KENYA WILDLIFE SERVICE

NATIONAL RECOVERY AND ACTION PLAN FOR HIROLA ANTELOPE *(Beatragus Hunteri)* IN KENYA (2018-2027)

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[Compiled by: *Kenya's National Hirola Taskforce, November, 2018*]

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We appreciate the support of local communities for their efforts in the conservation of this species.

List of Abbreviations and Acronyms

AWF	African Wildlife Foundation
CBO	Community Based Organisation
CWCCC	County Wildlife Conservation and Compensation Committee
DRSRS	Department of Resource Surveys and Remote Sensing
GCG	Garissa County Government
HCP	Hirola Conservation programme
IC	Ijara sub-county
ICDP	Integrated County Development Plan
IUCN	International Union for Conservation of Nature/ World Conservation Union
KWS	Kenya Wildlife Service
MoU	Memorandum of Understanding
NBSAP	National Biodiversity Strategy and Action Plan
NDMA	National Drought Management Authority
NGO	Non-Governmental Organisation
NRT	Northern Rangeland Trust
ODPP	Office of the Director of Public Prosecutions
SDZ	San Diego Zoo
TT	Tsavo Trust
WMCA	Wildlife Management and Conservation Act, 2013
WMCA	Wildlife Management and Conservation Act, 2013
WWF-K	World Wide Fund for Nature - Kenya
ZSL	Zoological Society of London

Foreword by Chairman of KWS Board of Trustees

The Kenya Wildlife Service's mandate is to conserve and manage wildlife in the country and enforce related laws and regulations, therefore, the Service will spearhead implementation of this Recovery and Action Plan. As the second Action plan targeting conservation and management of the hirola, it takes into account lessons learnt from the previous expired plan and central to this Action plan is community involvement and participation. The involvement of the County Governments, relevant government agencies and conservation stakeholders, is also vital in attaining long-term sustainable conservation of the species especially within its natural range.

This new Recovery and Action Plan for hirola was developed within a participatory framework that involved a multitude of stakeholders. It incorporates well thought out prescriptions for site-specific management actions that are necessary to achieve desired goals and recognises the need to prioritise short-term activities that will address the predicament that the hirola is currently facing.

The long-term conservation and management of wildlife will only be realized through sustained, collective actions of all Kenyans, the government, individuals, community and conservation organizations and KWS calls upon everyone to support the implementation of this and other Species Recovery and Action Plans.

DR. JOHN WAITHAKA
CHAIRMAN BOARD OF TRUSTEES
KENYA WILDLIFE SERVICE

Preface by Director General of KWS

Kenya Wildlife Service conserves and manages Kenya's wildlife on behalf of the Kenyan people and the world. It is a state corporation established by an Act of parliament, CAP 376, with a mandate for wildlife conservation in Kenya, and to enforce related laws and regulations. KWS takes all necessary measures to ensure that Kenya's wildlife and habitats are properly managed and protected.

In-line with KWS mission, which is to ''Sustainably conserve, manage and enhance Kenya's wildlife, its habitats and provide a wide range of public uses in collaboration with stakeholders for posterity''. This action plan also aims to secure viable Hirola populations in well-managed landscapes and as valued components of community development.

The Hirola antelope is one of the iconic species found in Kenya and is arguably one of Africa's most endangered ungulates. The population is reported to have declined from approximately 16,000 animals in the 1970s to an estimated 420 –450 today. Much of its decline was recorded between 1983 and 1985 during major rinderpest epizootic outbreaks. Habitat degradation and loss, poaching and insecurity are amongst the other threats that have contributed to the decline in population. Therefore, this action plan provides prescribes both in-situ and ex-situ conservation measures which include; improved security, creation of viable and secure community conservation areas, habitat management programmes, the creation of breeding sanctuary (ies), reduced exposure to livestock diseases, effective monitoring programs and the promotion of photographic tourism.

The Wildlife Conservation and Management Act, 2013 supports community initiatives towards conservation and plays an advisory role to the communities through the County Wildlife Conservation and Compensation Committee's and recommends that KWS may develop and implement recovery plans for endangered species. Therefore, this action plan recognises the important role communities play in conservation of wildlife in Kenya, key to implementation of this action plan will be involvement of communities from Garissa County, along with those from Lamu and Tana River Counties is essential to the long-term survival of the species.

The development of this action plan was a consultative process that involved County Governments, communities, Non Governmental Organisations and conservation stakeholders. KWS is indeed grateful to the entire team that provided tremendous support, active participation and contribution throughout the process.

KWS is committed to the sustainable management of Kenya's wildlife resources and calls upon all stakeholders to join efforts in the implementation of this Recovery and Action Plan for hirolas.

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Executive Summary

Fossil records suggest that Hirola (*Beatragus hunteri)* once had a pan African distribution in the dry ecosystems. However, their range is now restricted to Bura, Galmagala, Ijara, Gedilun of Garissa County, floodplains along the Tana River, the borders of Lamu and Ijara sub-county and an ex-situ population in Tsavo east National Park, in Kenya. They are classified by the IUCN Red Data List as Critically Endangered. The survival of the Hirola has been of concern to conservationists since the early 1960s. The population has declined from roughly 16,000 animals in the 1970s to an estimated 420 –450 today. Much of its decline seems to have occurred between 1983 and 1985 during major rinderpest epizootic outbreaks as well as the insurgence of insecurity and /refugee influx in the region.

This recovery/action plan follows a series of actions and plans, which began in the 1990s and provides detailed steps to counter threats and improve the conservation status of the Hirola. The Overall goal of the hirola recovery plan is to attain positive hirola population growth both *in-situ* and *ex-situ* populations in Kenya by attempting to address known drivers and limiting factors, while identifying other emerging threats. This will be achieved through the creation of breeding sanctuary (ies), investment in long-term rangeland restoration and management, creation of viable and secure community conservation areas, reduced exposure to livestock diseases, improved security, effective monitoring programs and sustained strong scientific research. Noting that, the Hirola's natural range occurs on Community Land and historically across the Kenya-Somalia boundaries, the integration of communities, County Government and other stakeholders is key to the development of an effective Hirola recovery plan. Recognition and participation of the various interest groups will go a long way in solidifying efforts and support needed for effective management of the *in-situ* Hirola population.

In the past, ecosystem conservation and management activities have been limited in scope and with minimal involvement of other stakeholders and in particular, the communities who live alongside hirola and other wildlife. The involvement of the communities from the Hara, Kotile, Korissa, Bura, Gababa, Galmagala, Ijara, and Gedilun from Garissa County, along with those from Lamu and Tana River Counties has increased in the past 5-10 years and is essential to the long-term survival of the species. The legal framework in the existing and revised policies and acts within the institutions responsible for the conservation and management of the species, allows a strengthened approach in integrating the wider community in the conservation of the world's most endangered antelope. The development of this recovery plan for Hirola conservation recognises the importance of involving local communities, County Government, relevant government agencies and conservation stakeholders, with the aim of attaining long-term sustainable conservation of the species especially within its natural range (*in-situ)*.

chapter 1

Introduction

Conservation of the Hirola antelope (*Beatragus hunteri*), is threatened by habitat loss emanating from tree encroachment associated with overgrazing by livestock and climate change, frequent droughts, and extirpation of elephants (Ali et al. 2017) within their range. Other threats include predation, disease, poaching and insecurity. This has led to over 95% decline of the global population in the past half a decade i.e. from 16,000 in the 1970s to the current estimate of 420- 450. As such, hirola will require targeted conservation efforts to curtail the ongoing declines.

The Wildlife Conservation and Management Act (WCMA 2013), gives the Kenya Wildlife Service (KWS) the mandate to conserve wildlife within and outside Protected Areas. It also supports community initiatives towards conservation and plays an advisory role to the communities through the County Wildlife Conservation and Compensation Committee's (CWCCC). Section 49 of the Act recommends that KWS may develop and implement recovery plans for the conservation and management of all the species listed under the Seventh Schedule (i.e. rare, endangered and threatened species). Thus this recovery plan for the hirola antelope is in line with the WMCA 2013. It further directs that KWS, in developing the recovery plan, to the maximum extent practicable:-

(a) Give priority to those rare, endangered and threatened species; and

(b) Incorporates in each recovery plan-

i. A description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;
ii. Objective, measurable criteria which, when met, would result in the species being removed from the list; and
iii. Estimates of the time required and the cost to carry out those measures needed to achieve the goal of the plan.

The former Local Government Act Cap 381 empowered local authorities to establish conservation areas within their areas of jurisdiction. As such, Arawale National Reserve is under the mandate of County Government of Garissa, formerly Garissa County Council (GCC), the Tana River Primate National Reserve, under the mandate of the County Government of Tana River and KWS, also includes important range for hirola. Other areas of high Hirola concentrations within the natural range need to be conserved and managed, preferably, in the form of community conservancies. WCMA, 2013 recognises communities' involvement in conservation through the establishment and registration of community conservancies and community wildlife associations.

In order to manage and conserve Hirola, there is need for enhanced collaboration between KWS, the communities, County Government, Conservation NGO's, researchers and relevant government departments. As such, a National Stakeholders' Workshop was held in June 2011 at Masalani in Ijara District attended by 40 people who included reprenatives from KWS, local communities, local administration, County Councils, researchers and NGO' working in hirola conservation to ensure wider public participation in the development of this recovery plan.

Background

The Hirola antelope, is the sole extant representative of a long-lasting phylogenetic lineage originating approximately 3.1 million years ago (Gentry, 1990), and the present population represents the last relic of a once widespread genus. Today, it is widely recognized as amongst the threatened monotypic species of antelope in the world (IUCN, 2008).

The Hirola's natural range – which pre-historically probably extended all the way from the Cape to the Horn of Africa (Bunderson, 1985) – has contracted over the millennia to the point where the species now occurs largely in Garissa County Kenya (Ali et al. 2017). It is arguably one of Africa's most endangered ungulates. Until as recently as the 1990s, the species was widely known as Hunter's Hartebeest, *Damaliscus hunteri* (after one H. C. V Hunter, who collected specimens in 1885). In 1996, it was established through DNA analysis that the hirola, far from being a hartebeest, belongs to a genus of its own, and was given the name *Beatragus* (Pitra *et al.,* 1998). The common name, hirola, is thought to stem from a Somali word (variously spelled "arrola","aroli", "arawle", "arawla", and "carowla") meaning "tawny" which is the general colour of the hirola (Andanje, 2000a).

Hirola Conservation Initiatives

chapter 2

2.1 In-situ initiatives

In-situ initiatives have focused on a number of actions including opportunistic sightings and population estimates from aerial surveys leading to the gazettement of Arawale Game Reserve in 1973. In 1996, the Hirola Task Force was established, leading to the development of the National Hirola Conservation Strategy in 2004. Ishaqbini Community Hirola Conservancy was established in 2006, the Ishaqbini predator proof hirola sanctuary was established in 2012, and Bura East Conservancy in 2017.

Arawale National Reserve

Arawale National Reserve (ANR) was gazetted in 1973 to conserve the Critically Endangered hirola antelope. The reserve falls under the Garissa County and covers an area of 533 km^2. Since its gazettement, Garissa County (formerly Garissa County Council) has been responsible for managing the reserve while Kenya Wildlife Service (KWS) for wildlife law enforcement through anti-poaching patrols. The operation of the reserve was short lived due to financial constraints, and political turmoil that characterized the vast Northern Frontier of Kenya in the 1970s and 1980s. Consequently, the ability of the then Garissa county council and KWS to oversee

Arawale collapsed in the late 1980s. In response to this, an anti-poaching unit was established by KWS in 1983 solely to protect hirola. This also proved futile as it was based in Nairobi, and it eventually failed due to lack of sustained funding. Following the withdrawal of Garissa County council and KWS, the region (and the world) lost the only formally - protected area dedicated to the conservation of the hirola.

Subsequently, the hirola experienced more than 95% population decline that led to uplisting as a Critically Endangered species in 1996. Until recently, little attention had been devoted to conservation efforts of the hirola. In 2017, HCP, KWS and Garissa County Government initiated discussions on the re- operationalization of Arawale National Reserve.

Ishaqbini Hirola Community Conservancy

The Ishaqbini Community Conservancy, covers an area of 240 km^2 and is located on the eastern bank of the Tana River in Kenya and was established in 2006, and became a member of NRT in 2008 and continues to be supported by NRT (Njoroge et al. 2015; Ali et al. 2018).

Ishaqbini Hirola sanctuary

Despite the efforts made in the establishment of Ishaqbini Conservancy, hirola populations continued to decline both inside the conservancy and within the adjacent outlying rangelands. The 2011 aerial survey estimated the global population of hirola at less than 500 individuals (King *et al*. 2011) and observations of free ranging populations within Ishaqbini Conservancy showed a continued decline (NRT, 2017). As a result, Ishaqbini Community Conservancy and NRT in collaboration with KWS established a 27km^2 fenced sanctuary in August 2012 with an initial population of approximately 48 hirola. The aim of the sanctuary is to provide a secure breeding population of hirola in the absence of predation, poaching and competition with livestock. The first 4 years of the sanctuary were a great success with the population more than doubling to an estimated 110 animals. However in 2016 and early 2017, the Ishaqbini region, as with much of Northern and North-Eastern Kenya, experienced a severe drought. Wildlife in the sanctuary were restricted and unable to move in search of food, and despite a supplement feeding program,

many animals died including an estimated 23 hirola. The sanctuary population has since recovered to an estimated 115 individuals in early 2018 (NRT aerial & ground surveys March 2018). While the sanctuary has registered great success in growth of hirola population, being a confined population, there is a high risk of losing the entire population should this population experience a disease outbreak or severe and prolonged drought.

NRT has developed a 5-year site-specific Hirola recovery program: (2017-2021). This program outlines a 5-year plan for the Ishaqbini hirola community conservancy and sanctuary with the specific objectives to: sustain sanctuary and conservancy operations; improve habitat in the sanctuary & grazing management in the wider conservancy; de-stock wildlife from the sanctuary; supplement the free ranging hirola population within Ishaqbini through release of hirola from the sanctuary; and establish disease surveillance and a livestock health program for areas surrounding the Conservancy and the Sanctuary. NRT is also in discussion with Ishaqbini, the adjacent Ndera community conservancy (in Tana River County) and KWS on plans for expansion of the existing hirola sanctuary.

Bura East Conservancy

Located just North of Arawale National Reserve, The Bura East Conservancy) was recently established in 2017 through a partnership between the Hirola Conservation Programme and the local communities. The Conservancy extends from the banks of Tana River to south of Galma Galla and was first proposed by Bunderson (1981) describing the area to be one of the most important for the conservation of this species particularly during the dry season when 50-55% of the hirola population sheltered here.

Other community initiatives

HCP is spearheading the protection and development of new protected areas such as Gababa and Gedilun, all of which are potentially viable grassland areas, identified as important sites for the long-term recovery of hirola antelope.

A time frame of major activities, both in-situ and ex-situ is summarized below in figure 1.

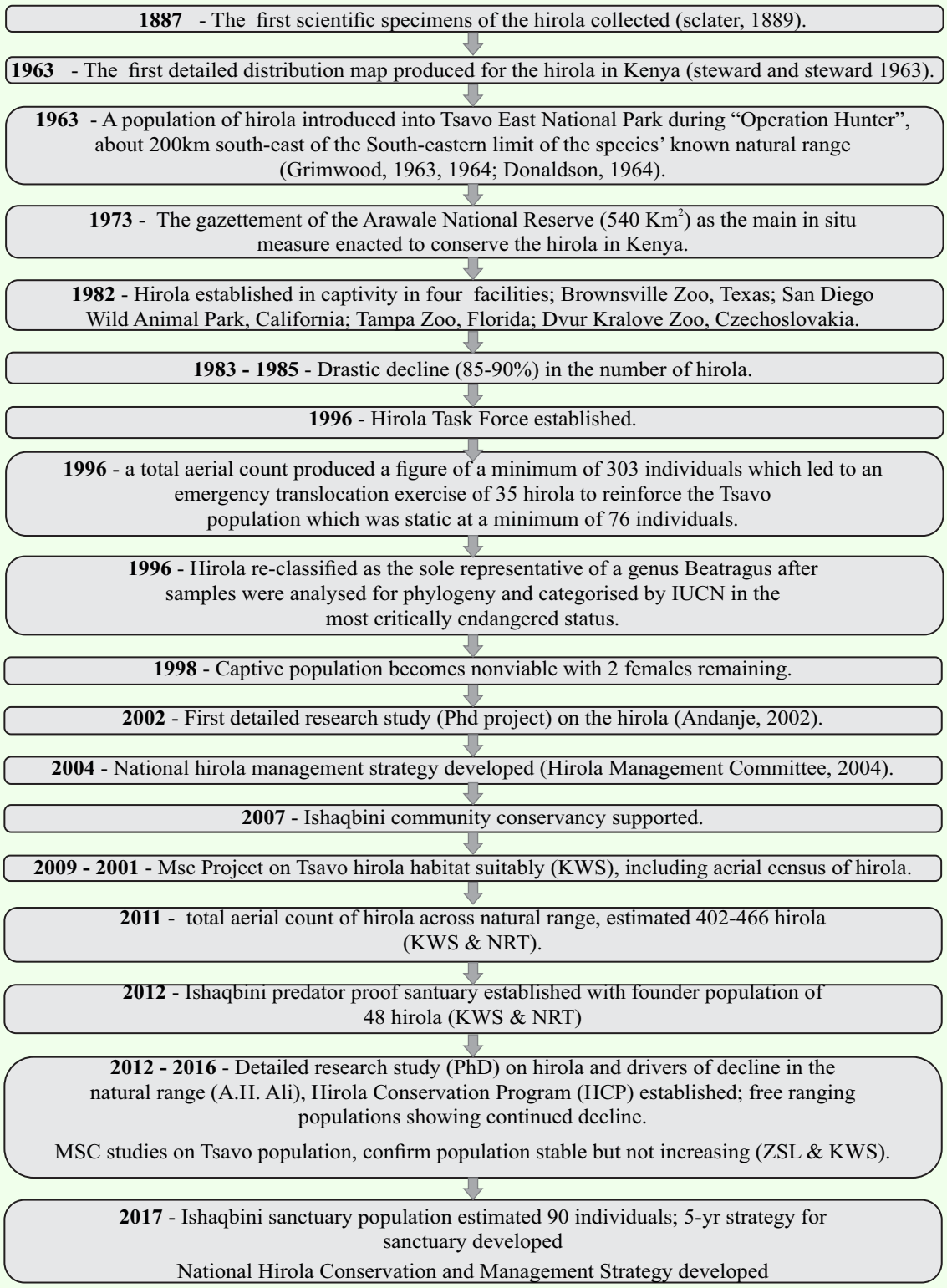

Figure 1. Time frame of major activities, both in-situ and ex-situ

2.2 Ex-situ initiative

Introduced Hirola population in Tsavo East National Park, Kenya

First translocation – 1963: This was one of the first wildlife translocation operations ever attempted in East Africa and on an extremely fragile and sensitive species. Accounts suggest between, 45-54 animals were captured, 30 sub-adults survived and were released in Tsavo East NP but many of these animals were reported to be weak and emaciated and probably far fewer survived to breed (Butynski, 2000). An intensive ground survey conducted specifically to determine the number of hirola concluded that there were at least 76 hirola in Tsavo East in December 199, (Agatsiva, 1995; Andanje & Goeltenboth, 1995; Kock, 1995; Ottichilo *et al.,* 1995).

Second translocation – 1996: The results from the aerial counts in 1995-1996 showed a massive decline in hirola numbers in the in-situ population, this led to a second capture and translocation exercise into Tsavo East to safeguard against the danger of a catastrophic die-off. Thirty-five hirola mostly adults were captured near Ijara, Garissa District, and translocated to Dika Plains, Tsavo East National Park, in August 1996. Twenty-nine Hirola survived the translocation and were released into Tsavo East.

Research reports by Kimitei, K., (2009) shows that the Tsavo population of hirola has not been increasing but has rather stagnated at between 60 and 110 individuals. Since the start of the intensive monitoring of the Tsavo population in September 2008, a total of 74 individuals have been encountered.

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1) Captive breeding

Literature review shows that the few attempts made to establish a viable captive breeding population of hirola, as an insurance against the loss of wild populations, have not been successful. Four facilities; Brownsville Zoo, Texas; San Diego Wild Animal Park, California; Tampa Zoo, Florida; Dvur Kralove Zoo, Czechoslovakia, had hirola at over the last 40 years. In 1971, two male and five female sub-adult hirola were moved from Garissa District to the Dvur Kralove Zoo. Two of the females died within 6 months of arrival. Nonetheless, during the following 11 years, 19 young were born (sex ratio 1 male: 1.7 females). Juvenile mortality was 32%. One female gave birth to eight calves in 9 years and another to five calves in 5 years. One male mated with all three females and fathered 15 calves before dying at the zoo after 10 years. The average longevity in captivity for the seven hirola brought from Garissa was 10.2 years. The eleven zoo-born hirola living to 3 months of age only survived an average of 2.0 years. This herd started to decline in 1979, when the animals suffered from acidosis and tympanie. Tuberculosis infected the herd twice in 1980, and in 1981, the herd was exterminated by mycobacteriosis (Smielowski, 1987; Kock *et al.,* 1999).

Distribution and Present Status of Hirola Populations in Kenya

The hirola (*Beatragus hunteri*) is a critically endangered' species (IUCN, 2017). In being the only surviving member of its genus (and a highly evolutionary distinct species), loss of hirola population would represent the first mammalian genus endemic to Africa to go extinct in modern human history.

The historical geographic range of hirola covered ~38,400 km^2 in eastern Kenya and southwestern Somalia. By the 1970s, however, hirola likely had been extirpated from Somalia, and persisted in a 17,000km^2 area in eastern Kenya bordered by the Tana River to the west and the Boni Forest to the east (Butynski 2000). *Beatragus* fossils have turned up in Omo River, Ethiopia (Gentry, 1985), Olduvai, Tanzania (Leakey, 1965; Gentry & Gentry, 1978), Gobaad, Djibouti (Thomas *et al*., 1984), and Elands fontein, South Africa (Gentry & Gentry, 1978; Kingdon, 1982), implying that the genus might once have been present in arid terrain across much of eastern and southern Africa.

The entire hirola population in Kenya was estimated at 16,000 animals in the late 1970's, and at roughly 11,000 in the early 1980s. The population declined drastically during the 1980's and was estimated at 1,600 animals (Ottichilo *et al.,* 1995; Butynski, 2000) in 1988. Currently, the overall number is estimated at between 420 – 450 animals (King *et. al.* 2011).

Currently, *Beatragus* (uniquely represented by the hirola) exists only in the Ijara and Fafi sub-counties figure of Garissa county, between the Tana River and the Kenya–Somalia border (Figure 2), and a small part of eastern Tana River County. An area no more than 1,500 km^2 and another small translocated *(ex situ)* population established within Kenya's Tsavo East National Park in 1963 (Hofmann, 1996; Andanje & Ottichilo, 1999; East, 1999; Butynski, 1999; Andanje, 2000a, b).

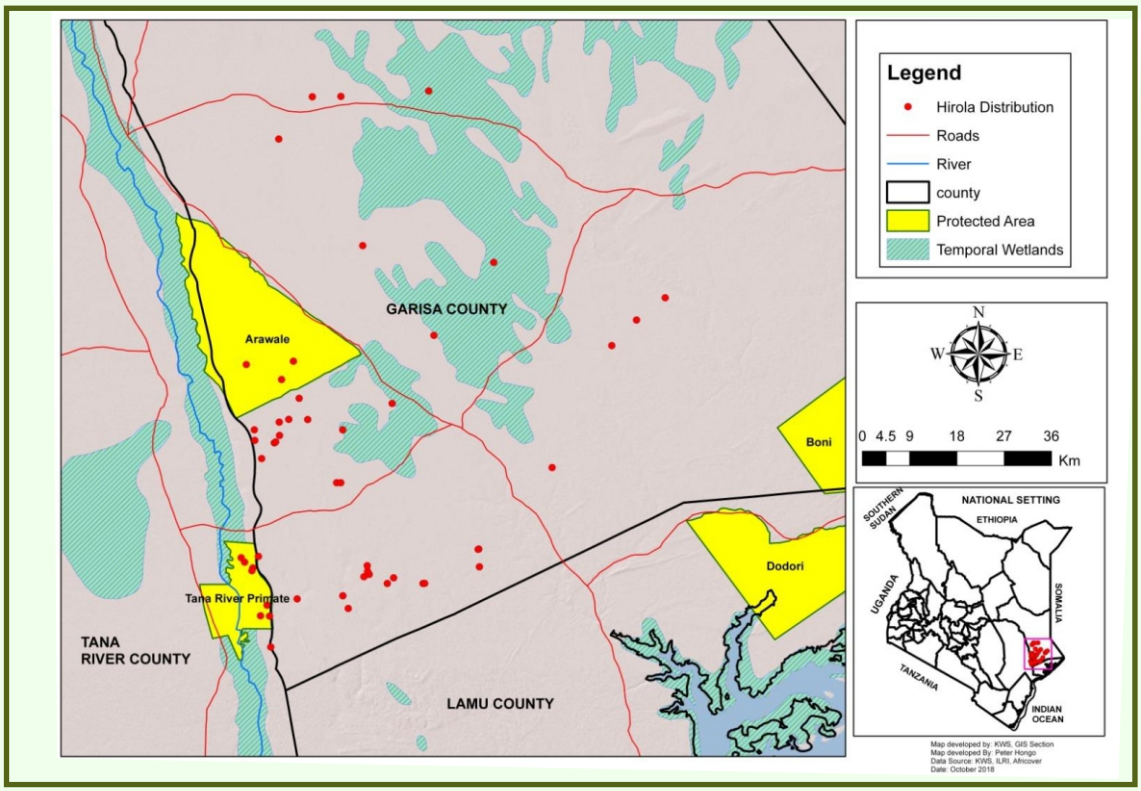


Figure 2. Hirola Range in Kenya

The cause of the rapid decline in hirola numbers over recent decades had not been fully documented until recently, when the mechanisms suppressing their population recovery have been detailed (Andanje 2002; Ali et al. 2016; Ali et al. 2017). These studies have attributed the decline of hirola partly to habitat loss via tree encroachment, triggered by a combination of various factors i.e. elephant extirpation, overgrazing, climate change, drought and perhaps fire suppression; and high predation and poaching in localized populations. To address these threats, the studies recommend a combination of rangeland restoration efforts (including conservation of elephants, manual clearing of trees, and grass re-seeding), increased wildlife law enforcement in both protected and non-protected areas, establishment of sanctuaries to build breeding stocks and re-introduction to the natural ranges to enhance recovery of the in-situ population. It is important to note that the success of these efforts will hinge on strong support from the local communities.

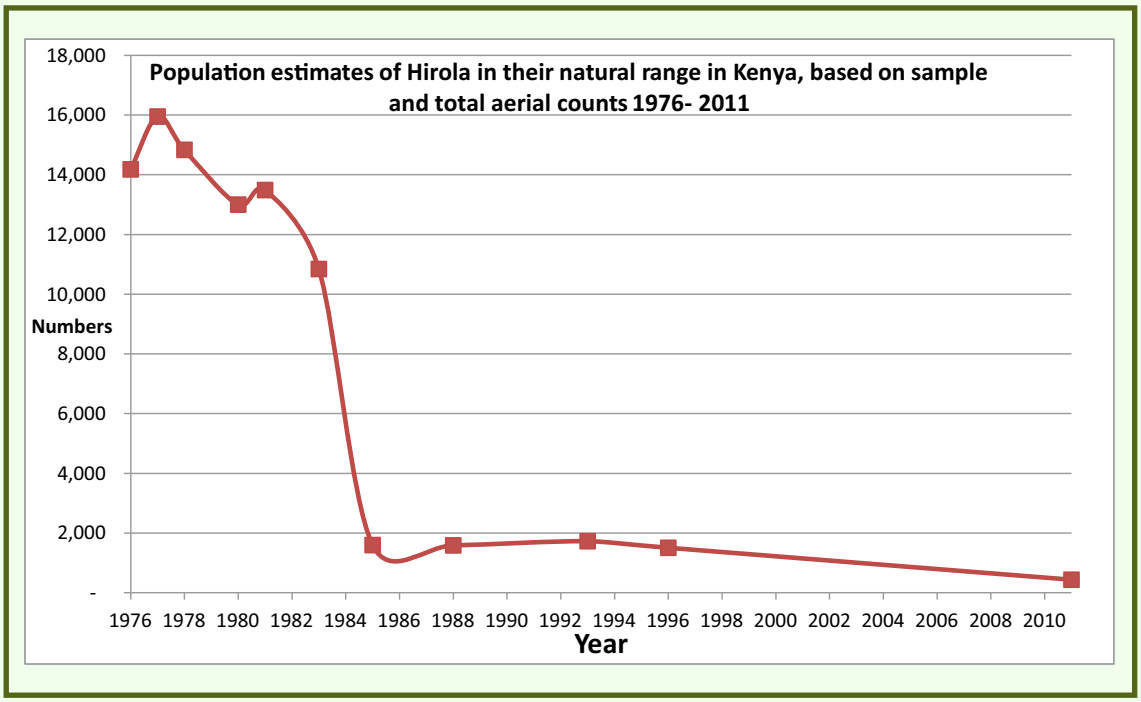


Figure 3. ***Population estimates of hirola antelope*** *Beatragus hunteri* ***in their natural range in Kenya from 1976-2011 as determined by aerial surveys.***

Periods of drought and rinderpest epidemics in Garissa District coincide with an 85-90% decline in the number of hirola from about 11,000 animals in 1983 to about 1,600 animals in 1985.

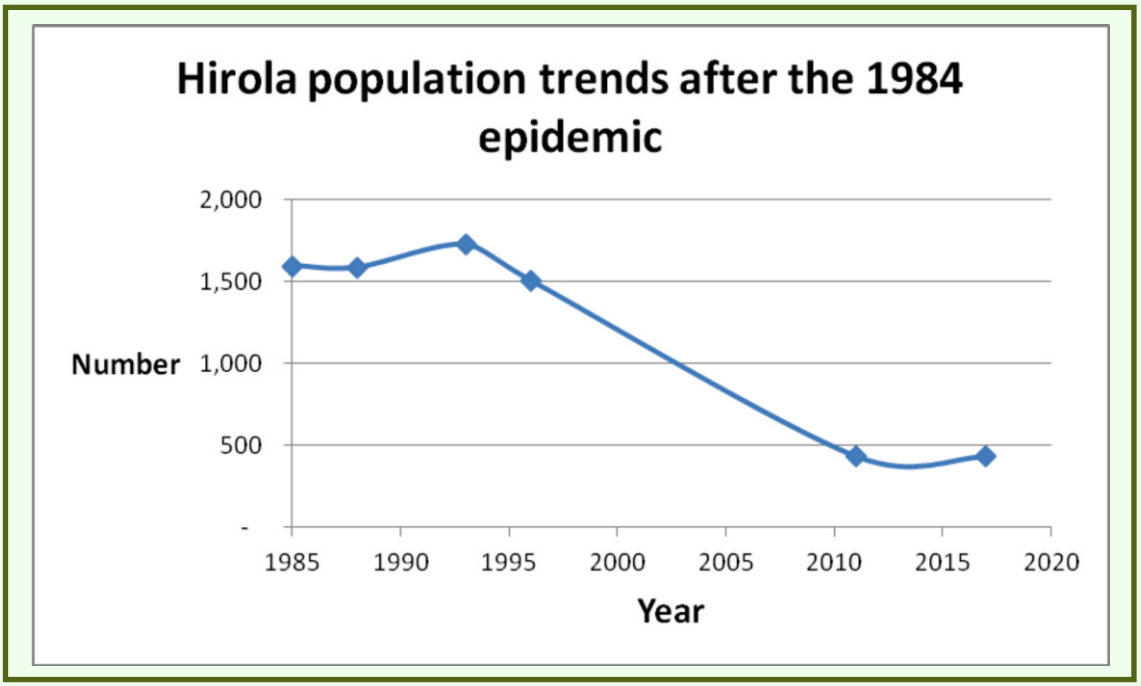


Figure 4: ***population trends after the 1984 rinderpest epidemic***

Table 1. Historical estimates of Hirola population in Kenya based on 15 aerial surveys conducted from 1973 to 2011.

Year	Months	Season	Transect spacing (km)	No. of hirola (95% C.I)	Source
1973	Apr/Jun	wet	10	13,729	(Watson et al., 1973)
1973	-	-	-	10,000	(Duncan, 1974)
1976	May/Jun	wet	10	14,180 (1,730)	(Bunderson, 1976)
1977	Feb/Mar	wet	10	2,278 (1,089)	(Dirschl et al., 1978; Wargute & Aligula, 1993; Grunblatt et al., 1995)
1977	Dec	dry	10	15,950	(Bunderson, 1979)
1978	Feb/Sep	Dry/wet	5	7,729 (1,840)	(Wargute & Aligula, 1993; Grunblatt et al., 1995)
1978	Jan	wet	10	14,835	(Bunderson, 1979)
1980	Jul	dry	5	13,000	(Williamson, 1987)
1981	Nov	dry	5	13,488 (2,461)	(Wargute & Aligula, 1993; Wargute, 1994)
1983	Apr/May	wet	5	10,843 (3,823)	(Wargute & Aligula, 1993; Grunblatt et al., 1995)
1985	Mar	dry	5	1,595	(Wargute & Aligula, 1993; Grunblatt et al., 1995)
1988	Feb-April	wet	5	1,585 (SE 571)	(Grunblatt et al., 1989; Wargute & Aligula, 1993)
1993	Mar	wet	5	1,725 (482)	(Wargute & Aligula, 1993)
1995	Jul	dry	1-2	302	(Ottichilo et al., 1995)
1996	May	wet	2-5	1,504 (654)	(DRSRS, 1977)
2000	Dec	wet	Known groups	600-2000	(Andanje 2002)
2011	Jan	dry	1-2	402-466	(King *et al.,* 2011)

Adapted from: Dr. T. Butynski: Independent Evaluation of hirola. Conservation Status and Conservation Action in Kenya, September 2000 and Andanje 2002

Table 2. 2018 Hirola Population estimates

Area	Population Estimate	Criteria	Population status	Source
Tsavo	60-70	aerial and ground counts	Stagnant/ declining	K. Kimitei (2009)
Ishaqbini sanctuary	115	aerial and ground counts	Increasing	NRT
Ishaqbini (outside the sanctuary)	60 - 80	aerial reconnaissance	Stagnant/ declining	NRT
Sangailou	60	scout based estimate	Declining	HCP
Bura	50	scout based estimate	Declining	HCP
Gababba	40	scout based estimate	Declining	HCP
Ijara – east of Masalani	30	scout based estimate	Declining	HCP
Bodhei	30	aerial reconnaissance	Declining	NRT/HCP
Total population estimate	445-475			

chapter 3

Threats to Hirola Conservation In Kenya

THREATS

Habitat Loss

Hirola are reported to be pure grazers (Kingdon 1982; Ali et al. 2016) and in historical times occurred throughout the open grasslands along the Kenya–Somalia border (i.e. eastern Kenya and south-western Somalia). Studies carried out on hirolas have shown that, the species actively avoid tree cover areas and prefer open grassland habitats (Ali et al. 2017). It is estimated that across the hirola habitat range, the tree cover increased by 251% between the years 1985 and 2012. A combination of various factors such as elephant extirpation, overgrazing by livestock, drought, climate change and perhaps fire suppression may have encouraged tree encroachment in eastern Kenya which in turn led to a ~75 % loss of potentially suitable hirola habitat (Ali *et al.,* 2017).

Future efforts geared towards long-term survival of in-situ hirola populations, should be directed towards integration with rangeland restoration, elephant conservation, tree removal, grass re-seeding and sustainable livestock husbandry practices.

Anthropogenic activities e.g. infrastructure, settlements, construction of dams have also led to loss of suitable habitat for hirola through habitat change.

Competition

Competition with livestock is classified as a high threat. Hirola favour grasses with a high leaf to stem ratio such as *Chloris* and *Digiatta* specie, (Andanje and Goeltenboth, 1995). However, overgrazing by livestock is thought to have led to a decrease in grasslands and an increase in tree cover. Most of the hirola's range has been inhabited by Somali pastoralists who have large herds of goats, sheep, camel and cattle. According to the 2009 national census, 17 million livestock were estimated to occur in the entire north eastern region of Kenya - Garissa, Mandera, and Wajir counties- (Ogutu *et al*, 2016). In recent years Kenya has documented an increase in goats, camels and sheep coincident with a decline in cattle, during which tree encroachment has also increased. Most pastoralists have shifted from grass dependent cattle to browsing livestock due to reduction in grasslands (Ali *et al.* 2017). Competition with wild ungulates could also affect hirola populations, grass-dependent ungulates such as the plains zebra and buffalo as well as the hirola have all increasingly been "compressed" into smaller patches of grassland.

Disease

Disease epidemics have the potential of having adverse effects on wildlife populations. In the past, domestic livestock infected with rinderpest transmitted the disease to the hirola population, leading to a major rinderpest outbreak in the mid 1980s, which, combined with drought experienced in the area at around the same time could have led to the dramatic decline in Hirola's population (Woodford, 1984; Kock, 1995, 1996, 1997; Kock *et al.,* 1999). However, since 2001, Rinderpest has been eradicated from the hirola's natural range. Other possible diseases that may threaten hirola populations include anthrax especially in small-enclosed populations. However, further research into the epidemiology of diseases affecting hirola is needed.

Predation

Although there is limited information on predation being a major threat to hirola, it is considered a threat due to the existence of small and fragmented hirola herds. Recent studies have estimated predation and poor range quality were equally responsible for suppressed population growth of hirola (see Ali et al. 2018). A study by NRT in 2010 in Ishaqbini conservancy indicated that lions, leopards and Spotted hyenas do predate on hirola (although sample sizes were small), scat analysis revealed that hirola represented 20% of the diet in lions, 9.8% in hyenas and 3.9% in leopards. In Tsavo East National Park, predation is thought to be one of the factors limiting growth of the *ex-situ* population.

Insecurity

Insecurity situations within hirola range poses a threat to populations as this leads to inadequate monitoring and protection in the natural range. This threat is low for Tsavo East.

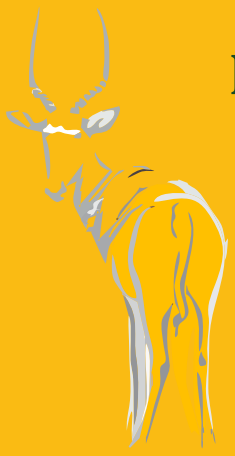
Drought

In the early 1980's there was reported decline in grazing resources due to an overarching arid climatic cycle. Most of the hirola population succumbed to death during this period, which coincided with a rinderpest outbreak. Dry conditions also favour growth of trees at the expense of grasses (Bond 2008; February *et al.* 2013), leading to bush encroachment and loss of prime habitat for the hirola.

The frequency and the duration of drought periods have increased in hirola range over the past 40 years (Ali *et. al.*, 2017). Thus, drought is high threat to hirola as it can lead to massive deaths and population decline. In 2016 and early 2017, the hirola range, experienced severe drought. Wildlife for example, in the hirola sanctuary in Ishaqbini Conservancy were restricted and despite a supplement feeding program, many animals died including an estimated 23 hirola (NRT, 2017).

Localized ranging behaviour

Most of the hirola groups are known to occupy specific sites all year round. They rarely move more than 10 kms from these sites. In areas with poor habitat condition, this localization might mean hirola groups lack the basic resources to maximise productivity, and the ability to adapt to localised rainfall patterns.



National Conservation Strategy and Action Plan for Hirola in Kenya 2018 - 2027

chapter 4

Background

The 2018-2027 Hirola Conservation and Management Strategy provides a reinvigorated framework guiding hirola conservation and management for the next ten years. A review will be undertaken after five years in 2022 to evaluate progress achieved in implementing the prescribed interventions and give an impetus for the remaining 5 years.

The formulation of this strategy involved the following process:

Process

1. Review of the 2004–2009 hirola conservation and management strategy.
2. Briefing (review) document circulated to stakeholders for the national strategy workshop.
3. The National Stakeholder workshop held at Masalani to produce a draft strategy document.
4. Circulation of draft strategy document for written comments by stakeholders
5. The document was however not finalized and there was a dormant phase (2011 - 2016)
6. The process was revitalized in 2017 by an interim HMC in a meeting held at KWS Head quarters in October 2017 followed by a smaller technical team working session at Lewa Wildlife conservancy in November 2017
7. Document circulated to stakeholders for final comments (stakeholder workshop in Masalani in July 2018)
8. Approval by KWS management
9. Editing, layout, printing and official launch to facilitate implementation

HIROLA CONSERVATION ACTION PLAN

The National Hirola strategy implementation period will be for 10 years, however the activities have been set for 5 years to enable mid term review of achievements and lessons learnt. The strategy recognises the need to prioritise short-term activities that will address the predicament that the hirola is currently facing. In the last few years, the main threats have been profiled and some interventions put in place. Efforts in the next 5 years will focus on building on the successes and lessons learnt.

Population Growth Scenarios of hirola populations

Hirola populations currently exist in three key areas. These are (1) the natural range population excluding Ishaqbini Conservancy i.e., Bura, Gababa, Gedilun, Galmagalla (2)Ishaqbini Conservancy and the predator proof sanctuary (3) Tsavo east National park. For the purposes of this action plan, five different conservation scenarios were developed and their potential impacts on national hirola population growth over the next 10 years were modelled. These projections are based on available raw count data on population growth in Ishaqbini predator free sanctuary (15% growth per year) which is currently the only growing population. Tsavo East National Park (which has stagnated for a number of years); and historical trends in the free ranging population (which survey data indicate have undergone a 5% decline per year between 1996 - 2011), as well as assumptions about population response to long-term interventions such as rangeland management and restoration (stabilised within 10 years).

Better population growth rates can be obtained if the population growth rates calculations/ models consider other variables such as sex ratios, juvenile recruitment into adulthood, density dependence factors, epidemics/uncertainties such as disease and weather valiability among others.

Scenario 1	**Status Quo**:	Ishaqbini sanctuary not expanded, remove surplus from sanctuary to outside; rest of the hirola core areas status quo.
Scenario 2	**Rangeland management only**	Ishaqbini sanctuary not expanded, remove surplus from sanctuary to outside; rangeland management stabilises 4 populations (Bura, Gababa, Gedilun, Galmagalla) in 10 yrs; rest of areas status quo.
Scenario 3	**Expand Ishaqbini, rangeland management**	Expand Ishaqbini sanctuary; rangeland management stabilises 4 populations (Bura, Gababa, Gedilun, Galmagalla) in 10 yrs; rest of areas status quo.
Scenario 4	**Ishaqbini not expanded, second sanctuary established, rangeland management**	Ishaqbini sanctuary not expanded, remove surplus from sanctuary to outside; second sanctuary established; rangeland management stabilises 4 populations (Bura, Gababa, Gedilun, Galmagalla) in 10 yrs; rest of areas status quo
Scenario 5	**Expand Ishaqbini, second sanctuary established, rangeland management**:	Expand Ishaqbini sanctuary; establish second sanctuary; rangeland management stabilises 4 populations (Bura, Gababa, Gedilun, Galmagalla) in 10 yrs rest of areas status quo.

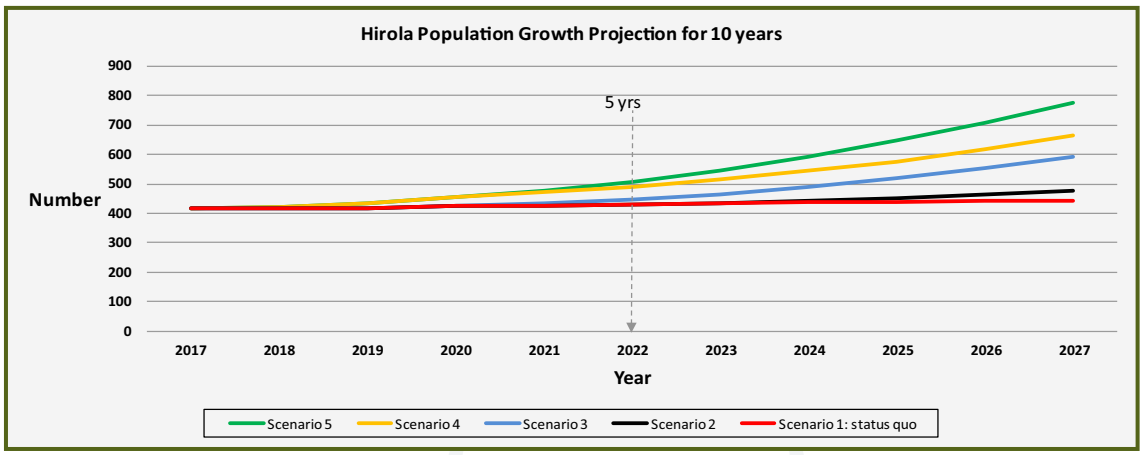


Figure 4: *Hirola population growth based on 5 conservation scenarios (10 year projection)*

Scenario 5 provides the optimum opportunity to stabilise and grow the hirola population in the next 10 years. Despite the success of Ishaqbini sanctuary in securing a population which has been increasing the prediction is that the national population will at best remain stable over the next 10 years, if the status quo is maintained (figure 4). These scenarios highlight the risk and potentially the continued decline of hirola unless we are able to secure additional growing populations within sanctuaries, whilst investing in long-term in-situ activities to improve rangeland conditions and manage grasslands, which are likely to take years to have an impact and reverse the declining trend of free ranging populations. The proposed Tsavo East Hirola sanctuary is intended to consolidate the existing population in Tsavo East NP in a predator free sanctuary.

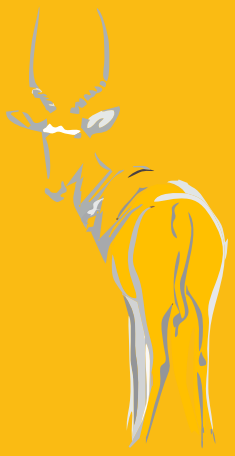
To address the decline and noting that the long term strategies such as habitat management, restoration and community awareness might take time to have a direct impact on hirola populations, there is need to prioritise activities in the Action Plan and embark on their implementation immediately. The objective of the Hirola Action Plan is to stabilise then grow the populations in the next 5 and 10 years with scenario 5 providing the best option to achieve the desired outcome.

Key Objectives of the Action Plan

Four key objectives have been identified to stabilise then grow the hirola populations in the next 5 and 10 years.

Key Objectives

1. Invest in long-term in-situ activities with local communities to improve rangeland condition and manage grasslands, increase engagement and awareness in hirola conservation on community land
2. Operationalise the management of Arawale National Reserve, the only public land set aside for conservation of hirola
3. Grow the populations within sanctuaries (expansion of Ishaqbini sanctuary; establishment of Tsavo East NP Sanctuary; identify a site and establish another sanctuary in the natural range)
4. Potential release of surplus hirola from the sanctuaries to supplement free ranging populations



Vision, Goal, Strategic Objectives

chapter 5

Vision

To secure viable hirola populations in well-managed landscapes and as valued components of community development.

Goal

To halt the decline of free ranging hirola populations in the natural range by securing their habitat to achieve a confirmed national population of at least **600** individuals by **2027**

Strategic Objectives

The vision and goal of the strategy will be achieved through seven strategic objectives in order to curb the threats faced by the hirola population in Kenya. The strategic

SO 1:	Protection
SO 2:	Research & Monitoring for Management
SO 3:	Re-establishment of Arawale National Reserve
SO 4:	Habitat Management in Core Areas
SO 5:	Management Intervention
SO 6:	Community Engagement
SO 7:	Coordination, Capacity & Support

SO 1: Strategic Objective 1: Protection

Rationale and Considerations

Due to the declining populations of the hirola, it is important to minimise mortalities from the various causes. Poaching and insecurity are identified as threats in certain parts of the natural hirola range especially off take for subsistence hunting, local bush meat trade and non-targeted kills. Hirola are listed under schedule 6 of WCMA, 2013. There is low level of awareness on their conservation status among the community, law enforcement agencies and judiciary thus the need to ensure punitive sentences on wildlife crime cases relate to the species.

Target	Activity	Indicator	Timeline	Actor(s)
Strengthened legislation and prosecution	Engage with the judiciary in Hirola range areas on implementation of WCMA 2013	• Number of workshops/forums/meetings held and outputs from the meetings • Number of successful prosecutions • Re-activate court users association in Hirola range • Membership in court users association in Hirola range	3 years	KWS, NRT, HCP, ODPP, CWCCC, NGOs
	Sensitisation of relevant government personnel and communities within hirola range on revised legislation and penalties for illegal hunting of hirola.	• Workshops/forums held	3 years	KWS, NRT, HCP, CWCCC

Target	Activity	Indicator	Timeline	Actor(s)
Security strengthened in hirola natural range	KWS outposts established at Bura, Ijara, Galmagala, Mansabubu equipped with motorbike/vehicle and appropriate staffing levels, upgrade housing	• Outposts with proper equipment and infrastructure in place	5 years	KWS, county government
	KWS security team based permanently within Hirola range (e.g. Arawale) to ensure more regular patrols	• Permanent security team deployed	3 years	KWS, county government
	Continued operation of KWS outposts in Hulugho and Bodhei	• Outpost re-established • Number of security operations carried out	5 years	KWS,
	Continued collaboration between KWS, military, Police to increase awareness among government personnel to stop use of bush meat especially during active operations	• Meetings/forums held and outcomes from meeting with police, military	5 years	KWS
	Support community scouts i.e. recruitment, training, equip and remuneration	• Number of community scouts hired, trained, equip and remunerated	5 years	KWS, HCP, NRT, WWF, County government

SO 2:

Strategic Objective 2: Research & Monitoring for Management

Rationale and Considerations

There is need to have up to date information on the population status, threats and drivers of the population decline so as to prescribe effective and targeted conservation management initiatives.

Target	Activity	Indicator	Timeline	Actor(s)
Population status and trend information collected and synthesised	• Carry out aerial and ground surveys in localised areas • Use of local knowledge and scouts data on population status and distribution	• Survey reports	Annual	KWS, HCP, NRT, WWF, CG
	• Collaboration with other partners e.g Tsavo Trust in TCA • Hirola to be included in wet season aerial counts for other mammal surveys in Tsavo East	• No of initiatives undertaken in liaison stakeholders • Survey report	3 years	KWS, WWF, AWF, Tsavo Trust, ZSL
Ranger/scout based monitoring systems to provide regular information for management	Ranger/scout based monitoring supported in Ishaqbini, Ndera, Gababa, Gedilun/Sangailu, Bura and Tsavo East	• Regular reports	5 years	KWS, HCP, NRT, WWF, Tsavo trust, county government

Target	Activity	Indicator	Timeline	Actor(s)
(quartely/ Monthly/Annual)	Scout based monitoring established in Galmagala, Ijara, Bodhei	• No. of scouts employed and trained	2 years	HCP,
Data from research and monitoring used in hirola management throughout strategic plan period	Assess level of bushmeat trade and subsistence consumption within Hirola range and Tsavo East – markets, species hunted etc.	• Assessment report	2 years	KWS, HCP, NRT, WWF
	Carry out a genetic study of isolated populations (Ishaqbini sanctuary and Tsavo East)	• Baselinereport	5 years	KWS, HCP, NRT, WWF, ZSL
	Conduct predator prey preference / selection study and predator density in relation to hirola (natural range and Tsavo East)	• Study report	5 years	KWS, HCP, NRT, researchers
	Undertake rangeland condition assessment within key hirola habitat	• rangeland condition status report	5 years	KWS, WWF HCP, NRT, other researchers
	Map land use/cover, settlements and development infrastructure in hirola range	• Land use/land cover map and report	4 years	KWS, WWF HCP, NRT, county government

Target	Activity	Indicator	Timeline	Actor(s)
	Establish weather stations and drought monitoring in key hirola areas (already established in ishaqbini and Bura)	• Weather stations in place • Reports	1 year	HCP ,
	Continue disease surveillance in livestock and wildlife	• Disease surveillance Report	3 years	NRT, KWS, Sandiego zoo, DVS
	Conduct livestock health management assessment study	• health management assessment report	5 years	KWS, DVS, Sandiego zoo, NRT
	Conduct livestock vaccination campaigns	• No. of campaigns	Annual	KWS, DVS, NRT/ Ishaqbini Conservancy, San Diego zoo
	Expand and conduct regular targeted community socio-economic surveys in core areas in the natural range (attitudes to wildlife and benefits attributed to conservation)	• Socio-economic Report	5 years	HCP, NRT WWF

SO 3:

Strategic Objective 3: Re-establishment of Arawale National Reserve

Rationale and Considerations

Arawale NR is the only formally gazetted protected area within the hirola natural range. Management of the reserve has not been effectively established. However, it remains a key area for hirola thus the need to engage the County government to re-establish the management structure of the reserve noting the Hirola is a flagship species for Garissa county government.

Target	Activity	Indicator	Timeline	Actor(s)
Establish effective management of Arawale National Reserve	Engage community, County Government of Garissa, and other partners on importance of hirola conservation/re-establishment of Arawale reserve	Meetings held	2 years	KWS, HCP, county government of Garissa
	Collaborate with the County Government of Garissa on re-establishment of Arawale and if necessary develop MoU between County governments, local communities and KWS	• MoU developed • Progress reports	5 years	County Government of Garissa, KWS
	Develop a management plan for Arawale by the County Government of Garissa	• Management plan in Place	5 years	County Government of Garissa, KWS, HCP
	Re-establish management structures and staffing levels	• Staff in place	5 years	County Government of Garissa
	improve infrastructure and re-establish Arawale HQ	• Infrastructure in place • Arawale NR re-established	5 years	County Government of Garissa

SO 4:

Strategic Objective 4: Habitat Management in Core Areas

Rationale and Considerations

Bush encroachment, rangeland degradation and habitat loss are major drivers of population decline across the hirola natural range.

It is critical to put in place adaptive habitat restoration and grazing management practices to address these threats.

Target	Activity	Indicator	Timeline	Actor(s)
Setup habitat management practices to optimize habitat for hirola	Expand planned livestock grazing management in Ishaqbini	• Livestock grazing plan expanded	1 year	NRT
	Introduce livestock grazing management in Gababa, Arawale, Bura, Sangailo,	• Livestock grazing plan established	3years	HCP, Ishaqbini conservancy (to share lessons)
	Set up pilot experimental plots for grassland restoration in key hirola habitats	• No. of habitat restoration plots established	2 years	HCP, Ishaqbini conservancy
	Disseminate information on appropriate/best rangeland management practices among local communities	• No. of dissemination meetings held and no. initiatives in place	5 years	HCP, Ishaqbini conservancy
	Adopt best practices for rangeland management using different approaches (e.g. range re-seeding with grass, manual removal of *Acacia reficiens*, use of fire in specific areas)	• Document on methodologies for rangeland management • No. of areas adopting best practices recommended	3 years	HCP, NRT, County government
	Removal of alien invasive plant species i.e. *Opuntia, Prosopis Juliflora*	• Progress reports	5 years	HCP, Ishaqbini conservancy, NRT, county government

Target	Activity	Indicator	Timeline	Actor(s)
	Education and awareness on control and management of *Opuntia sp., Acacia reficiens and Prosopis Juliflora* within the hirola range	• Education materials developed and disseminated • No. of areas undertaking control and management	5 years	HCP, Ishaqbini conservancy, NRT, KWS, county government
Setup water management practices	Coordinate with Drought management authority (NDMA) and county governments to understand water development plans in Hirola range	• Meetings held • input from wildlife sector to the CIDP	2 years	HCP, NRT, KWS
	Adopt integrated water system designs for livestock, wildlife, humans	• No. of water systems that are friendly to livestock, wildlife and human established	2 years	HCP, NRT, KWS

Target	Activity	Indicator	Timeline	Actor(s)
Create predator proof sanctuary for ex-situ population of Hirola in Tsavo East	Carry out predator scat analysis to establish levels of predation on hirola in Tsavo	• Predator scat report	1 year	KWS, Tsavo Trust, NRT
	Check feasibility of integrating hirola into the rhino sanctuary or selection of a different site for a hirola sanctuary	• Feasibility report	1 year	KWS, NRT, HCP, WWF, Tsavo Trust
	Develop management plan and budget	• Management plan in place	2 years	KWS, WWF, Tsavo Trust
	Upgrade/ construct a fence	• Fence upgraded/ constructed	3 years	KWS, WWF, Tsavo Trust
	Identify source herds from resident population	• number of individuals identified	3years	KWS, Tsavo Trust
	Translocation to sanctuary	• No. of translocated individuals	3 years	KWS, WWF, NRT, Tsavo Trust
	Operations established (infrastructure, equipment, staff training etc)	• Infrastructure and staff in place	5 years	KWS, WWF, Tsavo Trust
Explore options for establishment of a second sanctuary within the natural range	– Engagement of the community and county government – Feasibility assessment – SEIA (Social-Environmental Impact Assessment) – Management plan and budget – Fence design & construction – Identify source populations – Translocation – operations	• Meetings and minutes of meeting • SEIA report • Management plan in place • Site identified, if appropriate • Source population identified • number of founders translocated • Operation structure in place	3 years	Ishaqbini conservancy, KWS, county government, HCP, CWCCC, NRT

SO 5: Strategic Objective 5: Management Intervention

Rationale and Considerations

To reverse the declining trend in population, there is need to adopt best practices and tested successful management interventions. It is vital to engage the communities in identification and implementation the interventions.

Target	Activity	Indicator	Timeline	Actor(s)
Support community managed predator proof sanctuary in Ishaqbini conservancy	Management and operations sustained	Annual reports	5 years	NRT, Ishaqbini conservancy
	Implement the sanctuary Management plan (2017-2021)	• annual population status report • annual reports	5 years	NRT, Ishaqbini conservancy, KWS
	Explore options for sanctuary expansion	Increased area of sanctuary	3 years	NRT, Ishaqbini conservancy, Ndera conservancy, KWS
	Post release monitoring of hirola to include collaring	• No. of collared individuals • Status report/ movement map	5 years	NRT, Ishaqbini conservancy, KWS, HCP
	Support drought emergency response (supplement feeding, removal of some individuals from sanctuary)	• Reduced drought related mortalities	as needed	NRT, Ishaqbini conservancy, KWS
	Implement the disease mitigation strategy (Livestock vaccination program, monitor disease outbreaks)	No. of vaccinations campaigns no. of hirola disease related mortalities	5 years	NRT, Ishaqbini conservancy, KWS, San-Diego Zoo
	Integrate the sanctuary population into meta-population management	No. of hirola released from sanctuary	5 years	NRT, Ishaqbini conservancy, KWS

SO 6:

Strategic Objective 6: Community Engagement

Rationale and Considerations

The Hirola's natural range exists on community land thus its future is dependent on resident communities willingness to continue co-existing, investing in and protecting hirola in the long term.

Target	Activity	Indicator	Timeline	Actor(s)
Create benefits to communities from conservation of hirola	Explore potential for tourism development in hirola range as well as promote local tourism	• No. of local tourists and schools visiting • No.of tourism facilities established	5 years	Ishaqbini conservancy, Ndera conservancy, HCP, county government
	Coordinate with other development agencies working in region to improve access to social services (health, water, education) linked to hirola conservation	No. of development partnerships established	5 years	Ishaqbini conservancy, HCP, county government, NRT
	Develop community enterprises to improve livelihoods	No. of new enterprises established	5 years	Ishaqbini conservancy, HCP, county government, NRT
	Link with Ministry of Agriculture Livestock and fisheries and other agencies to improve livestock health and production	increased house hold revenues	5 years	Ministry of Agriculture Livestock and fisheries, County government, NRT, , San Diego Zoo
Enhance awareness and education about hirola conservation	Develop conservation education materials	Education materials developed	2 years	HCP, Ishaqbini conservancy, NRT
	Link to KWS community education programme & establish education centre at KWS Masalani	Education center established no. of school visits	5 years	KWS, County government
	Integrate hirola conservation education programme into Tsavo East education and outreach programme	Education materials in place	1 year	KWS

Target	Activity	Indicator	Timeline	Actor(s)
Create benefits to communities from conservation of hirola	Explore potential for tourism development in hirola range as well as promote local tourism	• No. of local tourists and schools visiting • No.of tourism facilities established	5 years	Ishaqbini conservancy, Ndera conservancy, HCP, county government
	Coordinate with other development agencies working in region to improve access to social services (health, water, education) linked to hirola conservation	No. of development partnerships established	5 years	Ishaqbini conservancy, HCP, county government, NRT
	Develop community enterprises to improve livelihoods	No. of new enterprises established	5 years	Ishaqbini conservancy, HCP, county government, NRT
	Link with Ministry of Agriculture Livestock and fisheries and other agencies to improve livestock health and production	increased house hold revenues	5 years	Ministry of Agriculture Livestock and fisheries, County government, NRT, , San Diego Zoo
Enhance awareness and education about hirola conservation	Develop conservation education materials	Education materials developed	2 years	HCP, Ishaqbini conservancy, NRT
	Link to KWS community education programme & establish education centre at KWS Masalani	Education center established no. of school visits	5 years	KWS, County government
	Integrate hirola conservation education programme into Tsavo East education and outreach programme	Education materials in place	1 year	KWS

SO 7: Strategic Objective 7: Coordination, Capacity & Support

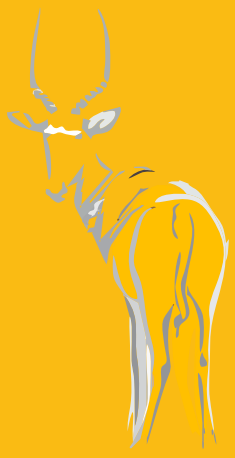
Rationale and Considerations

Effective and coordinated approach in implementation of this action plan will require functional Systems and committees.

Collaboration and partnership in conservation of hirola is paramount, this will involve engaging the communities, county governments, relevant government agencies, CWCCC and conservation NGOs to raise the profile of hirola at local, national and international levels.

Target	Activity	Indicator	Timeline	Actor(s)
A well coordinated and managed framework for implementation of the strategy	Implement coordination framework for Hirola management committee (HMC)	HMC established	1 year	KWS
	HMC meetings	• Meetings held	Bi-annual	KWS
	Link to other national species task forces (e.g. carnivores) on a need basis	Meetings held	as need arises	KWS,
	Coordinate and produce annual status reports on hirola	Hirola status report	Annual	KWS, HMC
	Coordinate conservation and research partners to synergise efforts and implement the hirola strategy	Meetings held	5 years - annual	KWS, HMC
	Coordinate with Government and development agencies working in hirola range to ensure non-conflicting plans (e.g. county spatial Plans, county integrated development plans)	input made to CIDP	2 years	KWS, NRT, HCP, county government
Mobilisation of resources for effective implementation of strategy	Support the KWS endangered species office	• Equipment in place	5 years	KWS, HMC
	Coordinate support for implementation of strategy/activities	• No. of activities funded and implemented	5 years	HMC

Target	Activity	Indicator	Timeline	Actor(s)
Communication and national awareness on status of hirola	Use media to raise the profile of the hirola through:- • local, national radio/TV stations; • social media • engagement of high profile persons to champion hirola conservation	• media brief information packaged • no. awareness campaigns	2 years	KWS, NRT, HCP
	Raise profile of hirola with the international conservation organisations	• new partners identified	2 years	KWS, NRT, HCP, San diego zoo
	Publish relevant articles in media on activities in hirola conservation (newspaper, websites, journals etc.)	• No. of published articles	5 years	KWS, NRT, HCP
	Proposal to establish a National hirola day	• National hirola day established	1 year	HMC



chapter 6

Implementation of the National Strategy

6.1 IMPLEMENTATION, RESPONSIBILITIES AND CONTROL

A framework shall be established for decision making and information flow through area level committees to the National. Hirola management committee

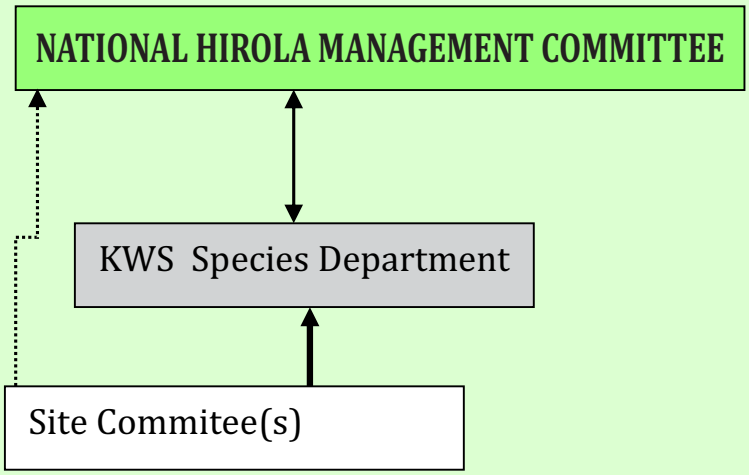


Figure 6. Coordination framework for the strategic plan

a) The National Hirola Management Committee shall be constituted of 10 member;

1. KWS Director -Biodiversity Research and & Planning (Chair)
2. KWS Senior Assistant-Director Parks & Reserves
3. KWS Head-Wildlife Protection Department
4. Assistant Director-Eastern Conservation Area
5. Assistant Director-Tsavo Conservation Area
6. Senior Scientist-Eastern Conservation Area
7. Senior Scientist- Tsavo Conservation Area
8. NRT
9. HCP
10. WWF
11. ZSL
12. County Government of Garissa
13. Hirola Community Conservancies Representatives – Bura and Ishaqbini
14. Honorary wardens from the hirola natural range

b) Site committee

1. Assistant Director-Eastern Conservation Area
2. Senior Scientist-Eastern Conservation Area
3. Warden Garissa
4. Warden Ijara
5. HCP
6. NRT
7. County Government of Garissa
8. Ishaqbini
9. Bura
10. 4 community representatives
11. Honorary warden

Appendices

Appendix 1: Hirola Conservation Strategy 2004 - 2009

Conservation and management strategy for the hunter's antelope or hirola (Beatragus hunteri) in Kenya (2004-2009)

Implementation of the strategy was spear headed by the National Hirola conservation Task Force, established by KWS in 1996. The taskforce membership included representatives from the local community, NGO's, conservancy and the local government.

The committee also championed the development of the 1st National Conservation and Management Strategy for the hirola (2004-2009) which was completed in 2004. Key policies developed for hirola conservation under this five-year plan were:

1. Improvement of security in the hirola natural range for both people and wildlife
2. Community awareness and education
3. Community capacity building
4. Re-establishment of existing conservation areas that support hirola
5. Creation of community hirola sanctuaries
6. Research
7. Biological interventions

Results of the strategy review

The review of the 2004-2009 hirola conservation and management strategy was carried out by the HTC at a 2-day workshop, KWS Headquarters, Nairobi in March 2011. The results of the review are summarized in the table below.

	Goal/Activity 2005-2009	Achievements
Goal 1: Improvement of security in the hirola natural range for both people and wildlife		
1.1	Putting up of KWS base: re-open former outpost and KWS presence in Ijara and create new outposts at Bura, Masalani and Galma Gala.	• Masalani KWS district station established with vehicle, but no dedicated security team. • Outposts at Bodhei and Hulugo.
1.2	Intensify patrols within hirola range.	• Partially achieved, KWS security response usually reactive and not regular patrols – Bura, Galmagala, Bodhei, Masalani, Ijara, Hulugo, Gababa. • Ishaqbini patrols by community scouts supported by KWS.
1.3	Linkage with provincial administration	• joint patrols in security prone areas undertaken on a need basis, Rapid response team established and includes all security agencies
1.4	Encourage community participation through formation of management committees of protection of hirola.	• Ishaqbini community conservancy formed and functional • Bura CBO set up but not well established. • Galma Gala community group set up but not well established. • Bodhei and Gababa community interest groups exist but not well organized

	Goal 2: Community awareness and education	
2.1	Develop a conservation awareness program that is inclusive of all hirola range stakeholders.	• Partially achieved through development of Ishaqbini conservancy
2.2	Carry out intensive awareness campaigns to educate the people on the benefits of conserving wildlife, livestock disease and transmission, stocking rates and livestock breeding programs.	• KWS disease surveillance done regularly (wildlife and livestock) • EU Transboundary Environmental Project (TEP) examined various aspects of environment, wildlife, livestock and economy. • No direct community awareness programmes carried out. • Livestock vaccination programs carried out by NRT in collaboration with county livestock and veterinary departments in Ishaqbini- masalani areas in 2016
2.3	Sensitize the different stakeholders of their roles and responsibilities in conservation and management of the ecosystem.	• Partially done – still little engagement from county councils in conservation management • Ishaqbini a model for integrated management at a community level
2.4	Organize environmental education programs through workshops and seminars to educate the public on conservation issues.	• Partially achieved through TEP project
2.5	The community wildlife conservation groups to continue with awareness activities through the public barazas in the sub locations within the hirola range.	• Partially done through the setup of Ishaqbini • Carried out in parts of Arawale, Bura Fafi by NRT and HCP
2.6	Give talks to the community groups and schools on topics related to environmental education.	• Not done specifically but some through Ishaqbini • School field trips to the conservancy carried out in Ishaqbini hirola sanctuary
2.7	Encourage visits to hirola range by local schools, tourist and other organized groups to appreciate the work of conservation agencies.	• Limited tourism in Ishaqbini, some school teacher visits in Ishaqbini but no organised group visits.
GOAL 3: Re establishment of existing conservation areas that have hirola (Arawale National Reserve)		
3.1	Develop an integrated management plan for Arawale National Reserve.	Not undertaken
3.2	Restore base at Massa Bubu, which will greatly reduce poaching.	Not undertaken
3.3	Support research activities at Arawale National Reserve.	• Some research activities undertaken through TEP project and NMK researchers.
3.4	Draft and supporting of the MoU between Kenya Wildlife Service and Garissa County Council.	• Not undertaken
3.5	Improve infrastructure making it easier to carry out patrols and enhance community security.	• Not done - road and airstrip improvement in region but not specific to Arawale NR.
GOAL 4: Creation of community hirola sanctuaries (re word as Conservancies)		
4.1	Construction of sanctuaries at Gababa-Duban Bubasa, Kotile- Korisa, Ijara-Handaro, Sangailu-Galmagala- Gubis and Dagega.	• Ishaqbini conservancy established (Kotile – Korisa). • Gababa, Galmagala, Ijara, Degega - not established
4.2	Hirola scouts assistance.	• Ishaqbini only

GOAL 5: Community capacity building		
5.1	Conduct a study on income generating activities and promote conservation income generating activities within the hirola range.	• Tourism assessment done Some bee-keeping enterprises established • Some Aloe planting established but unsuccessful
5.2	Empower the community through appropriate training and skills to diversify activities.	Some training done through Terra Nuova/Arid Lands
5.3	Diversify food production systems by improving livestock marketing and pasture management regimes.	• Livestock marketing not done specifically • Koitille livestock market closed • Not achieved • Grazing management established in Ishaqbini only.
5.4	Advocate for alternative source of energy.	Not undertaken
5.5	Circulate to stakeholders all the EIA reports by GCC on the impacts of the refugees.	Not undertaken
GOAL 6: Research		
6.1	Identify hirola research gaps and document research studies done on the hirola. Some of the areas to be researched on are: • Demographic data • Disease • Habitat • Forms of interaction with livestock • Aspects of predation • Impacts of poaching • Genetics • Captive experiments of optimum food requirements	Not done formally (some work carried out in 2012 - 2016 by HCP and NRT).
6.2	Establish proper guidelines for undertaking research activities by private individuals and institutions.	Draft KWS research authorisation guidelines
6.3	Development of research proposals	Done by individual researchers, students, in ishaqbini, TSAVO, Ijara last 5 years by NRT, ZSL, KWS and HCP
GOAL 7: Biological interventions / Management Interventions		
7.1	Coordination of emergency hirola rescue	Undertaken on a need basis
7.2	Development of programs of disease control	• Disease surveillance programmes established and ongoing KWS/AU-IBAR (Ref).
7.3	Habitat improvement	• Not done.
7.4	Creation of wild and semi-wild populations.	• Establishment of Ishaqbini hirola sanctuary in 2012
7.5	Captive sanctuary breeding population.	• Not undertaken
GOAL 8: Administration – Coordination of Strategic Plan		
8.1	Coordination of the various activities	• HMC formed and meeting regularly. • From 2013 HMC has been inactive
8.2	Conduct an inventory of office equipment and procure as per the requirements.	• Not undertaken • Hirola liaison office not established, work being carried out by Species office in KWS and NRT, HCP

Appendix 2: List of Participating institutions in the review of the 2004 - 2009 strategy and development of the 2018-2027 strategy

1. County Councils – Chairman & Clerk (8) - Garissa, Ijara, Fafi, Tana River

2. Community representatives & Chiefs
   - Ishaqbini – Manager & 2 Board representatives;
   - Bura (2);
   - Gababa (2);
   - Galmagala (2);
   - Bodhei (2);
   - Sangailu (2);
   - Hulugo (2);
   - Gubis (2);
   - Ndera conservancy (2);
   - Gumo (2),
   - Kitere (2)

3. DC – all districts (4)

4. MPs – Fafi, Ijara, Tana River (3)

5. Development/Govt Agencies – Ijara, Fafi districts only (8)
   - Arid Lands
   - Ministry of Livestock
   - Ministry of Agriculture
   - Ministry of Water

6. Conservation Organisations/researchers
   - KWS (10)
   - ZSL (2)
   - NRT (2)
   - WWF (1)
   - Wild Dog project (1)
   - Hirola Conservation Project – Univ Wyoming (1)
   - Kibodo (1)
   - HMC individual members – Lucile Ford, Ken Coe, San Diego Zoo

7. Official Opening/Closing – Hon Yussuf Haji/ Hon Noah Wekesa

Appendix 3: List of Workshop Participants for the Stakeholders validation Workshop held at Masalani in Garisa County on 26th June 2018

SNO	NAME	INSTITUTION
1.	Jumba Kenneth	NEMA
2.	Hassan Omar Muhumad	IHCC
3.	Fredrick Ibbras Eminae	NRT
4.	Athman Maru Dhidha	Ndera Conservancy
5.	Philip Simotwo	NEMA
6.	Komora Baraka	Ndera Conservancy
7.	Hassan	Arawale
8.	Muhamed Osman	Minstry of Tourism
9.	Harima Abdi	Tourism
10.	Mohamed Abdi Dero	Livestock department
11.	Mohamed Osman	Countuy liason officer
12.	Abdiraman B Hadan	County government
13.	Aden Ali Elmi	Ishaqbini Conservancy
14.	Aden Abdulahi Ibrahim	Sangailiu
15.	Ahmed Yaron	Chief Ijara
16.	Ibrahim W Khalif	Chief Kotile
17.	Hindia Mohamed	County
18.	Benard Kuloba	KWS
19.	Hamch Abdull	Ishaqbini Conservancy
20.	Ahmed Bare	Ishaqbini Conservancy
21.	Mohamed Yussin	Bura East
22.	Muhamed Mohamed	Bura East
23.	Ali Hassan Ali	Bura East
24.	Mohamed Ismael	Ishaqbini Conservancy
25.	Mustafa Kenan	Masalani
26.	Abduraham Ahmed	WRT
27.	Isa gedi	NRT
28.	Hussein Hassan	Ishaqbini
29.	Abdikadir	Ishaqbini
30.	Nasir Bare	CDF Ijara
31.	Bakari Chongwa	KWS
32.	Vincent Kipyeon	NGAO
33.	Mohamed Dahir	GCG
34.	Abdukahir Ali	HCP
35.	Ahmed Sidiye	GCG
36.	Ali Elmi	County government
37.	Anthony Munene	KWS
38.	Richard Okoth	KWS
39.	Hassan Shabo	KWS
40.	Yusuf Municha	KWS
41.	Ismael Bille	KWS
42.	Habon Aden	Garrisa County
43.	Sang Robert	Ijara
44.	Abdi Hasimah	Ishaqbini
45.	Duale Mahatbashir	Ishaqbini
46.	Darot Muhamed	Ishaqbini
47.	Bashir Chide	Ishaqbini
48.	Yussuf Ahmed	Ishaqbini
49.	Mohamed	Ishaqbini
50.	Daliir	MICT
51.	Abaisalam Shide	Asst Chief
52.	Ahmednoor Abdi	Ishaqbini
53.	Osman Aden Salat	
54.	Kennedy Opiti	KWS
55.	Christine Barasa	KWS
56.	Fatuma Ahmed	KWS
57.	Emmanuel Rono	Kenya Police
58.	Bashir Ali	County
59.	Polycarp Okuku	KWS

Appendix 4: Partners

1. Northern Rangeland Trust
2. Hirola Conservation programme
3. WWF - Kenya,
4. Zoological Society of London
5. Tsavo Trust
6. San Diego Zoo
7. Others

Appendix 5: Road map

1. Finalisation of the strategy draft shared by 15th October by 31st comments provided to be incorporated
2. Final Draft to be shared with the chair of the antelopes specialists group for comments
3. Editing, layout, and printing of 300 copies with the support from Hirola Conservation Program 300
4. Launch date – 3rd quarter of the financial year (January – March 2019)
5. Launch venue – Garissa Town

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