

THE OTHER SIDE OF DRONES: SAVING WILDLIFE IN AFRICA AND MANAGING GLOBAL CRIME

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On 23 May 2013, poachers brutally killed a rhinoceros in Lake Nakuru National Park, Kenya. Three days later, poachers attacked and killed two rhinoceroses in two separate incidents: at Solio Ranch near Nyeri in central Kenya, and at Ngulia Rhino Sanctuary in Tsavo West National Park. Just one day later, more poachers shot a rhinoceros at Meru National Park in northern Kenya. On 29 May 2013, two more rhinos were killed on a private ranch in Oserian Wildlife Sanctuary. All told, seven rhinoceroses were killed in less than a week, as poachers stepped up their deadly campaign in Kenya and throughout Africa. As the negative consequences of poaching are felt in Africa and around the world, governments and law enforcement may have a way to counter this threat: the use of unarmed surveillance drones.

The ethical and legal framework – or lack thereof – concerning the use of armed unmanned aerial vehicles (UAVs) has dominated the global debate over drones. Comparatively little attention is given to non-weaponised vehicles. Yet surveillance drones may be one of the sharpest tools available when managing transnational crime and terrorist threats. In addition, they can assist in furthering national economic development aspirations

Above: Small surveillance drones, such as the Raven, which Kenya currently operates can only stay aloft for about one hour. This limits the amount of loitering time and the amount of information the drone can procure in a given flight.



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in countries across Africa. As such, surveillance drones should be more broadly considered and governments, multilateral organisations and technology innovators need to work across the security–development spectrum to achieve mutually beneficial goals. In that vein, innovative partnerships to stop complex transnational challenges – such as illegal poaching – may also provide opportunities to bridge the security–development divide.

Managing skyrocketing levels of rhinoceros and elephant poaching in Africa is one of many contemporary transnational challenges where surveillance drones can play a critical role. The rise in poaching on the African continent has been charted by the World Wildlife Fund (WWF) and other preservation groups. In 2012 alone, over 30 000 African elephants were illegally killed – the highest number of deaths in two decades.¹ Today, however, poaching is not just a conservation issue, but is equally a terrorism and economic development concern.

The multifaceted nature of the poaching issue led United States (US) President Barack Obama, during his visit to Africa in July 2013, to sign an executive order that called for “enhanc[ed] coordination of US Government efforts to combat wildlife trafficking and assist foreign governments in building the capacity needed to combat wildlife trafficking and related organized crime”.² The order establishes a

Presidential Task Force on Wildlife Trafficking, which will enable an integrated and comprehensive approach to mitigate the skyrocketing levels of rhinoceros and elephant poaching in Africa.

Central to US and African anti-poaching efforts is the need for countries to take a holistic approach to ensure that non-lethal drone technology is used in an effective manner, and that public–private sector partnerships are leveraged against the transnational criminals who kill defenceless animals and threaten African and US security.

The Poaching–Terror Nexus

Wildlife poaching threatens US national security because organisations – such as Al-Shabaab³ and the Lord’s Resistance Army⁴ – are partially financed by the illegal trade of ivory and rhinoceros horn.⁵ As these groups cement their strongholds, poaching has become an integral part of their survival and success.⁶ Indeed, the increased carnage in 2012 led Hilary Clinton, then US Secretary of State, to initiate an intelligence effort to ascertain the impact of trafficking in high-value animal products on US national security. The report has not yet been made public, but the issue is increasingly at the forefront of policy discussions with African counterparts, as is evident by the July 2013 executive order on poaching.



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The executive order commits the US to provide US\$10 million in additional aid to African states to manage poaching on the continent. These resources are much-needed for under-resourced and poorly equipped law enforcement authorities fighting well-armed poachers, who are usually part of sophisticated international trafficking networks.

BECAUSE OF THE HIGH PROFIT MARGINS, AL-SHABAAB IS ABLE TO DERIVE AN ESTIMATED 13–40% OF ITS FUNDS FROM THE SALE OF IVORY AND RHINOCEROS HORN

Throughout the continent, militant and terror organisations are acting with impunity. Since 2008, Al-Qaeda has relied increasingly on local organisations, including Al-Shabaab, to carry out attacks against Western interests. As a result, local Al-Qaeda franchise groups are developing means to fund their terrorist campaigns in conflict-torn countries, often through illegal channels.⁷ For example, Al-Qaeda in the Maghreb region derives a large proportion of its funds from kidnappings and ransom payments. Other Al-Qaeda franchise groups have become involved in the drug trade, offering physical protection and safe passage to drug cartels. Likewise, Al-Shabaab is reliant on profits from the sale and transport of ivory and rhinoceros horn to Asia. As with other networks, these organisations utilise their contacts and connections to move illegal goods of all kinds effectively throughout the world.

The path of a single rhinoceros horn or elephant tusk from Africa to Asia is complex, but it is a lucrative business, as rhinoceros horns can sell for as much as US\$50 000 per kilogram on the black markets in Asia. The

path of ivory and rhinoceros horns often begins in Central and East Africa, where poachers take advantage of weak and overstretched law enforcement to target vulnerable elephant and rhinoceros populations, often in reserves with challenging topography, vast sizes, and minimal oversight and security. Once the poachers have garnered the valuable tusk and horn, they are quick to transfer it to traffickers, often organised by Al-Shabaab-funded brokers and facilitators. These brokers purchase the ivory for around US\$50 per kilogram. Utilising the porous borders between Kenya and Somalia, the traffickers transport the products into the latter country. Once the goods have entered Somalia, they are quickly ferried to Al-Shabaab-controlled port facilities, where they are disguised among coal containers and smuggled onto larger transport vessels bound for the Gulf states and then on to East Asia. Once the goods enter Asian markets, ivory, for example, can fetch over US\$1 000 per kilogram – a profit margin of over US\$900.⁸

Because of the high profit margins, Al-Shabaab is able to derive an estimated 13–40% of its funds from the sale of ivory and rhinoceros horn. These profits allow the group to pay its soldiers wages – a major draw for poor, unemployed young males. Indeed, a new recruit can make up to the equivalent of US\$300 per year; a large sum in the region.⁹

Poaching as a Development Problem

Poaching has manifested into a security challenge with a link to terrorism, but to African states it is also a threat to national prosperity and development opportunities. In Kenya, 25% of the gross domestic product comes from tourism – 70% of which is linked to wildlife.¹⁰ A diminished wildlife population, especially the tourist-popular elephants and rhinoceroses, will have a direct threat on national prosperity and further economic development.

Kenya has recently experienced horrific wildlife losses – a condition that is a direct threat to Kenya’s further economic development. The livelihoods of individuals associated with tourism in Kenya are also directly affected by greater



Poaching is not just a conservation issue; it is equally a terrorism and economic development concern.



An illegal consignment of five tonnes of ivory, confiscated from smugglers, is destroyed in Nairobi, Kenya. The confiscated consignment was recovered from smugglers in Singapore and originated from poaching activities in both Zambia and Malawi.

animal slaughtering, potentially increasing unemployment throughout the country.

The instability fuelled by groups such as Al-Shabaab and the Lord's Resistance Army have had adverse effects on international investment. International companies are unlikely to invest in and develop areas threatened by these rogue groups, further plaguing underdeveloped and war-torn areas of Africa. For example, the conflict with Al-Qaeda in northern Mali resulted in two major Italian companies leaving in 2012 and 2013: Eni, the oil and gas giant, and Illovo Sugar Ltd. Both companies cited security concerns and unstable markets as a result of the continued conflict with Al-Qaeda.¹¹ The conflicts spurred by Al-Shabaab in East Africa could parallel the situation in Mali, forcing major international corporations to reassess their ventures in the region.

Finally, poaching has an adverse effect on economic development by perpetuating the black market in East Africa and further fuelling corruption. The growing demand and price of ivory and rhinoceros horn will only increase the profits of black market traders, allowing them to expand and secure their markets by purchasing weapons and other illicit goods that are known detriments to national prosperity.

Developing Cross-cutting Solutions

In response to the serious security and development challenges arising from poaching and the associated international illicit trade of a variety of goods, Kenya and other African states are increasing their efforts against poachers and allocating more scarce resources to this campaign.

In its 2013–14 budget, the Kenyan government increased the country's security budget by US\$218 million from the year before.¹² These funds are allocated to the research and development of new technology, procuring new security equipment and funding enhanced operations. No doubt, this new technology will be used against poachers, illicit arms trafficking and terrorists alike.

Although African governments are taking on the poaching challenge themselves, they need more resources to combat poaching effectively and comprehensively. Non-weaponised surveillance drones can play an important role in successfully combatting poaching and other transnational threats on the continent. In May 2013, the US and Japan agreed to assist Kenya in procuring drones, to be used for border security and countering arms trafficking (illegal arms both increase the risk of armed conflict and

improve the capabilities of poachers).¹³ Arms trafficking is inextricably linked to poaching in Africa. The president of the WWF, Carter Roberts, has highlighted the link between guns and successful poaching, grimly noting that “the bad guys are extremely sophisticated. They have night-vision goggles. They’ve got helicopters. They have all kinds of funding and resources, and we need to up our game to combat what we’re dealing with.”¹⁴

To address the increased militarisation of poachers in Africa, wildlife protection organisations like the WWF are working with technology companies and local communities. These partnerships allow for innovative approaches that connect security and development, using technology to address complex challenges.

For example, Google is funding a WWF project focused on deploying drones in Africa to protect elephants and rhinoceroses.¹⁵ While the drones are relatively cheap (as little as tens of thousands of dollars to buy and operate), they produce a critical surveillance capacity for national wildlife services, which often cannot access remote locations fast enough due to limited technical resources, manpower and topographical challenges. Drones increase surveillance capacity and, used together with other law enforcement techniques, deter poachers.

The use of drone technology to counter poachers has garnered both attention and success. In his recent remarks, Roberts further called for more “real-time data on the animals, real-time data on the poachers and then a software

system that enables us to mobilize people to get to the right place at the right time”.

In June 2013, researchers from the University of Maryland, US, successfully implemented an anti-poaching programme in South Africa, which has seen a tremendous rise in poaching since 2009.¹⁶ Using analytic technology to predict the movement of rhinoceroses and poachers, Maryland’s Falcon UAV was able to locate and track a rhinoceros and her calf and successfully identify a potential poacher nearby. During the week-long test phase, no rhinoceroses were killed by poachers in the Kruger National Park. This programme has both the potential to target specific incidents of poaching, as well as more generally deter poachers in the area.

ARMS TRAFFICKING IS INEXTRICABLY LINKED TO POACHING IN AFRICA

Successes in other regions point towards the importance of surveillance drones. In Nepal, for example, the WWF and Google partnered to establish a multimillion dollar plan to employ surveillance drones to counter rhinoceros poaching.¹⁷ Since the programme was launched over two years ago, only two rhinoceroses have been killed. Comparatively, before the programme commenced, one rhinoceros was killed every month on average.

Surveillance drones seem to work because they provide a persistent “eye in the sky” over a vast area and are difficult to detect, especially at night. Current technology employed



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by small drones has its limits. Small surveillance drones, such as the Raven, which Kenya currently operates, can only stay aloft for about one hour. This limits the amount of loitering time, and thus the amount of information the drone can procure in a given flight. Furthermore, because smaller surveillance drones fly at low altitudes at fairly slow speeds, they are vulnerable to on-the-ground weapons systems employed by criminal groups. Recent successes countering poaching are encouraging, but more can be done to leverage and expand these current programmes to overcome problems of funding, manpower and technological impediments.

A Way Forward

Counter-poaching initiatives provide an opportunity for new and innovative approaches to a security and development threat. Because many approaches to bridge this divide are in their nascent form, stakeholders can develop a systemic and systematic approach to address poaching and stop the related illicit networks. In other words, innovators can work together to change the framework used to address this complex transnational threat using a carefully thought-out, step-by-step approach.

Three key factors provide a way forward. First, success will require a holistic approach that includes states and

multilateral organisations working together across the security, development and environmental spectrum. Preventing poaching motivates all three communities, which should lead to innovative new partnerships. Non-traditional partners – such as the US Pentagon, United Nations counterterrorism units, national development agencies, the World Bank and the WWF – can find common ground and leverage each other’s expertise, resources and technology for mutual benefit.

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Information-sharing among a variety of groups is also vital. Because of the interconnectivity, counter-poaching programmes can also be leveraged to track other illicit transport networks across Central and East Africa. However, such an undertaking will require a unified commitment from governments to share information and expertise to counter trafficking routes.

Second, beyond the low-tech UAVs currently in use, more advanced non-weaponised drones should also be broadly deployed in an effort to increase effectiveness. Current small surveillance drones have limited altitude and flying times, whereas more advanced non-weaponised UAV systems can operate for longer time frames and at higher altitudes, increasing the potential to identify key elements of the illicit supply chain – including transshipment points, trafficking routes and middlemen.

One of the advantages of more advanced drones is that they can loiter above target areas for longer periods of time, and constantly collect data over large areas of land. Further, these more advanced surveillance drones can be programmed to send alerts when suspicious activities occur, overcoming the problem of human fatigue or distraction.

Third, the public and the private sectors should work more closely together from the outset. To develop and provide the right technology in the appropriate environment, technology innovators must be at the table at an early stage when governments design programmes to fight transnational threats. Early understanding of conditions on the ground, including local capabilities, is critical to matching needs with resources.

New partnerships rely on effective coordination with local governments and law enforcement. Incentivising a variety of stakeholders to take action against poachers is paramount. Including these stakeholders goes beyond just increasing the use of surveillance drones. Connecting public and private actors to develop vital confidence-building ties, to work together to acquire the most up-to-date intelligence and on-the-ground information, is crucial to counter-poaching and anti-trafficking success.

The use of non-weaponised drones in Kenya and in other African countries for intelligence, surveillance and reconnaissance purposes has great potential to impede illicit activities that fuel violence, crime and terrorist organisations, as well as undermine economic development. New innovative partnerships across the security–development spectrum and with private industry will be key to holistically managing this and other transnational challenges that threaten Africa’s continued progress. ▲

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