A study of people's perceptions towards primates among different socioeconomic groups in Diani beach, Kenya

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Abstract

As human populations increase, land is often converted for human use which has led to increased contact between humans and wildlife. This can lead to potentially negative interactions between people and some primate species. Understanding these interactions and people's perceptions of local wildlife can help find solutions to reduce these negative interactions. The current study took place in Diani, Kenya, in partnership with Colobus Conservation, a conservation organisation in Diani.

The purpose of this study was to explore attitudes, knowledge and perceptions residents had towards Diani, the wildlife in Diani and Colobus Conservation, with information being collated to assist Colobus Conservation in future planning of their projects. Four socioeconomic groups were targeted, these being; agriculturists, Kenyan nationals, residents of international origin and tourists. Data was gathered using semi-structured interviews and data collected was analysed through interpretation and compared within and between viewpoints of other participants.

From the results several themes can be identified; (i) Most participants commented on the increase in development, residents of international origin having mixed views on the increase in development, Kenyan nationals and agriculturists feeling development improved living standards (ii) tourists were often witnessed feeding primates (iii) Baboons, *Papio cynocephalus ibeanus*, were perceived negatively by agriculturists and Kenyan nationals, with most negative interactions being on participants farms (vi) Residents of international origin were the most supportive and knowledgeable of Colobus Conservation, agriculturists, tourists and Kenyan nationals had limited knowledge of Colobus Conservation (v) Participants felt Colobus Conservation should consider increasing community involvement, communication and improve marketing.

Future conservation projects in Diani, should consider local peoples socioeconomic needs, this may be effectively achieved through partnerships with social scientists and economic specialists. Education programmes should incorporate local ecology, cultural and historic contents. The formation of committees could be used to allow agriculturists and Kenyan nationals to share knowledge. The use of social marketing may help reach a wider audience. Future research on baboon populations, crop foraging by wildlife, mitigation techniques and tourists effects on feeding wildlife should be considered.

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1. Introduction

Interactions between people and wildlife have been identified as the most widespread and obstinate issues facing conservationists (Dickman, 2010). As human populations increase, land is often converted for human use. This can increase contact between wildlife and humans and, in some cases cause negative interactions (Ceballos & Ehrlich, 2002; Estrada et al, 2012), which can be detrimental to conservation efforts. Understanding these interactions and people's perceptions of their local wildlife can allow conservationists to work with local people in finding solutions, and help identify other obstacles to reducing possible negative interactions between people and wildlife (Jacobson, 2010; Osborn & Parker, 2002). Furthermore, It can aid implementation of effective conservation tools such as: education programmes (Jacobson, 2010), mitigation techniques (Hill & Webber, 2010) and ecotourism (Jones & Young, 2004). Of particular interest in this present study are people's perceptions of primates in Diani, Kenya. Publications on people-wildlife conservation has shown a large increase in the last decade, specifically publications citing 'people-wildlife conflict' (Dickman, 2010), highlighting the increasing importance these interactions and perceptions play in conservation. In the consecutive paragraphs the following will be discussed; 1) Overview of the literature on people-primate Interactions 2) Ethnoprimatology and its importance in conservation 3) mitigation tactics used and 4) Previous research in Diani, Kenya and the intentions of the present research.

1.1. Challenges associated with shared spaces

With increasing human populations, has come increased clearing and alteration of forested land, and decreasing primate habitat areas. This has seen an overlap in living space between humans and nonhuman primates (Fuentes & Hocking, 2010). Out of 57 primates taxa reviewed living in agroecosystems (i.e. ecosystems where indigenous plants and plants are partially or completely replaced by crops and livestock), 49% were listed on the IUCN Redlist as Critically Endangered through to Near Threatened (Estrada et al 2012). It has been emphasised that more needs to be done; other than the establishment of protected areas, there needs to be long term collaboration with landowners within these areas (Estrada, 2013; Estrada et al, 2012). Furthermore, many protected species persist outside of protected areas (Dickman 2010; Estrada 2009).

Furthermore, the increase in the human population has seen an increase in development and urbanisation (UNFPA, 2007). Many species are unable to survive in these human dominated environments and so reduction in wild populations is inevitable. This has been reported for several primate populations, for example, Kumar et al (2013), suggested the increase in rhesus macaques and the decrease in the bonnet macaques populations was likely due to the anthropogenic changes

to the landscape. This was also noted in another study along with the decline in Hanuman langurs (Kumara et al, 2010).

However due to many primate species ability to adapt to various environments, many primate species are able to persist in these human dominated environments, Albert et al, (2014), highlights in their paper how a variety a cercopithecine primates persisting in human dominated landscapes show to have highly flexible diets, group size and flexible locomotion. In some cases primates can thrive in these conditions due to the increased availability of anthropogenic food sources (e.g., rubbish, fruit trees, crops, food items in houses, alien plants), as found in baboon populations in the Cape Peninsula, South Africa (Hoffman & O'Riain, 2012b). This leads to another problem, primates potentially being deemed as 'pests' (Priston & McLennon, 2013) due to negative interactions with the human populations they coexist with. This can often be due to several factors, examples in the literature include: feeding on human rubbish, road collisions (rhesus macaques in India; Pragatheesh, 2011, urban marmosets in Brazil; Goulart et al, 2010), entering houses (Hoffman et al, 2012a), increased aggressive interactions from primates to humans (Chauhan & Pirta, 2010), or feeding on crops (Marchal & Hill 2009; McGuiness & Taylor 2014, Nahallage et al, 2008; Strum 2010).

In a paper interviewing residents in an urban area in Singapore, it was reported local long-tailed macaques are known to "raid homes", behave aggressively, and "steal" (Yeo & Neo, 2010), Another risk is the potential increase in disease transfer between primates and people (Drewe et al, 2012). These primates in particular are often less tolerated and in some circumstances have been exterminated or relocated (Kumara & Kumar, 2010; Yeo & Neo, 2010) from these environments to counteract these interactions. However, the persistence or increase of primate populations in human dominated areas can also be attributed to food offerings by humans, which can further exacerbate agonistic interactions (Goulart et al, 2010; Katsvanga et al, 2006; Strum, 2005). The next section will discuss how the use of ethnoprimatology can provide an insight into these interactions and how this can help with conservation efforts.

1.2. Ethnoprimatology

Understanding how humans' perceive nonhuman primates can help conservationists better understand the complex relationship between these two groups, which will help primatologists to better conserve primate populations (Fuentes & Hockings, 2010). Ethnoprimatology is the study of human and nonhuman primate interactions. Exploring these interconnections can help conservationists understand people perceptions, attitudes and cultural expectations of nonhuman primates, which can aid in finding solutions for co-existence (Hill & Webber, 2010). Below a brief overview will be provided on previous research using ethnoprimatology.

Nonhuman primates can often be described in anthropomorphic terms. This was noted in Hill and Webbers (2010), paper where baboons in Uganda are identified as 'the enemy' and 'vindictive' while other primates in the area are seen as 'clever' and 'faithful'. The paper further describes perceptions in Japan, where macaques are seen as 'thieves', however due to macaques showing strong kinship and mother-infant relationships this often spurs people to feed them during winter months (Knight, 2003, cited in Hill & Webber, 2010). Using ethnoprimatology the authors found that when nonhuman primates lapse from social boundaries they are seen as less human, while nonhuman primates that are seen as more socially acceptable, receive a higher tolerance by people. A review by Dickman, (2010), found that social factors such as religion, affiliation, ethnicity and cultural beliefs strongly influenced perceptions of human-wildlife conflict, she suggests understanding these perceptions can help towards formulating mitigation approaches that can enable co-existence between wildlife and people.

It is important to highlight not all people-wildlife interactions are negative. In many instances folklore and beliefs have protected some primate populations. One study in Sulawesi, found that although crop foraging was common by macaques, they were still tolerated. This was due to local folklore which identified macaques as ancestors, kin and guardians. This in turn protected the surrounding forests. One tribe advised that they avoided entering the forests, so not to disturb macaque populations (Riley & Priston, 2010). In some parts of India, monkeys are highly regarded and provisionally fed due to the Hindu culture where it is believed monkeys are a direct descendant of Lord Hanuman, the monkey God (Pragatheesh, 2011).

As highlighted above, human perceptions of primates can be diverse and influenced by many factors. Research suggests perceptions can differ due to primates' economic value due to tourism, cultural beliefs (Alexander, 2000), primate foraging behaviour (Marchal & Hill, 2009) and aggressive interactions between primates and humans (Hoffman & O'Riain, 2012a). Many of the studies available emphasise the importance of understanding these local perceptions and the important role it plays in conservation (Lepp, 2007) as it can provide recommendations for future conservation projects and mitigation methods. Below gives a brief overview of mitigation methods and programmes that have been implemented in an attempt to reduce these negative interactions and enhance tolerance and co-existence.

1.3. Mitigation methods

A variety of mitigation tactics are used to reduce the impact wildlife has on human populations. McGuiness and Taylor (2014), interviewed farmers near forest fragments in Rwanda. They found the most common mitigation tactics used to reduce chimpanzees and Cercopithecus monkeys foraging

on crops, were guarding and modification of farming practices. The use of cowbells on fences showed to be preferential by farmers in Northern Zimbabwe when guarding fields from elephants, it gave farmers an early warning of elephants entering the fields. In the same study burning chillies was also used to deter elephants. However the authors emphasize any methods used need to be acceptable and easily available to people using them, in addition, new mitigation methods need to be continuously developed to avoid animals habituating to them (Osborn & Parker, 2002). In the Cape Peninsula, South Africa, people are hired to monitor baboon troops, herding them and monitoring their behaviour to reduce any negative interaction between people and the baboons. However, this is expensive and cannot always be funded all year round, and at times when monitored baboon troops are left unwatched, 'conflict' can escalate rapidly between baboons and human residents (Kaplan *et al*, 2011).

Economic loss is often the biggest problem, therefore other alternatives such as planting less palatable crops has been suggested (Osborn & Parker, 2002; McGuinness & Taylor, 2014; Naughton-Treves et al, 1998). However McGuiness & Taylor (2014), note some farmers were reluctant to do this as these crops were often less economically viable. Strum (2010), noted plots of leguminous beans appeared less attractive to baboons than maize and potatoes. However, preferences have been noted between primate populations, for example, Hockings and McLennan (2012), conducted a literature review on crop raiding in chimpanzees. They found different chimpanzee populations showed preference to different crops; in some areas crops categorised as highly attractive to chimpanzees for consumption, in other populations these crops were seldom consumed. This highlights the importance of assessing individual cases, as it cannot be assumed that because one primate population may avoid a particular crop at one site that other populations will also show the same preferences.

Providing economic benefit for local communities such as ecotourism can be used to increase support for conservation. Residents identified tourism to be the biggest benefit living next to a primate sanctuary in Belize (Alexander, 2000). Similar findings was found amongst men when interviewed on reasons they practiced restraint from hunting the black howler monkeys in Belize; this was largely attributed to the economic benefits from tourism, other benefits that were associated with this community based project was the establishment of local businesses and scholarships for children of landowners (Jones & Young, 2004).

Another effective conservation tool is the use of education programmes. Conservation education can foster public support for conservation (Jacobson, 2010), increase ecological knowledge (Kuhar et al, 2010) and positive attitudes towards local wildlife (Espinosa & Jacobson, 2012). Understanding

both cultural and social factors within an area can benefit education programmes to be better effective for their targeted audience (Espinosa & Jacobson, 2012). Educators need to be aware of how audiences connect to particular issues and address concerns that their audience may have (Jacobson, 2010). Working with residents can help find solutions, it is important to also manage expectations of all parties involved so not to leave people unsatisfied and frustrated (Wallis & Lonsdorf, 2010). As mentioned previously to be able to manage these expectations and make such programmes effective, understanding local resident's attitudes and expectations is important before implementing such programmes. Therefore, long term education programmes can benefit from involvement of local residents prior to implementation.

1.4. Diani, Kenya and Colobus Conservation

The current study will take place in Diani, Kenya, in partnership with Colobus Conservation. Diani is based on the coast and has a large tourist industry and in turn, has seen rapid human population growth (Anderson et al 2007a; Kairo et al, 2007; Kibicho, 2004). This has affected the wildlife in the area due to such activities as deforestation, fuelwood collection and conversion of land for agriculture (Anderson et al, 2007a; de Jong & Butynski, 2009; Oates, 1996), contributing to further fragmentation of remaining forests (Anderson et al, 2007a). This has left the Angolan Colobus, *Colobus angolensis*, nationally threatened in Kenya (Anderson et al, 2007c). Furthermore, with the large human populations residing in Diani (Anderson et al 2007a; Kairo et al, 2007; Kibicho, 2004), primates in the area are increasingly coming into contact with humans and being deemed as 'pests' (Anderson et al, 2007b).

Colobus Conservation, based in Diani, is a conservation organisation. Their work focuses on finding solutions for 'human/primate conflicts… biological/ecological research, community development and education, forest protection and enrichment and eco-tourism awareness programs' (Colobus Conservation, 2015). Colobus Conservation began in 1997 due to an increasing concern from residents about the number of black and white Angolan colobus being killed on the Diani beach road. Eighteen years on, Colobus Conservation continues working with local residents and primate populations within the area (http://www.colobusconservation.org/). Annual census of primates are conducted in Diani, with the last census finding Diani to be home to approximately 1400 monkeys (Colobus Conservation, 2014, unpublished data).

Conservation of coastal forests of East Africa, have been identified as a priority, showing high levels of faunal and floral endemism. The action plan recommends that the status of the *Colobus angolensis* needs to be assessed and that southern forests require strict management to conserve remaining forests (Oates, 1996). Other initiatives include the Kenya Coastal Forest Protected Area

System four year project. A mid-term review report in 2010 highlights the need for collaborative work between Colobus Conservation and the World Wide Fund for Nature (WWF) to continue to work with local communities to improve their livelihoods. It is also recommended that Colobus Conservation revive its partnership with Kenya Forests Working Group (KFWG) because of the threats posed by development in the Kwale district (Gachanja, 2010).

Previous research in Diani has mainly focused on the marine park and reserve (for some examples see Crona, 2006; Munga et al, 2010). One study investigated community conservation in the Kwale district which included Diani. This found that people in Diani felt the least involved in tourism than other coastal areas and that this can lead to dissatisfaction amongst local people (Kibicho, 2004). To date there has been no research on local perceptions of people in Diani on primates. Other research in the Diani area has focused on the *Colobus angolensis* habitat use and behaviour (Dunham & McGraw, 2014; Anderson et al, 2007a; Anderson et al, 2007b; Anderson et al, 2007c). The heavy use of natural resources in Diani has caused forest degradation (Anderson et al 2007a). Furthermore, studies have noted vervet monkey and yellow baboons in Diani feeding on hand-outs, raiding tourist facilities and garbage bins for human food items (de Jong & Butynski, 2009) and being branded 'pests' in the area (Anderson et al, 2007b).

1.5. Study overview

The purpose of this study is to (i) document and explore the range of attitudes residents have towards primates in Diani, (ii) examine people's reported responses to wildlife within the context of expressed attitudes, and (iii) document people's knowledge and perceptions of Colobus Conservation, specifically, what individuals know of the organisation, what individuals think Colobus Conservation's role is in Diani, whether they think they are an effective organisation and what areas they feel the organisation should contribute to. The information will be collated to assist Colobus Conservation in future planning of their projects and programs.

2. Methods

2.1. Research overview

The objective of the study was to investigate people's attitudes towards the wildlife, Diani and Colobus Conservation, in an attempt to find running themes within and between four socioeconomic groups within Diani; the four socio-economic groups being, local agriculturalists, Kenyan nationals, long-term residents of international origin and tourists. Semi structured interviews were conducted and the information gathered was collated to see whether similarities could be identified within and between socioeconomic groups between 16th May and 15th July 2015.

2.2. Ethical approval

Prior to the data collection approval was given by the University Research Ethics Committee (UREC) at Oxford Brookes University (see appendix 1). An information sheet explaining the project's purpose was available to all participants, which also supplied details of how participants could contact the researcher if they required any further information (see appendix 2). Finally, all participants were required to read and sign a consent form, which was countersigned by the researcher at the same time (see appendix 3).

2.3. Study site

2.3.1. Diani

Research was conducted in Diani, in Kwale District, Kenya (see figure 1), in collaboration with Colobus Conservation. Diani is based on the coast and has a large tourist industry and has seen rapid human population growth (Anderson et al 2007a; Kairo et al, 2007; Kibicho, 2004). The national average human population growth in Kenya is 2.9%, while the coastal population growth rate is 3.1%. The economic contribution from coastal activities in Kenya is 15%, with tourism contributing 12.5% (Kairo et al, 2007). Land use along the coastline falls into four main categories, livestock ranches, agricultural settlement schemes, private land and un-alienated government land, with the Kwale district having the second highest amount of agricultural land (Kamula & Ochiewo, 2007). Activities that threaten the area include mining for minerals and urbanisation, with expansion of agriculture being the most significant threat (CEPF, 2015). In addition, coastal sand contains a wealth of mineral resource including gas, gemstones, iron, titanium, limestone and kaolin. Another threat is the burning of woody plants and forests close to tourist areas, where there is a high demand for wood carving, timber for construction of hotels, private residents and tourist attractions (CEPF, 2015). This has affected the wildlife in the area due to such activities as deforestation,

fuelwood collection and conversion of land for agriculture (Anderson et al, 2007a; de Jong & Butynski, 2009).

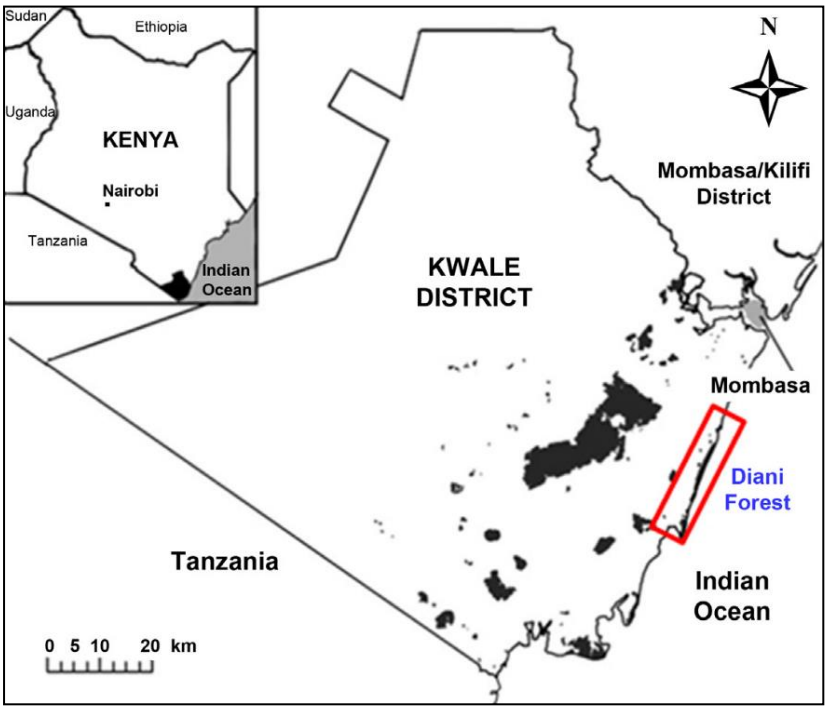


Figure 1. Map of the Coastal forests of Kenya showing the study area (Dunham & McGraw, 2014).

Diani's ecosystem is commonly referred to as Coral Rag Forest, due to forested areas growing on sedimentary rocks and fossilised coral (Hawthorne, 1993, cited in Clark, 2000). Within the Kwale district there are 124 coastal forest fragments remaining, ranging in size from 1ha to 160km2 (Anderson et al, 2007a). Due to the high floral and faunal endism found along the coast the forests along the coast in Kenya have been reclassified as the Swahilian Regional Centre of Endemsim (Clarke, 1998) and prioritised in the IUCN African primate Action Plan as areas needing a stringent management plan to conserve the remaining coastal forest fragments (IUCN, 1996). Furthermore, it is listed as one of the 25 global diversity hotspots (Myers et al, 2000).

2.3.2. Colobus Conservation

Colobus Conservation are involved in several areas of conservation in Diani. This includes; research, primate pest management; involving advising businesses and residents on methods to reduce negative human-primate interactions, and when necessary, rehabilitation, animal husbandry, welfare cases which involves dealing with human related incidents, such as injuries and deaths of primates due to vehicles, electrocutions on exposed power cables, dog attacks and humans purposely injuring the wildlife or primates. Other areas of their work include educational workshops for local schools, trimming trees so primates do not touch power cables, insulating power cables,

placing laddered bridges above roads for primates to use when crossing, (locally known as "colobridges") (Figures 2 & 3) and painting speed bumps (www.colobusconservation.org).

Figure 2. A picture of the aerial bridges, known as 'colobridges', installed over roads by Colobus Conservation to reduce primate fatalities due to road collisions.

Figure 3. A picture of a Sykes monkey, *Cercopithecus mitis albogularis,* using one of the bridges installed by Colobus Conservation over the main road in Diani.

2.4. Study groups

Due to the diverse range of people residing in Kenya, people were categorised into four social groups, often Kenyan nationals and agriculturists would have several jobs and therefore categorised within the group due to what was their main source of income or responsibility (see table 1). All participants were asked for the following information; Age, gender, occupation, level of education, city/country of birth.

Table 1. The four socioeconomic groups that will be targeted in Diani, along with a brief description of each group.

Agriculturists	Individuals who were born in Kenya and their main source of income and/or main responsibility is farming.
Kenyan Nationals	Individuals who were born in Kenya and their main source of income is something other than farming, i.e. Working in tourism, taxi driver, shop vender etc.
Residents of international Origin	Individuals who were born outside of Kenya or held an international passport.
Tourists	Individuals visiting Diani for no longer than 6 months.

Participants throughout the interview referred to several animals within Kenya, throughout the results and discussion, the animals are referred to by their common name; table 2 provides a list of all animals mentioned along with their Latin name.

Table 2. List of the common and Latin names of species mentioned in both the results and discussion.

Common Names/ name referred to in text	**Latin Name**
Yellow baboon, baboon	*Papio cynocephalus ibeanus*
Black and white Angolan colobus, colobus monkey, colobus	*Colobus angolensis palliates*
Vervet monkey	*Chlorocebus pygerythrus hilgerti*
Sykes monkey	*Cercopithecus mitis albogularis*
White-tailed small-eared galago, bushbabies*	*Otolemur garnettii lasiotis*
Kenya coast galago, bushbabies*	*Galagoides cocos*
Bushpig	*Potamochoerus larvatus*
Dik-dik	*Madoqua spp.*

* There was no distinction between the two species of galagos found in Diani, therefore no way to establish which species participants were referring to, participant would use bushbabies when speaking about the galagos.

2.5. Information gathering

Data collection was based on a cross-sectional design, with the intention to have a sample that was representative of the population as a whole, allowing a comparison of four different subsections within a population (Newing, 2011). Data was gathered using semi structured interviews, the interviewer had an interview guide so all pre-defined topics were covered (see appendix 4). All

interviews were organised between the participant and researcher prior to the actual interview, scheduled at a time and place that was convenient for the interviewee. Interviews involved discussion back and forth between the interviewee and interviewer and if new, interesting or relevant issues were brought up, then further information would be requested, allowing the interviewer to gather more detail when necessary (Newing, 2011). All interviews were audio recorded where possible, unless the interviewee requested not to be recorded, upon this request notes would be taken instead. Thirty minutes were allocated for each interview; however this was on the discretion of the participant if they wanted to continue or finish before then, this was also acceptable.

English is widely spoken within Diani. However, when interviewing in local villages and farms a translator was often required. This was due to the principle researcher's limited knowledge in Swahili and the short period the data was collected, rendering it impossible for the principle researcher to learn Swahili. Furthermore, other data collection methods could not be used, as they would not provide the detail required for this particular study (Newing, 2011). The translator was provided by Colobus Conservation. The translator was briefed and trained prior to the interview, to build up trust between the translator and the principle researcher and to minimise any potential influence of the translator. Literal translations were requested and discussed in depth between the translator and researcher, when required to reduce any bias or information being lost in translation (Newing, 2011).

Participants were targeted by use of convenience sampling, which involved interviewing whoever was interested (Newing, 2011). Several methods were used; advertisements were placed on several social media sites (see appendix 5), advertisements were placed in several public areas (see appendix 6) and emails were sent out to hotels along Diani (see appendix 7). Due to the principle researcher's prior visits to Diani and knowledge of the area, several key members of the community were approached for an interview and introductions were also made to other members of the community. Several social events where Diani residents participated were attended by the principle researcher as well as introductions made by Colobus Conservation. Meetings were also attended within the local community by the principle researcher, allowing a wider audience to be reached and further interviews to be arranged.

Introductions with many Kenyan nationals and agriculturists were made prior to all interviews in the previous week by the community liaison officer at Colobus Conservation. As many participants did not speak or read English, the project was explained in detail and any questions answered, all participants were made aware that it was voluntary, confidential and all participants could withdraw

at any point. The following week a day was spent in the area where the introductions had previously been made and all participants wanting to participate were interviewed.

2.6. Data analysis

Data collected was qualitative and was analysed through interpretation and compared within and between other viewpoints of other participants. Qualitative data is commonly used in social science and data collected is based on textual materials rather than quantitative data, which produces numeric figures (Wilks et al, 2013). Semi structured interviews aim to explore individual's thoughts and beliefs. In this present study the information collected is not for large scale replication but is preliminary data to aid further development material to inform future projects and programmes in the Diani and providing material for further discussion.

3. Results

Overall 65 participants were interviewed; 27 participants were categorised as agriculturists, 20 were Kenyan nationals, 13 were residents of international origin and five were tourists (see table 3 for demographics of the residents); Interviews ranged from 15 minutes to an hour. Due to the current political climate in Kenya, with many countries having travel warnings against Kenya and the time of year the data was collected (low tourism season), tourists were difficult to target, therefore interviews with individuals working in tourism were used to supplement the results for the tourist perceptions.

Table 3. The average length of residency for agriculturists, Kenyan nationals and residents of international origin and average age of female and male residents.

Socioeconomic group	Average length of residency	Female participants		Male participants	
		No. of participants	Average age of participants	No. of participants	Average age of participants
Agriculturists (n=27)	18.72 years	16	44	11	52
Kenyan Nationals (n=20)	11.06 years	10	33	10	41
Residents of international origin (n=13)	6.96 years	8	50	5	48

The results have been structured into topics that were covered in the interviews, in some cases the tourist interviews have not been referred to due to their short term stay in Diani and therefore are not relevant. Topics covered are as follows; (i) perceptions of Diani (ii) perceived changes in Diani (iii) wildlife in Diani identifying negative, positive and ambivalent perceptions (iv) mitigation methods currently used by residents (v) perceived changes in the wildlife (vi) tourism and wildlife (vii) people's knowledge, perception and recommendations for Colobus Conservation.

3.1. Diani

3.1.1. Perceptions of Diani

All residents were asked why they were in Diani; the most common reason given by agriculturists and Kenyan nationals was for employment, whereas the majority of residents of international origin gave reasons related to Diani being "beautiful", for the nature and the coast. Five participants were born in Diani, and other reasons were related to marriage, moving for family, one agriculturist advised their previous place of residence was no longer safe (see table 4). Tourists were asked reasons why they were visiting Diani, reasons given varied from kitesurfing, honeymoon,

backpacking and relaxation. Most tourists explained that Diani was part of a bigger trip, explaining that they had previously visited other places in Africa.

Table 4. Reasons agriculturists, Kenyan nationals and residents of international origin moved to Diani

	Agriculturists	Kenyan Nationals	Residents of International Origin
Employment	21	15	5
Marriage/Family	3	1	0
Born	2	3	0
Safety	1	0	0
Studying	0	1	0
Aesthetic reasons	0	0	8

Diani was often described as a "good place" by agriculturists, Kenyan nationals and residents of international origin. Agriculturists were the only group who had negative comments; with a small number feeling Diani was expensive and that there had been a reduction in tourism. Another reason was the increase in "land grabbing" happening in the area, one participant explained how they had been approached several times with falsified title deeds for their land, participants in the same area explained the government was corrupt and there was little they could do if someone came to take their land, being too poor to stop them. When asked for reasons Diani was a good place many agriculturists, Kenyan nationals and residents of international origin felt the community was friendly and hospitable. Many of the tourists also commented on Diani having a small community and finding it easy to make friends. Both agriculturists and Kenyan nationals would also give reasons related to being employed, Diani being peaceful with little or no violence and the development in the area. Most agriculturists felt Diani was cheap, with one commenting on the education being better than there previous place of residence. Tourism was mentioned by a small number of agriculturists as it created jobs. A larger number of Kenyan nationals commented on tourism being a positive attribute, advising tourism improved their business and gave opportunities to engage with people from other places. Other reasons Kenyan nationals gave were Diani having "beautiful" nature. Residents of international origin reasons were due to Diani having a laid back atmosphere and a good social live. Many residents of internationals origin commented on there being plenty of wildlife, this being a good attribute to Diani. When asked to compare it to other places they had previously resided, many residents of internationals origin advised this was their first time living so close to nature, many previously living in cities. One participant discussed the economic disparity between the people (figure 4). Similarly, Kenyan nationals who had moved to Diani from Nairobi would describe Diani as a "quiet environment", with a lot more nature, people being friendly and hospitable with Nairobi having a high population and being polluted (figure 5). Tourists described Diani as "beautiful",

'tranquil' and ''quiet''. When asking tourists what brought them to Diani, many empathised what drew them to places was the chance to explore something new.

Figure 4. Resident of International origin discussing Diani and poverty.

"It's a tourist resort but it's a developing economy so you only have to go 500 metres or less off the beach road and you are in a developing economy, people living below the poverty line, you go into Ukunda and there are slums, you drive up and down the main road and just see people below the poverty line and yet on the beach slip there is some absolute affluence"

Figure 5. Kenyan nationals comparing Diani to Nairobi.

"[Diani] place full of trees, the beach, fresh air… compared to Nairobi, full of infrastructure, … population is high… there is no habitat for the animals unless you go to the parks, where it is separated… air pollution from the factories and also noise pollution… then also motor vehicles which is just, let's just say horrible"

"Nairobi it's like the city, here there's trees, it's nice, there's fresh air and everything but in Nairobi there is pollution and there are so many people… you can stay for one week and not see a bird, but here there are birds, there are monkeys. It's nice".

"difference is the people here they are hospitable and you know Nairobi is different … people are very aggressive and everything, here people are a bit laid back which is good thing".

3.1.2. Perceived changes in Diani

All residents were asked if they had seen any changes in Diani, this section will only focus on agriculturists, Kenyan nationals and residents of international origin responses. All participants in all groups commented on the increase in development and human population, both agriculturists and Kenyan nationals generally felt both were a positive change. Kenyan nationals felt development had led to an improvement in the standard of living for the local communities, one Kenyan national attributing this to tourism. Similarly, agriculturists felt that is was a good thing as it showed the area was growing, one participant felt it provided work for the local youths. In one particular village in Diani, participants mentioned the building of a school and the opportunities this provided for their children. Agriculturists felt the increase in the population increased security in the area and provided neighbours, increasing interactions with other people. Kenyan nationals also felt this was a positive change as it improved their business. Residents of international origin expressed mixed feelings to both the increase in the development and human population, commenting on valuing the quietness of Diani. Residents of international origin commented on how the development improved the security in the area, others were concerned there was no consideration for the natural habitat,

participants commenting on it being cruel to the animals and a dislike for the replacement of the indigenous plants (figure 6a). Some residents of international origin felt it was good for the local community as it improved living conditions and provided more jobs. While other residents of international origin appreciated it was good for Diani they advised they had moved to Diani because it was quiet and felt this would change due to the development. Many residents of international origin spoke both positively and negatively about the development, with one resident of international origin explaining how the development was done tastefully and improved security but saw a reduction in the forest as a negative (figure 6b). Decrease in the forest was mentioned by many of the residents. This seemed to be a greater concern among residents of international origin and Kenyan nationals working in tourism, due to its detrimental effect on the wildlife. Few agriculturists spoke about this change negatively, however, one agriculturist commented how people were replacing indigenous trees with exotics, which was not good for both the animals and people.

Figure 6. Resident of International origin thoughts on the increased development in Diani.

(a) "I can understand if you buy a piece of land and you want to build, you're going to have to, to a certain extent, cut some trees down, but I think the way that it was done was particularly cruel to the animals… just come in and start burning and chopping… as you can see here, we have lots and lots of trees, we have too many, but, it's part of what this place is".

"There's nothing worse than actually seeing a manicured lawn here, it's very English, why would you have a manicured lawn here when there is water restrictions to an extent and it's just not natural, it doesn't do any good to anything it's laying on".

(b) "A lot of it is done in a tasteful way so it does blend in with the environment and I think because it is generally aimed at either tourists or a slightly up market person that has money to either invest or to live here but it is good quality and they also try and make it slightly Swahili… the only thing that obviously, is they destroy a lot of the forest to put those in so that would be one of the negatives, it improves security in the area in a way because when you find yourself living in completely, surround by bush obviously you'll be a target for, people, thieves that come around, suddenly if you're surrounded by quite a lot of compounds then with lighting and CCTV cameras and everything your security seems to improve, it has its good and its bad points"

A decrease in tourists was another change often mentioned among residents, all residents attributing this to the travel warnings and recent terrorist attacks upcountry, one resident of international origin explained how it affected the local economy (figure 7). This was also reflected by one agriculturist commenting on the reduction of tourism also being the reason for the reduction in business, stating "hotels are our main source of income". However, the reduction in tourism was not

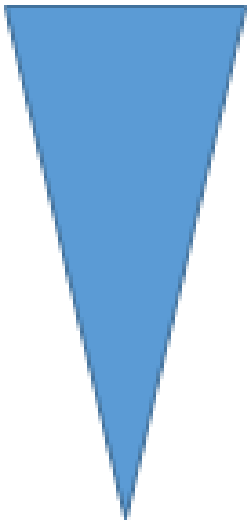
always seen as a negative, with one Kenyan national explaining there was an improvement in the environment as there was less undesirable behaviour such as drinking and littering, however, they felt there had been an increase in crime due to a decrease in employment.

Figure 7. Resident of International origin on the decreased tourism and its impact in Diani.

"You got the backpackers but there is less and less of those because their parents are going well why you would go Kenya it's dangerous. There used to be camp Kenya here, they moved to Tanzania, so same sort of thing. Those volunteers that were coming out their parents are going why are you going to Kenya. So it's perceived as a dangerous place… Everyone has realised there aren't tourists here, there really is no other/little industry here…from the beach boys to the taxi drivers to the staff in the hotels everything relies around tourism, as soon as tourism goes down, these guys don't get a pension, they go hungry, so they will flip pockets all day hoping to earn hundred until they get old"

Some residents of international origin and Kenyan nationals felt people were more environmentally aware than they were previously; two Kenyan nationals commenting how they felt communities and developers in Diani had become more environmentally aware, explaining how people when cutting one tree down would plant two to replace it. This was also echoed by a resident of international origin explaining how they felt people were more vocal about changes in Diani, where they hadn't been previously. All changes mentioned by all the three groups can be found in table 5.

Table 5. Perceived changes in Diani mentioned by agriculturists, Kenyan nationals and residents of international origin, from the most common to the least common changes.

	Agriculturists	Kenyan Nationals	Residents of International Origin
Most common changes mentioned  Least common changes mentioned	**Increase in development**	**Increase in development**	**Increase in development**
	Decrease in the forest	Increase in the human population	Decrease in tourism
	Decrease in tourism/increase in hotels closing	**Decrease in forest**	**Decrease in forest/ Increase in the human population**
	Decrease in business	Decrease in tourism	More environmentally aware
	Increase in corruption and "land grabbing/ No change	**No change/ Increase in business**	**Increase in crime**
	Increase in the human population/ Increase in living expenses	More environmentally aware/ decrease in business	Decrease in the wildlife/ Loss of culture/ Increase in expatriate community
	Decrease in crime	**Improvement to the standard of living/ Increase in tourism/ Increase in crime**	

3.2. Wildlife

The first four sections only cover agriculturists, Kenyan nationals and residents of international origin responses, as attitudes and perceptions were related to experiences living in Diani. The next section will address tourists and the wildlife.

3.2.1. Negative perceptions

The baboons were perceived the most negatively by agriculturalists and Kenyan nationals, other species mentioned negatively by both groups were Sykes monkeys, bushpigs and vervet monkeys. However, areas where baboons were not regularly seen, Sykes monkeys were often perceived most negatively. Although Kenyan national's main source of employment was not farming, many had small farms within Diani and thus negative comments were often associated to interactions they had on their farm. The main reason for the negative perception of wildlife was due to wildlife feeding on the crops. Kenyan nationals would also comment on the baboons, Sykes monkeys and vervet monkeys "stealing" from their small businesses, such as shops and cafes. Both agriculturists and Kenyan nationals when describing baboons would often refer to baboons as "clever". One agriculturist when explaining why they were clever, gave an example of how the dominant male

when chased away, would send another male to lead the troop next time, as he already knew there was someone waiting to chase him away. They further described the baboons in their field was like watching a football match because they would take one maize cob throw it to another baboon and would not eat it, instead would break everything. “Attack” was used frequently when describing baboon’s behaviour by both Kenyan nationals and agriculturists. Many agriculturists and Kenyan nationals told stories of being “attacked” for their shopping bags, when returning from the shops. Residents of international origin had the fewest negative comments on wildlife, and any negative comments were often explained by participants as a fear of a particular species.

Agriculturists, Kenyan nationals and residents of international origin often explained how baboons did not fear women, with one female agriculturist recalling one event where a baboon had attempted to take her infant. Many of the female participants in all socioeconomic groups feared baboons, reasons given for this was often due to baboon’s large body size and large teeth. Many of the Kenyan nationals and residents of international origin who initially expressed their fear or dislike for baboons would also talk about their fondness of the baboons social structure (figure 8a). One resident of international origin responded how they did not dislike baboons recalling a situation where they had witnessed a young baboon being killed in a road accident which had “broken their heart”, especially watching the mother’s reaction, with the female baboon picking up the infant’s body (figure 8b).

Figure 8. Residents of international origin and Kenyan nationals on observing baboons.

(a) “I still always have this feeling inside that they are going to come after me for some reason and they have such big teeth and so big when grown, you know, the babies are beautiful but when they’re big, and they’re still amazing creatures but close quarters is just scary”.

“when you are looking at them the way they clean each other it’s really, it’s something you enjoy watching, the way they are families and they protect their area I mean you get to learn a lot from them”

“You go into the hotel grounds where they are just playing with each other and they have got their babies on their back, it’s pretty cool”.

(b) “I don’t dislike them… I was driving actually down the beach road one day and the car in front of my hit it, there was a mother with a baby… hit the baby and when I actually saw the mother run into the road pick up her lifeless bleeding baby and hold it to her chest then I just realised although I am scared of them it’s not that I don’t like them, I just felt like from, as a mothers point of view the way she held her lifeless baby, broke my heart… the caring the nurturing side of them is very close to human beings and it was actually really sad I will never forget seeing that, was really quite heart breaking, so I respect them”

While both vervet and Sykes monkeys were highlighted as being a "nuisance" or "cheeky" by Kenyan nationals, residents of international origin and some of the agriculturists, they were often deemed as "manageable" whereas the baboons were not. One Kenyan national explained why they thought baboons were so negatively perceived was because they were not easily scared (figure 9a), while one resident of international origin felt baboons were negatively perceived because they were more physically obvious (figure 9b). One agriculturist explained how they liked the Sykes monkeys because they only came when "very hungry", taking only what they needed and did not destroy all the crops, unlike the baboons. This perception was resonated by many agriculturists who perceived baboons the most negatively; one agriculturist explained how baboons would eat their chicken only to vomit afterwards, only doing this to be wasteful. They later described how the bushbabies only came and ate their crops when they were "very hungry". Finally, when some agriculturists were asked whether they thought there was anything good with the wildlife responded that they felt there was nothing good, as they did not benefit from the wildlife personally.

Figure 9. (a) Kenyan national and a (B) resident of international origin perceptions on baboons.

(a) "monkeys they jump everywhere because their size is not that scary compared to baboons… when you do your hands like this [motions to pick up a stone] they run away but baboons know… they are just sitting and waiting for the stone to throw but the moment monkeys see you bending by the time you get up you won't see it but the baboon will wait for you to bend pick that stone and throw"

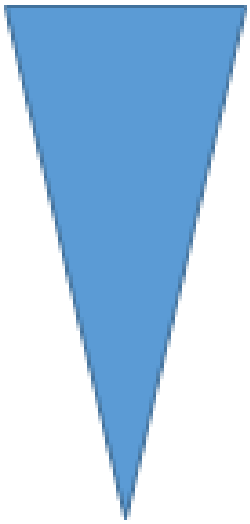
(b) "Because the monkeys are smaller aren't they, they don't cause quite so much havoc I don't think and because there are so much huge numbers of baboons and because they are more apparent aren't they as you drive along whereas the monkeys are above eye level"

3.2.2. Mitigation methods used

Several mitigation methods were used by Diani residents to reduce negative interactions. The most common methods by agriculturists and Kenyan nationals was guarding their small business or farms. Residents of international origin would advise they needed to keep doors shut and lock food away, getting staff to chase baboons off their property, keeping a dog was also mentioned as an effective way in deterring primates. Some residents of international origin explained how getting rubbish properly disposed deterred baboons, one resident of international origin explained how other residents complaining about baboons felt this was because they did not manage their rubbish well. Agriculturists overall provided a larger variety of methods to deter wildlife (see table 6). One Kenyan

national advised they had changed what they farmed from maize to chilli. One agriculturist requested poison to help control the primates in their area, this was also mentioned by another agriculturist, explaining they had been approached by farmers about contributing money for poison, but being Muslin had refused, explaining they could not harm the monkeys.

Table 6. All mitigation methods mentioned by agriculturists, Kenyan nationals and Residents of international origin, from the most common to the least common mitigation methods.

	Agriculturists	Kenyan National	Residents of International origin
Most common mitigation methods used  Least common mitigation methods used	**Guarding farms/ sleeping at farms**	**Guarding farms and small businesses**	**Keeping doors and windows shut/ Locking food away/having a dog**
	Throwing sticks and stones	Wire mesh around small businesses/ catapult	Staff to chase baboons of the property
	Chasing and screaming	**Hanging tin and iron on trees producing a noise in the wind/ concealing shopping bags/ Keeping doors and windows shut/ Locking food away**	**Managing rubbish**
	Making noise		Driving slowly on the road/ Catapult
	Using a catapult/ Hanging tin and iron on trees producing a noise in the wind		**Water pistol/ concealing shopping bags**
	Building a fence		
	Scarecrows/ Lighting a fire/ Dog/ Moving farm plot	Change crop/ driving slowly/ Scarecrow	

3.2.3. Positive and ambivalent perceptions of wildlife

All residents of international origin expressed positive attitudes towards the wildlife in Diani, commenting on the variety; describing the wildlife as “exceptional”, “amazing” and “beautiful”. Most participants demonstrated detailed knowledge of the wildlife in Diani. A quarter of Kenyan nationals felt all wildlife was good, with some Kenyan nationals calling the wildlife “Kenya’s pride”. Some Kenyan nationals felt the wildlife attracted tourists which led to further development, going on further to explain how it was free to see wildlife in Diani, unlike other places where you would need to pay (figure 10). Wildlife’s ability to attract tourists was also mentioned by some agriculturists. Reasons given by residents of international origin for liking the wildlife was often explained by Diani being their first time interacting with wildlife. Often participants expressed their pleasure in showing the wildlife to visitors, one participant commented how their visitors were

mesmerised by the monkeys (figure 11a), while another participant expressed how they enjoyed showing off the animals (figure 11b).

Figure 10. Kenyan national on the wildlife attracting tourists and being free to observe.

"Wildlife is good, it's fun and especially for our country… it attracts tourists and that is how we get development because maybe a tourist is coming for wildlife and they feel like they can stay here and invest because it is a good place. So I think wildlife is good… We are lucky the ones [wildlife] we see they're not enclosed somewhere so maybe a person like me I cannot afford to go to a park or somewhere but I pass here I see a dik dik, or a baboon. Somebody from my part of Kenya when they come to visit me they're like oh my God you stay with these things, it's fun".

Figure 11. International residents discussing visitors and wildlife.

(a) "Some people from Mombasa… they were just mesmerised by the goings on of the monkeys and things, they live in Kenya all their life but they never really took it under their nose what goes on… I suppose we are so used to it, it's like living in a mini wildlife park in away".

(b) "I bring friends or have visitors I love showing them the animals I mean that's one of the things we do, it's part of what attracts you to Kenya… they love it, they are floored I mean you get camels crossing the road I mean you get lots of wildlife"

The colobus monkey was the most favourably mentioned animal by all social groups, for agriculturists and Kenyan nationals, the most common reason being the colobus monkeys did not forage on the crops, other reasons given were colobus monkeys being "humble", "never a disturbance" and "never hurting anyone". Residents of international origin when describing colobus monkeys often commented on them being aesthetically pleasing, commenting on how they enjoyed watching them (figure 12). Similarly, other explanations given by agriculturists and Kenyan nationals was the colobus monkey being "beautiful". One agriculturist explained they were a good tourist attraction and if they disappeared the tourists may not come. However, one agriculturist advised although they liked the colobus monkeys, they did not want their population to increase in fear they will begin to feed on the crops.

One agriculturist perceived colobus monkeys positively due to a story she heard as a child, explaining the colobus monkey used to be Muslin people living in the community but they misbehaved and were changed by God to colobus monkeys. Another story by a Kenyan national explained the reason they liked the colobus monkeys was due to stories they had heard from their grandparents, explaining the skin of the colobus monkey was the skin of authority, traditionally worn by authoritative figures, with the skin being valued and respected.

Figure 12. International residents on the colobus monkeys.

"You just stop and have the colobus almost at your window and you just stare at them and they are just happy… as long as you don't get to close to them or approach them, you know, when I am in the car I just turn the engine off and role to a stop"

"They are pretty for a start, but they are so placid and gentle and calm… they can be on our wall going up to our house, sitting in a tree and you can pull up next to them and just watch them for a while and they don't mind whereas the other animals run away or try and stare you down but the colobus don't do any of that they are pretty to look at… you meet people and some people seem like nice people and some people, not so nice, they just seem like nice monkeys".

"I just love them, I mean I could just, I never tire off looking at them, watching them when they come down and it's lovely when they come so close and they sit there beside you, trust you, so I never get tired of them".

Other species mentioned favourably by Kenyan nationals were the bushbabies, dik diks, Sykes and vervet monkeys. When asked why they liked Sykes and vervet monkeys a Kenyan national explained they liked watching them steal cakes from a coffee shop, while another participant enjoyed watching them play and interact. The bird life was mentioned by many of the residents of international origin commenting on their "striking colours" and the variety. Bushbabies were also favourably mentioned by many of the residents of international origin, many finding them "attractive". Many residents of international origin spoke about their pleasure in observing the primates (figure 13).

Figure 13. Resident of international origin on observing primates in the area

"That's why I like the place, that's why I like it. They are an absolute pleasure and joy to watch. I can just sit for hours just watching them… when I walk up there, usually around this time I head out and they are usually up and down the wall, frolicking or whatever and more than often, I spend 10 maybe 15 minutes just watching them. It's an absolute excellent, pleasure, it's one of those little things that you take for granted sometimes, but really you know it makes my day".

Some agriculturists and Kenyan nationals when asked what they thought of the wildlife would respond ambivalently. Agriculturists who advised they had no issue with the wildlife would report that they did not see them often on their farming plot as they were surrounded by neighbouring farms, so the animals would forage on the other farms. One agriculturist felt nothing should be done as they were Gods creations (figure 14). Some Kenyan nationals explained they did not think anything about the wildlife, with one advising they were created by God and therefore nothing could be done about them. One agriculturist felt they should be left as although they did not benefit from the wildlife, the wildlife could be profitable for someone else.

Figure 14. Agriculturalist response when asked what they felt should be done about the animal feeding on their crops.

"They can't do anything, the animals are created by God and we are created by God so if we kill the animals that's against God, so we have to live with them. If they steal from us we just have to accept it, because even human beings take from us so we just have to live together".

3.2.4. Changes seen in the wildlife

The biggest change in the wildlife identified by agriculturists and Kenyan nationals was the increase in the baboon population, followed by an increase in the Sykes and vervet monkeys, only three residents of international origin mentioned an increase in the baboon and Sykes monkeys' population. One agriculturist felt the bushpig numbers had increased and one Kenyan national felt the dik diks had increased but they were also the only participant to report dik diks feeding on their crops.

Most residents of international origin mentioned the decrease in the wildlife; only one resident of international origin felt they had seen an increase in the wildlife. The decrease in the wildlife was mentioned by some of the Kenyan nationals and agriculturists. Some agriculturists felt the reduction in wildlife feeding on their crops was because there was an increase in farmers in the area, whose plots were easier to access. Residents of international origin were also often the most concerned with the reduction in the wildlife, this concern was shared with a few Kenyan nationals, and these were often individuals working in tourism. Approximately a third of agriculturists, a quarter of Kenyan nationals and one resident of international origin felt there had been no changes.

Two Kenyan nationals felt the primates had become more aggressive, with one perceiving an increase in aggression when more tourists were present. This was also a change mentioned by one resident of international origin who felt the Sykes monkeys had become more "cheekier". Two residents of international origin felt there was an increase in concerned individuals about the wildlife, one stating "monkeys, they're getting protected; people are starting to realise they are an asset rather than a burden".

Development was often a reason given for the reduction in the wildlife by residents of international origin, agriculturists and Kenyan nationals, with one agriculturist explaining how before the development there were many antelope, leopard, buffalo, Sykes monkeys and colobus monkeys. One Kenyan national explained how the increase in development and agriculture had forced the wildlife to move into the villages; later explaining the reduction in forest, along the sea front would not be a problem as the animals can move to forested areas near their villages. The participant went

on to explain the difference in where they lived and the people living along the sea front, who had little building restrictions unlike where they resided (Figure 15). One resident of international origin also felt the development was pushing the wildlife further inland. One agriculturist explained they believed the increase in the baboon population on farms was due to the closure of hotels, leaving the baboons unable to eat out of the dustbins so instead were feeding on crops. Other agriculturists mainly attributed the increase in the primate population was due to primates having access to more food. Similarly, one resident of international origin responded they felt there was plenty of food so the primates were breeding well, they also advised there were no predators left in the area, with the only thing killing the wildlife being the cars and power cables.

Figure 15. Kenyan national on the development within Diani, the effect this has on the wildlife and the differing restrictions in local villages and the more affluent sea front in Diani.

"I have seen them decreasing, I don't see them increasing [the wildlife] and it is because of the buildings and agriculture because they cut the bushes and when they cut the bushes they move to the villages actually. Others they have no place to go… 20 years ago this was a forest, all of this was a forest. So every time we make the building we chase the animals and others go to the villages and they are killed… No problem even if they finish all the bush here… the animals will be safe because we have trees and we have bushes. We have another forest over there, which is conserved by the government"

"You cannot stop these people from building. They will build, because the government wants money… because even the bushes you see are in private property, someone can do what they want with the bush and you cannot take them to court… but outside there is the big problem… in our place they call it the bush so they stay there, they have the offices [the government] so every time you are on the lookout… no cutting a tree and no killing an animal. To cut a tree in your farm first you write a letter… and then you are approved then you can cut a tree. You can't wake up one morning and cut a tree so there it is very strict, more than here [Diani sea front]. If they catch you with a dik dik they will arrest you, because you kill it and you want to eat it. So if you see a dik dik tomorrow then leave it, if you go to court, they jail you for so many years. So yes we are existing with animals very nicely".

3.2.5. Tourism and wildlife

When tourists were asked what wildlife they had seen in Diani, most mentioned the baboons, followed by bushbabies and the marine wildlife. One tourist did advise they had seen Sykes monkeys, baboons, vervet monkeys and colobus monkeys while another participant had not seen any monkeys despite the signs reading "beware of the monkeys". Four of the five participants mentioned seeing monkeys using the bridges placed across the roads.

When asking one tourist what they liked, they responded with “I just like the baboons and I like that we can go up so close to the baboons and they come up to us”. Two participants described how the monkeys in Diani were not “as cheeky” or “as invasive”, explaining they did not think there was much “conflict” between people and the wildlife. When asked whether wildlife played an important part when on holiday, two explained it was not important to them and was not something they considered, one participant did express they felt they probably should consider wildlife more.

All tourists commented on how they saw few or no monkeys at their hotels and only saw them along the road. Two tourists when asked what they thought of feeding monkeys and whether they would feed the monkeys, explained it would not be something they would purposely do but saw no harm in “chucking” food for them. However, three of the tourists explained this was an activity they would never engage in, two of the tourists had visited Colobus Conservation and explained this was the reason they would not feed the monkeys. Bushbabies were mentioned often, with three of the participants having engaged in feeding them a banana at a small resort in Diani. Bushbabies were spoken about positively, with one participant having never seen one before describing the interaction as “enjoyable”.

All participants working in hotels expressed how the primates in Diani were a big attraction for tourists, believing tourists found them “exotic”. All participants working in hotels had witnessed tourists feeding primates, all expressing how tourists love the wildlife but how tourists did not quite comprehend not to feed the primates (figure 16a) another participant recalled a time a tourist informed them they were trying to find baboons to feed (figure 16b). Often participants felt the tourists were feeding the wildlife to get photos with them (figure 16c).

Participants working in hotels explained guards would chase the baboons off site if they were seen and guards would be present when guests were eating. With one participant stating “You know, that would probably spoil some of my business” when asked why, they responded “people are scared of those great big baboons”. One participant felt the biggest problem were the guests not adjusting their behaviour to reduce negative interactions between themselves and the primates (figure 16d).

Figure 16. Hotel staff on tourists feeding the primates in Diani.

(a) "Yes the tourists love them, they can't quite comprehend quickly not to feed them. That feeding is harmful to them, that this can change their natural behaviour… I talk a lot about the hazards of feeding them, some understand and listen but most don't listen. So they do it secretly instead, from their balconies. The monkeys are not afraid of the tourists, they are more afraid of the locals. The hotel and I do tell guests on arrival not to feed them"

(b) "it is something we really advise them when they're coming in, only the ones that are really, really, I don't know whether to call them stubborn or risk takers because we always tell them they are very dangerous… then there are those ones who tell you, I'll feed them whatever you tell me… We had these ladies the other day the first day they came they fed them and the next day they came and we are like we told you last time not to and they were like what are you talking about, in fact, we are looking for baboons to feed, seriously, so that just attitude"

(c) "I don't think people feed them because they think they're hungry I usually see them feeding them because they want to take a photographs and they want to get them to come down"

(d)"you can't look after the guests all the time they do their own thing and they leave doors open and they leave food sitting under the window and you know, it's educate the guests more than anything"

3.3. Colobus Conservation

3.3.1. People's knowledge and perception of Colobus Conservation

The majority of the agriculturists, Kenyan nationals, tourists and all of the residents of international origin had heard of Colobus Conservation, however residents of international origin and Kenyan nationals working in tourism were the only group who seemed knowledgeable of the organisation's work, everyone one else had limited or no knowledge of their work, believing most of Colobus Conservation work was welfare based and only with primates. The majority of agriculturists did not know what Colobus Conservation did.

When agriculturists were asked how they had heard about the organisation, most had seen staff or volunteers wearing the t-shirt or had seen the truck, some people responded they had heard from people in the community; two agriculturists had heard about the organisation from their children who had attended an educational day at Colobus Conservation. Three agriculturists advised they had heard about Colobus Conservation through the community liaison officer. All the agriculturists and Kenyan nationals able to answer, when asked, what Colobus Conservation did, responded they helped injured or sick animals, a few participants responded they put the bridges up and another advised they gave eco-tours to guests. The agriculturists who were not able to provide an answer were asked what they thought Colobus Conservation did, most responded they did not know, while

others thought the organisation protected and took care of the animals, two believed they only dealt with primates and three believing Colobus Conservation only dealt with colobus monkeys. Kenyan nationals working in tourism had a better understanding and regular contact with Colobus Conservation, as well as a positive opinion of the organisation with one participant describing the Colobus Conservation staff and researchers as passionate (figure 17).

Figure 17. Kenyan national commenting on Colobus Conservation staff.

"you can see they have passion because what they do, I can't do, honestly, you can see they do it from their heart you know the way they come and the people taking the statistics and the way they take their time to wait and wow, something they have passion for, so it's good I don't think they do it as something as a job, no they do it with passion"

Most residents of international origin had visited or contacted Colobus Conservation previously, often contacting Colobus Conservation to report an injured or dead primate, to seek advice on "pest" primates, request trees to be cut or electricity cables to be insulated. Five residents of international origin advised they had financially supported them and three had been on an eco-tour. All residents of international origin showed to be very supportive of the organisation, commenting on the dedication of the staff (Figure 18a). Often participants were well informed on current events through Colobus Conservation social media pages, actively followed Colobus Conservation activities and regularly seeing them out in the community. Most residents of international origin felt that the organisation had created awareness within the community (figure 18b). Many of the residents of international origin felt the international residents within the community were aware of Colobus Conservation and their work (figure 18c). However, one Kenyan national advised they would contact Colobus Conservation if they saw an injured colobus monkey but would not for a baboon, Sykes monkey or vervet monkey, due to their dislike for them. Another Kenyan national also advised the people where they lived would only report an injured colobus monkey to Colobus Conservation, but would not report an injured baboon. This was again because people did not like the baboons.

Figure 18. Residents of international origin on Colobus Conservation.

(a) "I think what they have done is great but it's only because of dedicated people and a core group of people who keep the place running and their supporters, it makes a difference here, if they didn't if they weren't so proactive then the community wouldn't get behind them… it's the people that are associated with it you don't mind helping them out".

(c) "What is so good people are aware of it, I mean if it wasn't for Colobus no one would be aware, I doubt even anyone would be aware of the wildlife to be honest with you"

"I think if they weren't there I think you would see a decline in the primate population around here just because habitat would go and people wouldn't care and there would be nowhere to take injured or orphaned primate, they would be just someone else's problem".

(d) "I think they are doing a good job at heightening awareness and I don't know what else they can do but every muzungu [international resident] in the community knows about them, nearly everybody's got their number and it's well-advertised along the road"

"everyone knows who they are everyone, everyone knows who puts the monkey bridges up, everyone knows why, everyone knows who to ring if there is, you know, an issue, even if its relocating a bit of a serial pest, a monkey that's being an issue they get people together and discuss the right and wrong ways to do it".

Tourists who had heard of Colobus Conservation had either seen the organisation's headquarters or had seen the signs along the road. One explained they felt there was not much advertisement. When one tourist was briefed on the work of Colobus Conservation and asked whether they would consider visiting responded they would definitely consider visiting. Another tourist who was aware of the organisation from seeing the signage, but were unaware what Colobus Conservation did. Two tourists interviewed had visited the centre and described their visit to be "thought provoking", "informational" and were "impressed" explaining they were not expecting much and so was pleasantly surprised. Both the tourists talked in depth on how it had made them think of their impact on the environment. One participant explained how they had not considered the affects humans had on primates, they went further to reflect on the affect humans have on the marine life (figure 19).

Figure 19. A tourist on their visit to Colobus Conservation.

"I didn't think about it in that way, I didn't think that, you know, they start relying on you and then you want to have as little contact with them as possible for their wellbeing even though that is not fun for humans… Just little things like at the hotel there was something saying please leave all the shells and the things on the beach, just leave the whole ecosystem as it is so to speak and as a kid or whatever you think, you always collect shells and it's just this really harmless thing but you are actually taking away all the homes of the crabs and things"

3.3.2. Recommendations by participants for Colobus Conservation

All participants were asked if they thought Colobus Conservation should make any changes and if so, what changes these should be. The majority of Kenyan nationals and agriculturists wanted Colobus Conservation to provide solutions and methods to reduce negative interactions between people and the wildlife. Most agriculturists and Kenyan nationals also expressed interest in being more involved with Colobus Conservation (figure 20), with a quarter of the agriculturists expressing they were happy we had spoken to them, finding it "encouraging". One agriculturist advised Colobus Conservation needed to "get more people to understand the value of the project" and there needed to be a "two way conversation" between the local community and Colobus Conservation. This was a feeling many shared, with one agriculturist advising Colobus Conservation shouldn't just say "don't kill a monkey", because people will ask why, Colobus Conservation needed to explain, with many Kenyan nationals and agriculturists asking how could Colobus Conservation help? What was Colobus Conservation going to do about the baboons? And, how do they benefit from the wildlife? Some residents of international origin suggested Colobus Conservation needed to be more involved with the local communities, however did empathise how it was difficult to involve local communities in conservation due to poverty being high (figure 21a). One resident of international origin felt there needed to be a better understanding between all communities in Diani, advising of an incident where they witnessed people trying to kill a primate to eat (figure 21b).

Figure 20. A Kenyan national discussing wanting more involvement with Colobus Conservation.

"I think there is a gap between the management of the conservation and the local people… I don't think people are well informed. So they don't see the importance of the wildlife as it is not supporting them… make them feel it is theirs. I think that is the biggest problem. We need to think of a way of driving people so that they can feel that they are secure in the conservation business"

Figure 21. Resident of international origin on the local communities and wildlife.

(a) "I think people don't understand, of course this is also about the money as long as the society is poor, protection of the environment will not be important, it is important to survive rather than protect the environment but this is long process"

"it is quite unusual I think for local people that have to work so hard for a living to take an interest in wildlife which to them, is very often superfluous, why do muzungus [international residents] spend money on trying to preserve wildlife when we're starving, you can't help people having that sort of attitude at all"

(b) "it's good to try and understand both sides of the story, you know they are not killing that monkey because it is a monkey and they dislike it, they are killing it as a source of protein"

Other common suggestions by Kenyan nationals and agriculturists included more community involvement, translocation of the "problem" species. Financial compensation for people's crop losses was suggested, however, one Kenyan national advised Colobus Conservation needed to educate people and let them know Colobus Conservation did not compensate. They gave an example of a situation at their place of work where their co-workers wanted compensation from Colobus Conservation for a fridge damaged by a colobus monkey (Figure 22). When asked why they believed Colobus Conservation should compensate or translocate the baboons some agriculturists felt the primates were Colobus Conservation responsibility, another advised if Colobus Conservation did not compensate for losses caused by a baboon, they would kill them. In one particular area Kenyan nationals requested Colobus Conservation provided a water hole for the baboons, as the baboons were breaking the water pipes to drink the water. In another area of Diani, agriculturists requested help with the rubbish that was being dumped on their farms.

Figure 22. Kenyan national describing an incident at work.

"A colobus jumped on to the fridge, the glass broke down. And the colobus ran away and it was not injured and they were like we should go and complain at the Colobus Trust [Conservation] so they can buy us a new fridge… I think at the trust [Colobus Conservation] they have to make them know they are there to conserve the animals not compensate what the animals destroy"

The most common suggestions by residents of international origin was that Colobus Conservation marketing needed to be improved and better communication to the general public, with people not being fully aware of what they did (figure 23a). Another participant felt the speed bumps recently added on the roads were connected to the organisation and felt Colobus Conservation had not advertised them well (figure 23b). Two participants felt all information was only communicated on Colobus Conservation social media pages and felt other avenues should be used to reach a wider audience. Some residents of international origin felt the organisation were unwilling to allow residents to assist, one saying "I think they are doing a good job, but they can't do it on their own". Some residents of international origin were unsure where the money being donated was going. One resident of international origin felt they put "primates over people" (figure 23c). One resident of international origin felt the centre could be improved, finding the tour and display basic and the tour needing a more interactive element. Another common suggestion by residents of international origin was that Colobus Conservation needed to be more involved in education; one suggesting Colobus Conservation should have schools adopt a primate and give them regular updates. One participant felt more education on the ecological role the wildlife in Diani played would be beneficial

(figure 24a). However, other participants felt they raised a lot of awareness within the local communities (figure 24b).

Figure 23. Resident of International origin on Colobus Conservation and the community.

(a) "I think they are doing a good job. But they should let everybody know what's going on, the locals, they don't know what's going on"

"I don't know how the local locals feel about the whole thing"

(b) "I was told they were the ones, they put the speed bumps, the big speed bumps which kill people which turned up overnight they seem to be very influential".

(c) "I think they do a good job but they also need to understand that it's an integrated community… it happens to have a habitat of native animals and I think they [Colobus Conservation] need to have certain principles put into place but people also need to live so there needs to be a balance"

Figure 24. Residents of international origin on education at Colobus Conservation

(a) "I don't know enough of the ecology and how if they were extinct what would happen how they contribute to the environment …I don't know what they, whether they, keep these primates there or whether they try to reintroduce them, it comes back to what do they do, what's the benefit what's going to happen if somebody doesn't do this are these animals going to disappear off the face of the planet"

(b) "I think that they have made some really good positive changes, not only for the monkeys here but also for the people that are living here and trying educate them about what works to make sure we can live together…I think that they have worked really hard to try and get as far as they have and they have certainly made positive changes, and I know they struggle to continue to do more and that my impression is that they, as they continue to move forward they also face a lot of brick walls and… the ignorance of people about what the Colobus [Conservation] actually is. And what they actually do"

People working in the tourist industry showed to be supportive of Colobus Conservation, expressing they wanted to be more involved and actively encouraged tourists to visit the centre. They believed it would help change tourist behaviour to be more conservation aware and change undesirable behaviours such as feeding the monkeys, believing tourists were more likely to listen to staff at Colobus Conservation (figure 25a). Many of the participants working in the hotels felt Colobus Conservation needed to market themselves more to encourage tourists to visit, one participant advised the issue was transport (figure 25b). All suggestions can be seen in table 7.

Figure 25. Participants working in hotels on tourists visiting Colobus Conservation.

(a) "I believe just as many people will do more for the conservation if they do go and experience it. So if they go and see your work [Colobus Conservation] and if they go and experience what you guys do and they're more educated they will do more"

"It would help us a lot because, we have signs don't feed the monkeys, because our monkeys at our hotel figured out that if they see someone carrying something in their hand, if they jump on them, their first reaction is ahhh,… so all of these things we have to tell our tourists, when they read it they don't understand until they actually get to see something and I think when they see something, when they go and they understand what happens and they might stop"

"sometimes you just carry on without thinking… just don't think about the consequences, you are enjoying, it's fun and you don't think about the consequences and then when such a moment to stop and someone will bring your attention to, it's a good job".

(b) " I think there needs to be some kind of easy transportation for them, because the only way to get there is, it is too far to walk… a lot of the tourists we have are all inclusive tourists that come here with a tour operator that come here just for a holiday they don't venture out much. They don't like taking a matatu [local bus] over there so they would have to take a taxi"

Table 7. All suggestions mentioned by agriculturists, Kenyan nationals, residents of international origin and tourists on changes Colobus Conservation could do, from the most common to the least common suggestions.

	Agriculturists	Kenyan nationals	Residents of International Origin	Tourists/ individuals working in tourism
Most common suggestions  Least common suggestion	**Provide solutions to reduce negative interactions between people and wildlife** More involvement with the community **Translocate baboons** Compensate **Supplement feeding the baboons/ help with rubbish management** Nothing	**Provide solutions to reduce negative interactions between people and wildlife** More involvement with the community **Translocate baboons** Provide water holes/ provide wire mesh or weapons/ Compensate **Administer birth control/ supplement feeding/ increase bridges on road**	**Improved communication** Education programmes/ community involvement **Marketing needs improving** Improve the education centre and ecotours	**Better advertisement** Increase communication and work with hotels **Provide transport for tourists**

4. Discussion

The results of this study have helped identify themes within and between socioeconomic groups, along with identifying people's priorities, perceptions and attitudes within Diani. The findings will be discussed within the context of the current literature and recommendations will be devised for potential future conservation projects and programmes in Diani. Below will focus on; priorities and perceived changes in Diani by residents and implication for local conservation, value of tourism, tourist behaviour and perceptions towards wildlife, perception of the wildlife in Diani among residents, as well as the perception and knowledge of Colobus Conservation within the local communities. Considerations for future projects and research will be highlighted in an effort to expand Colobus Conservation's work with people and wildlife.

4. 1. Priorities and perceived changes in Diani by residents and it's implication for local conservation

Positive perceptions of Diani by residents of international origin were attributed to the diverse wildlife and the natural landscape. This was emphasised by a few Kenyan nationals working in tourism. For most Kenyan nationals and agriculturists, being employed was the reason they perceived Diani positively. The increase in development was mentioned by all socioeconomic groups. Often participants migrating to the coast were coming from rural areas, seeking employment. It has been found that migration to developed areas offers more employment opportunities as well as an improved standard of living (Agesa & Kim, 2001). Perceptions of the increased development by residents, identifies the differences in priorities among these groups, where the most supportive of development were agriculturists followed by Kenyan nationals. Residents of intentional origin often had mixed perceptions of the increase in development. This will be further discussed below with consideration as to how this can affect conservation efforts in Diani.

Garcia et al (2010), notes conservation agendas are unlikely to be supported by farmers unless there is an increased concern for the wellbeing of the local communities. As long as a community remains poor, regardless whether they have the knowledge and information, people will still be unable to act (Wright, 2010). Developing alternative livelihoods will play a part in facilitating a change in behaviour. One project in India, helped gain community support for the conservation of the nilgiri tahir, *Nilgiritragus hylocrius*, through increasing the local community's involvement; several tactics were used including; (i) education programmes highlighting the ecological role of the neighbouring national park, (ii) local people employed as tour guides (iii) providing support for small businesses. This was partly funded by private companies and large businesses in the area (Alembath, 2010).

Equally helping small businesses market themselves that is affordable for local people can be a useful tool in conservation (Walpole et al, 2005). The above provides potential ideas that should be considered when developing projects in Diani.

Residents of international origin when interviewed, often considered how local communities were affected by conservation initiatives. They were also most concerned on how the wildlife was affected by the development and the high human population in Diani than any other group. Many residents of international origin expressed a willingness to be more involved in conservation efforts. Residents of international origin, where poverty is not an imminent concern, could help collaborate, assist or provide expertise, in such areas as business or marketing, in community projects. Involving a diversity of people provides different perspectives and ideas which can enhance education programmes (Jacobson, 2010). In addition, collaboration with local NGOs, private companies and other specialists within Kenya would make conservation projects more effective and potentially gain further support. Many conservation papers highlight the need to collaborate with individuals from other disciplines (Dickman, 2010; Kuhar et al, 2010; Williams et al, 2003). Williams et al (2003), advises that incorporating socioeconomic information into conservation planning is likely to improve the success in achieving conservation goals. It should be noted that local affordability and cultural beliefs need to be considered and addressed when implementing any conservation work within local communities (Aronson et al 2006). Below I consider local perceptions of the wildlife and how this can be incorporated into conservation programmes.

4.2. Perception of the wildlife in Diani among residents

4.2.1. Negative perceptions

Baboons were the most negatively perceived animal amongst agriculturists and Kenyan nationals, and feared by many of the residents of international origin. Furthermore, these negative interactions were often on people's farms. Baboons were not the only animal witnessed foraging on crops, yet, were identified as the biggest "problem". Efforts should be concentrated on changing perceptions of the baboons, with particular focus on farms. This will be the focus of this section.

Baboons are regularly identified as frequent crop foragers in Africa, and are often deemed as 'pests' (Hill & Webber, 2010; Fuentes, 2006; Hoffman et al, 2012a). The negative perceptions of baboons were sometimes attributed to their large size by some of the residents of international origin and Kenyan nationals. Hill (2004) highlights how people's perceptions can often be influenced by more "visible" species. This is further supported by agriculturists describing baboon arriving in large groups. Sykes and vervet monkeys were often seen foraging on crops, but were far less obvious due to their smaller body and group size. This is similar to other findings, for example; a study in Rwanda,

where participants felt it was only the primates in the area feeding on crops and other species such as rodents, birds and insects were not mentioned, even though they also frequently fed on crops (McGuiness, 2010). Further research in Diani on species feeding on crops may identify how much baboons account for this behaviour. This could help structure mitigation methods and increase tolerance among people affected.

Baboons were often compared with other primates in Diani, with other primates only foraging on crops when “very hungry” unlike baboons who came to be “destructive” and “wasteful”. Often when animals transgress from what people see as socially acceptable, what people are willing to lose or accept can decline dramatically (Hill, 2004). This has been identified in similar studies, for example, often macaque species are seen as “bad”, while gibbons are seen as “good” in Chinese culture. This was due to gibbon behaviour being seen as ethical and ‘good’, where macaques were not (Zhang et al, 2015). Similarly, Costa et al (2013), found people’s perception of chimpanzees were positive in one area in Guinea-Bissau. This was due to chimpanzees’ human like affinities but in other areas where they would be known to attack women and children, perceptions were markedly negative with chimpanzees being seen as disruptive. In one study in China, participants would describe wild pigs as destructive or dangerous whereas the Guizhou snub-nosed monkey, were seen as good and not harmful (Ellwanger et al, 2015). Again, this was similar to the perception among participants in Diani, especially agriculturists, where the colobus monkey was perceived positively, as they were seen as “harmless” and “non-intrusive”. Changing the perceptions of baboons among agriculturists and Kenyan nationals could be achieved through education programmes.

4.2.2. Changing perceptions of the wildlife

Women were more likely to comment on how they enjoyed watching baboons socialise, appreciating the close family bonds among the baboons. This is similar to a study in China, where women were found to show stronger emotional attachment and a higher anthropomorphic response towards the Guizhou snub-nosed monkey in China (Ellwanger et al, 2015). Furthermore, on two occasions the colobus monkey was positively perceived in a cultural and historical context. One agriculturist described colobus monkeys once being Muslim people, another time a Kenyan national explained how the skin of colobus was worn by authoritative figures. It would be beneficial to explore further the emotional connection people have towards the social structures of the baboons and also these cultural and historic connections of the colobus monkey as this could be incorporated into Colobus Conservation education programmes (Jacobson, 2010; Patel et al, 2005). Potentially, these emotional, historic and cultural connections can often provide protection for wildlife (Riley & Priston, 2010).

4.2.3. Other factors influencing perceptions

Kenya has a long and complicated history in relation to 'Human-wildlife conflict', this has seen resentment among local people and government officials, due to corrupt compensation schemes and people feeling wildlife is valued over people (for an overview see Brockingham, 2004; Western & Waithaka, 2005). To reduce this tension, the Kenyan Wildlife Service (KWS) was established in 1989 to conserve biological diversity nationwide and to remove control of compensation schemes from the government (Western & Waithaka, 2005). Although participants advised there were compensation schemes in place for damages of people's property and crops by elephants, there are no compensation schemes for damage by baboons. Furthermore, participants often felt the KWS never paid compensation for damage by elephants and feelings of resentment seemed to be prevalent from interviews with some agriculturists and Kenyan nationals. Kenyan nationals and agriculturists advised the wildlife was not their responsibility, but that of KWS or Colobus Conservation. Some commented on how more affluent individuals in Diani were able to cut down trees on their property, whereas this was not allowed in the villages. This highlights two interesting points, although out of the scope of this current study, it is worth noting and should be considered for further research in Diani, that people who believe they have little control over situations may inflate perceptions of risk and also, what initially may have appeared as a human-wildlife conflict may be in fact be human-human conflict (Hill, 2004). Therefore finding effective mitigation methods may not be sufficient in resolving negative interactions between people and wildlife but instead understanding underlying issues maybe better effective and achieved through increasing community involvement.

Some of the participants interviewed showed tolerance towards wildlife or restraint from hurting wildlife foraging on crops due to their religion. Religious tolerance of wildlife has been reflected in several studies (Jones & Young, 2004; Nekaris et al, 2013; Pragatheesh, 2011; Riley, 2010). However, restraint due to religious or cultural believes is not always practiced, Marchal & Hill (2004), reported although Islam forbids the consumption of primate meat, Muslim farmers killed primates and then would discard the meat or give to Christian neighbours. Jones & Young (2004), also highlight how cultural tolerance is a learned behaviour and therefore can be disinhibited. However, religion still can play a vital part in conservation. Mikusinki et al's (2013) paper highlights biodiverse hotspots which overlap with populations who identify themselves as believers in some form of deity and as adherents of a religious community. The paper suggests a need to integrate local beliefs with conservation approaches. Moreover, religious leaders could be of benefit to conservationists in gathering support for future efforts. As religion was identified by some agriculturists and Kenyan nationals as reasons for their tolerance towards the wildlife, exploring this further would be

beneficial and possible collaboration with religious leaders and institutes may provide a platform in spreading conservation messages and reaching a larger audience.

4.2.4. Perceived changes in the wildlife

Most agriculturists and Kenyan nationals reported an increase in baboon, Sykes and vervet monkey populations, whereas residents of international origin felt wildlife had decreased. Nekaris et al (2013), found participants experiencing problems associated with primates would also report an increase in primate populations, whereas if participants did not report any problems they would report a decrease. Some participants in Diani suggested the increase in baboon populations was likely attributed to baboons feeding on human food and rubbish. This has been noted in other studies in Diani (Anderson et al, 2007b) and at other sites (Fenta, 2014; Hoffman & O'Riain, 2012b). The perceived increase in baboons among agriculturists and Kenyan nationals may be due to a change of baboon ranging patterns. Hotel staff and residents of international origin often reported baboons being chased off site; tourists also reported rarely seeing primates at their hotels. Furthermore, the closure of hotels may be reducing human food availability to primates. It also should be noted, the time of data collection coincided with maize planting season, the perceived increase in baboons could possibly be seasonal. These are merely observations, further research on baboons ranging patterns and foraging habits, as well as, observation on farms to identify the degree of damage by baboons compared to other wildlife may help explain these observations and help towards effective mitigation methods.

4.2.5. Mitigation tactics

All residents of international origin felt the wildlife was manageable and methods adopted were often low maintenance. However, there were hints that methods such as disposing rubbish appropriately, shutting doors and locking food away, was not practised with all the residents of international origin. Many residents of international origin also reported contacting Colobus Conservation to assist with "pest" primates, highlighting that negative interactions do exist among the residents of international origin in Diani. The provision of feeding primates, inefficient disposal of rubbish and leaving food out has been shown to increase primate aggression and habituating primates to humans (Chauhan & Pirta, 2010; Oram, 2002). The use of monkey-proof bins in Diani could reduce negative interactions between residents and tourists, and has been recommended for other sites (Chapman et al, 1998; Healy & Nijman, 2014). Therefore, encouraging residents of international origin and businesses in Diani to use monkey-proof bins would be beneficial. Tourists in Diani were witnessed feeding primates by hotel staff; this may contribute to the perceived increase in aggression in primates towards people. Tourist behaviour will be later discussed but is worth

highlighting as it may be indirectly affecting negative interactions among other communities. Education in the form of regular meetings and distribution of pamphlets advising residents of effective mitigation methods, may be of benefit to reduce negative interactions.

Guarding was the most used method to deter wildlife from crop foraging; this is a commonly used mitigation method among farmers in other areas (Fenta, 2014; McGuiness, 2014; Riley & Priston, 2010; Warren, 2008). This is often time consuming, can disrupt schooling for children and increase risk of injury from wildlife (Marchal & Hill, 2009). Guarding has been found to be ineffective, only reducing severity of damage and can often be difficult to sustain (McGuiness, 2014; Warren, 2008) and to have no significant effect on crop loss (Riley, 2007). However, other studies have found guarding to be effective when combined with deterrents. A study near Budongo forest in Uganda found fences made from wire or hedges and the use of bells and alarms to help farmers detect crop foragers, reduced crop foraging by primates, furthermore, it reduced time guarding and made guarding more effective (Hill & Wallace, 2012). The use of fencing and methods to give early warnings to farmers could be tried in Diani.

Several mitigation methods have been tested in other areas in the hope to reduce crop loss, for example, coating crops in emetic properties to induce vomiting, translocation of baboons; however this can be a costly endeavour (Strum, 2001; Strum, 2010), burning of chillies, placement of cowbells on fences and use of locally made firecrackers were used to deter elephants off farms in Zimbabwe (Osborn & Parker, 2002). Mitigation methods trialled around Budongo forest in Uganda, included natural barriers such as hedge fences and trenches, nets, wire fences and bells/alarms (Hill & Wallace, 2012). A study a year later at the same site found that these deterrents were still being implemented by farmers, as they were easily maintained and cost effective (Hsiao et al, 2013). Kaplan et al (2011), provisionally fed baboons in the Cape Peninsula, South Africa, found that it did alter baboon ranging and feeding patterns but warns provisional feeding could result in overgrazing of natural vegetation, alterations in community composition and increase fecundity. Effective mitigation methods need to take into account how and why people perceive crop losses, what they expect to be done and who is responsible for the issue, (Hill, 2004). Furthermore, methods need to be feasible and affordable for agriculturists (Osborn & Parker, 2002). Collaboration between local farmers and researchers can encourage cooperation and reduced hostility between researchers and farmers (Strum, 2010).

There were cases where particular areas in Diani had specific concerns. For example, Kenyan nationals interviewed in one area, advised baboons were breaking water pipes, in another area, agriculturists complained about rubbish being dumped on farms. In some cases baboons were

perceived to be the biggest 'problem', whereas Sykes monkeys were deemed manageable; however, in areas where baboons were not often seen, Sykes monkeys were seen as the biggest 'problem'. Kenyan nationals rarely commented on bushpig but agriculturists mentioned them regularly foraging on their crops. Furthermore, the majority of female residents interviewed feared baboons. Agriculturists who did not perceive primates negatively, reported not interacting with them often, usually because they were out of the primate's territory range. This corresponds with research from other sites, in Sri Lanka where agriculturists living in close proximity to the rainforest were significantly more likely to have the most negative attitudes towards the primates (Nekaris et al, 2013). Similarly, Hoffman & O'Riain (2012a), also found the highest areas of 'conflict' between people and baboons were along urban edges. The above highlights how Individuals may experience different degrees of vulnerability, highlighting that communities or groups of people should not be treated as homogenous units (Hill, 2004). Therefore projects and potential mitigation methods may need to be case specific within Diani.

The literature provides potential mitigation methods that could be tested in Diani. Colobus Conservation should work with local agriculturists to come up with cost effective methods to reduce crop loss. Encouraging residents of international origin and small business to install monkey-proof bins, the distribution of educational brochures and regular meetings may be effective to reduce potential negative interactions between people and primates.

4.3. Value of tourism

Most residents highlighted tourism as the main source of income and employment in Diani. Often wildlife was valued due to its ability to attract tourists, however, this was often not a connection agriculturists made unless they had previously worked in tourism. Residents of international origin would mention little of tourism but would comment on the important role tourism played for the local communities. The decrease in tourism was often noted when discussing the changes in Diani. From the interviews, it is evident that tourism plays an intricate and important role for all people residing in Diani, either directly or indirectly. Below tourism's role in conservation in Diani and the potential repercussions the reduction in tourism may have in Diani will be discussed.

Global tourism has produced a US$0.75m million industry in Kenya, which has also raised national consciousness of wildlife (Western & Waithaka, 2005). Participants who were involved or had been involved in tourism often saw the wildlife as a vital part of Diani and their livelihood. Tourism gives hope of greater prosperity, social and economic growth and a shift into the industrial world. It offers opportunities of employment, directly working in hotels or as tour operators, or indirectly through local transport, craft production and restaurants (Brockington et al, 2008). This attitude was strongly

reflected with individuals in Diani working in the tourist sector, and participants, especially Kenyan nationals, who would see tourism as the reason they saw development. Others commented upon the chance to engage with a variety of people or the increased business or increased employment for people.

Tourism can be used as a tool for improving tolerance towards wildlife but the issue lies with who benefits from tourism, where often, benefits are not evenly distributed to all who are affected by the wildlife (Walpole et al, 2005). Ultimately, some people will benefit more than others and understanding who will benefit and who will not is fundamental as it will help us better address these issues (Brockington 2004). Lepp, (2007) interviewed residents near Kibale National Park, Uganda, and found farmers were often the poorest and also the least enthusiastic for tourism, they were also the most effected by the wildlife but saw little of the economic benefit from tourism. Gadd (2005), interviewing local people in Laikipia, Kenya, found residents who directly benefited from tourism would show positive attitudes towards wildlife. Whereas individuals receiving indirect benefits overlooked the connection between wildlife and employment. This was reflected in many agriculturists blaming the increase in the baboon, Sykes or vervet monkey population as to why their business had decreased and not the hotels closing, and thus reducing sales.

However, with the perceived decrease in tourism mentioned by residents in Diani this could reduce tolerance for wildlife among participants. As often individuals have been found to maintain positive attitudes despite negative impacts as long as there is an economic benefit (Lindberg & Johnson, 1997). Similarly, Nejati et al (2014), found residents on two touristic islands in Malaysia, perceived the economic, social and cultural impact to be more important than the negative impact tourism had on the environment. Therefore if wildlife is purely seen as an economic benefit, if this incentive is no longer prevalent, wildlife may no longer be valued within Diani by some Kenyan nationals, a concern echoed by Gadd (2005).

Encouraging agriculturists and Kenyan nationals to value wildlife for other reasons than its economic value could be achieved through education programmes. Increasing ecological knowledge has been found to increase desirable conservation attitudes (Caro, et al, 2003) and change in behaviour (Kuhar et al, 2010). However, increased ecological knowledge is not always enough to change people's behaviour, as it does not address people's socioeconomic needs (Higuera, 2012). Instead the use of social capital could be effectively used in Diani, by building relationships of trust, reciprocity and exchange, and facilitating connectedness in groups, to aid long term conservation efforts. This could be achieved by the development of committees, made up of representatives, which can effect and manage change. This would allow local communities to share their knowledge

and provide advice and support. Equally, information can be provided on the advantages of biological diversity on farms instead of monocultures, alternative uses of pesticides for agriculturists and much more. The bringing together of farmers helps foster new social relations, building on social capital and building trust between conservationists and local communities. In addition, local ecological knowledge could be provided (Pretty & Smith, 2004). Furthermore, this could help create a sense of ownership and increase interest for the program (Jacobson, 2010). Social capital could be an effective tool in Diani, as often, participant's highlighted how communities were an important part of Diani.

Future programmes will need to address how wildlife can be valued by all communities in Diani and how to encourage this value for more than its economic benefit. As tourism is not necessarily a reliable source as evident by the current decline in tourism witnessed in Diani. This is especially important among Kenyan nationals and agriculturists as many of the residents of international origin value for wildlife went further than its economic benefit. However, tourism and tourists have a detrimental effect on the wildlife in Diani which was mentioned by many of the participants especially residents of international origin and participants working in the tourist industry.

4.4. Tourist behaviour, perceptions and impact in Diani

As highlighted above tourism is highly valued in Diani, playing either a direct or indirect role in many people's lives. However, tourism can be detrimental to conservation. Hotel staff would often comment on witnessing tourists feeding wildlife, furthermore, tourists' attitudes towards conservation were often limited and some advised how conservation and local wildlife did not play an important part in their vacation. This will be the focus of this section.

Feeding wildlife is not unique to Diani. Reasons for feeding wildlife by tourists are often attributed to tourists wanting to get closer for photo opportunities (Oram, 2002; Newsome & Roger, 2008). This was an explanation given by hotel staff interviewed. However, Oram, (2002), highlights the act of feeding can be complex and dependent on varying views and motivations of individuals. Although tourist and primate interactions are actively managed within hotel compounds in Diani, once tourists are out of sight of hotel staff or outside these compounds there is no way to manage these interactions, a point often highlighted by the hotel staff. Furthermore, some tourists did advise that they saw no harm in feeding wildlife; most tourists had also engaged in feeding bushbabies in some establishments which allowed this in Diani, this can send mixed messages, with tourists possibly questioning when is it acceptable to feed wildlife (Ballantyne et al, 2009). To overcome this potential confusion in Diani, Colobus Conservation would work with establishments which engage in feeding bushbabies. Finding effective ways to distinguish the difference in feeding bushbabies compared to

other primates in Diani may be of benefit. This could be achieved by installing signage explaining the difference.

Hotel staff who reported tourists feeding primates would also be aware of the negative effect it had on both conservation and people, highlighting the increased reliance of primates on people and increased aggression towards people. This has been reported in other papers, where tourists feeding primates has seen an increase in aggressive interactions (Fuentes, 2006; Orams, 2002) and increased habituation of primate to humans (Chauhan & Pirta, 2010; Oram, 2002), which can have detrimental effects on local human populations and other tourists. Feeding can also lead to dietary problems for wildlife, disrupt wildlife social structure and increase health risks for both humans and wildlife and pose risks to public safety (Newsome & Roger, 2008). Educating tourists on the potential problems associated with feeding wildlife may reduce this behaviour, Colobus Conservation do provide eco-tours and tourists interviewed who had visited Colobus Conservation advised it had altered their views and increased their conservation awareness, suggesting conservation education was effective in this particular incident. The difficulty is targeting tourists and encouraging them to visit Colobus Conservation. Distribution of leaflets explaining the detrimental effects of feeding primates in Diani could help target a wider audience. This was done in Bali, Indonesia, where leaflets were distributed to foreign tourists visiting a temple, explaining macaque behaviour and ecology, along with the history of the temple, in the hope to discourage tourists feeding macaques (Fuentes. 2006).

Qualitative assessments of the relationships between wildlife and humans can improve our understandings of these interactions (Fuentes, 2006). Interviews in this current study do not go into depth with regards to these interactions and further research on this would be beneficial to improve education programmes. Furthermore, distribution of brochures within hotels and surrounding areas explaining the affects feeding can have on both people and wildlife may help reduce tourists feeding wildlife.

4.5. Colobus Conservation

Many participants suggested areas Colobus Conservation could improve or focus on. The most mentioned were; (i) increased involvement and communication of the organisations activities with residents of international origin, agriculturists and Kenyan nationals (ii) improved marketing (iii) management of the baboon population either by compensation, translocation or supplemental feeding.

4.5.1. Increasing community involvement

Awareness and knowledge of Colobus Conservation was the most predominant among residents of international origin and Kenyan nationals working in tourism. Although these individuals also showed to be the most supportive of the organisation, they did express that they wanted to be more involved and felt there was a lack of communication between Colobus Conservation and residents. Most agriculturists and Kenyan nationals had heard of the organisation, however, knowledge of what the organisation did was limited. Increasing involvement with local communities and improving communication can help increase support for conservation initiatives. Jacobson (2010) advises conservation programmes need to fulfil personal drives such as self-esteem, a sense of belonging and self-fulfilment. When people feel valued they are more likely to help and get involved. Furthermore a feel of ownership of a project will encourage people to continue support (Jacobson, 2010). One way of doing this could be enlisting the assistance of local communities when collecting long-term data (Brewer, 2002).

4.5.2. Marketing

Marketing is another aspect that participants felt needed improving; this was regularly mentioned by residents of international origin, hotel staff and tourists. One way in improving marketing for the organisation could be through social marketing; this can play a vital role in increasing their profile and funds. Jacobson et al (2006), suggests several methods in using social marketing, including: (i) reaching out to newspapers for press interviews (ii) using prompts which provides 'do's and don'ts' on products such as keychains, car window stickers and magnets. (iii) Obtaining commitment from members of the community, this can be achieved by approaching people in public areas, going from door to door, organising meetings and workshops, (iv) engaging community leaders. Wright (2010) suggests the use of filmography to portray messages which can be an effective marketing and education tool, recommending that local communities should be involved in the production or using local narratives to engage with local communities. Films can be shown as part of a conservation education program, incorporating it into group discussions, so desired conservation messages can be clearly defined and reinforced in culturally appropriate ways, with such events being repeated to aid knowledge retention (Wright, 2010). It is vital that there is a continual avenue for providing and receiving feedback among conservationists and local communities (Jacobson et al, 2006).

Targeting tourists can be difficult due to their short time in Diani, however understanding what activities they engage in on holiday can help better target tourists. Tourists would mention they enjoyed engaging in water sports, collaborating with these companies may help encourage tourists to visit Colobus Conservation. Zaradic et al (2009), found individuals who engaged in backpacking or

hiking were more willing to financially support a conservation organisation due to their exposure to the outdoors. Tourists interviewed all were currently or previously engaged in backpacking, therefore targeting budget accommodation in Diani may be effective in increasing awareness and funding. Zaradic et al (2009), also found backpackers were likely to contribute financially in future NGO contributions, thus encouraging backpackers and maintaining communications could assist in current and future funding.

4.5.3. Managing expectations

Suggestions made from Kenyan nationals and agriculturists in controlling/reducing baboon populations were often not feasible. With many suggesting Colobus Conservation should compensate and translocate baboon populations. Furthermore this can be expensive and non-effective, Hoffman et al (2012a), highlights the translocation of baboon populations in South Africa would leave the territory open for another baboon troop to occupy. Managing expectations is vital when working with local communities, so not to cause frustration and resentment (Hill, 2004; Wallis & Lonsdorf, 2010). From the interviews this will need to be addressed as many agriculturists and Kenyan nationals had many misconceptions to what Colobus Conservation could do, instead working with both groups to come up with effective mitigation methods and providing education programmes would be more effective.

4.6. Conclusion, Recommendations and further research

The findings of this study, although preliminary, highlights several recommendations for future projects and programmes within Diani, which would help further conservation initiatives by Colobus Conservation. Often agriculturists and Kenyan nationals had similar responses; however, participants working within tourism responses were often similar to residents of international origin. Tourists varied from the other socioeconomic groups as their priorities and experience was very different in comparison. From this, several recommendations have been put forward for future projects implemented, in the hope to improve communication and community involvement between Colobus Conservation and people in Diani. Thus, increasing support for conservation by all communities in Diani.

- Agriculturists and Kenyan nationals often valued Diani for such aspects as development and employment opportunities, whereas residents of international origin enjoyed the natural beauty of Diani. Implementation of future projects need to consider people's priorities within Diani. This in turn could help gain support for conservation initiatives by Colobus Conservation.

- The use of committees, regular meetings and education programmes with all residents, would allow residents to share knowledge and ideas as well as be used as an avenue to give feedback. Colobus Conservation can use these meetings as a platform to pass information on Colobus Conservation activities to members of the public. This would also build on social capital and help increase community involvement. Furthermore, recruiting residents to help in the collection of long term ecological data will aid in creating ownership and value for the project.
- Collaboration with specialists in other disciplines outside of conservation and local leaders, such as religious leaders within Diani, would help reach a larger audience and also make Colobus Conservation projects and programmes more effective.
- Education programmes may be more effective incorporating emotional, local historical and cultural contents. Also, providing information on the local ecology of the wildlife may help increase support for conservation in Diani.
- Working with agriculturists in Diani to find effective mitigation methods that are both locally affordable and feasible, these should also be case specific.
- Research on local baboon populations, wildlife foraging on crops and effective mitigation methods will help better understand baboon-people interactions and improve tolerance for baboons among agriculturists and Kenyan nationals.
- Encouraging the use of monkey-proof bins for residents of international origin and businesses in Diani, and the distribution of leaflets providing mitigation methods that could be easily implemented, may reduce possible negative interactions between people and primates.
- Further research into tourists feeding primates may help better understand reasons for this interaction, as well as, distribution of leaflets explaining the detrimental effects feeding primates in Diani can have, may help reduce this behaviour from tourists.
- Improvement in marketing could be done through the use of social marketing. In addition, targeting backpackers and water sports companies in an effort to increase tourist knowledge of Colobus Conservation.
- The management of agriculturists and Kenyan national's expectations of what Colobus Conservation can do, would be beneficial so as not to create frustration or resentment among these socioeconomic groups.

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6. Appendix

Appendix 1- Approval given by the University Research Ethics Committee (UREC) at Oxford Brookes University

OXFORD BROOKES UNIVERSITY

Faculty Ethics form HSS.E2

Faculty of Humanities and Social Sciences

Application for ethics approval for a research project involving human participants

Undergraduates and Foundation Degree Students:
Before completing this form, the ethics review checklist (school form HSS.E1) should have been completed to establish whether this additional application for ethics approval is required. If ethics approval is required, you should complete this form, sign it and submit it to the Faculty Research Ethics Officer, Maggie Wilson at mvwilson@brookes.ac.uk. A decision form, E3 will then be returned to you by e-mail.

Master's Students:
You should complete this form before you start your project and submit it to your supervisor.
If he or she is unable to sign it at this stage, the form will be referred to the Faculty Research Ethics Officer, as above, who may seek further information and clarification from you. A decision form, E3, will then be returned to you by e-mail.

All students should refer to the University Code of Practice on Ethical Standards for Research involving Human Participants, available at www.brookes.ac.uk/res/ethics and Faculty guidelines, which are included in the relevant on-line module or course handbook. You should bind a copy of the approved form in your final project or dissertation submission.

1.	Name of Principal Investigator (Student):	Kelly Martin	
	E-mail address:	Kelly.martin-2015@brookes.ac.uk	
2.	Name of Supervisor and e-mail address:	Prof. Catharine Hill	
	E-mail address:	cmhill@brookes.ac.uk	
3.	Working Project Title:	People's perceptions of primates among different socioeconomic groups in Diani beach, Kenya.	
4.	Project Type (please specify course and give module number):	Master's	Primate Conservation MSc
		Master's dissertation	P20107: Final Project
5.	Background to and rationale of proposed research:	There is growing concern regarding people-wildlife interactions. As human populations continue to rapidly increase, many species are identified as 'pest' species, including primates. To deal with people-wildlife negative	

		interactions many efforts have been made to promote wildlife conservation, including ecotourism and community based projects. Colobus Conservation, which is based in Diani, is one such project. I will conduct my study in Diani, Kenya in partnership with Colobus Conservation. Diani is on the coast and has a large tourist industry and in turn, has seen rapid human population growth. This has affected the wildlife in the area, deforestation, fuelwood collection and conversion of land for agriculture. The intention of this study is to investigate whether primates are perceived negatively or positively amongst human populations in the area. If particular patterns of perception can be identified within and between human social groups and how people think primates should be dealt with in Diani. Due to the broad variation of people residing in Diani, four social groups will be compared. Data will be collected using semi-structured interviews and the results will be analysed to help understand people-primate interactions from the human perspective and devise possible recommendations for Colobus Conservation future initiatives locally.
6.	'Gatekeeper' permission If you are conducting your research within an organisation external to Brookes, such as a school or company, has permission been obtained? Attach a copy of the letter or e-mail giving permission	I will be working in collaboration with a local Kenyan NGO, Colobus Conservation. They have given permission for me to conduct the research.
7	Methods of data collection: Attach a copy of your draft questionnaire, interview schedule or observation guidelines	With the assistance of Tony Gachuna, the community liaison officer, I will be conducting semi-structured interviews with four social groups in Diani (Local Digo, typically agriculturalists; Employees of small scale business establishments in Diani, Kenyan but non-local; Long-term residents of International origin; Hoteliers and Tourists). I plan to interview 30 participants from each group. I plan to interview 12 participants each week in a 10 week period (schedule attached). Tony Gachuna already has established links with residents in Diani, therefore his assistance in finding and contacting participants will be essential to my project. Targeted sampling will be used, whereby people who fit into one of the four social groups, will be asked to participate. Data will be collected by note taking and/or recording information with use of a Dictaphone. Information gathered will include age, gender, occupancy, city of birth and education. Topics to be addressed are; 1) Attitudes residents have towards wildlife in the area. 2) Whether attitudes are positive, negative or ambivalent. 3) If they see wildlife as disruptive. 4) How people respond to wildlife. 5) Their knowledge and perception of Colobus Conservation. The interviews will also be used to understand how individuals think wildlife should be dealt with in

		the area and how best this should be implemented. Questions will be designed to investigate the above topics (Attached). Interviews will be conducted in English when possible, if not, then in Swahili, translated by Tony Gachuna. To reduce any information being lost in translation, Tony Gachuna will be sufficiently briefed prior to conduction of interviews.
8	Participants involved in the research: Include the target number, age range, source and method of recruitment and location of the research	Participants will all be aged over 18 with a maximum of 80 participants. Research will be conducted in Diani, Kenya, in collaboration with a local NGO, Colobus Conservation. Tony Gachuna, the community liaison officer, already has established links with residents in Diani, therefore his assistance in finding and contacting participants will be essential to my project. Targeted sampling will be used, whereby people most relevant to my study who fit into one of the four social groups, will be asked to participate.
9	Are participants in a dependent relationship) as an unequal power relationship) with the researcher? If yes, what steps will you take to ensure that participation is entirely voluntary and is not influenced by this relationship?	No
10.	Potential benefits of the proposed research:	The information provided by local participants will provide Colobus Conservation information on the impact of their work on the views and beliefs through the cross-section of the Diani population. It will assist the organization in future planning of their projects and programs. Finally, adjustments can be made that considers the expectations of the various social groups in Diani, helping streamline efforts made by Colobus Conservation to reduce negative interactions between wildlife and people.
11	Potential adverse effects of the proposed research and steps to be taken to deal with them: These are defined as risks greater than those encountered during normal day to day interactions and could include possible psychological stress or anxiety	The length of the interview will approximately be 40 minutes, this can be extended if the interviewee wishes to continue This will require people to take time out of their daily live. All participants will be made aware of the time the interviews could take. Participants will also be aware they can withdraw from the interview process at any time if they choose. Interviews may be tape recorded. Participants will ~~give~~ need to give consent to being recorded, if they choose not to be then only notes will be taken. They will also be advised that the recordings, once transcribed will be destroyed.
12.	Plan for obtaining informed consent: Please attach copy of your participant information sheet and consent form (Note consent forms are not needed for questionnaires)	All potential participants will receive an information sheet (attached) explaining the intentions of the study, any risks/benefits, the right for participants to withdraw, that participant will remain anonymous. My contact information will be on the information sheet for participants to contact me to arrange a time best suited to meet up for an interview if they

		choose to participate and if they have any further questions. A consent form will then be required to be signed by myself, Tony Gachuna and the participant.
13.	Steps to be taken to ensure confidentiality of data: Outline steps to be taken to ensure confidentiality, privacy and anonymity of data during collection and publication of data	Taken from the 'Ethical standards for research involving human participants- Code of practice' (https://www.brookes.ac.uk/Research/Research-ethics/Information-and-procedures/) the following procedures and considerations will be put in place. If interviews are taped, permission from participants will be required, Any recordings that are made will be destroyed on completion of transcription. Codes will be used instead of names. Any information that has personal information will be stored in a locked cupboard available on Colobus Conservation premises, where only I will have access to it. Other personal data will be saved on an encrypted file on my computer. Any data that cannot be destroyed will be kept on me when travelling back to the UK and stored in a locked drawer once back in the UK.
14	Debriefing and/or feedback to participants What debriefing and support will participants receive after the research? How will findings of the research be made available to them?	The intentions of the study will be explained to all participants and that the results will be used for my Masters dissertation in Primate Conservation at Oxford Brookes University, that results will also be forwarded to Colobus Conservation and potentially submitted for publication into a scientific journal. If participants would like a copy of the published research they can request this either by advising me during the interview process, or contacting me via email. All contact details will be on the information sheet that they will keep. I will then forward copies to people on completion of report.
15	Data storage and security How will you ensure safe data storage during fieldwork and after publication?	Information that includes personal information will be stored in a locked cupboard available at Colobus Conservation premises, where only I will have access. Other personal data will be saved on an encrypted file on my computer. Any data that cannot be destroyed will be kept on me when travelling back to the UK and stored in a locked drawer once back in the UK. Any recordings that are made will be destroyed on completion of transcription.

All materials submitted will be treated confidentially.

I have read and understood the University's Code of Practice on Ethical Standards for Research involving Human Participants

Signed:  Principal Investigator /Student

Signed: C. M. Hill. Supervisor

Appendix 2- Information sheet provided to all participants

OXFORD BROOKES UNIVERSITY

People's perceptions of primates among different socioeconomic groups in Diani beach, Kenya.

You are being invited to take part in an interview. Before you decide whether or not to take part, it is important for you to understand why the interview is being done and what it will involve. Please take time to read the following information carefully.

The intentions of the study is to build an understanding of people's perceptions of the wildlife in Diani. The study is in collaboration with Colobus Conservation, a local organisation in Diani. By understanding these perceptions, any future work done by Colobus Conservation can take into consideration these perceptions.

Interviews will be conducted within an eight week period in Diani (late May 2015- mid July 2015). Information collected will be summarised in a report that will be used for my (Kelly Martin) Masters project and will be forwarded to Colobus Conservation along with recommendations.

We are particularly interested in different perceptions among different local people. You have been asked to participate as you fall into one of the following groups.

- Local Digo people associated with the sacred forests in the Diani area, typically agriculturalists.
- Employees/owners of business establishments in Diani (Kenyan but non-local).
- Long-term residents of International origin.
- Tourist

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason.

With the assistance of Tony Gachuna, the community liaison officer, I will be conducting interviews with four social groups in Diani. Data will be collected by note taking and/or tape recording the interview. If you choose not to be taped then I will only take notes during your interview. Information gathered will include age, gender, occupancy, city of birth and education. Topics to be addressed are as follows; 1) Attitudes residents have towards wildlife in the area. 2) Whether attitudes are positive, negative or ambivalent towards local wildlife. 3) How people respond to wildlife. 4) Their knowledge and perception of Colobus Conservation. The interviews will also be used to understand how individuals think wildlife should be dealt with in the area and how best this should be implemented. Interviews will be conducted in English when possible, if not, then in Swahili, translated by Tony Gachuna. Interviews should take no longer than 40 minutes of your time, but can continue past this if you wish to continue.

The data collected will provide Colobus Conservation information on the impact of their work on the views and beliefs of the Diani population. It will assist the organization in future planning of their projects and programs. Finally, adjustments can be made that considers the expectations of the various social groups in Diani. With the intention to help streamline efforts made by Colobus Conservation to reduce negative interactions between wildlife and people.

All information collected about individuals will be kept strictly confidential (subject to legal limitations) and confidentiality, privacy and anonymity will be ensured in the collection, storage and publication of research material. Data generated by the study will be retained in accordance with the University's policy on Academic Integrity. Data generated in the course of the research will be kept securely in paper or electronic form for a period of ten years after the completion of a research project. After this, all information will be destroyed.

If you would like to participate then all you need to do is contact myself, the principal investigator (Kelly Martin). Contact details are below;

Kelly Martin
Kelly.martin-2014@brookes.ac.uk
Mobile:

I will then set up a suitable time to meet with you. Prior to the interview a consent form will need to be signed by myself, Tony Gachuna (if present) and yourself.

The results of the research study will be used for my Masters dissertation in Primate Conservation at Oxford Brookes University. The results also be will be forwarded to Colobus Conservation and possibly submitted for publication into a scientific journal. If you would like a copy of the published research I will be happy to forward this to you. You can request this either by advising me during the interview process, or contacting me via email; Kelly.Martin-2014@brookes.ac.uk.

I am conducting this research as a student at Oxford Brookes University, department of Social Science.

This research has been approved by the University Research Ethics Committee, Oxford Brookes University.

If you have any concerns about the way in which the study has been conducted, please feel free to contact the Chair of the University Research Ethics Committee on ethics@brookes.ac.uk.

Thank you for your time and if you have any questions or would like further information, please feel free to contact me.

Kelly Martin – Principal investigator
Kelly.martin-2014@brookes.ac.uk/ kellyyana03@gmail.com
Mobile:

Date

11th May 2015

Appendix 3- Consent form signed by participants and countersigned by the researcher

OXFORD BROOKES UNIVERSITY

CONSENT FORM

Full title of Project: People's perceptions towards primates among different socioeconomic groups in Diani beach, Kenya.

Name, position and contact address of Researcher:

Kelly Martin, Principal investigator

Colobus Conservation

P.O. Box 5380

Diani Beach

80401

Kenya

Email: Kelly.Martin-2014@brookes.ac.uk

Mobile: TBC

	Please initial box
1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.	☐
3. I agree to take part in the above study.	☐

	Please initial box	
	Yes	No
4. I agree to the interview being audio recorded	☐	☐
5. I agree to the use of anonymised quotes in publications	☐	☐

6. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research. ☐ ☐

Name of Participant	Date	Signature
Name of Researcher	Date	Signature
Name of Researcher	Date	Signature

Appendix 4- Interview guide

Information to be requested

Age:
Gender:
Occupation:
Education:
City of Birth:

Topics to be covered

Introductory

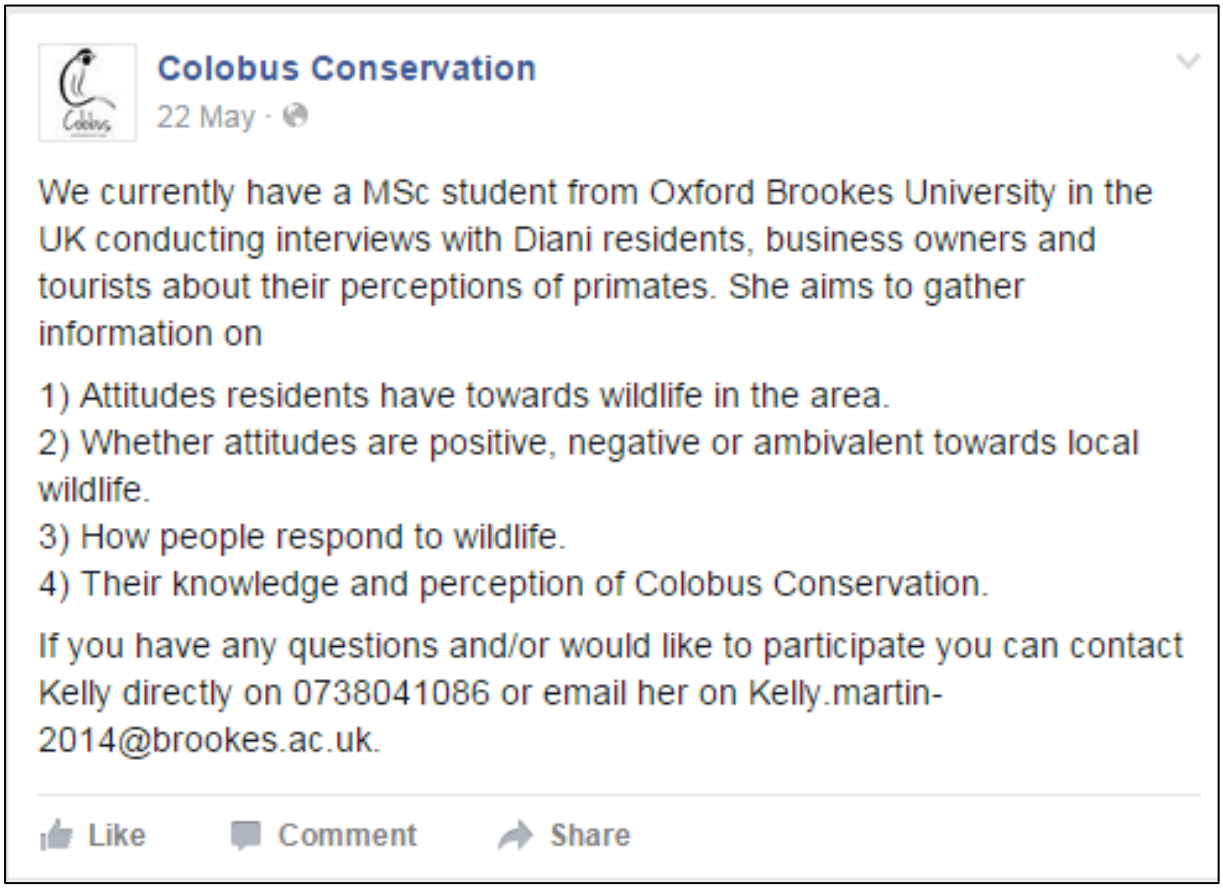
Hello, my name is _____, during the interview, I would like to discuss Diani, wildlife in Diani and Colobus conservation. With this in mind…

LETTHE INTERVIEWEE TELL THEIR STORY AND USE THE QUESTIONS BELOW AS PROBES/REMINDERS

Prompts

Main questions	Additional questions	Clarifying questions
What do you think of Diani? or Tell me about living in Diani?	Is there anything you would change about Diani? Have you ever lived/been anywhere else? How did it compare?	
What do you think of the wildlife in Diani?	How often do you see wildlife in Diani? Do you interact with the wildlife? How so? When was you last interaction with wildlife?	Can you expand a little on this? Can you tell me anything else? Can you give me some examples?
Have you heard of Colobus Conservation?	Tell me what you know about it? Do you know what Colobus Conservation does do?	
Conclusion of interview		
Would you like to add anything?		

Appendix 5- Advertisement placed on social media sites



Colobus Conservation
22 May ·

We currently have a MSc student from Oxford Brookes University in the UK conducting interviews with Diani residents, business owners and tourists about their perceptions of primates. She aims to gather information on

1) Attitudes residents have towards wildlife in the area.
2) Whether attitudes are positive, negative or ambivalent towards local wildlife.
3) How people respond to wildlife.
4) Their knowledge and perception of Colobus Conservation.

If you have any questions and/or would like to participate you can contact Kelly directly on 0738041086 or email her on Kelly.martin-2014@brookes.ac.uk.

Like Comment Share

Appendix 6- Advertisement placed in public areas

Participants Wanted

I am looking for participants to be interviewed on perceptions and attitudes towards wildlife in Diani. Interviews shouldn't take longer than 40 minutes. All information collected will be kept anonymous. The intention of the study is to help aid Colobus Conservation in their work in Diani, possibly helping with future projects run by Colobus conservation.

If you would like to participate or would like further information please take the contact details below;

Email: Kelly.martin-2014@brookes.ac.uk
Mobile: 0738041086

Email: Kelly.martin-2014@brookes.ac.uk
Mobile: 0738041086
Email: Kelly.martin-2014@brookes.ac.uk
Mobile: 0738041086
Email: Kelly.martin-2014@brookes.ac.uk
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Mobile: 0738041086
Email: Kelly.martin-2014@brookes.ac.uk
Mobile: 0738041086
Email: Kelly.martin-2014@brookes.ac.uk
Mobile: 0738041086

Appendix 7- Email were sent out to hotels along Diani

Information needed for research at Colobus Conservation

Kelly Martin <kelly.martin-2014@brookes.ac.uk> 29 May

to info

Dear Sirs/Madam,

I am a masters student at Oxford Brooks University in England and am writing to enquire if it would be possible to arrange a meeting with the managers or staff members at the hotel.

I am currently residing at Colobus Conservation in Diani and I am conducting research on people's perceptions of wildlife in the area. I hope to be able to interview a range of people in Diani to understand attitudes and perceptions. Results from this research will be used for my Master's thesis and will be summarized in a report for Colobus Conservation, which will provide recommendations for possible future projects and programmes.

I will be interviewing people over an 8 week period and would like to interview managers at hotels and resorts. Interviews take no longer than 40 minutes. If you would like further information or would like to participate please feel to contact me at: 0738041086 or by responding to this email.

Your participation would be much appreciated and I look forward to hearing from you soon.

Thank you for your time.

Yours sincerely,

Kelly Martin