COMMUNITY INVOLVEMENT AND JOINT OPERATIONS AID EFFECTIVE ANTI-POACHING IN TANZANIA

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ABSTRACT

The Ruvuma Elephant Project (REP) area is located in the United Republic of Tanzania and lies between Selous Game Reserve in southern Tanzania and Niassa National Reserve in Mozambique. The area is dominated by miombo woodland with a mosaic of different land uses. Unfortunately, this mosaic of wildlife, forests, people with a variety of often competing land uses, as well as the presence of an international border close by, helps make it one of the worst impacted areas in Africa in terms of elephant poaching for the ivory trade. Despite the recent resurgence of elephant poaching in Tanzania, and in particular within the Selous ecosystem which includes the REP area, the results show the project has managed to curb elephant poaching. It is believed that the local elephant population within the REP area should remain stable if current anti-poaching input levels can be maintained. The success of the REP may be attributed to various approaches and activities that are beyond the scope of conventional anti-poaching units or programmes. These include a strong focus on: working with communities to achieve their reciprocal support and participation; joint patrols and operations; and intelligence-led operations within and outside the protected areas.

KEYWORDS: poaching, anti-poaching, communities, elephants, Tanzania, Selous Game Reserve

INTRODUCTION

The Ruvuma Elephant Project (REP) area is located in the United Republic of Tanzania, and lies between Selous Game Reserve in southern Tanzania and Niassa National Reserve in Mozambique (see map overleaf). The REP area is approximately 2,500,000 ha in total extent. It forms an important ecological corridor and is dominated by miombo woodland, interrupted by wetlands, open woodland and riparian forest. This area supports typical miombo species, including substantial numbers of elephant (*Loxodonta africana*), buffalo (*Syncerus caffer*), sable (*Hippotragus niger*) and wild dog (*Lycaon pictus*) populations.

The area falls within three local government districts, namely Namtumbo, Tunduru and Namyumbo. It is primarily community owned land, consisting of: five Wildlife Management Areas (WMA) managed by community based organizations which have been given Authorized Association status to protect, manage and sustainably utilize the wildlife resources; five forest reserves managed by the respective District Forest Officers; one game reserve managed by the Wildlife Division (Lukwika-Lumesule, on the Ruvuma River); and village land managed by the local village governments and the Districts.

The land use in the REP area therefore consists of intact miombo woodlands supporting wildlife, interspersed with villages and associated infrastructure, subsistence agriculture farms, limited but expanding numbers of livestock, and a limited network of roads. The wildlife land use component comprises a little less than 50 per cent of the total area.

Unfortunately this mosaic of wildlife habitat, forests, human settled areas with a variety of often competing land uses, as well as the presence of an easily accessible international border close by, helps make it difficult to manage, and is consequently one of the worst impacted areas in Africa in terms of elephant poaching for the ivory trade and also an important area for illegal timber trade. Jackson (2013) notes that there has been a huge increase in illegal elephant killing in Tanzania over the past few years. Some poaching groups reportedly enter the Selous Game Reserve for periods of up to two weeks
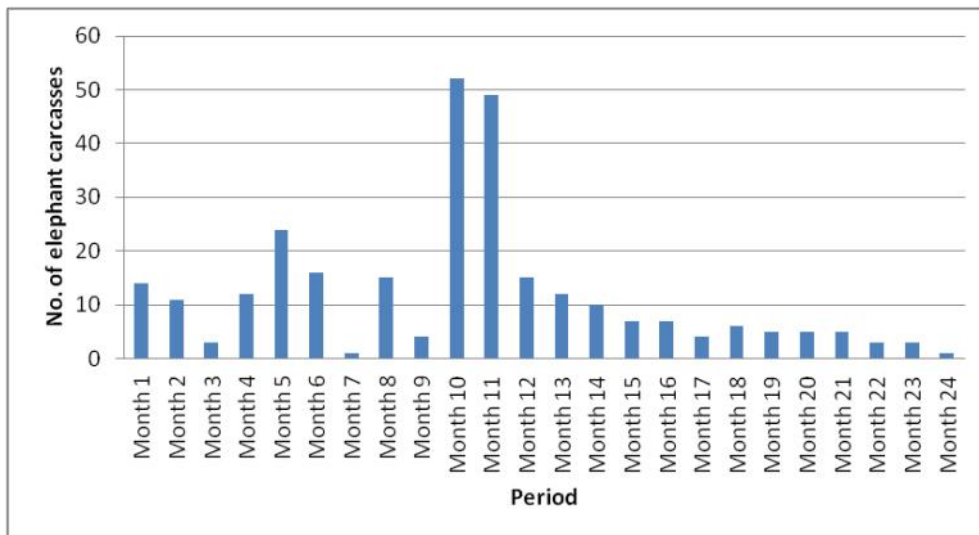
Figure 1: Number of elephant carcasses observed in the Ruvuma Elephant Project area during foot and aerial patrols, Dec 2011 to Nov 2013

Note: Aerial surveillance was introduced during month 10

and kill as many as 10 elephants each trip. Jackson further refers to a continual flow of poached ivory out of the Selous, which is then being hidden, buried at remote locations on the edge of the reserve until it is sold to traders.

ELEPHANT POACHING CRISIS

There has been a massive resurgence of elephant poaching for ivory in Africa in recent years, with Tanzania being hit particularly hard (Nelleman et al., 2013; TAWIRI, 2014). Statistics indicate that Kenya and the United Republic of Tanzania are currently the major exit points for illicit ivory (UNEP et al., 2013). Wasser et al. (2009), show through DNA fingerprinting how ivory seizures in Hong Kong and Taiwan provided further strong evidence that a lot of the ivory was poached in a relatively small area on the Tanzania and Mozambique border that includes the Selous and Niassa protected areas. This was similarly a hotspot during the previous international ivory poaching crisis during the 1980s. The substantial losses in places like the Selous Game Reserve in southern Tanzania provided fuel for the international outcry and the many campaigns that led to the CITES ban on the sale of ivory (UNEP et al., 2013).

The most recent aerial census of the Selous Game Reserve (World Heritage Site) ecosystem, which was conducted in late 2013, estimates the elephant population at 13,084. This represents a dramatic decline from 2006 when it was estimated to be at 70,406 and a major decline from the estimated 2009 census population of 38,975 (TAWIRI, 2014). The REP area falls within the greater Selous ecosystem, but is directly neighbouring the Mozambique border where transboundary poaching as well as the integration of villages and public roads traversing the area make effective law enforcement and the pursuit of poachers more difficult.

Whereas corruption is a major challenge across the continent (Jackson, 2013), UNEP et al. (2013) cite poor law enforcement, weak governance structures and political and military conflicts as some of the main drivers that facilitate poaching and allow illicit trade in ivory to grow. Locally, poaching levels are associated with a wide variety of complex socio-economic factors and cultural attitudes. The ivory trade entices many different people for lots of different reasons, from corrupt militias to poverty-stricken people eking a living at the edges of protected areas (Jackson, 2013). UNEP et al. (2013) further acknowledge that while hunting for meat or ivory has been a traditional source of protein and income for many rural communities, poverty also facilitates the ability of profit-seeking criminal groups to recruit local hunters who know the terrain, and to corrupt poorly remunerated enforcement authorities. In Jackson (2013) it is purported that poachers are well known in the communities neighbouring the Selous Game Reserve. The cash they get after delivering their poached ivory to middlemen gives them immediate status and makes them become role models for young people who see only the immediate benefit of an illegal activity.

RUVUMA ELEPHANT PROJECT

PAMS Foundation is a not for profit conservation organization registered in Tanzania. PAMS Foundation started the REP during August 2011. The aim of the REP is to improve the status of elephant conservation in the area between Selous Game Reserve and the Niassa National Reserve. The primary objectives include to: determine the current status of and threats to elephants in the project area using reliable and objective methods; gain a meaningful understanding of the seasonal movements of elephants in the project area; control the poaching of elephants; ensure that law enforcement and prosecution is a sufficient deterrent for elephant
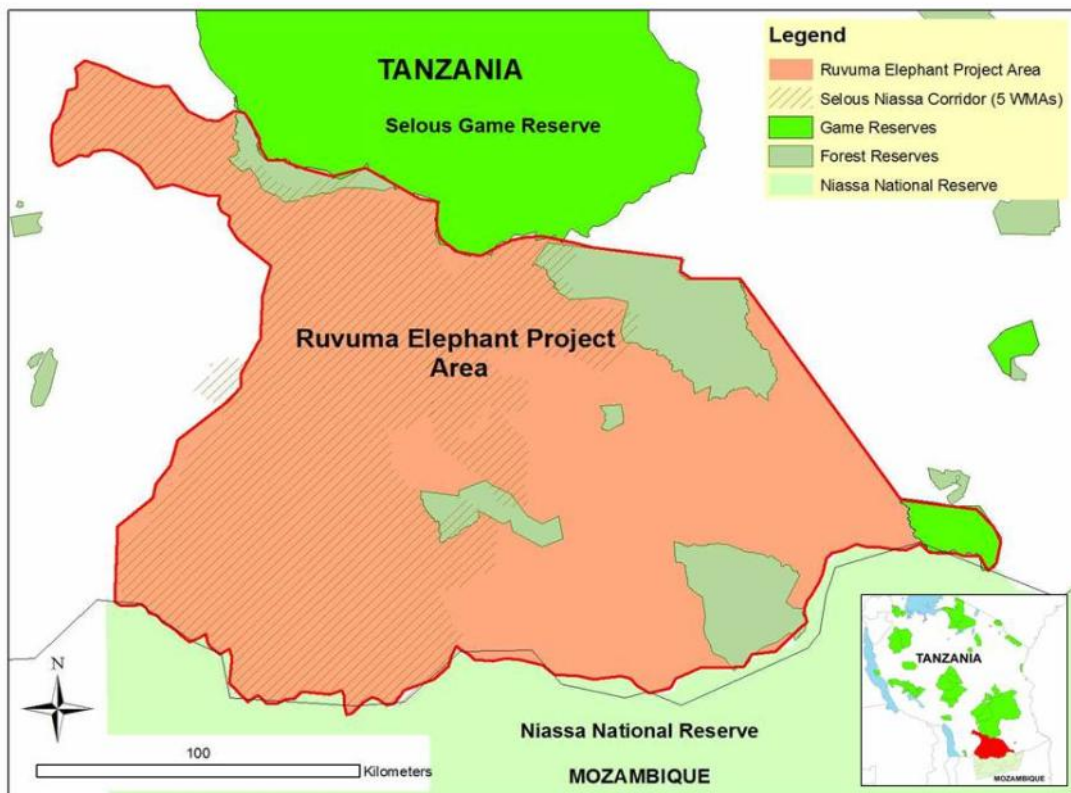
poachers; and reduce elephant mortality resulting from Human–Elephant Conflict (HEC).

The primary project activities include:

- Training game scouts and rangers in basic anti-poaching skills and case preparation;
- Implementing joint field patrols on an ongoing basis. Typically patrol teams consist of village game scouts accompanied by wildlife officials or rangers, from either the applicable District or from the Wildlife Division. Numerous patrols are undertaken in the project area each month, with a top priority focus being in areas where the density of both elephants and of poaching incidents has been the highest;
- Undertaking aerial surveillance in order to locate illegal activity, identify poaching hotspot areas and understand elephant distribution in the landscape in order to better prioritize ground patrols. Aerial surveillance includes flying set routes on a near monthly basis, in which all elephants were counted (total counts) and recorded on GPS, along with all new carcasses and illegal activities. This was done in order to allow for monthly, seasonal and yearly comparisons;
- Providing incentives and rewards for ensuring good performance and results to those undertaking patrols and special operations, as well as to finance an informer network;
- Informing and co-financing special intelligence-led operations;

- Implementing a HEC mitigation programme, including erecting chili pepper fences and beehive fences for protecting communities' crops against elephants;
- Supporting income generating activities for the WMA communities; and
- Monitoring wildlife densities and distribution through patrols and aerial surveillance work.

The challenges of the REP have been immense. However, as the project was able to begin to equip, train and deploy a pool of more than 200 village game scouts and a small number of government wildlife and law enforcement staff and commence with achieving its range of activities, the situation has steadily improved.

Roe et al. (2014) note that law enforcement strategies tend to overlook how involving local people in conservation, for example as community game guards, can boost more formal law enforcement approaches. Their paper further states that "Ultimately, the illegal wildlife trade will be best controlled not by guns and rangers but by solutions that respect and make partners of local communities and landowners, through providing sound incentives and opportunities to value and conserve wildlife".

The REP has involved local people extensively and has provided incentives and opportunities for participation for as many individuals and groups as possible, including
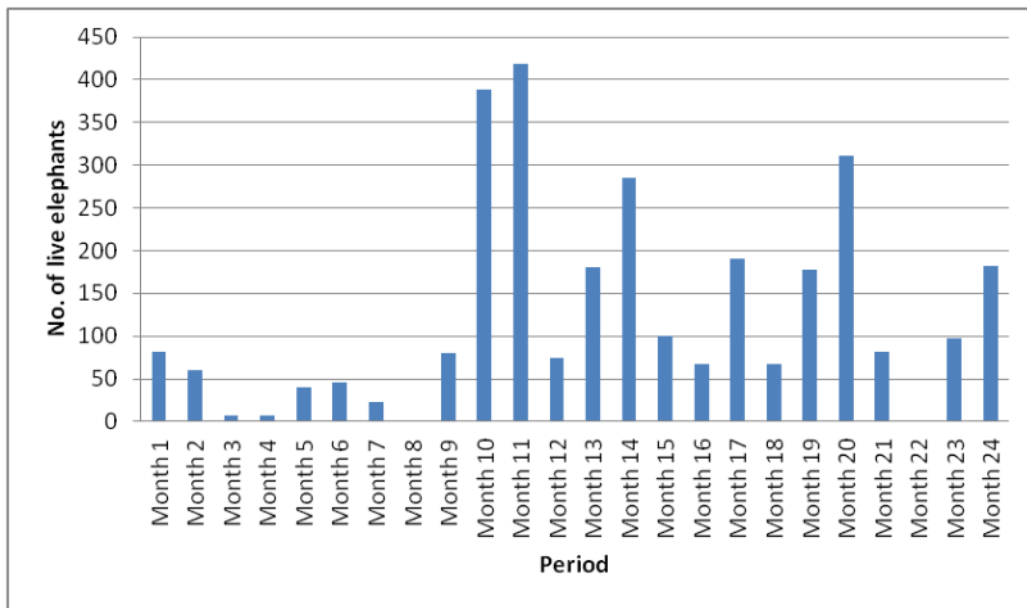
Figure 2: Number of live elephants observed in the Ruvuma Elephant Project area, Dec 2011 to Nov 2013

Note: Aerial surveillance was introduced during month 10

paying financial rewards to any and everyone who provides assistance or helpful information that furthers the objectives of the project.

RESULTS FROM THE RUVUMA ELEPHANT PROJECT

The first patrols of the REP were conducted in 2011. All of the initial eight patrols results included photographs and Global Position System (GPS) locations of elephants shot, poisoned or spiked to death. The meat had not been removed in 95 per cent the carcasses, only the faces hacked away and the ivory removed. The elephant carcasses included elephant cows and juvenile elephants. It was also evident that scavengers were unable to keep up with the volume of fresh elephant meat, resulting in many carcasses being untouched and meat left to rot.

Data from project patrols and aerial surveillance (Lotter & Clark, 2014) show a substantial annual decrease in the number of elephant carcasses observed over the 24 month period of operation (Figure 1). A total of 216 elephant carcasses were observed in year one, and 68 in year two. These exclude a small number of carcasses of elephants that were suspected to have died as a result of natural causes. The sudden spike in the number of elephant carcasses observed in month 10 is a data bias attributable to the introduction of aerial surveillance.

The numbers of live elephants observed over this period did not indicate a decline over the 24 month period (Figure 2). A total of 1,226 live elephants were observed in year one, and 1,325 in year two (Lotter & Clark, 2014). These data were obtained from foot patrols as well as aerial surveillance. Patrol effort as well as areas and distances covered through aerial surveillance were similar in both years.

Results from patrols and other law enforcement interventions implemented since project inception include: the seizure of 1,582 snares; 25,586 illegal timber (pieces); 175 elephant tusks; 805 firearms; 1, 531 rounds of ammunition; six vehicles; 15 motorcycles; the arrest of 563 people; and the discovery of 284 elephant carcasses and 17 other wildlife carcasses that were believed to have been illegally killed (Lotter & Clark, 2014). These results are substantially higher than any other anti-poaching unit or project in Tanzania apart from the Friedkin Conservation Fund (FCF), which has comparable levels of effectiveness from their operations in western and northern Tanzania. FCF operate similarly to the REP in that they also focus to a large extent on working within communities neighbouring the protected areas where they have been allocated their concessions and have emulated the strongly intelligence-led multiple agency approach adopted by the REP.

The large number of elephant carcasses discovered that had been poached, and other observations including the frequency of live elephant sightings from patrols and work in the field, indicated that the population was declining extremely rapidly at the time of inception of the REP. The number of fresh elephant carcasses observed in the field and the volume of ivory being sold in the area were particularly high during the early stages of the project. The poaching was notably high in 2011 and 2012, but was demonstrably reduced during 2013 to the level whereby the local elephant population should remain stable if current anti-poaching input levels can be maintained.

Carcasses from other wildlife also decreased dramatically during the corresponding period, with no new records reported from within the area over the last six months of

A recently killed elephant © Krissie Clark

2013. Hunting Concession block owners and field staff from within Niassa National Reserve reported measurable declines in cross-border poaching in their respective areas following major intelligence-led multi-departmental special operations conducted during late 2012 (Tunduru) and 2013 (Namtumbo), respectively (J Wilson 2013, pers. comm.). These operations form part of the *modus operandi* of the REP.

The use of poison to kill elephants and other wildlife was reduced, with no cases of suspected wildlife poisoning having been reported during the last six months of 2013. Similarly, the number of elephants killed as a result of HEC also declined, albeit not dramatically, to an average of four during 2012 and 2013 respectively compared with the previous annual average of 11.

Poaching has been reduced within the REP area in spite of the precipitous decline in elephant numbers throughout the Greater Selous ecosystem as a whole.

DISCUSSION
It is useful to compare the relative successes and trends from some different protection models.

Comparing Selous Game Reserve with Ruvuma Elephant Project: The 4.5 million hectare Selous Game Reserve is managed and protected by a single Government authority, and has several private sector concessionaires undertaking hunting and photographic safaris within it. It has experienced very significant declines in elephant numbers over the last five years.

The Ruvuma Elephant Project (REP) area, on the other hand is managed and protected by multiple Government agencies (not a single authority), including several community based organizations and a non-government organization specializing in protected area management support (PAMS Foundation). These organizations work together in a coordinated manner.

As discussed, evidence suggests that poaching has been reduced in the REP area, which was instituted beginning three years after the dramatic poaching onslaught started in 2009, but there is no strong evidence of it abating yet in the Selous Game Reserve (SGR) in spite of there not being a meaningful difference between the SGR and REP in terms of rangers and scouts available for conducting patrols. The REP has a slightly higher density of scouts

available per unit area, but the SGR has more firearms and better equipment available for their patrol teams. A further notable difference is that in the case of the REP there are substantially more arrests and seizures made outside of the actual protected areas (Wildlife Management Areas, Forest Reserves and a Game Reserve) in and around villages and community areas, than within them in the field.

Comparing Kruger National Park with Ruvuma Elephant Project: To consider another case study of a protected area adopting a more conventional approach similar to the first model (SGR), the situation in South Africa's Kruger National Park (KNP) provides an interesting example. The KNP is one of the most developed and best resourced protected areas in Africa, and has one of the best trained and equipped ranger corps as well as a specialized anti-poaching department. Functioning as a government authority and operating primarily by conducting patrols and operations within the protected area itself, the KNP has suffered increasingly heavier losses of rhinoceros species (*Ceratotherium simum* and *Diceros bicornis*) due to poaching on an annual basis. The numbers of ranger staff stationed at the 22 main senior ranger sector bases has been increased a few times as part of the effort to turn the tide; more training and equipment has been provided; more aircraft and some drones and tracker dogs have been brought in; a retired military general was appointed to oversee the effort and defense force units have been deployed to bolster the efforts on the ground. Substantial public and media campaigns were launched and the private sector in South Africa has rallied and financial donations have been made. In spite of all this arguably making the KNP one of the best protected area operations on the continent in terms of being trained and equipped to deal with illegal wildlife killing, the rhino poaching problem continues to worsen.

Rademeyer (2012) proposes that the primary reason for conventional anti-poaching approaches failing to protect rhinoceros populations in South Africa is because of corruption in the system. Multiple agency involvement is a way to increase transparency and reduce corruption, hence it was adopted by the REP. As with the SGR case

Spikes used to kill elephants © Shaziri Adamu

example, a further notable difference compared with the REP is that in the case of the KNP substantially less arrests and seizures are made in community and urban areas outside of the actual protected area compared with those made in the field.

A summary of the anti-poaching results from the Kruger National Park can be seen in Table 1.

SECRETS OF SUCCESS

The case examples discussed above suggest that in many cases the simple, conventional approaches are no longer effective and that a broader scope, multi-party run programme adds to effectiveness. No matter how well and professionally tactics are implemented, if the strategy is inadequate then overall success cannot be achieved against a well organized adversary.

The all too common tendency to treat symptoms rather than causes is one of the reasons many programmes fail, or enjoy only limited success.

For example, at the protected area level neighbouring community participation in poaching is one of the key issues to be addressed to achieve effective wildlife protection. It is extremely difficult for commercial poachers to be successful without community participation in various forms, filling the roles of guides, porters, informers, etc. So, what are the causes and what are the symptoms in this example?

	2010	2011	2012	2013	Table 1: Rhino poaching results for Kruger National Park, 2010 to 2013 (South African National Parks, 2014)
Rhino poached	146	252	425	609	
Arrests	67	73	82	127	

Confiscated ivory © Krissie Clark (left) and weapons and other items © Max Jenes (right)

Local community participation in commercial poaching is the manifestation of a problem that is caused primarily by: the need for cash; lack of viable alternatives; lack of understanding of the importance and value of conservation (and living wildlife); and lack of good relationships between community members and protected area authorities. These causes all need to be recognized and treated before any long term success can be expected. Conducting patrols and related law enforcement activities is essential but it is addressing a symptom and not the root causes of why most of these people are poaching.

Similarly, focusing on operations to defeat poaching groups within the protected areas alone is also a reactive, not a proactive, strategy. At least equivalent attention must be given to the corrupt financiers of poachers in towns and cities surrounding the protected areas and their neighbouring communities. Apart from the fact that not doing so is ignoring another cause and treating only its most obvious symptoms, there is also a practical advantage of including this approach to an anti-poaching programme. In reality it is more difficult to locate and surprise poachers in a large protected area, compared with informer-led actions in the villages or towns where they live and spend the majority of their time.

Another reason why people are lured into poaching as easily as so many are, is because many poachers who are caught are freed shortly thereafter, or are fined lightly and are thus not put off sufficiently to deter them from going back and poaching again. The fear of being severely punished (convicted and heavily sentenced) is a bigger deterrent, where it is a reality, than the act of being arrested. Proper case preparation, prosecution and sentencing of poachers adequately to the maximum extent of the law, should therefore enjoy much more focus and attention than it does. The judiciary system and the people who run it should be the allies of conservation, whereas in reality there are many cases where even magistrates and prosecutors are not on the side of conservation. In the case of the REP, most of the worst offenders were repeat offenders. However, over the past year this trend changed since these aspects were better addressed and some poachers who were previously freed shortly after being arrested, have been properly convicted and sentenced to prison terms ranging from 3 years to 10 years. Similarly to the REP, there have been substantial numbers of convictions of poachers in the KNP, and hence not many repeat offenders arrested.

Finally, we suggest that another important ingredient needed for ensuring success in anti-poaching at the protected area level is to involve more than one agency in the law enforcement effort. It is far easier for criminal syndicate leaders to be able to understand, predict and in many cases influence and corrupt, single agencies and systems working within well known reporting structures than it is to do so when there is more of a multi-agency approach. It is prudent that not only one agency should be tasked, empowered and incentivized to deal with the problem of commercial poaching and its associated crimes, and equally important that the approach employed should include the implementation of routine as well as unanticipated cross-checks. A measure of unpredictability needs to be a part of the *modus operandi* at all times to keep the enemy guessing. Establishing ad hoc task forces reporting only to the highest authority in each country and comprised of a selection of the best officers coming from all the agencies (national parks, police, security, customs, army, etc.) is a practical way to accomplish this.

CONCLUSION
In the case of the Ruvuma Elephant Project (REP) within the Selous–Niassa ecosystem in southern Tanzania, an unconventionally holistic approach has led to a reduction in large scale ivory poaching. The strategy has included

Training wardens in anti-poaching techniques © Shaziri Adamu

various approaches and activities which are beyond the scope of conventional anti-poaching units or programmes; to which most of the success achieved thus far is primarily attributed. These include a strong focus on: working with communities to achieve their reciprocal support and participation; joint patrols and operations; and intelligence-led operations within and extensively outside the protected areas.

The success of the REP may be attributed to various approaches and some activities which are beyond the scope of most conventional anti-poaching units or programmes.

In comparison, several much better trained, equipped and resourced, anti-poaching efforts adopting a more conventional approach, have not been experiencing similar trends of success.

It is acknowledged that there is no room for complacency, and there is still a lot of work needed before it can be said that the project aim and objectives have been achieved. However, due to a combined effort including various government, community and private sector partners, the REP has achieved some meaningful early successes. From the lessons learnt and shared and by looking to improve and adapt further, as well as working more closely with and in support of our neighbours on this immense problem that respects no boundaries, it is believed that the results achieved thus far should be maintained and improved.

ACKNOWLEDGEMENTS

ABOUT THE AUTHORS

Wayne Lotter is a Director of the PAMS Foundation, a not for profit conservation organization in Tanzania. He is also Vice President of the International Ranger Federation, board member of The Thin Green Line Foundation and member of IUCN WCPA. He has a Masters Degree in Nature Conservation and has 25 years of professional experience in wildlife management, conservation and environmental management, and community liaison. Wayne has worked in government, corporate and NGO sectors.

Krissie Clark is a Director of the PAMS Foundation in Tanzania and is also a member of IUCN WCPA. In 2010, Krissie was recognized at the runner-up for the IUCN Young Conservationist Award. She holds a M.Sc in Botany and a B.Sc Honours in Wildlife Management. She has over 14 years' experience in conservation, ecology, research, training, project management and participatory community natural resource management. She is also the project pilot.

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RESUMEN

El Proyecto para la conservación del elefante en la región del Ruvuma (REP) se desarrolla en la República Unida de Tanzania, entre la Reserva de Caza Selous, en el sur de Tanzania, y la Reserva Nacional Niassa en Mozambique. La zona está dominada por bosques de miombo con un mosaico de diferentes usos de la tierra. Desafortunadamente, este mosaico de vida silvestre, bosques y personas con una variedad de usos concurrentes de la tierra, así como la presencia de una frontera internacional cercana, contribuyen a que sea una de las regiones más afectadas de África en términos de la caza furtiva de elefantes para el comercio de marfil. A pesar del reciente resurgimiento de la caza furtiva de elefantes en Tanzania, especialmente dentro del ecosistema Selous, que incluye la zona del proyecto REP, los resultados reflejan que el proyecto ha logrado frenar la caza furtiva de elefantes. Se cree que la población local de elefantes dentro de la zona del proyecto REP podría permanecer estable si se mantienen las medidas actuales en contra de la caza furtiva. El éxito del proyecto REP se puede atribuir a diversos enfoques y actividades que rebasan el ámbito de las unidades o programas convencionales para combatir la caza furtiva. Estos incluyen un marcado énfasis en: el trabajo con las comunidades en procura de apoyo y participación recíproca, patrullas y operaciones conjuntas, y operaciones de inteligencia dentro y fuera de las áreas protegidas.

Aerial surveillance © Krissie Clark

RÉSUMÉ

Le Ruvuma Elephant Project (REP) se trouve en République Uni de Tanzanie entre la Réserve Naturelle de Selous au sud et la Réserve Nationale de Niassa en Mozambique. Bien que des boisements de miombo prédominent dans la région, l'on observe aussi toute une mosaïque de terrains, arborant des animaux, des forêts, et des habitants dont les activités agricoles sont souvent opposées. Malheureusement cette mosaïque de terrains différents, ainsi que la frontière toute proche, ont contribué à créer l'un des pires régions pour le braconnage d'ivoire d'éléphants en Afrique. Cependant, malgré la récente résurgence du braconnage d'éléphants en Tanzanie, notamment dans le Selous et la région du REP, ce projet a réussi à enrayer la montée du braconnage. La population d'éléphants au sein du REP devrait en effet rester stable si cet effort anti-braconnage est maintenu. Le REP doit ses succès à la diversité de ses méthodes et à des activités qui dépassent le champ d'application des programmes habituelles de lutte contre le braconnage. On y voit par exemple un travail au sein des communautés pour favoriser une collaboration réciproque, des patrouilles conjointes, et des opérations basées sur le renseignement à l'intérieur et à l'extérieur des aires protégées.