage I'm happy to report that almost 30 percent of AU member states have made contributions into the fund."

**An African Union Soldier patrols Mogadishu as part of the AU Mission in Somalia.**

AFP/GETTY IMAGES



# TASK FORCE DISMANTLES IVORY SMUGGLING RING



## LUSAKA AGREEMENT TASK FORCE

The Lusaka Agreement Task Force (LATF) has shut down an international syndicate that was smuggling ivory from Africa to Asia.

The six-month operation led to the arrest of seven suspects believed to be responsible for trafficking 106 pieces of elephant tusk weighing 1.8 tons. The ivory originated in Uganda and was hidden in 15 wooden crates declared to contain coffee beans. The shipment left the seaport in Mombasa, Kenya, and was destined for Vietnam.

Those arrested include a financier, a customs officer in Mombasa who allegedly cleared the container without scanning it, and a clearing agent who allegedly escorted the container from its loading point in Uganda to the border with Kenya. If convicted, the suspects face a minimum of 20 years in prison and/or a \$200,000 fine.

“Without the goodwill of the two governments as well as the commitment and dedication of the officers who took part in the operation, these suspects who trafficked in such a large haul of ivory could not have been brought to book,” said Bonaventure Ebyai, LATF director. “LATF, therefore, wishes to congratulate the governments of Kenya and Uganda, Kenya Wildlife Service, National Police Service, and Kenya Ports Authority for the pivotal role they played during this successful operation.”

Headquartered in Nairobi, the LATF is a permanent law enforcement institution established in 1999 to improve cooperation between national wildlife bureaus and other enforcement agencies in seven African member states. The LATF’s mission is to prevent the illegal trade in wildlife.



REUTERS

## Ethiopia’s Tedros Takes the Helm of WHO

WORLD HEALTH ORGANIZATION,  
WIRE REPORTS

The World Health Organization (WHO) elected Dr. Tedros Adhanom of Ethiopia as its director general, the first person from Africa to lead the global health organization.

The election came after a hotly contested campaign, which Tedros won over two other candidates. In taking charge of the organization with 7,000 employees in 150 countries, he pledged to reform the WHO bureaucracy, tap new sources of funding and focus on a mission of bringing universal health coverage to people around the world.

“Health is a means to development. It’s not actually a waste — it’s the smartest thing to invest in,” said Tedros in a conference call with reporters after the election. “All roads should lead to universal health coverage. And it should be the center of gravity of our movement.”

Tedros, who has a Ph.D. in community health, won praise, particularly from donors, for his stewardship of health in the Ethiopian government from 2005 to 2012. He worked to improve maternal and infant health and battle diseases including malaria, AIDS and tuberculosis. He later served as the country’s foreign minister.

In Ethiopia, Tedros led a comprehensive reform effort of the country’s health system, including the expansion of the medical infrastructure, creating 3,500 health centers and expanding the country’s medical workforce to include 38,000 new extension workers. He also helped create financing mechanisms to expand

insurance coverage. As minister of foreign affairs, Tedros led the effort to negotiate the Addis Ababa Action Agenda in which 193 countries committed to the financing necessary to achieve the U.N.’s Sustainable Development Goals.

Health officials, including those from the United States, a key WHO donor, said the agency’s new leadership needs to focus on getting emergency response right after what many perceive as an inadequate response to the Ebola outbreak of 2014-2015.

“We know that the next health emergency is not a question of ‘if’ but ‘when,’ ” then-U.S. Health Secretary Tom Price said. “When it happens, the world will turn to the WHO for guidance and for leadership. We need to be sure it is up to the task.”

Tedros succeeded Dr. Margaret Chan, who had led the WHO since 2007.



World Health Organization  
Director General  
Dr. Tedros Adhanom  
AFP/GETTY IMAGES



## Cameroon, Nigeria Cite Productive Naval Partnership

VOICE OF AMERICA

Cameroon and Nigeria are touting a naval partnership that lets them clamp down on piracy, trafficking and illegal fishing. The latest success story occurred in May 2017 when the Cameroonian naval vessel *Le Ntem* was traveling through Nigerian territorial waters and encountered a suspicious fishing vessel.

Capt. Fabrice Ntieuche of the Cameroon Navy said the vessel disobeyed instructions to stop until authorities threatened to use force. He said all the occupants aboard the fishing boat were arrested. Ntieuche said ships on patrol don't hesitate to threaten force, including firing warning shots, since the area around Calabar once was notorious for piracy.

The bilateral partnership dates to 2014. Each country allows the other's navy to pursue vessels in its territorial waters. The two navies also have established a shared communication system and provide each other backup during operations.

The Gulf of Guinea remains a global hot spot for piracy, with reported attacks concentrated off the coast of Nigeria. Regional naval coordination has

been a challenge, as the gulf touches 17 countries along West and Central Africa.

Rear Adm. James Oluwole of Nigeria's eastern naval command in Calabar said the two countries have cut piracy attacks in the area dramatically. "We have seen better collaboration,"

Oluwole said. "We have on both sides been able to check the acts of piracy and made some arrests, even all the way from Angola down to the end of Senegal. Before, it was not that easy to collaborate. But once all these countries come together, we have come a long way."

The Nigerian Navy official said the waters alongside Cameroon and Nigeria saw 53 piracy-related incidents in 2013 and 2014. In the first five months of 2017, there were no incidents in the area between the Cameroonian border and Nigeria's Calabar.

The two navies say they routinely deal with illegal fishing and cases of kidnappings for ransom around Calabar and along Cameroon's Bakassi Peninsula. They also deal with drug trafficking cases and ecological threats.

The Nigerian Navy patrols creeks in the Niger Delta near Port Harcourt.

AFP/GETTY IMAGES





## South African Air Force Fights Wildfires

SOUTH AFRICAN RESERVE FORCE COUNCIL

**S**outh African Air Force (SAAF) helicopters performed emergency firefighting and rescue operations in Western Cape in June 2017. Over the course of a day, the helicopters dropped nearly 720,000 liters of water onto the raging fires. They also flew rescue missions, including to Buffels Bay, where fires forced residents onto the beach.

The three Oryx medium transport helicopters were based at Port Elizabeth and dropped the contents of 359 buckets onto fires burning in the towns of Knysna, George and Plettenberg Bay.

SAAF personnel reported 408 houses were burned down in Knysna with more than 200 informal dwellings also destroyed. SAAF personnel confirmed the loss of 20 houses in Plettenberg Bay. About 8,000 people were evacuated from the scenic coastal town of Knysna in South Africa's famous Garden Route to escape fast-moving wildfires that killed nine people, CNN reported.

Firefighters battled 26 active fires, made worse by a storm front that flooded nearby Cape Town but fanned the flames around Knysna and Plettenberg Bay, CNN said. It was the year's second large-scale wildfire in the country.

The firefighters also used technological tools. Airborne Drones South Africa told defenceWeb that responders issued a call for drones equipped with heat-mapping capabilities, which would allow them to identify hot spots at the greatest risk of flare-ups — a task virtually impossible for ground crews working in blinding smoke and dense undergrowth.

# Nigeria Beefs Up Air Fleet

NEWS AGENCY OF NIGERIA

The Nigerian Air Force (NAF) has acquired new helicopters and is reactivating old aircraft to better combat security challenges in the country.

Chief of Air Staff Sadiq Abubakar announced the acquisitions at the inauguration of the newly built Air Force Secondary School and Airmen Transit Accommodation in Lagos State. The Air Force has taken delivery of the first of 12 Mi-35 helicopters that will be crucial to defeating Boko Haram, he said.

"This has contributed immensely toward equipping the service to conduct counterinsurgency operations and also contend with other emerging security challenges across the country," Abubakar said. "Be assured that we will continue to do our best in meeting our statutory responsibilities of defending the territorial integrity of the nation."

The first two helicopters were introduced into service during the Nigerian Air Force's 53rd anniversary celebrations in April 2017 in Makurdi. The modern Mi-35M attack helicopter has night capabilities that the earlier version lacked and also has higher performance, more endurance and is fitted with a glass cockpit to enhance situational awareness during operations, defenceWeb reported.

Additionally, Air Force technicians repaired six Alpha Jet engines, bringing several old planes back into service. The repair work saved \$2.4 million.

While celebrating the school inauguration, Abubakar said education was key in human capital development and will lead to technical advancement and innovation.

"We made a quick assessment of the available primary and secondary schools in our bases and identified some gaps. These gaps necessitated the upgrade of some of the schools," he said.

NAF School Shasha has 18 classrooms, five laboratories, a library and recreational facilities, and offices for the commandant and other staff members.



A Nigerian Air Force officer pilots an ATR 42-500 Maritime Patrol plane acquired to fight maritime crime. AFP/GETTY IMAGES



Men, women and children dig for gold at a mine in Burkina Faso.

## COUNTRIES COMMIT TO CURTAILING MERCURY

INTER PRESS SERVICE

**W**ith a new international treaty, an increasing number of African countries are committing to phasing out mercury, a significant health and environmental hazard. Research has shown that maternal exposure to mercury from contaminated fish can cause learning disabilities in babies. When inhaled, mercury vapor can affect the central nervous system, impair mental capacity and, depending on levels of exposure, be fatal.

"Despite the danger that mercury poses, it is still widely used, especially in Africa, and this is of great concern," said Olubunmi Olusanya of Nigeria's Federal Ministry of Environment. "While Africa does not manufacture mercury-added products, the continent is a leading importer of mercury. The ripple effect of using mercury is very costly in both human health and harm to the environment."

The Zero Mercury Working Group is an international coalition of more than 95 public interest environmental and health nongovernmental organizations from more than 50 countries around the world, with several NGO members coming from African countries.

"Phasing out mercury will mean replacing

mercury-added products such as thermometers, thermostats and batteries with alternatives, but it also means reducing and ultimately eliminating the use of mercury in artisanal and small-scale gold mining," explained Elena Lymberidi-Settimo of the Zero Mercury Working Group.

According to the group, artisanal and small-scale gold mining is a complex global development issue. It uses and releases substantial amounts of mercury in mineral processing, usually in unsafe and environmentally hazardous conditions.

Mercury is used to bind the gold to form an amalgam, which helps separate it from the rock, sand and other materials. The amalgam is then heated to vaporize the mercury, exposing miners and contaminating the environment while leaving the gold behind.

The Zero Mercury Working Group has ongoing intervention projects in Nigeria and Mauritius, focusing on phasing out mercury-added products by 2020. Other Zero Mercury project countries include Ghana and Tanzania, where the focus has been on reducing and eventually eliminating the use of mercury in artisanal and small-scale gold mining.



# Hospitals Improve in Ebola's Aftermath

THE WORLD BANK

Shirley Kamara, an expectant mother, smiled as she received medical care at C.H. Rennie Hospital in Kakata, 68 kilometers north of Monrovia, Liberia. "Our hospital is far better now since the Ebola outbreak," she said. "We are encouraging our people to come here because everything is getting better."

C.H. Rennie Hospital in Liberia's Margibi County was one of the facilities hardest hit during the Ebola outbreak that began in 2014; 14 of its health workers died. But, as a result of international attention, health-care services have since improved, said Dr. Asinya Magnus.

"Ebola revolutionized health services in Margibi, with a transition from a closed to an open health-care system," he said.

The health system's new infrastructure is more decentralized, and health workers receive more medical supplies and training in infection prevention control.



THE ASSOCIATED PRESS

The Ebola outbreak exposed the weaknesses in Liberia's health-care delivery services. The dilapidated state of the country's public health system included everything from inadequately qualified health practitioners and poorly equipped medical facilities to the lack of infection control measures.

The response, led by Liberia's Ministry of Health with help from other organizations, including the United Nations, resulted in bringing the number of Ebola cases down to zero.

Social mobilization and community-driven activities were carried out in each of the country's 15 counties. Almost 600,000 infants were vaccinated for measles, and drugs and medical supplies were provided for pregnant women and children under 5.

As many as 47 vehicles, including ambulances, were procured, and hazard pay was provided to 20,000 health workers from state and private health facilities. Death benefits also were paid to 154 families of health workers who succumbed to Ebola while combating the outbreak, which killed 4,810 people in Liberia, 2,544 more in neighboring Guinea and another 3,956 in Sierra Leone.



## SOLAR-POWERED PUMPS CHANGE LIVES

THE WORLD BANK

**I**N Tanzania, the 3,600 residents of the village of Gidewari once lived a life of striking irony, trekking more than 8 kilometers each day for water, despite living next to a lake. Lake Gidewari contains saltwater, and thus its water is unfit to drink.

"My first chore very early each day was to go and fetch just one 20-liter jerrycan of water from Dareda Catholic Church, which is a 5-kilometer walk, and then walk back home," said Rosalie Margwe, a wife and mother of three. "The water there was also not clean, but we had no option."

For those unable to walk the distance to the church, the option was to buy three 20-liter jerrycans of water for a total of 1,000 shillings (44 cents). "That is a lot of money to spend in a day here," Margwe said.

"We had to attend to our gardens and yet, even with all the family members helping, on a typical day it would take no less than four hours just fetching water for domestic use and for our animals," said resident Elizabeth Safari. "Sometimes it was necessary for the children to miss school or go late in order to help with fetching water."

Help for the villagers finally came in November 2016 when the Birisima water project was launched. Financed by the Water Mission, the World Bank, and the Nordic Development Fund, the Birisima project is one among a group of pioneer rural units that are now operated by solar-powered pumps as an innovative solution to Tanzania's rural water supply challenge.

The shift to solar power has had a striking financial impact on rural water operations. Although electricity and diesel-powered technologies pose a financial burden, solar can be viewed as a 20-year energy subsidy. Through solar power, a village will enjoy free energy for the duration of the water plan, allowing it to set aside savings for future maintenance and repairs.

Operating for 6.5 hours, a solar-powered water pump can produce 24,000 liters per day. "The water is safe and clean since it is treated with chlorine," said Jason Asugu, project coordinator.





# Three African Sites Given UNESCO World Heritage Status

UNESCO

In July 2017, the United Nations Scientific and Cultural Organization (UNESCO) World Heritage Committee added three new cultural sites in Angola, Eritrea and South Africa. The prestigious “world heritage site” designation means the areas are “considered to be of outstanding value to humanity” and are given protections from development or destruction. The newly added sites are:

## **Mbanza Kongo, the former kingdom of Kongo in Angola**

The town of Mbanza Kongo, located on a plateau at an altitude of 570 meters, was the political and spiritual capital of the kingdom of Kongo, one of the largest states in Southern Africa from the 14th to 19th centuries. The community grew around the royal residence, the customary court and the holy tree, as well as the royal funeral places. When the Portuguese arrived in the 15th century, they added stone buildings.

## **Asmara, Eritrea: Africa's Modernist City**

Located more than 2,000 meters above sea level, the capital of Eritrea developed from the 1890s onward as a military outpost for the Italian colonial power. After 1935, Asmara underwent a large-scale development, applying unique architectural techniques to governmental edifices, residential and commercial buildings, churches, mosques, synagogues, cinemas and hotels. It is an exceptional and well-preserved example of early modernist urbanism at the beginning of the 20th century.

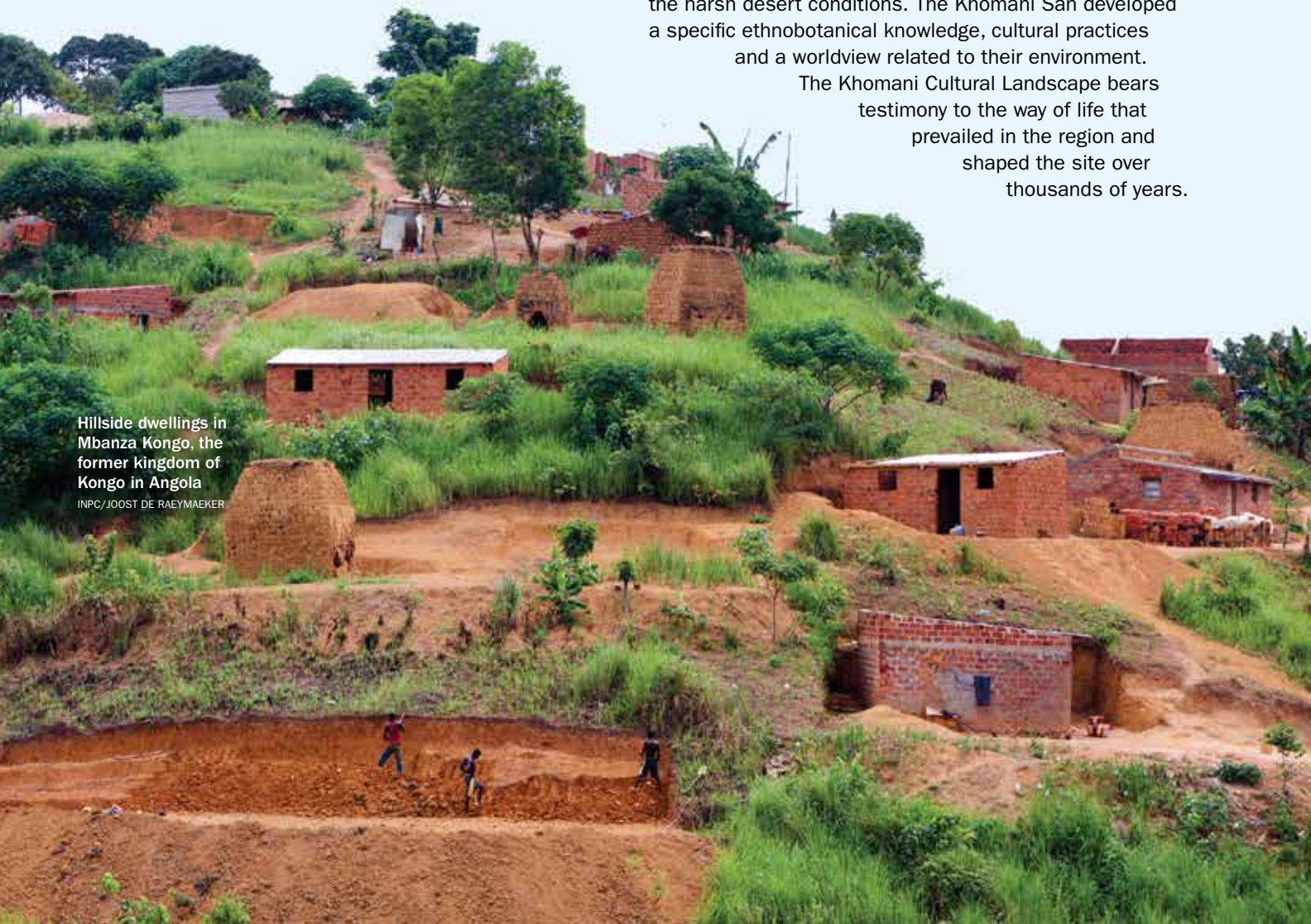
## **The Khomani Cultural Landscape in South Africa**

The Khomani Cultural Landscape is at the border of Botswana and Namibia in the northern part of South Africa. The large expanse of sand contains evidence of human occupation dating to the Stone Age. It is associated with the culture of the formerly nomadic Khomani San people who have adopted unique strategies to survive the harsh desert conditions. The Khomani San developed a specific ethnobotanical knowledge, cultural practices and a worldview related to their environment.

The Khomani Cultural Landscape bears testimony to the way of life that prevailed in the region and shaped the site over thousands of years.

Hillside dwellings in Mbanza Kongo, the former kingdom of Kongo in Angola

INPC/JOOST DE RAEYMAEKER





# Local Language Guide Tells Farmers Which Way the Wind Blows

VOICE OF AMERICA

When farmers in northern Burkina Faso speak about the direction of the wind, they refer to the direction it is blowing in. Burkina Faso's meteorological agency, however, classifies wind by the direction it comes from. That means that when state forecasters warn of a strong west wind, farmers find an east wind comes gusting along, flattening their faith in forecasts.

A new guide aims to solve that problem — and help farmers build better resilience to climate change — by translating the French and English words commonly used in weather forecasts not just into northern Burkina Faso's local languages, but also its culture.

The guide, for instance, translates the French and English word “eclipse” — the total or partial disappearance of the sun or moon — into the much more colorful term Burkinabe farmers would use for the phenomenon, said Malick Victor, a journalist from Chad who led development of the translation guide.

“If on local radio I want to announce an eclipse, I need to say that ‘Tomorrow, according to the meteorological forecast, the cat will catch the moon or the sun,’ ” Victor said. “Right now, the language used is so technical and not designed for the farmer. But if we give it to the farmer in a way they can understand, then they can use it.”

Victor's guide is a dictionary of more than 500 French and English meteorological terms with equivalent translations in Moore, Fulfulde and Gulimancema, northern Burkina Faso's three most-spoken languages. It was created as part of the British government-funded Building Resilience and Adaptation to Climate Extremes and Disasters program.

The three-year program aims to give some of the world's most climate-vulnerable people, in countries from Burma to South Sudan, the tools they need to prepare for more extreme weather and fend off more frequent climate shocks without slipping into worsening poverty.

Victor started the guide in 2016 after noticing that efforts to get better seasonal forecasts to farmers through radio broadcasts weren't working effectively, in large part because of translation issues. In Burkina Faso, for instance, farmers have little use for terms like winter and summer, instead dividing the year into periods of different rainfall and winds, such as the hot Saharan Harmattan wind season or the monsoon period.

Efforts to broadcast expected high temperatures also don't make much sense for remote rural farmers without temperature gauges, Victor said.

“But if you can say whether it's a day you can go outside with your animals or not, that can help,” he said.

Burkina Faso's government, which has encouraged the project, has indicated it intends to reprint and widely distribute the new guide. It hopes to expand the translation effort to more of the country's 60 languages.



## Market Reopens at Cameroonian Border

VOICE OF AMERICA

Trade is returning to Cameroon's border communities more than two years after the start of the regional military offensive against Boko Haram militants. But as security improves, local officials warn that Boko Haram remains a threat.

It is now a matter of routine that hundreds of buyers and sellers assemble at the Ngule market near Achigachia as police and a few Soldiers stand guard. The town straddles the Cameroon-Nigeria border, which officially reopened in January 2017.

At the market, traders sell cotton, sorghum and millet destined for Nigeria. Food items and dresses from Nigeria are also for sale.

Fifty-eight-year old merchant Bouba Lamsi said 80 percent of the people in the area work in commerce. He said business is picking up, and life is slowly returning to normal. It's a stark change from 2016 when the village was deserted after a large Boko Haram attack on Achigachia and a nearby military command post. Mosques, schools and the market were burned.

In April 2017, the government of Cameroon rebuilt the market and refurbished the Ngule government primary school, also damaged in the deadly attack. Hundreds have returned to class.

Boniface Bayaola, Cameroon's secretary of state for secondary education, said teachers who are still reluctant to resume work should be informed that peace has returned. He said he was visiting schools that were shut down due to the insurgency to encourage children with textbooks and financial assistance.

He said 125 of the 170 schools in the former Boko Haram hot spots of Logone, Chari, Mayo-Sava and Mayo-Tsanaga administrative units have reopened. But Midjiyawa Bakari, governor of the Far North region of Cameroon, urged vigilance. He said Boko Haram has lost significant firepower but had orchestrated at least 20 suicide bombings in the area since the beginning of 2017.

“We cannot say that 100 percent we have security,” he said. “You know how Boko Haram is operating. They are just seeing whether you are sleeping, and they will operate.”

People walk across the Gaboru Ngala bridge, which links Cameroon with Nigeria. REUTERS

# Thutmose

## THE WARRIOR PHARAOH

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In the course of more than 3,000 years, 170 pharaohs ruled Egypt. Of those, the greatest military leader was Thutmose III, the sixth pharaoh of the 18th dynasty.

Thutmose inherited the throne when his father died, but he was too young to rule. His stepmother was named pharaoh, and he was named co-regent. He did not become the ruler until her death. His “true” rule was from 1457 B.C. until 1425 B.C.

Even for a pharaoh, he was a man of ambition. During his reign, Thutmose led at least 17 military campaigns without losing a battle. He is said to have captured 350 cities. He made Egypt the wealthiest it had ever been.

As is often the case in history, Thutmose was at least partly successful in expanding his realm because he was in the right place at the right time. Years earlier, Egypt had been invaded by the Hyksos, a Western Asian force that used horse-drawn chariots as weapons, and Egyptians learned the skill as well. The use of chariots gave Thutmose a tremendous military advantage.

But he had genuine skills. He was a master of logistics and maintaining supply lines. He was ingenious in his habit of sending supplies and provisions out ahead of his troops. He also knew the value of surprise attacks and rapid movement. As a tactician, he was seldom predictable.

His first campaign is his most famous and is recorded in detail on the walls of a temple he built in Greece. He marched his army into what is now northern Israel and had three possible routes to the enemy's camp. Two of them were on established, easy roads. The third, winding through mountains, was scarcely wider than a single horse in places, and his war council said it was too risky.

But Thutmose chose the narrow path and led his men on foot, “horse behind horse and man behind man, his Majesty showing the way by his own footsteps,” according to the temple inscriptions. In his surprise attack, he held the enemy camp under siege for eight

months until its surrender.

In his eighth campaign, a march on what is now northern Syria, he again chose surprise over convenience. Instead of fording the Euphrates River at one of the usual, established crossings, he marched his troops north across Syria, stopping to build pontoon boats that were then lashed to ox carts. He continued north and crossed the Euphrates at a point where its rulers had not expected him and had no defenses in place.

His preferred method of expanding his empire was to attack a weak, poorly defended city or region, which would, in turn, lead to the defeat of the next town, and the town after that, as his kingdom grew more powerful.

Scholars know much more about Thutmose than most of the other pharaohs because his royal scribe kept detailed records of his pharaoh's exploits. We now know Thutmose as a Soldier, a statesman and as a skilled hunter.

The lyrics of a song dedicated to his exploits survives. In it, the god Amon-Ra sings:

*I set thy glory and the fear of thee in all lands, and the terror of thee as far as the four supports of the sky. The rulers of all foreign countries are gathered together within thy grasp. I stretch out my hands to bind them for thee.*





1. According to legend, this site is the capital of a kingdom ruled by the Queen of Sheba.
2. This important trading center was built between 1100 and 1450.
3. The site was home to the Shona people and at one time had 10,000 inhabitants.
4. Part of the site's name means "house of stone" in the Shona language.



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