BIZCOMMUNITY

Technologies and tactics in curbing wildlife poaching

By Nicholus Funda

10 Jan 2020

Generally in South Africa, criminals control the night. Technology is a tool that is used in protected areas (national parks, provincial, municipal and private nature reserves) for detecting suspected poachers or criminals. It can be used to empower protected area management to claim a fraction of the night.

Image source: Gallo/Getty

When it is working, it can act as a force multiplier because it can be active 24/7. Information provided by technology, in general, is accurate in terms of time, position, altitude and other variables. Protected area agencies must be aware that anti-poaching technology is changing rapidly and they must be prepared to adapt to those changes.

Most technologies are designed for fighting crime in urban areas which are smaller in size with high human densities, and developed mainly from the Northern Hemisphere countries where climatic conditions are not the same. In rural areas, human population is low, bigger areas are to be covered, and there is usually poor connectivity. These conditions also require high power retention technologies. These challenges impact on limited resources such as budget and manpower in protected areas. Bringing these technologies into rural areas is costly and at times some of the technologies are not viable in these areas. These challenges call for prioritisation based on the threats and the value of the environmental assets.

Types of technologies used in protected areas

With a wide range of activities taking place in protected areas, including wildlife, landscapes and human activities (tourism, counter-poaching, research), technology must be able to differentiate between friendly forces and enemies. Game such as elephants can uproot foreign objects, hyenas can bite cables and rhino can rub themselves against anchor posts. Some of the assets also share some characteristics that are similar to human beings e.g. same temperature (for thermal detection) at different times of the night - such as termite mounds and certain species of trees, as well as shape, and walking patterns.

There are five main types of technologies used in protected areas:

- **Personal technologies:** In some protected areas, personal technologies are a standard part of the operation, including activities such as law enforcement and guiding. For example, in protected areas with potentially dangerous animals, such as hippo, buffalo, elephant, lions and leopards, firearms are used to protect human lives.
- **Night vision technologies:** Poachers walk around mostly at night to avoid easy detection by rangers and exploit

cooler temperatures, particularly in the lowveld of South Africa. Night vision technologies can be used to detect and deter poachers when visibility is low at night.

Nicholus Funda, chief ranger at SANParks' Kruger National Park

- **Mobile technologies:** These include air support, tracking devices such as GPS, cyber trackers, scanners, command and control technologies such as cellphones and radios, perimeter technologies such as seismic and magnetic cables, area-specific technologies such as trap cameras, as well as airborne sensors.

Technology forms part of the game changers in counter poaching and includes canines, air-mobility and field personnel. In the Kruger National Park, we are making headway with technology, however no technology can replace troops on the ground.

ABOUT THE AUTHOR

Nicholus Funda completed his National Diploma in Nature Conservation at Fort Cox College followed by a Bachelor's in Technology degree in Nature Conservation at Port Elizabeth Technikon (1996). He then went on to join the Eastern Cape Department of Nature Conservation and was able to complete his Masters in Environmental Management at Free State University (2002). Funda was appointed as a section ranger at Shangoni in 2000. He moved on to join South African National Parks (SANParks) where he rose through the ranks to become park manager of Marakele National Park in Limpopo (2002). In 2005 he joined TUT's Nature Conservation department as a lecturer and acted as head of department for the latter half of 2015. However, the bush continued to be the beacon to Funda and he resigned from TUT at the end of 2015 to take up his current role as chief ranger at SANParks' Kruger National Park.