Community Perceptions and Attitudes Regarding Wildlife Crime in South Africa

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Abstract—Wildlife crime is a complex problem with many interconnected facets, which are generally responded to in parts or fragments in efforts to "break down" the complexity into manageable components. However, fragmentation increases complexity as coherence and cooperation become diluted. A whole-of-society approach has been developed towards finding a common goal and integrated approach to preventing wildlife crime. As part of this development, research was conducted in rural communities adjacent to conservation areas in South Africa to define and comprehend the challenges faced by them, and to understand their perceptions of wildlife crime. The results of the research showed that the perceptions of community members varied - most were in favor of conservation and of protecting rhinos, only if they derive adequate benefit from it. Regardless of gender, income level, education level, or access to services, conservation was perceived to be good and bad by the same people. Even though people in the communities are poor, a willingness to stop rhino poaching does exist amongst them, but their perception of parks not caring about people triggered an attitude of not being willing to stop, prevent or report poaching. Understanding the nuances, the history, the interests and values of community members, and the drivers behind poaching mind-sets (intrinsic or driven by transnational organized crime) is imperative to create sustainable and resilient communities on multiple levels that make a substantial positive impact on people's lives, but also conserve wildlife for posterity.

Keywords—Conservation, community perceptions, wildlife crime, rhino poaching, interest and value creation, whole-of-society approach.

I. INTRODUCTION

SOUTH Africa has been experiencing the worst rhino poaching crisis in history, with rhinos killed daily throughout the country. The number of rhinos poached in South Africa increased rapidly over the period of 2007 to 2014, with a peak of 1,215 rhino poached in 2014. This recent and rapid increase in wildlife crime, mainly for the illegal trade in wildlife and wildlife products, not only threatens the survival of significant populations of endangered species in South Africa, but also threatens regional security, the stability of the tourism sector, poverty reduction, and social stability. Poaching and illicit trade promotes corruption, threatens the peace and security of fragile regions, strengthens illicit trade routes, destabilizes economies and communities that depend on wildlife for at least part of their livelihoods, and contribute to the spread of disease [1].

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The United Nations Secretary-General, Ban Ki-moon, is quoted as saying that *"Illegal wildlife trade undermines the rule of law and threatens national security; it degrades ecosystems and is a major obstacle to the efforts of rural communities and indigenous peoples striving to sustainably manage their natural resources. Combating this crime is not only essential to achieving peace and security in troubled regions where conflicts are fuelled by these illegal activities"* [2].

Wildlife crime is a complex problem with many facets and angles, and no clear, quick solutions. Many factors drive this complexity, such as the number of stakeholders involved, each with an agenda; the high stakes; the number of simultaneous aspects of intervention; the problem dynamics; and the huge number of interactions in the problem. Apart from the sheer number of actors and interventions in, for example, the rhino poaching problem, the different aspects of the problem are also interconnected but are generally addressed in parts or fragments, thus intensifying the complexity [3].

The Constitution of South Africa mandates the government to take reasonable legislative measures that promote conservation by providing for the management and conservation of biological diversity and the sustainable use of indigenous biological resources. Section 24 of the Constitution provides the overarching legislative foundation for environmental management in South Africa. It states that everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development [4]. Thus, a constitutional duty is placed on all spheres of government to take reasonable steps, in their current functions as well as future plans, to prevent environmental degradation, promote conservation and ensure sustainable development [5]. With this responsibility in mind, one of the focus points of the whole-of-society approach is the factors and aspects relevant to rural communities around conservation areas. An in-depth understanding of the social and psychological fabric influencing people's views on conservation, poaching and illicit trading of wild life is crucial in order to understand the motivational factors behind their acceptance or rejection of wildlife crime. Perceptions, based on values and interests, influence and guide behavior, motivate all actions and determine the future success of interventions. To mitigate wildlife crime, perceptions have to

be managed and understood to develop interventions, adapt the implementation strategy and to direct the tasks of creating, shifting, and changing world-views.

This paper discusses the research conducted in communities adjacent to conservation areas (hereafter referred to as parks) and the aspects and facets of people's perceptions of conservation and wildlife crime.

II. COMMUNITY PERCEPTIONS AND WILDLIFE CRIME

Perceptions and attitudes towards conservation and/or animals are likely to be influenced by social interests and the costs and benefits experienced.

It is argued that nature conservation is inseparable from a people's worldview and concomitant values because the latter informs about 'useful' or 'valuable' resources, accepted behavioral norms and the setting of priorities. The key to people's worldview is their local and indigenous knowledge that is largely formed by shared experiences and underlying values, which are often unstated but guide the behavior of people to a major extent [6]. It is also offered that wildlife is a direct symbol of the wildness in which many rural communities feel surrounded, and that the effect of this on the psyche and beliefs of local residents should not be underestimated [7].

A number of studies of rural communities in developing countries found that local attitudes towards wildlife, protected areas, and conservation can be influenced positively if local people are involved in decision-making for resource management and have access to conservation-related benefits [8]. It is important for the wider community to receive generic benefits from living with wildlife, since one individual's behavior (e.g. someone living locally and excluded from benefits) can undermine project success [9]. This is supported by a number of surveys in South Africa, Botswana, and Tanzania, which established that local people's support or opposition to protected areas, managers of protected areas, and wildlife is based on utilitarian values [10]. These studies found that in these countries, "local people may support protected areas because national parks and related reserves protect important watersheds, generate foreign exchange, or maintain critical hydrology functions" [10, p. 588]. However, those who held negative or neutral attitudes toward management of protected areas did so because they felt that parks management provided inadequate services or benefits for their communities [10].

III. RESEARCH AND RESULTS

In order to determine the effect and impact of perceptions and attitudes on wildlife crime prevention, a community perception study was conducted in the northern part of the KwaZulu-Natal (KZN) province in South Africa. In an examination of the relations between local communities and conservation areas, the history of the region is important, as well as the regional political and economic situation.

The KwaZulu-Natal province was selected as the target area as it plays a major role in the conservation of both white

(*Ceratotherium simum simum*) and black rhinos (*Diceros bicornis minor*). The former Natal Parks Board was instrumental in saving the white rhino from extinction – over 17,000 southern white rhinos are descended from the remnant population of white rhinos in the Imfolozi Park (formerly Umfolozi Game Reserve). Today, Ezemvelo KwaZulu-Natal Wildlife (EKZNW) is involved with saving a subspecies of the black rhino, virtually all of the black rhinos now living in South Africa are descendants of the population of Imfolozi Park. EKZNW is a parastatal body responsible for maintaining wildlife conservation areas and biodiversity in the KwaZulu-Natal province. It receives a subsidy from the provincial government, and supplements this through its own business operations, generating about 40% of its operating budget. In many instances, EKZNW is the only employer in certain areas and one salary paid to an employee from a local community can benefit between 10 and 15 others.

A. Goal of the Study

The study discussed here forms part of an initial study in directing the development and design of a whole-of-society approach, which could be utilized in tackling different kinds of security problems in South Africa.

Wildlife crime is a complex problem but by adding the perspectives of various actors, which include communities, to understanding the problem and contributing to the discourse, progress can be made. To tackle fragmentation in responding to wildlife crime, one of the methods proposed was to integrate interventions in working towards a common understanding and purpose through a whole-of-society approach. The focus of this method is on a trans-disciplinary approach, driven by an understanding of complexity theory, to combine and integrate disciplines and knowledge. The process is underpinned by stakeholder engagement and consists of foresight concerned with creating a shared understanding of the situation and a new future, co-developing and implementing cross-organizational interventions on strategic, operational and tactical levels, and building capabilities within organizations.

The aim of the community study was to employ an integrated way of assessing and understanding the problems and challenges currently faced by rural communities around conservation areas in KZN regarding wildlife crime, and to determine the context within which these communities live and survive in order to identify the different levels and significance of elements and factors (drivers and barriers) that affect wildlife conservation, crime and crime prevention in the areas around the conservation areas.

B. Approach and Methodology

The assessment of the rural communities took into account the subjective (critical values, power relations and cultures that exist within and between all the actors), as well as the objective (infrastructure, access to basic services, equity, capacity, and financing), in order to build a picture of the communities in their context and of their perceptions regarding wildlife and nature conservation. Rhino

conservation was used as a focus because of the rapid increase in rhino poaching.

The villages included in the study were identified based on selection criteria encompassing distance from the borders of a conservation area (within 20km or a day's walk), the presence of rhinos in the conservation area, vicinity of international borders, and willingness of community members to participate in the research. In each village, an opportunistic/snowball sample of about 35 households was drawn upon obtaining permission from the chief/headman for his/her people to participate in the research. Due to research ethics considerations, no person under the age of 18 years formed part of the research. The interactions with a village and its residents were limited to one day only in order to obtain information from the communities as efficiently as possible, without unnecessarily upsetting the activities of the communities, and as far as possible not to affect relationships between the parks and communities. Most of the community members in the target villages were willing to participate in the research, but tensions between the conservation areas and people in six of the target villages resulted in the research team not being allowed to formally record their responses. Some of the community members in these villages were willing to participate in the research and share information, but in an informal manner. This resulted in a total of about 200 respondents forming part of the research with 70 participating formally and about 130 participating informally.

A three-pronged approach was followed to gather information and data. Individual participants were asked to firstly respond anonymously to a questionnaire (in their home language), and secondly, focus groups were formed to learn more about specific matters. Thirdly, a group feedback session was formed to verify and validate the information obtained through the questionnaires and the focus group discussions.

The questionnaire was developed to establish demographics and general data about the circumstances these individuals and their households live in, as well as some personal opinions and perceptions regarding conservation and rhino poaching. Even though valuable information was obtained through completing the questionnaires in a group session to save time, the lesson learnt was that more in-depth information could have been obtained through individual household interviews to rule out the possibility of not all opinions being raised in a group session because of possible fear (being of a lower status to that of the person talking), respect (not wanting to oppose people of a higher status), or peer pressure (not wanting to differ from the others).

The focus group discussions were conducted in their home language to gain a general understanding of the perceptions of community members specifically about conservation, wildlife crime prevention and rhino poaching. Separate focus groups were conducted for women and for men. This eliminated the possibility of not all opinions being raised because of possible gender issues, such as women not willing to raise their opinions when men are present.

Following the separate focus group discussions, the participants were gathered in one group again to discuss and verify the responses and issues raised by the different groups. The purpose of this feedback session was to ensure that the responses and issues were valid for all, i.e. consensus was reached on the responses to be used for the study. This proved to be valuable as the responses were validated by the research team, as well as the participants.

The data from the completed questionnaires were captured in a spreadsheet in a format similar to the questionnaire. The data were analyzed quantitatively (numbers and frequency of responses) and qualitatively. The qualitative data were obtained from the questionnaires, as well as the focus group discussions. This information was listed and grouped into categories to respond to the main research questions. A response was deemed more important than another based on the frequency of mention. The information was also disaggregated by gender. The focus group responses were subsequently listed according to frequency and thus quantified. To ascertain the relationships between questions, the Chi-square (χ^2) test for independence was used.

C. Summary of Results

The results from the community perception study disclosed that the perceptions and attitudes of community members were ambivalent – conservation was regarded as good *and* bad. The general perception is that conservation is mainly about animals - plants, birds or fish were not mentioned by any respondent in this study.

Most respondents were in favor of conservation in general and of protecting rhinos, but only if they derived adequate benefit from it. Regardless of gender, income level, education level, or access (or lack of) to municipal services (water, sanitation, refuse removal, electricity, etc.), conservation was perceived to be good. Conservation is good because of increased tourism, job opportunities and the resulting money flowing into the areas; as well as for protecting animals for future generations. Infield [11] showed in a study in 1986 that despite a belief that the parks caused many problems for local people, and that the promised resources and benefits were not forthcoming, two-thirds of the respondents were still very positive towards conservation, indicating that many people within the local communities recognized the desirability of conservation.

Conservation was also perceived to be not good, mainly because of community members not being employed by the parks, and their access to resources and cultural heritage being limited, restricted or prohibited. This perception was not linked to fauna or flora (apart from complaints about wild animals preying on domestic animals), but mainly linked to restrictions of their access to resources (meat, supplies, materials for crafts, etc.) and cultural sites (graves, ancestral grounds). This indicates that community members disagree with specific management actions of conservation, i.e. the process of conservation, rather than the concept of conservation.

The loss of livelihoods is of great concern to the communities. The respondents said that men and women are leaving the area, being unable to eke out an existence from

what resources are left for them and leaving behind the aged and the very young. Community development is one of the goals of the parks in KZN; however, none of the respondents envisaged themselves gaining from conservation locally. They understood that money from the tourism levies are paid out by the conservation bodies to the chiefs and headmen of the areas, but "w*e never see any of that money*" or any positive results from that money.

The study provided evidence that the willingness to stop rhino poaching does exist in the communities, regardless of their poverty levels, but that their perception of parks management of not caring about people resulted in an attitude of not being willing to prevent or report poaching. Personal survival is regarded as far more important than conservation. Many respondents pointed out that conservation means animals are being considered as more important than people - "*they tell us we cannot take the wood* [fallen branches for firewood] *in the park because ants live under it and why are ants more important than people?*"

Since the conservation areas were established, the communities have had limited access to those areas and their resources. The perception of conservation impacting negatively on people's lives is thus exacerbated. The villages had very few viable economic activities due to their remoteness or due to them having been resettled from their ancestral grounds in the parks to settlements just outside the parks. Some of these resettled communities have not yet received the promised services (water supply, sanitation, electricity, housing, etc.) from the relevant local authorities and/or conservation bodies to 'make up' for their loss of ancestral land and resources.

IV. DISCUSSION

Over millennia many species have become extinct (more than 10 species in the last two decades) [12] due to climate change, habitat loss, and human interferences [13], such as exponential human population growth, destruction/fragmentation/pollution of wildlife habitat, climate change/global warming, exploitation for gain, etc.

The illegal trade in wildlife products has a pronounced effect on local communities as it creates insecurity, and depletes important livelihood and economic assets. Communities can also be negatively affected by forceful militarized responses to wildlife crime [14]. In recent decades, disjuncture in the developing world between wildlife conservation objectives and indigenous livelihood practices has severely threatened the sustainability of conservation [15].

Fortress, or protectionist, conservation - setting aside game reserves and national parks - was preceded by mass slaughter that was integral to the process of conquest of the land by colonialists in the 1600 and 1700s. Wild animals were a source of revenue - hides, horns and ivory continued to be a major source of revenue into the late 19th century. At the same time, the farming frontier moved north, displacing large numbers of wild grazers and their predators.

The threat of extinction of wildlife species and the natural environment resulted in a preference for fortress conservation.

Fortress conservation means that biological resources are either to be protected or exploited; and resources inside parks or reserves are protected from human use [16]. In Southern Africa, the first reserves were created in the 1890s due to fears of the final extinction of game [17], as a means to claim land, and to place restrictions on hunting and the use of the land for livelihood [18]. The evolution of conservation from the 1940s onwards was demonstrated as follows: settlements were initially allowed to remain in the conservation areas but over 3,000 people were evicted from the larger Sabi Game Reserve in 1905 [18]; the Makuleke community was relocated after losing a decades-long struggle against expansion of the Kruger Park in 1969 [17]; fortress conservation continued through the 1960s and the 1970s, but it has in the last few decades made way for greater emphasis on community involvement in conservation, even though exclusion and resettlement was still practiced in 2010 when the iSimangaliso Wetlands Park was established along the coast of KwaZulu-Natal. An opinion is that South Africa's conservation history not only disregarded the role that local people played in the past, but conservation bodies also ignored the environmental interests and attitudes of local people [19]. The creation of a park is however not a simple matter of 'good versus evil', but is part of complex natural, historical and political changes. It goes beyond immediate grievances, such as denial of access to ancestral land, curbs on resource use, and conflicts with wildlife on cultivated lands. Several areas of conflict in the past are nowadays settings for possible solutions that include sharing revenues from tourism, cooperative protection, and expenditure on welfare [20]. However, difficult issues tend to persevere. Even benefit-sharing is no magic bullet or panacea. Costs of exclusion for local people still outweigh benefits, such as a share of park revenues. For instance, the construction of classrooms through conservation funding may not directly be linked to reduced grazing or farming fields, and only very rarely has the restitution of claims for damage by wildlife been a matter for re-negotiation [17]. Thus came about Community-based Wildlife Management (CWM) or Community Parks Management (CPM). The theory is that rural communities have been estranged by conservation practices from resources they rely on and should actually control, manage and benefit from [21]. Community members have been marginalized and denied a voice over the last century [22]. The aim of CWM/CPM was to create conditions where community members benefit from sustainable management and utilization of wildlife in a bottom-up, participative approach. The hope was that the approach would change people's behavior and practices [23] towards achieving a conservation goal as they would benefit from it. However, many studies showed that support for this approach was insignificant. The major factors for this disinterest were that the local people's raised expectations were not met and that their costs were bigger than their benefits, resulting in a lack of trust between communities and parks management [21].

For many decades, many community involvement programs by conservation bodies misjudged the economic, political and social benefits of local hunting. A case study in Zambia 20

years ago already showed that, rather than supporting conservation, local hunters continued to kill game at a rate comparable to the days before the community involvement programs, by shifting their tactics and prey selection [23]. The point was made that law enforcement systems often do not separate the illegal activities driven by large scale profits ("crimes of greed") from those driven by poverty ("crimes of need") [24], and that the long term survival of wildlife populations will to a large extent depend on the local communities who live with wildlife. It was emphasized that where the economic and social value of wildlife populations for local people is positive, they are likely to be motivated to support and engage in efforts to combat and manage poaching and illicit trade [24]. But where local people do not play a role in wildlife management and where it generates no benefits, wildlife crime will continue [23]. This is supported by this study in the respondents saying: "*we know the poachers, but because the park doesn't want to help us, we don't want to help the park*. Many authors, inter alia [25]-[30], over the last two decades have highlighted that if communities are not involved in the active management of their natural resources, they will use resources destructively.

Evidence has shown that community-based wildlife management schemes over the last few decades succeeded in protecting some of the larger mammals (rhino, elephant) largely by virtue of increased enforcement levels and technology application [3], not by distributing socio-economic benefits. But community management of wildlife resources is not yet practiced in South Africa on a large scale. This can mainly be ascribed to the preference for fortress conservation based on historical events and experiences in the country.

Interactions between humans and the environment across the planet are inevitably the result of complex relationships that exist among the widely varying approaches, government policies, systems of economic exchange, local land use strategies, ecological processes, and environmental uncertainty. For example, many initiatives sponsored by environmental organizations are staffed by biologists and focus on the management of the natural capital of the area. Humanitarian organizations focus on the health, education, and skills of the human population; government aid agencies pay attention to issues of legality, governance, law, and policy – social capital. Development banks are concerned with infrastructure and job creation - built capital. Conservation foundations pay for environmental services, which enhances local financial capital [31]. All of these actors may be sources, receivers, transmitters and/or change agents, both in perpetrating crimes and as part of mitigating wildlife crime. By understanding the context, the challenges, and all the actors involved, increases the success of interventions on several levels to stop poaching and illicit trade.

Coordination between the large number of public and private entities involved in the fight against wildlife crime in South Africa, the bordering countries, as well as with transit and consumer countries, is crucial in building skills that will enable disruption of the syndicates involved in wildlife trafficking [3]. A whole-of-society approach requires a response from the global community, consisting of the participation of multilateral organizations, international and local business, consumers, religious and secular civil society, journalists and international online communications, researchers, and educational institutions. Without the participation and cooperation of different communities outside of government forming strategic partnerships, it will prove impossible to counter the corrosive impact of crime, corruption and terrorism [32].

The broad focus of the whole-of-society approach allows for the different interventions to be aligned to achieve greater results. For example, while law enforcement is understandably frustrated by its inability to get ahead of wildlife crime, it cannot refer to its efforts as a "war on poaching" or to poachers as "insurgents" and then hope to work with communities [3]. In as much as parks are necessary for conservation, parks fragment land and people as another example. Development and conservation programs that ignore local perceptions and rely strictly on demographic and economic correlates of behavior to guide policy may fail to address the local and underlying causes of behavior. Changing an individual's environment may not change his behavior if his perceptions do not change accordingly [15].

Understanding the factors that influence attitudes is important to enable wildlife managers to implement approaches that are supported by the stakeholders and the public. It is necessary to have stakeholders actively participate not only in technical efficiency, but also in satisfying cultural, social and political concerns within the context to assist in changing attitudes towards wildlife and conservation [33].

Social norms motivate appropriate and desired behavior within a group. People behave in ways expected of them in case there is a negative social consequence to violating the norm, and changed behavior could be encouraged by making social norms more explicit, which is key for inducing change [34]. An example in the water sector from Costa Rica shows that "*raising awareness about how much water an individual consumes, and comparing this consumption level with peers, can go a long way in helping change individuals' behavior regarding the use of a finite resource such as water*" [35, p. 2]. The same is applicable in addressing wildlife crime. Already the awareness campaigns focusing on saving the rhino have resulted in some behavior change due to social pressure and the norm being set that the rhino needs to be conserved, as is shown by the respondents saying: "*the next generation won't know these animals*" if poaching is not stopped, and "*the big five cannot be complete without the rhino*".

V. CONCLUSIONS

This paper discussed one part of a wider project on developing a systemic and integrated approach to tackling wildlife crime and other security problems.

The conclusion from a community perspective is that poaching may have deep social and cultural roots, and its meanings may be multi-layered. Poaching cannot be understood only as an individual action, but as one where

collective community and personal characteristics are entrenched in the face of unrelenting economic and social changes. Wildlife crime must be understood in the context of changes to an environment people used to rely on for a living and do not experience any benefit from anymore. In this context poaching is the symptom of lost livelihoods and no opportunities, as expressed by a number of respondents in saying "*sometimes the Parks sell wildlife meat at very low prices, but most of it is taken by the parks rangers since they have inside information on when the parks will be selling the meat*", and "*very few local people are lucky enough to have a job in the Park*".

In complex problems, there is no one "Truth", but rather people's different perceptions. Understanding the nuances of the communities themselves and of those living in them, i.e. the drivers behind poaching mind-sets, whether intrinsic or driven by transnational organized crime, is imperative in order to create sustainable community programs on multiple levels that make a substantial positive impact on people's lives and perceptions.

Communities adjacent to conservation areas need to be recognized as playing a major role in conservation and protection of wildlife, and to be partnered with conservation authorities in combating wildlife crime. The findings of the community perception study in KZN were encouraging as it revealed that behavioral elements may be leveraged in order to reduce wildlife crime. Hand-in-hand with strengthening these behavioral incentives and other opportunities to promote wildlife conservation is intensifying the disincentives to participate in wildlife crime. Community scouts, government rangers, and game wardens are the beginning of a wildlife crime prevention chain. The cost of participating in wildlife crime must increase relative to engaging in the legal economy.

Partnerships need to be formed and maintained that will result in long-term, ecologically, socially, and economically sound management of wildlife, including with governments at national and local levels, regional institutions, civil society organizations, research institutions and universities, private sector partners, and community leaders.

Because multiple factors play a role in integrated and inclusive conservation and development projects in Africa, alternative and complementary approaches for promoting wildlife conservation and preventing/addressing wildlife crime must be actively explored. The capacity to manage wildlife crime effectively, without compromising wildlife population viability or human life and livelihoods, is possible by combining technical expertise with local knowledge and embracing transparent and inclusive/collective processes of participatory planning, with the sacrifices this entails. The whole-of-society approach is a perfect means for doing this.

Future work in this arena will concentrate on identifying specific and appropriate interventions, focusing on efforts aimed at peace building through, amongst others, conflict mediation and mitigation methods, identifying a common purpose, innovative governance, and social (such as relationships and trust), cultural, and economic value creation.

"*The ultimate challenge facing conservationists today is not only to reconcile errors of the past but also to determine how to shape human interactions with nature in landscapes of which people are a part*" [36, p. 251].

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