MINISTRY OF TOURISM AND WILDLIFE

NATIONAL WILDLIFE STRATEGY 2030
1. OUR WILDLIFE

Kenya is world renowned for its unique combination of tourist attractions, breathtaking tropical beaches, abundant wildlife, scenic natural habitats and geographically diverse landscapes. At the heart of this rich natural heritage is a deeply resilient people, whose cultures are as diverse as the rich ecosystems they live in. Throughout our history, these ecosystems, and the wildlife they support, have been central to our lives and livelihoods as Kenyans. Whether providing clean air and water, rich soils for productive crops and livestock, food and shelter, or contributing to social cohesion and cultural identity, our rich natural heritage has been central to our identity and our prosperity.

Kenya has a unique diversity of ecosystems, ranging from mountains, forests, rangelands, arid lands, croplands, and urban areas, to marine and inland waters. Each of these ecosystems supports a diverse array of animal and plant species, some endemic to Kenya—found nowhere else in the world - and a range of services essential to our prosperity and wellbeing as individuals, communities, and a country. This Strategy is a call to action and a blueprint for empowering all Kenyans to participate in caring for and conserving our rich natural heritage as part of our commitment to our people, our prosperity, and our planet.

Our wildlife, and wildlife habitats, are an extremely important economic asset. They are central to our world-renowned tourism industry that attracts over one million tourists to our country every year. In 2017, tourism generated over 10% of the national gross development product (GDP) and directly employed nearly 11% of the total formal workforce.

However, the narrative is much richer than just a contribution to Kenya’s GDP. Kenya’s impressive network of protected areas and natural habitats support a diversity of wildlife and provide a rich array of natural resources and ecosystem services at the centre of people’s livelihoods and sustainable development (Constanza et al., 2014/2015). These essential ecosystem services include clean and abundant water, fresh air, sequestration of carbon dioxide, crop pollination, and control of soil erosion among others. These services are central to a broad range of economic activities across a range of sectors including, agriculture, forestry, livestock and fisheries, and commerce and industry. Kenya’s economy depends on a healthy environment and the sustainable use of natural resources, and this dependency is increasingly acute in the face of climate change.

Wildlife are found throughout Kenya - in our parks and reserves, in our rangelands, in our forests, in our fields, and in our gardens and urban green spaces. Indeed, while Kenya has officially protected over 8% of its terrestrial and marine ecosystems with a network of National Parks, National Reserves, Forest Reserves, and Sanctuaries, we must also recognize the potential for all habitats to contribute wildlife conservation. For example, our formal protected area network is currently (2017) complimented by a further 160 Conservancies, ensuring an additional 11% of Kenya is actively managed for wildlife.
Despite these efforts to provide active conservation management, there are still large gaps in our conservation area system - including key marine and coastal systems, urban, and freshwater ecosystems - where as much as 80% of Kenya's fragile freshwater and inland aquatic ecosystem resources remain unprotected. Increasingly, wildlife conservation will depend on weaving together this diverse array of habitats and conservation models to create a dynamic and resilient tapestry of interconnected ecosystems in support of biodiversity and prosperity.

Just as wildlife is found throughout Kenya, wildlife and wildlife habitats are facing a suite of chronic and emerging challenges. Climate change, population growth, changing aspirations, poverty, pollution and invasive species, and unplanned development are all threats to biodiversity. Land use change stemming from rural-urban migration and unsustainable development leads to degradation of both private and common property resources such as fisheries, forests, rivers and rangelands. Coupled with the direct over utilization of wildlife through poaching, bushmeat, and the illegal wildlife trade, the resulting habitat degradation and fragmentation are threatening the productivity and resilience of ecosystems and the diversity and viability of biodiversity across the country.

Ecosystem degradation and biodiversity loss has wide ranging impacts including, increased vulnerability to climate change and natural disasters, declines in productivity (e.g. fisheries, agriculture, livestock, etc), and precipitous declines in iconic species such as elephant, rhino, giraffe, pangolin, and dugong. To protect our rich natural heritage, ensure our prosperity, and maintain Kenya’s role as a leader in wildlife conservation and management, there is an urgent need to address these emerging challenges.

This strategy is a call for action. It represents the collective aspirations of all Kenyans, and, presents the opportunity to transform the conservation and management of our wildlife for the benefit of all Kenyans; both now and in the future. The time is now. Our lives and livelihoods depend on safeguarding these valuable natural resources.

**Box 1. The Economic Significance of Wildlife**

Over and above its environmental significance, wildlife has an important and growing role in Kenya’s economy because of the wildlife tourism industry. This takes several forms: providing foreign exchange, incomes, and employment, and markets for other economic sectors, generating revenues for the Government, and broadening the base of rural development, especially in arid and semi-arid areas. There are also many indirect economic benefits from wildlife conservation, such as the protection of water catchments and genetic resources.

The tourism sector earns Kenya an average of KES 100 billion (USD 1 billion) every year and contributes and contributed over 13.5% of the Country’s GDP and directly supported an estimated 250,000 jobs and an additional 350,000 indirectly. The sector is also a leading employer, accounting for 9.3% of total employment in Kenya, a figure that is 0.3% higher than global averages (KWS strategy). In 2015, the sector attracted Kshs. 83.6 billion worth of
investments, this is forecasted to rise by 5.2% every year over the next decade to Kshs. 146.8 billion in 2026 according to the World Travel and Tourism Council 2016 (KWS strategy, 2018?). Kenya’s Vision 2030 identifies tourism as a leading sector in attaining the goals of the Vision. In Vision 2030, the Country aims to be among the top-ten long-haul tourist destinations in the World offering a high-end, diverse and distinctive visitor experience (reference).

Why the Strategy?

A first of its kind for Kenya, this Wildlife Conservation and Management Strategy a transformative vision for Kenyans’ active participation and equitable benefit sharing. It is anchored on clear targets and a collaborative implementation framework. The strategy is a response to the chronic and emerging challenges facing wildlife.

This strategy provides a framework for coordination and implementation of Article 69 of the Constitution of Kenya (2010) and the Wildlife Conservation and Management Act (2013), and articulates an ambitious vision that “Kenyans value a wildlife that is healthy and resilient to threats.”

It further builds on the successes of the past and lays groundwork for innovative new solutions to emerging challenges. At its heart this strategy, this is a call to all Kenyans to recognize and embrace our role as individuals and communities who conserve our rich natural heritage, essential ecosystem services and natural resources upon which our collective development depends.

The Wildlife Conservation and Management Strategy gives life to the Wildlife Policy (Draft 2018). It provides a mechanism to coordinate the sector and implement the Wildlife Conservation and Management Act (2013). This strategy is designed to bring Kenyans together through a shared vision for wildlife as a cornerstone of our social, cultural, environmental, and economic development. In addition, the strategy provides a collaborative framework for implementation and cross-sectorial coordination. Essentially, it is a mechanism to identify priorities, coordinate implementation and monitor impact.

For this Strategy to succeed, the national government, county governments, communities and landowners’ must improve effectiveness of their actions. The collective focus of Kenyans must target threats and embrace opportunities for wildlife conservation. Key elements that the Strategy will deliver are to:

- Promote an ecosystem approach and inclusion of biodiversity in totality.
- Promote integrated planning and cross-sectorial coordination.
- Enhance awareness and participation.
- Include evidence-based decision-making.
- Embrace equitable and inclusive access to benefit sharing, climate resilience, good governance and sustainable financing.

PURPOSE of the strategy

The purpose of the National Wildlife Conservation and Management Strategy (2018-2030) is to provide an overarching framework that prioritizes, coordinates, and inspires participation for the transformation of the wildlife sector in Kenya. The strategy will prescribe principles, objectives, standards, indicators, procedures and incentives for the
protection, conservation, and management of wildlife resources.

There are **four pillars** that underpin this strategy. They focus on protection of wildlife and ecosystem services for the benefit of all Kenyans. The pillars are:

1. Resilient species and ecosystems
2. Engagement for all Kenyans
3. Evidence-based decision making
4. Sustainability

Stewardship in the formulation of this strategy rests with the Ministry of Tourism and Wildlife.

The Kenya constitution 2010 identifies that Kenyans have a **RIGHT TO HEALTHY ENVIRONMENT**

**A new vision for wildlife conservation**

It is a transformative vision that speaks to Kenya’s rich heritage and calls on all Kenyans to participate in—and directly benefit from—wildlife conservation and management.

**The road to wildlife conservation**

Proactive government intervention in wildlife conservation in Kenya dates back to 1898, when the earliest wildlife regulations were enacted to regulate and control indiscriminate hunting. In 1907, the Game Department was established, essentially to control hunting. In 1946, Nairobi National Park was established as the first national park in East Africa for purposes of strict wildlife and habitat preservation.

In 1975, Kenya’s post independence government formulated a new wildlife conservation and management policy and act, which combined the functions of the National Parks Trustees and the Game Department into the Wildlife Conservation and Management Department (WCMD). Even as the economic value of wildlife expanded in the 1970’s and 80’s there was growing concern over the decline of wildlife, especially elephant and rhino, because of organized poaching and the loss of critical habitats. The capacity for effective wildlife conservation and management also deteriorated rapidly and communities adjoining and living in important wildlife areas felt alienated through failed community development programmes.

In response to these growing concerns, the Government of Kenya created the Kenya Wildlife Service (KWS) through the Wildlife (Conservation and Management) Amendment Act 1989. The KWS was charged with all wildlife conservation and management in Kenya. While the wildlife sector under KWS has recorded significant achievements, the challenges of increasing human population pressure, over utilization, and climate change continue to drive wildlife population numbers down and undermine the resilience of ecosystem services. This critical situation was confirmed by the Task Force Report on Wildlife Security (2014), which concluded that serious reforms are required to deal with the chronic and emerging challenges in the wildlife sector.

However, the Constitution of Kenya, 2010 and the Wildlife Conservation and Management Act, 2013 provide an opportunity for a paradigm shift in conservation strategies and approaches to
address these challenges through the concept of devolution, the principle of subsidiarity, and the requirement to prepare a National Wildlife Conservation and Management Strategy.

**Bringing Kenyans Together (formerly formulation process)**

This strategy is not an end in itself. It is designed to promote an iterative, continuous process to ensure accountability over time (ideally as a five-year cycle). It began with a series of meetings were held between March 2017 and April 2018. This process brought Kenyans together in briefing meetings, a National Steering Committee briefing, launch of the strategy formulation process, public participation and stakeholder engagement, regional public consultations, and under-the-tree grassroots meetings.

A more targeted consultation meeting with chief executive officers from conservation NGO’s was also held. This was under the auspices of the Conservation Alliance of Kenya (CAK) which is the umbrella body representing all conservation NGOs in Kenya. The meeting was critical to ensure the adoption of the strategy formulation process. It provided an opportunity to lobby for support in the implementation of the strategy.

The strategy formulation process used the following methodology:

1. Review of existing strategies, from various sources
2. Documentation of best practice
3. Broad public participation
4. Focus group discussions
5. Technical input from experts
6. Key stakeholder consultations

**Briefing Meetings**- Briefing meetings were organized by the Synthesis committee, one to the Principal Secretary, State Department on Natural Resources and the other to the Cabinet Secretary, Ministry of Environment and Natural Resources Prof. Judi Wakhungu and the Development Partners Wildlife Issues Group. These meetings gave opportunity to the synthesis committee to provide progress updates as well sort feedback and recommendations that would input into the strategy thus enrich the strategy formulation process.

**National Steering Committee** briefing: The team leaders of the synthesis team briefed the National Steering Committee on 20th July 2017. The NSC gave input to the expanded strategy outline and the report is annexed.

**Launch of the NWCMS Formulation process**-On Monday, June 12, 2017 the Cabinet Secretary Ministry of Environment and Natural Resources presided over the launch of the National Wildlife Conservation and Management formulation process. Among other dignitaries who graced the occasion were; the US. Ambassador to Kenya, Robert Godec representing the donor community ([link to speech](#)), Dr. Manu Chandaria, representing the private sector, Members of the fourth estate and representatives of various conservation organizations in Kenya. ([Press Release](#))

**Public Participation and Stakeholder Engagement**- As required by law, under Article 10(2)(a) of the Constitution, Section 5(5) and the Fourth Schedule to the Wildlife Act, participation of the people is a national matter is one of the values and principles of governance enshrined in the constitution. As such, to meet the constitutional requirement, the Cabinet Secretary, Ministry of Environment and Natural Resources through a gazette notice in the local dailies published a call
for public consultation on the development of the National Wildlife Conservation and Management Strategy.

**Regional public consultations:** There was consensus that the synthesis team would conduct stakeholder public consultation meetings in 6 regions representative of all the 47 counties in Kenya.

**Under-The-Tree Grassroot meetings:** In order to have effective and inclusive participation of the communities and landowners living with wildlife, the synthesis team embarked on grassroot meetings in key wildlife areas. To achieve this Kenya Wildlife Conservancies Association (KWCA) was contracted to organize and facilitate community consultative meetings through its grassroot networks. The communities and landowners living with wildlife and actively conserving them on their lands contributed to the Strategy by identifying real issues affecting effective conservation as well as possible solutions. Nine (9) community grassroot consultative meetings were held reaching over 300 community and conservancies stakeholders and collating authentic views on issues hindering effective, sustainable and beneficial wildlife conservation in Kenya and proposed practical solutions required to address the issues. All the above meetings were held in July-December 2017

[Insert photo] - Synthesis team: Meeting stakeholders in the North Rift

Our success at large-scale transformation demands more than the best strategic and tactical plans. It requires an intimate understanding of the human side; culture, values, people and behavior. Value will only be realized through the sustained, collective actions of individuals, group of people, community, organizations and the nation.

Views consolidated from engagements with the public and from key stakeholders informed the development of key strategic goals and objectives. These were categorized along seven (7) Strategic goals for:

1. Habitats and Ecosystem
2. Species and Biodiversity
3. Engagement and Awareness
4. Access and Benefit Sharing
5. Knowledge and Dissemination
6. Capacity Building and Training
7. Sustainable Financing

*The reports with key out-comes of the Public consultation meetings and the Grassroots Under-the-tree Meetings is annexed.*

The graphic below is a summary of the issues that the strategy needs to address as collated from all Public Participation workshops–
2. STATUS – SITUATIONAL ANALYSIS

Kenya’s biodiversity richness

While Kenya has a vast array of biodiversity, the status and trends of all Kenya’s ecosystems shows general degrading and declining status of biodiversity. Despite the vital role these ecosystems and their wildlife play, their loss and degradation is adversely affecting the livelihoods of millions of people and the country’s economy. This calls for urgent remedial intervention to stop the decline. Active enactment of existing regulatory frameworks is at a critical level, while developing new ones to address the associated threats is no longer a luxury.

Africa is home to about 20% of all known species of plants, mammals, and birds as well as 17% of amphibians and reptiles (WWF 2006). Kenya alone has over 6,500 plant species. About 260 of these plant species cannot be found anywhere else in the world (WRI 2007). The country hosts more than 1,000 bird species and over 350 species of mammals (see Figure 2.1). Kenya ranks as second highest in the whole of Africa in terms in terms of animal species richness (Bigg et al., 2004).

Figure 2.1: Map showing species richness of mammals, birds and reptiles in East Africa (Source: MEWNR 2014).
Kenya has ecosystems that are unique and exceptional. The seven ecosystems are the savanna, freshwater, forest and woodland, marine and coastal, mountain, urban, and croplands (see Figure 2.2). However, all these ecosystems are threatened by degradation and intense pressure from increasing human population, commercial and illegal use and unplanned infrastructure development.

Figure 2.2: Major Ecosystem in Kenya – boxes pictures of the ecosystem

With all this richness in animal and plant species, the actual value of biodiversity in Kenya is unknown (MEWNR 2014). The potential of this valuation of ecosystem services and their relationship with human well-being is critical for this strategy as it embarks on the larger efforts of conserving and protecting key biodiversity areas and species. The importance of the valuation of biodiversity are highlighted in Box 2.1.

Box 2.1: Importance of ecosystem services and it value

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<tr>
<th>Ecosystem services and value</th>
<th>Tourism in Kenya</th>
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<tr>
<td>Globally the ecosystem value stands at US$142.7 trillion (Costanza et al., 2014). Global loss of ecosystem services due to land use change is US$ 4.3–20.2 trillion/yr.</td>
<td>Globally US$7.1 trillion generated by tourism.</td>
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<td>Tourism in Kenya is the second-largest source of foreign exchange revenue earner</td>
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In 2017 - 1.4 million people visited Kenya and revenue 120 billion shilling were generated from the industry, and tourism contributed 9.8% to the country GDP.

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<th>Forest valuation</th>
<th>World Bank</th>
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<td>Forests sustain life for over 70% of terrestrial biodiversity; they regulate water cycles, maintain soil quality, and reduce the risks of natural disasters such as floods and landslides, as well as directly and indirectly supporting the livelihoods of over 1.6 billion people (MEA, 2005 and Eliasch, 2008).</td>
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<td>Braat and Brink (2008) estimate the annual losses from forest ecosystems as ranging between $1.35-3.1 trillion.</td>
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<th>Blue Economy</th>
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<td>Collectively African coastal and island states encompass vast ocean territories of an estimated 13 million km². Africa's vast coastline hosts a maritime industry estimated at $1 trillion per year. This is according to Professor Prof Francois Vreÿ research coordinator at the Security Institute for Governance and Leadership in Africa, Stellenbosch University.</td>
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<th>Agricultural biodiversity</th>
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<td>Agricultural biodiversity (or agro biodiversity) is a component of biodiversity referring to all diversity within and among species found in crop and domesticated livestock systems, including wild relatives, interacting species of pollinators, pests, parasites, and other organism (reference).</td>
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**Priority Ecosystems and Species in Kenya: State and Trend**

In this chapter we analyse the status of seven ecosystem, describe the drivers and pressures and also the response – which is the focus of this STRATEGY. We use the DPSIR framework to analyse the state and trends of biodiversity and the drivers and pressures affecting them. The state and trends information was based on literature review, feedback from national dialogue, meeting with communities and experts.

The strategy is a response to current state (and desired state) recognition of drivers and
pressures, and their impacts on society. Using the DPSIR\(^1\) framework and a combination of analytical and feedback from national dialogue, meeting with communities, a list of actions was developed. This list informed the formulation of this strategy. It resulted in the development of innovative responses and prioritization of their interventions.

Figure 2.3 is summary of DPSIR framework used in this chapter to analyse the state and desired state (the strategy). The definition of terms used in DPSIR based on (EAA 2007) are as follows: Drivers are social, economic and institutional system that directly and indirectly trigger pressures on the environmental state. Pressures are the anthropogenic factors inducing environmental change (Impacts). State can refer to a wide range of features, from the qualitative and the quantitative characteristics of ecosystems, the quantity and quality of resources. Impacts are changes in environmental functions affecting social, economic and environmental dimensions, which are caused by changes in the State of the system. Responses are the policy actions which are directly or indirectly triggered by the perception of Impacts and which attempt to prevent, eliminate, compensate or reduce their consequences.

![DPSIR Framework](image)

*Figure 2.3: An Illustration of DPSIR Framework for this Study*

### 2.4 Status and Trends

**Forest and Woodland Ecosystems**

Healthy forest ecosystems are our ecological life-support. Forests provide goods and services that are vital to human health and livelihood. They are natural assets; carbon

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\(^1\) **DPSIR (Driver-Pressure-State-Impact-Response):** A causal framework for describing the interactions between society and the environment, developing interventions and tracking effectiveness. It is a flexible framework that can be used to assist decision-makers in many steps of the decision process. DPSIR was initially developed by the Organization for Economic Co-operation and Development (OECD 1994).
sequestration, water purification, groundwater and surface flow regulation, erosion control, and riverbank stabilization. Kenya has a wide range of forests; from coastal forests, mountain forests in Central Kenya and thick rainforests in Western Kenya.

According to FAO (2010), forests cover about 3,467,000 ha (6.1%) of Kenya. Of this, 654,000 ha (18.9%) are classified as primary forest, the most bio-diverse and carbon-dense form of forest. However, between 1990 and 2010, Kenya lost 6.5% of its forest cover, or around 241,000 ha. Similarly mangrove forest in Kenya has continued to decline. Between 1985 and 2010, the country lost an average of 18% of its mangroves (Kirui, et al., 2013).

Healthy forest ecosystems are ecological life-support systems. Forests provide a full suite of goods and services that are vital to human health and livelihood, natural assets we call ecosystem services – these services includes wildlife habitat and diversity, watershed services, carbon storage, and scenic landscapes.

**Savannah Ecosystem**

More than 80% of Kenya is covered by the savannah. These grasslands, scrublands and woodlands receive less than 600 mm annual rainfall. The Kenya savannah is home to thousands of large herbivores and hundreds of carnivores. These animals are key economic drivers through tourism. Recent report on the status of wildlife and livestock in Kenya indicate varied rates of decline among the wildlife species in the Savannah (Ogutu et al., 2016). The report indicate on average wildlife declined 68% between 1977 and 2016. These declines are worrying if they continue declining at this rate. The trend and status of the wildlife in the Kenya rangelands are given in Figure 2.4.
Figure 2.4: Population trends and status of key wildlife species in the Kenya rangelands between 1977 and 2016 (Source: Ogutu et al., 2016).

**Freshwater Ecosystems**
Freshwater ecosystems are vital to human well-being, ecological integrity and national development. Kenya’s freshwater resources, including rivers, lakes and swamps, are estimated at 20.2 billion cubic meters. They are distributed within six drainage basins. The freshwater ecosystems are a lifeline for fisheries, agriculture, livestock and biodiversity conservation.

Inland waters and wetlands contain unique species and some are the last refuge for rare and threatened species. They also provide a wide variety of environmental services and are breeding grounds for fish and thousands of migratory birds.

The rivers and lakes provide water for irrigation, hydropower generation, industrial and domestic use, and modulation of local climate.

**[CASE STUDY BOX] — Lake Victoria supports one of the largest freshwater fisheries in the world. In 2007, the lake produced about 1 million tons of fish annually, valued at between US$300-400 million (Kenya Wetlands Atlas, 2009). Until the introduction of the Nile Perch, the lake had over 500 fish species, most endemic to the lake and of high economic and scientific significance (Kenya Wetlands Atlas, 2009). About 35 million people (about 30% of the entire population of Eastern Africa) are estimated to live and derive their livelihood directly or indirectly from the basin Lake Victoria (UNEP, 2006).**

**Marine and Coastal Ecosystems**
Kenya’s 600 km coastline—from Somalia the North to Tanzania the South—supports a large proportion of the marine species. These are found on the beaches, mangroves, coastal wetlands, sea-grass beds, lagoons and coral reefs.

The distribution of ecosystems along the coastline is influenced by coastal geology, hydrology, oceanography, and the characteristics of the continental shelf. Sandy soils and a relatively dry climate have produced a mosaic of coastal forests and bushland vegetation at the coast. The hills from south of the Shimba Hills to Malindi block the flow of major rivers to the South Coast. This has enabled the development of a continuous fringing coral reef, rocky cliffs, white sandy beaches, mangrove creeks and estuaries.

Marine protected areas have healthier corals with abundant fish due to limited human interference. The coral reefs and rocky shores harbor a rich biodiversity of birds, fish, crustaceans, molluscs and echinoderms.

The pelagic marine zone of the open ocean covers almost one-third of Kenya’s territorial area. The coastal belt varies between 4 km in the south to 40 km in the north, generally under 50 meters altitude. The coastal ecosystems occupy the western extremity of the tropical Indo-Pacific biogeographic region.
Coral species diversity decreases as one moves northwards along the coast; with Kisite-Mpunguti in the south coast having the highest diversity (203 coral genera), followed by Lamu (173) and Kiunga (167) in the north (Obura 2012).

**Mountain Ecosystems**

At over 3,000 m above sea level lie Mt. Kenya, the Aberdares and Mt. Elgon. These are home to Kenya’s afro-alpine meadows and moorlands. They are the least modified of Kenya’s biomes due to their high altitude, remoteness and protection within national parks (MEWNR 2014).

However, these unique high altitude ecosystems are highly susceptible to human impact due to their specialized, narrow-ranged plants and animals. There have been instances of moorland fires and evidence that global warming is adversely affecting the afro-alpine zone. The Mt. Kenya snowcap, for example, has decreased in area by 90% between 1934 and 2017 (MEWNR 2014). These ecosystems host some unique and rare of species due to their extreme and cold ecological conditions. However, they are vulnerable to global warming as the narrow afro-alpine zone shifts upwards with glacial retreat (MEWNR 2014).

**Urban Ecosystems**

An urban ecosystem is simply the community of plants, animals, and humans that inhabit the urban environment. It is an area physically dominated by man-made structures like buildings, roads, sewers, and power lines. Managing urban areas as ecosystems begins with a better understanding of what green spaces contribute to urban life, as well as an appreciation for the pressures they face and the rapid expansion or urban spaces now occurring (Moyers 2001).

The green spaces provide shade, temperature control, air filtering, noise reduction, storm water control, biodiversity and wildlife habitat, and food production. Examples of urban wildlife habitats are the Nairobi and Nakuru National Parks. In the next few decades many of our major towns will be megacities home to more than 10 million residents. It follows that urban areas will be spread over significantly larger landscapes. Changes in natural areas like forests, grasslands, and farms into urban and suburban environments are already taking place (Moyers 2001).

It is projected the population of Nairobi will reach 14.3 million by 2050 and will double to 28.4 million people by 2075 (UN 2017). The demand for clean air, water, recreational and other ecosystem services will only increase. Therefore, ecosystem conservation and management must be proactively incorporated in housing, town and city plans.
Cropland
For most Kenyans, agriculture and livestock production remain the main livelihood. This sector is at the peak of Kenya's economy; 30% of the country's Gross Domestic Product. Crop diversity is a foundation of biodiversity ensures food security. The income and livelihood strategies of rural farm household income are highly diversified (WRI et al., 2007). Maize accounts for only 14% of total household income, other crops such as tea, vegetables, fruits, sugarcane, coffee and root crops account for more than 20% of the household income.

One of the leading environmental concern is the loss of crop biodiversity. About half of all plant species face extinction if current crop biodiversity loss trends persist (UN 2002; Cardinale et al., 2012). Some 6% of wild relatives of cereal crops such as wheat, maize, rice, and sorghum are under threat (Castaneda-Avarez et al., 2016). Among the many threatened species are wild relatives of our domesticated crops. These wild and weedy plants possess valuable traits such as pest and disease resistance (Castaneda-Avarez et al., 2016).

The loss in crop diversity directly contributes to a lower crop production and further reduces resilience of these landscapes affecting the livelihoods of millions of farmer’s country wide.

2.5 Key drivers that influence wildlife conservation
What are drivers? These represent major social, demographic and economic developments in society, and the corresponding changes in lifestyle resulting to overall levels of consumption and production patterns. Some of the drivers associated with loss in wildlife and degradation of wildlife habitats include increasing population, climate change, policies, poverty and changes in land use.

Population, land use changes and poverty
The human population in Kenya has grown exponentially between 1962 and 2017, from 8.6 million to 47.9 million. Kenya’s current population growth rate, at 2.7% per annum, is one of the highest in the world (UN 2017). Human population in Kenya is projected to increase to 65.4 million by 2030, 95.5 million by 2050 and 156.9 million by 2100.
Figure 2.6: Projected human population in Kenya and distribution of people in Kenya in 1962 compared to 2009. There has been five and half-time increase of people between 1962 and 2016. (Source KNBS, UN 2017).

As the human population continues to increase, so does the demand for more agricultural land. Change in land use presents the greatest immediate threat to biodiversity. Ogutu et al., (2016) found 15 out 18 species their densities were high as low human population and reduced significantly at high human population densities. Species that live a narrow range of habitats will be most affected by the conversion of land for human-dominated use (Newbold, et al., 2014). Also some taxa’s will be more sensitive than others, for example birds might completely disappear as urban areas takes up their habitats in urban development (Newbold et al., 2014).

Climate change
Due to global land surface warming, severe temperature events are expected to occur more frequently and more extremely causing changes in biodiversity and altering movement and survival of large herbivores (Aduma et al., 2018). There are increasing observations of escalating wildlife range losses worldwide. Recent studies by Ceballos et al., (2017) reveal that out of the 177 mammals for which they had comprehensive data, all have lost at least 30% or more of their geographical ranges and more than 40% of the species have experienced severe population declines—more 80% range shrinkage. Aduma et al., (2018) have shown for Amboseli ecosystem for RCP 8.5 which is the extreme scenario of temperature changes projects 5 out of 15 species to lose their range by 50% in 2030s, 7 out 15 species by 2050s and 10 out of 15 species by 2070s.

Figure 2.7 and Table 3 shows the rainfall and temperature changes across the 47 Counties of Kenya based on climate scenarios as represented by Representative Concentration Pathways (RCPs) 2.6, 4.5 and 8.5. The RCP 2.6 represents an optimistic projection characterized by a very low concentration and emissions levels of greenhouse gases. RCP 4.5 scenario represent medium emission scenario where international communities are working on limiting emissions with limited implementation of climate change policies. RCP 8.5 scenario represents a pessimistic projection with high levels of concentrations of gases emitted; this scenario assumes no implementation of climate change policies. By the
2050 for RCP 4.5 and 8.5 the mean increase in temperature would have exceeded the 1.5°C. The Paris climate agreement ambition to keep global warming below 1.5°C recognizes that even this level of warming could present extremely serious adaptation challenges for the world’s most vulnerable regions. These changes in temperature and rainfall seasons with October-November-December (OND) becoming wetter and March-April-May (MAM) becoming drier might impact biodiversity in various ways.

![Figure 2.7: Projected rainfall and maximum temperature changes in Kenya by 2030s for the 4 season – annual, MAM (March-April-May), JJAS (June-July-August-September), and OND (October-November-December) for the three RCPs 2.6, 4.5 and 8.5. (Source: Said et al., 2018).](image)

**Table 2.1: A summary of maximum temperature changes for the periods 2030s (2016-2045), 2050s (2036-2065) and 2070s (2055-2085) for the 47 Counties (Source Said et al., 2018).**

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<td>2030s</td>
<td>2050s</td>
<td>2070s</td>
<td>2030s</td>
<td>2050s</td>
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<tr>
<td>Minimum</td>
<td>0.87</td>
<td>1.03</td>
<td>0.84</td>
<td>0.88</td>
<td>1.40</td>
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<tr>
<td>Maximum</td>
<td>1.14</td>
<td>1.48</td>
<td>1.34</td>
<td>1.22</td>
<td>1.81</td>
</tr>
<tr>
<td>Mean</td>
<td>1.04</td>
<td>1.28</td>
<td>1.14</td>
<td>1.01</td>
<td>1.62</td>
</tr>
</tbody>
</table>

**Potential impacts of climate change on ecosystems and wildlife**

Wildlife in Kenya faces profound impacts from climate change. As temperatures rise, the natural phenomena that millions of tourists travel to see – coral reefs, forests, fauna-rich savannah – will be degraded, destroyed or lost. Table 2.2 summaries the potential impacts of climate on the seven ecosystems.

**Table 2.2: Summary of the projected impacts of Climate Change on the Ecosystems**

<table>
<thead>
<tr>
<th>Ecosystems</th>
<th>Projected Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savanna</td>
<td>Climate change can alter migratory routes (and timings) of species that use both seasonal wetlands (e.g., migratory birds) and track seasonal changes in vegetation (e.g., wildebeest)</td>
</tr>
</tbody>
</table>
A change in the intensity or duration of the rainy versus dry seasons could change relative breeding rates, phenology, synchrony and genetic structures of species populations.

Invasive species and other species with high fertility and dispersal capabilities have been shown to be highly adaptive to variable climatic conditions in the savannas.

A changing climate may worsen the threats to forests, such as pest outbreaks, fires, and human encroachment to forest. Warming temperatures could increase could also shift the geographic ranges of some tree species.

Reduced provision of environmental services and economic activity

Mountain climbing will be at risk due to rising temperatures and snowfalls

Loss of plants in the afro-alpine zone and bird in higher mountain ranges

Two factors determining weed growth such as water hyacinth rates are water temperature and nitrogen concentration; with growth rates maximal at 29.6°C

Climate change will lead to an increase in pests and diseases in fisheries due to increased temperature and reduced water quality. Increased precipitation may lead to pollution of fish farming facilities by heavy metals.

Marine species that might be affected by climate change will include plankton - which forms the basis of marine food chains - corals, fish and seabirds.

Rising sea levels and more extreme weather events threaten beaches and coastal infrastructure enjoyed by hundreds of millions of tourists each year

The combination of rising water temperatures and increasing ocean acidification, caused by the absorption of carbon dioxide, spell particular peril for reef ecosystems and the dive tourism they support.

Maize is grown in temperatures of 18°C–27°C. A 1.5°C warming by the 2030s could lead to about 40 percent of present maize cropping areas being no longer suitable for current cultivars

The optimum mean annual temperature range (for Arabica coffee) is 18°C–21°C. Above 23°C, development and ripening of fruits are accelerated, often leading to loss of quality.

Reduced volumes of water supply, floods, mudslides, increase in water borne diseases,

Key pressures that affect wildlife conservation

For the purpose of this strategy, pressure is effects of driving forces. They represent processes that affect wildlife and wildlife habitats; habitat loss, land degradation, over-utilization of natural resources, poaching and illegal wildlife trade, pollution and invasive species, siltation and over-abstraction and human wildlife conflict.

In the long run, these accelerate changes in the state of wildlife resources. Depending on the changes of state, positive or negative consequences to the society may occur. These consequences are identified and evaluated to describe impacts by means of evaluation indices.

Habitat loss, fragmentation and degradation

Biodiversity is changing at an unprecedented speed and scale as a complex response to several human-induced changes in the global environment (Sala et al., 2000). In particular, fragmentation of landscapes is occurring on a scale and rate that are far greater than brought about by natural events (Wiens, 1990). Fragmentation is a landscape level process in which a specific habitat is progressively subdivided into smaller and more isolated fragments (McGarigal & Cushman, 2002).

Grasslands and savannas are highly threatened ecosystems as a result of land use changes
(Sala et al., 2000) and land fragmentation (Galvin & Reid, 2007). Land use changes and agriculture expansion has been major factor in the massive decline of the wildlife population in Kenya (Ogutu et al., 2016, Western et al., 2009). Kenya lost more than 68% of its wildlife between 1977 and 2016 in the rangelands. In extreme circumstances we observed the collapse of wildebeest migration between pastoral areas and Nairobi National Park (Ogutu et al., 2013; Said et al., 2016) due to land fragmentation, habitat losses and fencing. In the coastal zone, rapid land use changes has affected beachfronts, mangroves and their long-term ecology.

Between 1990 and 2010, Kenya lost about 6.5% of its forest cover to deforestation (FAO 2010). Wetlands and area under swamps declined by about 40% between 1970 and 2003. The flow rates (discharge) in most rivers reduced by over 30%, while lakes have had dramatic fluctuations in water levels (Keche et al., 2007). Kenya’s mangrove forests have shrunk by 18% due to illegal harvesting (Kirui et al., 2014).

Most of these changes are driven by human encroachment to wildlife/biodiversity areas in addition to uncoordinated land use. To address uncoordinated land use development, a National Spatial Framework (NSF) was recently developed. This strategy will address some of these issues, together with land and ecosystem planning and individual species strategies.

**Over-utilization, poaching, and illegal wildlife trade**

Poaching and uncontrolled use of natural resources are major contributors to the decline of biodiversity and wildlife in Kenya. The seriousness of poaching is well known, especially in relation to elephants and rhino. Poaching and illegal wildlife trade for bush meat and trophies has been responsible for the precipitous declines in several species over the last 30 to 40 years. The growing pressure on Kenya’s wildlife, evidenced by the recent spike in poaching since 2008 that has led to a serious concern that our wildlife is severely threatened. The figures were alarming in 2011 - 134 elephants and 24 rhinos were poached, 384 elephants and 29 rhinos were poached in 2012, and 289 elephants and 25 rhinos were poached in 2013 (MEWNR 2014b). There is a gap in the less-documented illegal harvesting of plant species. A good example is the African Sandalwood (Osyris lanceolata), a tree exploited for its essential oils used in perfumes.

In response Kenya Wildlife Service and its partners launched an innovative project called ten Boma, which includes the development of a counter-wildlife crime intelligence fusion centre, engagement with communities living near wildlife, and modernization of KWS security operations to stop poachers before they kill elephants and rhinos. Such initiative and including judiciary reforms on sentencing of poachers has helped reduce the incidence of poaching. Also the recent forecast on illegal logging needs to address core issues on deforestation.

**Human wildlife conflict**

The major cause of human wildlife conflict in Kenya is competition for finite natural resources. The situation is exacerbated by the exponential growth of population and changes in land use; human settlement, urbanization, large infrastructure projects,
agricultural expansion, and increase livestock numbers. These pressures are edging out wildlife in the critical wildlife dispersal areas, resulting in escalating human-wildlife conflicts (Ojwang et al., 2017).

**Pollution and invasive species**

Unsustainable farming practices and unplanned expansion of agriculture degrade the land and accelerate soil erosion. This leads to severe pollution of rivers, dams, lakes and the ocean that are wildlife and biodiversity habitats. In the aquatic and marine environments, water quality has declined due to increased pollution and siltation from poorly managed upper catchment areas and agricultural zones. Lake Naivasha is one such ecosystem affected by serious eutrophication as a result of extensive flower farming around it.

Apart from pollution being menace to a number of ecosystems invasive species have posed a serious threat to wildlife and wildlife habitats. Warmer temperatures and changes in carbon-dioxide concentrations driven by climate change are likely to increase opportunities for invasive species. They adapt to a broader range of bio-geographic conditions and environmental controls. Warmer temperatures accelerate the life cycle of invasive pathogens and insects. As their number and extent increase, they compete for diminishing resources such as water. This will severely affect five out the seven ecosystems in Kenya.

Aquatic and wetland biodiversity is seriously compromised by alien invasive species. Notable among these is the water hyacinth (*Eichhornia crassipes*) that has been described as the world's worst aquatic weed. On land tick berry (*Lantana camara*), has colonized a number of national parks—including Nairobi and Oldonyo Sabuk. Its bushy undergrowth inhibits the growth of other natural vegetation.

**Box 2.3: Impact of water hyacinth to Lake Victoria**

Water hyacinth a major invasive plant found in Lake Victoria. It is native to the South America; it was introduced to Lake Victoria. The hyacinth’s spread has been prolific due to a lack of natural predators, an abundance of space, a favorable temperature and an abundance of nutrients. These nutrients include increasing heavy metals from pollution flowing into the lake. The weed has affected local ecosystems. There are massive losses in fish populations, an increase of diseases, and loss of livelihoods for fisherman.

**Impacts**

Table 2.3 summarizes impacts of drivers and pressures on the seven ecosystems. The savanna, forest, fresh water and marine and coastal ecosystems are under severe pressures.
The croplands and urban areas are moderately under pressures while the mountains are slight under pressure mostly driven by climate change.

Based on this analysis and feedback from the consultative meetings the **RESPONSE** was to develop the National Wildlife Conservation and Wildlife Strategy.

*Table 2.3: Summary table of drivers and pressures and their impacts on ecosystem*

<table>
<thead>
<tr>
<th>Ecosystem</th>
<th>Savanna</th>
<th>Forest</th>
<th>Mountain</th>
<th>Freshwater</th>
<th>Marine and Coastal</th>
<th>Cropland</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRIVERS</strong></td>
<td></td>
<td></td>
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<tr>
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<td>2</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Land Use Change</td>
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<td>2</td>
<td>3</td>
<td>2</td>
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<td>3</td>
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<tr>
<td>Climate Change</td>
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<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
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<td>Poverty</td>
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<td>3</td>
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<td><strong>PRESSURES</strong></td>
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<tr>
<td>Over utilization</td>
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<td>Illegal Wildlife Trade</td>
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<tr>
<td>Pollution</td>
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<td>3</td>
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<td>2</td>
<td>3</td>
<td></td>
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</tr>
</tbody>
</table>

**Key:**

| 1 | No Impact | 2 | Medium Impact | 3 | Severe Impact |
3. VISION

The National Wildlife Conservation and Management Strategy speaks of Kenya’s rich heritage and its value to Kenyans and the Kenyan economy. The vision of the strategy, therefore, is that:

“Kenya’s wildlife is healthy, resilient and valued by Kenyans.”

Purpose
The purpose of this National Wildlife Conservation and Management Strategy (2018-2030) is to provide an overarching framework prioritizing, coordinating and inspiring participation for the transformation of the wildlife sector in Kenya. As such, the Strategy draws from a broadly participatory process, and builds on the guiding principles of key national documents such as the Constitution of Kenya (2010), the Wildlife Act (2013) and Vision 2030.

Kenya ranks among the world’s top wildlife destinations and its economy is largely nature based unlike the industrialized nations. This natural capital, channeled through plants and animals, is the engine of our farming, ranching, fisheries, forestry, wildlife, and tourism industries. The ecological services biodiversity provides daily captures rainfall, regulates river flows, supplies nutrients for crops, fodder for livestock, controls erosion and cleans the air, water and soils we pollute. These services come free of charge, add billions of shillings to our local and national economy, and yet are ignored in our calculations of national economic output.

Transformational change
For any vision to become operational, it must be supported by strong building blocks. To make this a reality, the following strategic approaches will be followed:

Systematic and Integrated approach
It is clear from the statutory provisions that there is deliberate effort to move away from short-term and sectoral management towards a more systematic, integrated and planned approach in conserving and monitoring wildlife. For this reason, the initial fifteen-year timeframe of this strategy is aligned to the Vision 2030. This encourages long-term planning and investment in conservation. This fifteen-year timeframe is also practical for recording and evaluating the results of conservation efforts. Every five years, there will be a progress review against the targets to adapt priorities and develop responses to emerging information and needs.

Cooperative approach and Stakeholder engagement
Wildlife conservation in Kenya is at crossroads. This calls for a paradigm shift in the manner that conservation is undertaken in the country. The current model of wildlife conservation in the country is unsustainable and is likely to collapse. This will have far-reaching consequences on loss of biodiversity, tourism and the overall socio-economic development of Kenya. To deal with matters related to wildlife, both the national and county governments must adopt a cooperative approach. Integration of local communities, private landowners, private sector, civil society organizations and other stakeholders, will be a game-changer in
securing space for wildlife as well shared responsibility.

**Adaptive Monitoring and Reporting**

For the strategy to make a real difference, a more efficient monitoring program needs to be developed to track the effectiveness of conservation actions. Although it is important to focus on the short- to medium-term, the objectives and the conservation priority areas are designed to lay a strong foundation for the longer-term impacts on Kenya’s wildlife conservation. It is these that the strategy’s effectiveness could be ultimately being determined. Implementation of the strategy should include the development of a long-term monitoring and evaluation framework based on existing well-established systems. The information gained from such a long-term monitoring framework will be used to track trends in the condition and extent of Kenya’s wildlife conservation. This will inform the report to the National Assembly and future reviews of the strategy.

**Approach and Guiding Principles**

Success at large-scale transformation demands more than the best strategic and tactical plans. It requires an intimate understanding of the human side; culture, values, people, and behavior that must be changed to deliver the desired results. Plans themselves do not capture value. Value is realized only through the sustained, collective actions of individuals, group of people, communities of practice, organizations or a nation.

**Shaping the transformation**

Incremental change is no longer sufficient to drive the long-term vision for transforming wildlife conservation in Kenya. Seven Strategic Goals, therefore, guide this strategy. They are designed to inspire and enable all Kenyans to safeguard and benefit from their natural resources or ecosystems in particularly wildlife

- **Ecosystem management** - Natural ecosystems – landscapes and seascapes – are dynamic but have a finite capacity to recover from external threats, impacts and pressures (*Natural Resource Management Ministerial Council 2010*). This is across land tenure systems, ecosystem services, and resilience.

- **Engagement and participation of all** - All Kenyans must be engaged in biodiversity conservation. This includes implementation of robust national monitoring, reporting and evaluation, enhance strategic investments and partnerships that ensure participation in the development, review, and implementation of the strategy for long term transformation of wildlife conservation.

- **Sustainability** – This must take an inter-generational approach. Wildlife is a key component of our national development agenda. There must be support for ecosystem services and sustainable livelihoods.

- **Devolution** – All stakeholders must take responsibility and action that matters; counties, communities - local responsibility, action, and benefits.

- **Collaboration and communication** – There must be transparency and accountability as all levels; international, inter-governmental, between governments, civil society, and private sector.
• **Benefits** – A new and broader understanding/appreciation of benefits (e.g. ecosystem services) should drive benefits from wildlife. These benefits must outweigh costs while at the same time being equitable and sustainable. Improving social equity is one such objective that is often considered an enabler of successful outcomes (Law et al., 2017).

• **Communities** – Action for change is expected to be at rural, urban, traditional, and emerging settings. We must acknowledge and respect the culture, values, knowledge and practices of local communities.

• **Evidence-based decision-making** – This is recognition of the importance of information and knowledge, both scientific and traditional. It will guide effective conservation and management, support the review process, and provide a monitoring platform. This at ecological, social, and economic levels.

A call for action
The Wildlife Conservation and Management Strategy (2018-2030) is a national strategy that aims to transform the role and recognition of wildlife within Kenyan society. At the heart of the Strategy is a call for action. Guided by the overall vision and the set of core principles highlighted above, the Strategy provides a coordinating framework and blueprint for addressing current and emerging challenges for transformative change. To achieve this desired change the strategy must fit within existing structures and processes, while at the same time develop innovative mechanisms and approaches that go well beyond the existing mechanisms within currently defined wildlife sector.

The strategy is designed to speak to people at multiple levels - from national governments, to international institutions, to regional structures, to counties, to communities, to individuals. The Strategy employs a multi-layered structure to facilitate communication and engagement with four (4) core Pillars and a set of underlying Goals which define the long term vision and objectives (Figure 3.1), and a set of Strategies and Priority Actions within each Goal designed to address the priority needs for this initial five-year period (see Chapter 4).

The four core Pillars underpinning the capture the core guiding principles underlying the Strategy into a conceptual framework to enhance communication, coordination, and collaboration, while inspiring engagement and catalyzing action.

**Pillar 1: Resilient Species and Ecosystems** highlights the prioritizing, planning, and protection of ecosystem and species. In particular, this pillar emphasizes a comprehensive assessment of ecosystems and species status and prioritization of key intervention areas, the development of effective responses for integrated planning for ecosystem and species protection and restoration, and the effective coordination and implementation of species protection and wildlife security in the country. In addition, this pillar highlights the need for innovative approaches to human wildlife conflict that reduce the costs, and increase the benefits, of living with wildlife to ensure mutually beneficial coexistence.

**Pillar 2: Engagement for All Kenyans** focuses on ensuring that we engage all Kenyans in recognizing the value of our wildlife–economic, social, cultural, ecological–and inspire their participation at all levels. Through innovative partnerships and collaborations, this Pillar highlights the need for actions and initiatives to enhance the provision of and access to ecosystem services, incentives, and benefits. These efforts are supported by outreach and awareness activities, relevant curricula at all levels of education with an emphasis on conservation, and incentive programmes that catalyzes participation by the general public.
This Pillar also seeks to promote access to, and the equitable sharing of, benefits for all Kenyans, through innovative pro-wildlife nature based enterprises, and sustainable utilization.

**Pillar 3: Evidence based Decision Making** emphasizes the importance of research and knowledge, decision support tools, information sharing, and skills and capacity development to support adaptive management and integrated cross sectoral and multi-scale planning for enhanced protection, rehabilitation and restoration of key ecosystems and wildlife habitats.

**Pillar 4: Sustainability** outlines a sustainable financing framework and governance structure to ensure the effective coordination, monitoring, review, and implementation of the Strategy. At the centre of this pillar is the recognition of the importance of local action—whether by counties, cities, communities, or individuals—and the need for strong cross-sectoral and private sector engagement.

Individual Pillars are made up of one to two Strategic Goals that encapsulate the long-term objectives identified by stakeholders across the country (Figure 3.1). These Goals emerged from the broad stakeholder engagement process, including consultations with counties, local communities and landowners, academia, youth, development partners and the private sector (see Chapter 1 for details on the Strategy Formulation process). Each Goal has been broken down into an assessment of the current state, the desired state, and potential responses for achieving the desired transformation (Figure 3.2). Priority responses are captured as Strategies underlying each Goal, with an initial set of Priority Actions identified for each Strategy (Chapter 4).

Figure 3.1 The Vision (yellow triangle), Core Pillars (large boxes), and associated Strategic Goals (light green boxes) of the National Wildlife Conservation and Management Strategy (2018-2030).

Theory of change

In response to current and future challenges, the strategy provides a coherent structure and theory of change. This is how we will move from the current state of declining wildlife and degraded habitats, to one of health wildlife populations and functioning ecosystems (see Chapter 2 for a more detailed description of the State - Pressures - Response model).

Figure 3.2 Goal maps as a theory of change underlying each Pillar.

The Strategy in Context

The strategy is also cognizant of and responsive to the overarching policy frameworks and processes. These include sector specific strategies, relevant Acts of Parliament, policies and regulations, and international treaties and obligations such as the AICHI Targets of the Convention on Biological Diversity (CBD) and the Sustainable Development Goals (SDGs). Transformation of wildlife conservation in Kenya requires commitment at local, county,
national and international levels. This is through leveraging existing efforts and global visions for effective coordination and collaboration.

**Sustainable Development Goals (SDGs)**
The Sustainable Development Goals are a collection of 17 global goals set by the United Nations. The broad goals are interrelated though each has its own targets to achieve. The total number of targets is 169. The SDGs cover a broad range of social and economic development issues. These include poverty, hunger, health, education, climate change, gender equality, water, sanitation, energy, environment and social justice.

*Figure 3.3: The 17 Sustainable Development goals (SDGs)*

The strategy will directly contribute to the national targets on SDG 6, SDG 8, SDG 11, SDG 13, SDG 14 and SDG 15. In *Table 3.1*, we can see the links between SDGs and strategy strategic goals (*refer to the matrix in the appendix for the detail activities suggested to be undertaken for each strategic goal for the next 5 years*).

*Table 3.1: Relationship between SDGS and strategic objectives.*

**Convention on Biodiversity - Aichi Targets**

The Convention on Biodiversity is a global commitment to conserving…

The Aichi Biodiversity Targets are part of the Strategic Plan for Biodiversity 2011-2020 which highlights the implementation....

Kenya is a signatory to the CBD and has committed to enshrining its principles and actions into its own policies and legislation. The Strategy builds on these commitments and the global recognition of the important role that Biodiversity pays in functional ecosystems, the provision of ecosystem services, and human well-being

**Strategic Goal A:** Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

**Strategic Goal B:** Reduce the direct pressures on biodiversity and promote sustainable use

**Strategic Goal C:** To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

**Strategic Goal D:** Enhance the benefits to all from biodiversity and ecosystem services

**Strategic Goal E:** Enhance implementation through participatory planning, knowledge management and capacity building
4. STRATEGIC GOALS

Transforming Conservation in Kenya
The National Wildlife Conservation and Management Strategy outlines a long-term vision for the conservation of Kenya’s wildlife and the ecosystems on which they depend. To support the achievement of the longer-term vision, the Strategy identifies 7 Strategic Goals. These are in turn supported by a set of 5-year strategies and priority actions.

Goals, Strategies and Activities
While Goals represent the overall framework to guide the long-term vision, the individual strategies and priority actions must be responsive to relevant needs and emerging challenges as identified during the initial 5-year development and review process. Goals represent priority areas of intervention. They guide
government policy, provide a framework for collaboration to direct efforts and ensure coordination for enhanced impact.

Each goal is made up of a set of initial strategies that should be taken or initiated over the next 5 years (2018-2022). The individual strategies under each goal are interrelated and interdependent. Under each strategy are the priority activities and sub-activities necessary to realize that strategy and ultimately the goal.
Goal 1: SPACE FOR WILDLIFE - HABITATS and ECOSYSTEMS
Maintain and Improve Habitat and Ecosystem Integrity to reduce biodiversity loss, protect ecosystem function, enhance connectivity, and increase resilience.

**Goal Description**
Habitats and ecosystems are the foundation of healthy wildlife populations. They are an essential element of effective conservation efforts. Habitats and ecosystems across Kenya are under threat from unsustainable use, degradation, fragmentation, loss and conversion.

This Strategic Goal emphasizes the protection and restoration of habitats and ecosystems through evidence and adaptive management. It identifies and prioritizes key habitats and ecosystem needs while highlighting mechanisms for integrating isolated, existing and future planning processes. It encourages the enhancement and expansion of the protection of key habitats and ecosystems to ensure sustainable wildlife conservation through habitat rehabilitation, preservation, and the restoration of connectivity through securing corridors and dispersal areas.

**Context**
Kenya has about 8% of its land mass under government protected areas - this includes 30,348 km² of National Parks, 18,042 km² of National Reserves and Sanctuaries. In addition to these terrestrial protected areas, Kenya has an additional 548km² of marine parks and reserves.

These protected areas represent a wide range of habitats ranging from the alpine zones of Mt Kenya to the coral reefs and mangrove forests of the Kenya coast.

These protected areas are the jewels of Kenya’s conservation and represent the backbone of historical, current, and future conservation efforts across the country. However, while these areas are essential components of Kenya’s conservation future, traditional protectionist conservation approaches are insufficient. This protectionist mindset cannot effectively address the emerging conservation challenges of rapid land use change, climate change, fragmentation and unprecedented human induced pressures on key habitats and ecosystem services.

For example, some protected areas suffer from lack of resources and commitment and are essentially parks on paper. In addition to effective governance challenges, the protected area network suffers from extensive habitat loss and degradation through seasonal encroachment. This results in over-utilization, charcoal production, overgrazing, fuel wood extraction, and pollution. Fragmentation, and the associated loss of connectivity between protected areas and protected areas and important habitats and dispersal areas, is
gradually eroding the resilience of Kenya’s protected area network and the biodiversity that depends on it.

In particular, increasingly hard boundaries around protected areas associated with the expansion of agriculture, widespread fencing, urbanization, and the development of transport infrastructure results in the loss of access to key dispersal areas and the isolation of protected islands. The combined impact of these and other challenges undermine the resilience of Kenya’s wildlife and diminishes the ecosystem services that are essential to the long-term success of wildlife conservation and Kenya’s sustainable development more generally.

To address these challenges, Kenya must recognize the importance of connectivity and habitat diversity, the potential for sustainable and wildlife compatible land uses and embrace habitat and ecosystem approaches to conservation planning and implementation. In addition, these efforts must be linked with existing and future land use planning processes at the county, national and regional level. This ensures truly integrated planning. Essential to this approach is the recognition of dispersal areas and corridors are critical to enhance conservation connectivity and increase the resilience of wildlife and essential ecosystem services.

The emergence and expansion of community conservancies in Kenya represents an important and exciting innovative conservation solution. These conservancies cover 6.36 million hectares or 11% of terrestrial area (KWCA 2016) and X km² of marine habitats. This promises to significantly expand Kenya’s conservation network, enhancing connectivity and revolutionizing environmental governance. Exploring the potential for conservancies as a conservation tool across habitats—including marine, coastal, urban, and freshwater ecosystems—is an essential component of this strategy.

This goal addresses these issues with a focus on evidence-based decision support tools, adaptive management, integrated cross-sectoral and multi-scale planning, and enhanced protection, rehabilitation and restoration of key ecosystems and wildlife habitats.

**Strategies and Priority Actions**

<table>
<thead>
<tr>
<th>Goal 1</th>
<th>Maintain and Improve Habitat and Ecosystem Integrity to reduce biodiversity loss, protect ecosystem function, enhance connectivity, and increase resilience.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy 1.1</td>
<td>Increase understanding of ecosystem functioning through identification, prioritization, and securing of key conservation areas and ecosystems to focus and enhance the effectiveness of conservation investments and interventions.</td>
</tr>
<tr>
<td>Activity 1.1.1</td>
<td>Identify key biodiversity resources and determine their Minimum Viable Conservation Areas (MVCA) at national and county levels, with special reference to transboundary ecosystems, dispersal areas, and wildlife corridors.</td>
</tr>
<tr>
<td>Strategy 1.2</td>
<td>Improve integrated data driven land use planning at regional (transboundary), national, county, PA and ecosystem levels to enhance the protection of wildlife habitat, ecosystem services, and reduce biodiversity loss.</td>
</tr>
<tr>
<td>Activity 1.2.1</td>
<td>Develop and implement an integrated multi-level, multi-sectoral, collaborative planning framework, including tools, guidelines, and standards for ecosystem planning to support national and county level land use planning.</td>
</tr>
</tbody>
</table>
Activity 1.2.2
Develop and implement management plans at protected area, ecosystem, county, and national levels.

Strategy 1.3
Protect, rehabilitate, and restore wildlife habitats and their connectivity, including forests, savannas, freshwater, marine, and mountain ecosystems to increase the resilience of key habitats and ecosystems.

Activity 1.3.1
Secure existing protected areas through assessment of status, demarcation of boundaries, and acquisition of title deeds.

Activity 1.3.2
Ensure all existing protected areas are effectively managed, including currently inactive "paper parks".

Activity 1.3.3
Rehabilitate and restore degraded habitats in protected areas, corridors and dispersal areas.

Activity 1.3.4
Increase the area of land under effective wildlife conservation through the creation of new wildlife protected areas and the securing of priority wildlife corridors and dispersal areas.

Activity 1.3.5
Increase in the extent of land effectively managed by communities for biodiversity conservation.

Activity 1.3.6
Increase the extent and effectiveness of the conservation and protection of marine and coastal ecosystems.

Aichi targets that these actions help us achieve:

11, 13, 14, 15

Sustainable development goals these action helps us achieve:

6, 11, 14, 15
**Goal 2 - SPECIES CONSERVATION**

*Enhance Species Conservation and Management to ensure healthier, more resilient wildlife communities and populations.*

**Goal Description**

Safeguarding our valuable wildlife resources for current and future generations is an urgent issue. This strategy enhances species conservation and management for healthier, more resilient wildlife communities and populations focusing on three aspects – develop and expand the use of assessment tools to prioritize interventions, enhanced protection through improved security, disease control, and reduction in unsustainable utilization and illegal wildlife trade through collaboration and support from local communities and government at all levels, and promote the coexistence of people and wildlife through a targeted reduction in human wildlife conflict and the development of incentives for living with wildlife.

**Context**

Kenya’s mega fauna are in precipitous decline with an average loss of 68% in the last 40 years alone. While most of this decline has occurred outside of gazette protected areas, designated conservation areas have also suffered losses. In addition, there are 33 mammalian, 28 avian and 356 plant species in Kenya under severe threat of extinction. These losses are driven by a combination of factors including, climate and land use change, habitat loss and fragmentation, poaching and illegal wildlife trade, and human wildlife conflict.

Wildlife insecurity in Kenya is characterized by (i) international trade in trophies and meat, (ii) commercial poaching for bushmeat, (iii) illegal wildlife trade, and (iv) illegal bioprospecting and biopiracy. While the illegal killing of elephants and rhinos for export trade in ivory and rhino horn has been widely recognized as a key threat, the rise of commercial poaching for bushmeat is emerging as a serious threat to species survival, as well as affecting tourism in key protected areas. High levels of poaching coupled with IWT in the past have been a threat to species conservation in Kenya. Enhancing the legal frameworks and enhancing supporting to anti-poaching activities will increase the possibility of species survival in Kenya.

Human Wildlife Conflict (HWC) has severe direct and indirect effects on conservation efforts throughout Kenya. Increasing human populations, land use change, poorly planned development, and unsustainable policies all lead to increased conflict resulting from human encroachment into wildlife areas and the degradation of ecosystems. The destruction of property, loss of livestock, crop destruction, injury and loss of life undermine livelihoods and
foster resentment towards wildlife and conservation efforts more generally. Reversing the negative impacts of HWC is an essential first step in transforming wildlife conservation in Kenya.

This goal addresses these issues with a focus on developing and implementing new tools to increase the impact of species based interventions within the context of integrated ecosystem planning, enhancing wildlife security, and developing innovative approaches to offset the costs of living with wildlife, reducing human wildlife conflict, and promoting coexistence.

**Strategies and Priority Actions**

<table>
<thead>
<tr>
<th>Goal 2</th>
<th>Enhance Species Conservation and Management to ensure healthier, more resilient wildlife communities and populations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy 2.1</td>
<td>Catalyze the conservation of endangered and threatened species through the development and implementation of conservation tools for prioritizing, monitoring, and managing wildlife species.</td>
</tr>
</tbody>
</table>

**Activity**

- **2.1.1** Develop and implement a process for regular updating and ongoing review of the National Red list of threatened and endangered species.
- **2.1.2** Prioritize, develop and implement species-specific conservation and management plans that address emerging issues and challenges (e.g. climate change, genetic diversity, etc) facing endangered and threatened species while supporting the conservation of the broader community of wildlife species by working synergistically with ecosystem plans and landscape level planning tools.
- **2.1.3** Conduct a comprehensive and continuous assessment, and communicate the results, of the status and threats for wildlife species.
- **2.1.4** Develop, adopt and implement policy guidelines on species specific conservation interventions - including captive breeding, introduction, reintroductions, and translocations.
- **2.1.5** Implement conservation interventions for priority species (threatened/vulnerable/endangered) to address emerging and critical threats, including climate change, disease, and land use change.
- **2.1.6** Develop an Endangered Species Act for Kenya to catalyze broad public support and coordinate cross sectoral engagement in the conservation and management of endangered and threatened species.

**Strategy 2.2** Reduce poaching, over utilization, and the illegal wildlife trade and their related impacts.

**Activity**

- **2.2.1** Enhance the coordination and capacity of security and law enforcement agencies to reduce, and improve responses to, incidents of poaching, illegal wildlife trade and reduce wildlife related crimes.
- **2.2.2** Modernize and expand wildlife security units to increase coordination and effectiveness.

**Strategy 2.3** Promote coexistence to reduce human wildlife conflict.
Activity 2.3.1 Develop and implement innovative mitigation measures in areas with incompatible land-uses, including wildlife-proof barriers, bomas, etc.

Activity 2.3.2 Develop and implement management approaches including harnessing traditional/indigenous knowledge in mitigating human wildlife conflict, with focus on education, awareness, integrated planning and building capacity of wildlife officers and local communities.

Activity 2.3.3 Develop and provide communication and education materials, and extension services on human wildlife conflict mitigation measures and management strategies (as above).

Activity 2.3.4 Develop and promote alternative consolation programmes to ensure prompt response for loss, injury and damage caused by wildlife.

Activity 2.3.5 Develop sustainable innovative national compensation scheme including insurance and community supported programmes for loss of property, livestock and crops.

Activity 2.3.6 Setup anti-venom centres in relevant priority areas with high incidences of snake bite related deaths.

Activity 2.3.7 Establish and maintain a database, bringing together existing and new data, on the types, extent, causes and impacts of human wildlife conflict and mitigation measures for such conflict.

Activity 2.3.8 Train and equip wildlife officers and local communities in rapid response to human wildlife conflict, mitigation, and management approaches.

Aichi targets that these actions help us achieve:

Sustainable development goals these actions help us achieve:
Goal 3 - PARTICIPATION and AWARENESS

Increase the awareness and appreciation of wildlife, and motivate support and action by all Kenyans, to enhance Conservation through participation.

**Goal Description**

All Kenyans must be active participants and stakeholders in the conservation of wildlife. The goal aims at cultivating national pride, public support and active engagement of all Kenyans in the conservation of this rich national heritage and natural asset. Activities under this goal are designed to ensure Kenyans can access information and are aware of the intrinsic and economic values of wildlife. Awareness activities, outreach and diverse training opportunities will ensure Kenyans take individual and collective action to support wildlife conservation.

**Context**

People are more inclined to protect and conserve what they understand and appreciate. The better all sectors are aware of and understand the complexity and implications of their actions, the more responsibly they will respond. Historically, Kenya has had strong ties between people and nature. Over time, there have been changing attitudes with shifting expectations and aspirations. This has led to a gradual disconnect between people and nature.

Most Kenyans are indifferent to conservation with low engagement and understanding on the value and benefits of wildlife conservation. This lack of engagement and understanding of the value and benefits of wildlife conservation has deep environmental ramifications. The Kenyan constitution 2010, and the devolved governance framework it enshrines, supports strong linkages and engagement at all levels, including national, county and across the general public with special reference to women and youth.

This goal seeks to restore these natural connections by cultivating value and inspiring action through building awareness and appreciation, building partnerships, and encouraging engagement and participation.
### Strategies and Priority Actions

#### Goal 3
Increase the awareness and appreciation of wildlife, and motivate support and participatory action by all Kenyans, to enhance participation in Conservation.

#### Strategy 3.1
Increase awareness and understanding to enhance appreciation and encourage action by all Kenyans.

<table>
<thead>
<tr>
<th>Activity 3.1.1</th>
<th>Introduce into all education curricula at all levels a comprehensive conservation education and awareness content through e-learning platforms and traditional set books</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 3.1.2</td>
<td>Develop Comprehensive public outreach and awareness programmes embedded within a public participation strategy to engage all Kenyans (including people living with wildlife) - &quot;Wildlife our Heritage&quot;</td>
</tr>
<tr>
<td>Activity 3.1.3</td>
<td>Develop programs for the general public to experience Kenya's wildlife and nature</td>
</tr>
</tbody>
</table>

#### Strategy 3.2
Foster partnerships and collaboration among stakeholders to mainstream conservation action across all sectors of society.

<table>
<thead>
<tr>
<th>Activity 3.2.1</th>
<th>Conduct a National Competition - across all 47 counties - to select a unique wildlife species for each county (flora or fauna), and then for Kenya as a country.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 3.2.2</td>
<td>Establish designated natural areas for public use in cities through partnerships with multiple sectors</td>
</tr>
<tr>
<td>Activity 3.2.3</td>
<td>Engage with 'private sector partnerships' to mainstream biodiversity initiatives in their supply chains, including the development of a Green Business Awards Scheme, with special reference to the government’s priority development pillars - Infrastructure, food security, health care and housing and settlements.</td>
</tr>
</tbody>
</table>

#### Strategy 3.3
Engage the public, youth, and communities through targeted education and outreach, and stewardship opportunities to enhance participation.

<table>
<thead>
<tr>
<th>Activity 3.3.1</th>
<th>Establish an annual wildlife conservation award scheme to recognize achievement in various aspects of conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 3.3.2</td>
<td>Organize a biennial National wildlife Expo and Investment Forum to showcase best practices in wildlife conservation to the Kenyan public, in partnership with KTB</td>
</tr>
<tr>
<td>Activity 3.3.3</td>
<td>Create a culture of conservation in youth through projects and partnerships that engage them in wildlife conservation and environmental stewardship. Including, tree planting, invasive plant removal, river/watershed management and recycling projects.</td>
</tr>
</tbody>
</table>

**Aichi targets that these actions help us achieve:**

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Sustainable development goals these actions help us achieve:
Goal 4 - ACCESS and BENEFITS
Provide incentives for access and sustainable use of wildlife resources, while ensuring equitable sharing of benefits.

**Goal Description**
Kenya aims to be one of the top ten long-haul tourist destinations in the world, offering a high-end, diverse, and distinctive visitor experience. Wildlife and tourism is considered an essential component of economic development in Kenya’s development blueprint (*Kenya Vision 2030*). Wildlife is an essential precondition for its conservation in the face of increasing demands on resources and space.

For Kenyans to value their wildlife, this goal promotes an enhanced understanding of benefits. It promotes the development and implementation of mechanisms for equitable sharing and facilitates to access the benefits through sustainable pro-wildlife investments. The goal also proposes mechanisms for rebalancing the relationship between people and wildlife for those that bear the costs and the burden of sustaining this essential natural resource on behalf of all Kenyans and the world.

**Context**
Living with wildlife comes with both direct and indirect costs. However, it also presents an opportunity for those that designate their land for wildlife conservation. The Constitution of Kenya (2010) imposes an obligation on the State to ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, while ensuring equitable sharing of accruing benefits. Further, the Wildlife Act (2013) provides that benefits are to be derived from wildlife conservation to enable offset the costs of managing wildlife and ensure value of wildlife does not decline.

In the above context, access to wildlife resources is recognized as a legal right under the Act for landowners and communities involved in wildlife conservation and living with wildlife. Wildlife-related tourism is a top foreign exchange earner and an important economic driver in Kenya. Yet, the direct economic returns and other benefits are poorly quantified and unequally distributed. While the potential and actual benefits–social, cultural, economic, and ecological–from wildlife and wildlife resources (e.g. habitat) are substantial, the ordinary Kenyan has limited appreciation of the scope of these benefits and potential mechanisms to access the benefits. The perception is still that wildlife conservation is for foreigners and a few elite Kenyans (*see Goal 3 above on Awareness*). These feelings are compounded by the very real costs associated with living with wildlife that are disproportionately born by local communities.

In addition, there is a narrow focus on short-term benefits from habitats and ecosystems–poaching, overgrazing, charcoal production, illegal logging, etc.–and unsustainable tourism development. There is
little investment in conservation and this slowly erodes the resources and ecosystem services on which Kenya’s sustainable development depends on. Combined with the currently high (and rising) levels of conflict, Kenya’s wildlife resources and rich natural heritage are too often seen as an actual cost rather than a potential benefit.

This goal addresses these issues and seeks to broaden our understanding of benefits associated with healthy ecosystems and wildlife. It promotes equitable sharing of benefits for all Kenyans and enhances access to benefits through innovative pro-wildlife nature based enterprises. This will reduce the costs, and increase the benefits, of living with wildlife to ensure mutually beneficial coexistence. Increasing the value of wildlife to Kenyans will promote voluntary conservation action (participation) towards improving wildlife conservation.

**Strategies and Priority Actions**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Increase access, incentives, and sustainable use of wildlife resources, while ensuring equitable sharing of benefits.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy 4.1</td>
<td>Develop and implement a clear framework for access and benefit sharing from wildlife resources and biodiversity.</td>
</tr>
<tr>
<td>Activity 4.1.1</td>
<td>Review, revise, and gazette appropriate regulations, including the rights and responsibilities of landowners, to facilitate equitable and effective benefit sharing for sustainable livelihoods to support wildlife conservation.</td>
</tr>
<tr>
<td>Activity 4.1.2</td>
<td>Assess, review, and revise tax structure on nature based enterprises and activities including exemption of stamp duty on registration of land for conservation, reduced land tax burdens (e.g. rents and rates), etc, to promote investment in wildlife conservation and wildlife compatible land uses.</td>
</tr>
<tr>
<td>Strategy 4.2</td>
<td>Develop and promote innovative and strategic investment for the sustainable use of wildlife resources and biodiversity.</td>
</tr>
<tr>
<td>Activity 4.2.1</td>
<td>Conduct a market study, including a review of past and current efforts, to establish and inform the sustainability of consumptive wildlife utilisation including game farming and game ranching.</td>
</tr>
<tr>
<td>Activity 4.2.2</td>
<td>Develop and implement a comprehensive incentives package to encourage voluntary conservation through wildlife conservancies, sanctuaries, game farms, game ranches, and other green spaces, including use of land leasing, conservation easements and offsets, land banking and other means.</td>
</tr>
<tr>
<td>Activity 4.2.3</td>
<td>Develop and pilot local industry for value addition and marketing of wildlife and wildlife products.</td>
</tr>
<tr>
<td>Activity 4.2.4</td>
<td>Provide education and extension services, including pilot programs, demonstrations, to promote opportunities for wildlife based enterprises.</td>
</tr>
<tr>
<td>Activity 4.2.5</td>
<td>Create opportunities for employment and participation for local communities in biodiversity conservation activities and sustainable use.</td>
</tr>
<tr>
<td>Strategy 4.3</td>
<td>Develop and promote the cross sectoral coordination of marine and coastal natural resource management for sustainable utilization.</td>
</tr>
</tbody>
</table>
Activity Conduct a collaborative study (pull together existing studies) on sustainable utilization and natural resource management of marine and coastal resources and innovative opportunities for investment and sustainable livelihoods - with special reference to marine protected areas, but look at ecosystems broadly to avoid poor sectoral coordination.

Activity Develop and promote innovative approaches for catalyzing investment and benefits from sustainable utilization and natural resource management through innovative structures (e.g. conservancies) in marine and coastal ecosystems.

Aichi targets that these actions help us achieve:

Sustainable development goals these actions help us achieve:
Goal 5 - RESEARCH and KNOWLEDGE
Increase knowledge and information access and use to support evidence based decision-making and adaptive management.

Goal Description
This goal addresses the need to strengthen the science-policy interface by setting up a Wildlife Research Training Institute and bioinformatics hub(s). The bioinformatics hub(s) will bring together dispersed biodiversity information and provide a platform for biodiversity assessments as to enhance evidence-based decision-making at all levels.

Context
Better information on the status, trends and drivers of biodiversity change is needed to assist governments in developing more effective and timely policy responses. The Constitution Kenya (2010) stipulates the need for free access to information of all citizens.

Biodiversity information in Kenya is not well coordinated. It is under-funded and with limited data sharing or use of access (Conservation International and Ministry of Environment 2016). Biodiversity reporting at both national and international level needs data to be integrated and modeled to derive meaningful information for decision-making. Biodiversity information in Kenya is collected by many agencies. These include by Kenya Museums, Directorate of Resource Surveys and Remote Sensing, Kenya Wildlife Services, Kenya Forestry, Kenya Marine and Fisheries, and others. However, there is no existing framework for its consolidation or common access. This strategy proposes a setup of bioinformatics hub(s), tools and protocols based on global standards that allow for interoperable data sharing platforms.

Biodiversity informatics will enhance the efficiency of biodiversity management (data collection, intermigration of data, integration, and analytical tools) by researchers (scientist and local community), policy makers, and funding agencies. The strategy advocates training of ten Masters and five PhD Students in the field of bioinformatics (data mining, statistical modeling, climate modelers, and environmental economists).

To oversee this development, the Ministry will set up a Wildlife Think-tank to coordinate the establishment of bioinformatics hub and the training of future managers and scientists. This will involve other government agencies, local communities, universities and the private sector. The strategy also proposes exchange of scientist between the north and south to foster learning and also future collaboration on biodiversity and wildlife monitoring and assessments.

The hub(s) could be established in government institution or United Nations facilities that already have the requisite infrastructure. This includes modern computers, high-speed Internet connectivity, microwave
connectivity and backup facilities. The desired scenario is to conduct a bi-annual conference for review and plan purposes. The conference’s focus will be Information, Innovation, Technology and Investments in wildlife and biodiversity. Prior to the conference there will be two-week training in bioinformatics for young graduate students, a peer-to-peer review program and student mentorship.

**Strategies and Priority Actions**

<table>
<thead>
<tr>
<th>Goal 5</th>
<th>Increase knowledge and information access and use to support evidence based decision making and adaptive management.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy 5.1</td>
<td>Support wildlife conservation and management decisions and actions with the best available knowledge derived from natural, and social sciences, and traditional knowledge.</td>
</tr>
<tr>
<td>Activity 5.1.1</td>
<td>Operationalizing the wildlife research and training institute</td>
</tr>
<tr>
<td>Activity 5.1.2</td>
<td>Establish a wildlife innovation hub at the KWS.</td>
</tr>
<tr>
<td>Activity 5.1.3</td>
<td>Conduct priority research to improve wildlife conservation and management.</td>
</tr>
<tr>
<td>Strategy 5.2</td>
<td>Develop data and information management systems as part of a BioInformatics Platform, to ensure data quality, enhance sharing, and promote access and use.</td>
</tr>
<tr>
<td>Activity 5.2.1</td>
<td>Develop and harmonize existing protocols, standards and tools for information management, sharing and access as part of a data sharing and management framework.</td>
</tr>
<tr>
<td>Activity 5.2.2</td>
<td>Develop and appropriately deploy relevant capacity to build data information systems, manage information systems and ensure sharing and access</td>
</tr>
<tr>
<td>Activity 5.2.3</td>
<td>Avail research information and knowledge to sectors with direct and indirect impacts on wildlife conservation for use in decision-making processes, policy development, and reporting.</td>
</tr>
<tr>
<td>Strategy 5.3</td>
<td>Strengthen coordination and implementation of research, monitoring, and modelling of ecosystems and wildlife, climate and land use change, and other threats and opportunities to support effective management.</td>
</tr>
<tr>
<td>Activity 5.3.1</td>
<td>Establish a think-tank made up of an interdisciplinary team of expert advisors to strengthen research coordination and implementation, knowledge sharing, and use.</td>
</tr>
<tr>
<td>Activity 5.3.2</td>
<td>Hold a bi-annual conference to bring data producers, managers, and users together to review, plan, and coordinate with the goal of catalyzing innovation, developing new technologies, and spurring investment to promote data collection, sharing, and use for evidence based wildlife conservation and management.</td>
</tr>
<tr>
<td>Activity 5.3.3</td>
<td>Develop and implement a framework for public-private partnerships in coordination, training and of biodiversity research. Reflect the functions of the institute as stipulated in the wildlife act</td>
</tr>
</tbody>
</table>

**Aichi targets that these actions help us achieve:**
Sustainable development goals these actions help us achieve:
**Goal 6 - CAPACITY and TRAINING**

*Build the capacity of individuals, institutions, communities, and networks, including equipment and technology, to meet current and emerging challenges in wildlife conservation.*

**Goal Description**

This goal supports the training and capacity building of communities, conservation professionals, interested citizens, students, and the youth to enhance their participation and effectiveness in the conservation of wildlife and ecosystem services.

**Context**

In this strategy, great emphasis has been placed on capacity building and training. Feedback from counties, community and academia consultations have indicated big gaps of information and education needs. These are on top of added are the challenges of accelerating land use changes, tenure, and climate change, continuing loss of wildlife, forest and marine resources.

The National (CIDP, Spatial Planning, reporting on status of wildlife, forest, etc.) and international (CBD, Aichi targets, etc.) reporting and planning requires up to date data. These data should stand up to rigorous scientific analysis, projections and model the various potential scenarios driven by the various land use and climate options. Therefore, we need to review of our training and capacity building programs. In this strategy the focus will be on academia, local communities and the youth (young scientist and leaders) with equal emphasis on women (individuals or organizations).

This goal is linked directly to Goal 5. The institutions–Wildlife Training Institute, universities and bioinformatics hubs–will be used to build capacity of the local community and youth. Individuals, young researchers, youth groups/networks and institutions will be mentored and provided with opportunities of work attachments (both locally and internationally) to increase their ability to effectively work within their communities on conservation matters. This has to be supported by sound science that is focused on generating knowledge but also providing opportunity for development.

Therefore, there is urgent need to link the information providers and information users. This will inspire innovation, technologies and open more business opportunities in the wildlife sector.

**Strategies and Priority Actions**

**Goal 6** Ensure the capacity of individuals, institutions, and communities, including systems, equipment, technology and networks to meet current and emerging challenges in wildlife conservation.
Strategy 6.1
Identify capacity needs and priorities to support sustainable wildlife conservation and management at all levels.

Activity 6.1.1
Conduct a collaborative needs assessment and develop a capacity building strategy for supporting conservation and management of wildlife in Kenya with broad support from stakeholders including the public and private sector, universities and colleges, and policy makers.

Strategy 6.2
Support the coordination of training and capacity development in wildlife conservation and biodiversity management through the training institute and a network of partner institutions and exchange programmes across levels and sectors.

Activity 6.2.1
Establish a task force comprising the Ministry of Tourism and Wildlife, KWS, Conservation NGOs, University, Wildlife Research and Training Institute, NACOSTI and Private sector to develop a five year agenda on research on conservation, management and business opportunities for local entrepreneurs and communities.

Activity 6.2.2
Develop curricula with Universities and colleges to initiate a Conservation Leadership Programme (CLP) for individuals, game scouts and communities members to build the next generation of conservation leaders.

Strategy 6.3
Implement relevant, appropriate, and dynamic training programmes at multiple levels.

Activity 6.3.1
Strengthen local institutions and universities to use cutting-edge science to understand the impacts of various drivers (including climate change) on wildlife and natural resources through academic exchange programmes (students and lectures) and collaborations with external universities.

Activity 6.3.2
Develop Youth programs for various age classes to inspire and equip the next generation of conservation leaders. This includes - discovering parks for Youth under 15, Enjoying opportunities for 15 -18 years (short term attachments to these institutions) and exploring careers for the Youth for 18 - 35 years (employment in these institutions).

Activity 6.3.3
Promote peer-to-peer learning, knowledge sharing, and documentation of best practices to make local action more effective.

Activity 6.3.4
Pilot the curriculum developed under this strategy.

Aichi targets that these actions help us achieve:

Sustainable development goals these actions help us achieve:
Goal 7 - GOVERNANCE and SUSTAINABLE FINANCE

Develop an effective governance structure and sustainable financing framework to support conservation actions, and improve accountability and transparency on conservation financing.

Goal Description

Several finance mechanisms have been developed, including land acquisition and conservation easements, as well as advocacy programs for environmental protection. However, conservation financing has largely focused on trying to meet conservation needs by trying to overcome challenges and barriers and has continued to be demand driven. The strategy aims to shift focus from demand for to the supply of conservation financing. It is also crucial that the field of conservation finance expands from donor-driven financing toward a commercial, investor-driven market.

Context

Kenya is endowed with vast and diverse natural resources including biodiversity, land and unique ecosystems as well as recently confirmed deposits of oil and gas and other extractives. Yet natural resource governance structure is loose and sector-based, with existing policies and legislation functioning independent of each sector. This uncoordinated approach leads to replication of action for conservation and sustainable use of natural resources. Local communities, private sector and non-governmental organizations work independent of each other. Yet, they compete for the same of public sector and philanthropic financing. This reduces their outputs and intended impact.

Historically, the main sources of financing have been through the government budget and conservation fees. However, in the past ten years, development partners and private philanthropists have become a dependable source for conservation finance.

Kenya’s natural capital and the services that ecosystems provide are still poorly understood and rarely monitored in terms of economic, social, cultural and ecological contributions. As a result, valuable ecosystems are today undergoing rapid degradation and depletion thus, larger amounts of conservation financing are required than the sums currently being allocated to conservation through public financing, foreign development aid and private philanthropy.

Conservation financing can be assessed by its ability to deliver positive transformational impact on key conservation priorities. It includes supporting social and economic pillars in Kenya’s development blueprint, Vision 2030. It is in this context that this strategy is considering adoption of conservation financing across the ecosystem planning and management to mitigate degradation and depletion of...
This goal addresses these challenges with the development of implementation and monitoring structures, the establishment of a clear governance framework for coordinating and facilitating wildlife conservation activities across all levels, and establishing innovative and sustainable financing mechanisms.

**Strategies and Priority Actions**

<table>
<thead>
<tr>
<th>Strategy 7.1</th>
<th>Develop effective implementation frameworks and monitoring structures for the effective implementation, coordination, and monitoring of the Strategy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 7.1.1</td>
<td>Develop, review, enact, harmonize, and implement wildlife related policies, laws, regulations, guidelines, and plans.</td>
</tr>
<tr>
<td>Activity 7.1.2</td>
<td>Develop and Implement a Monitoring and Evaluation System and communication portal for the Strategy to track progress, evaluate impact, and ensure transparency and engagement.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy 7.2</th>
<th>Support the effective coordination and implementation of the strategy at National, county, and local levels.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 7.2.1</td>
<td>Ensure the effective coordination and implementation of the strategy at National Level.</td>
</tr>
<tr>
<td>Activity 7.2.2</td>
<td>Ensure the effective coordination and implementation of the strategy at County Level.</td>
</tr>
<tr>
<td>Activity 7.2.3</td>
<td>Ensure the effective coordination and implementation of the strategy at Ecosystem Level.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy 7.3</th>
<th>Identify and develop innovative mechanisms for sustainable financing and distribution of funds to support biodiversity conservation and the implementation of the Strategy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 7.3.1</td>
<td>Building the case for conservation finance from within the GoK.</td>
</tr>
<tr>
<td>Activity 7.3.2</td>
<td>Establish a National Wildlife Conservation Trust Fund</td>
</tr>
<tr>
<td>Activity 7.3.3</td>
<td>Establish an effective wildlife compensation insurance scheme in consultation with the Ministry of Agriculture, Livestock, and Fisheries.</td>
</tr>
<tr>
<td>Activity 7.3.4</td>
<td>Map economic flows and values of ecosystem services in order to identify potential markets and payment mechanisms for ecosystem services using information derived from a National Natural Capital assessment (see Goal 5).</td>
</tr>
<tr>
<td>Activity 7.3.5</td>
<td>Establish mechanisms for fundraising through conservation events/campaigns/ for conservation programs to net donors, philanthropists and private sector (e.g. Rhino charge, Lewa marathon, etc)</td>
</tr>
</tbody>
</table>
Activity 7.3.6 Explore alternative/innovative tourism options to get more conservation value from tourism, including increased utilization of nontraditional areas and reinvestment in communities and conservation initiatives,

**Aichi targets that these actions help us achieve:**

**Sustainable development goals these actions help us achieve:**
5. THE FUTURE OF CONSERVATION: CITIES, COUNTIES, COMMUNITIES, INFORMATION TECHNOLOGY AND YOUTH (CITY)

The purpose of NWCMS is not just about protecting nature from people—by safeguarding biodiversity and the few remaining wild places but it is to encourage increase space for nature for people, by saving—or even creating—natural spaces. In this strategy the drive is to bring all players such as cities, counties, and youth who have been most of the time sidelined on issues on conservation.

The National Wildlife Conservation and Management Strategy is designed to integrate and work together with cities, counties, communities and youth to contribute and pursue the vision of this strategy - *Kenya’s wildlife is healthy and resilient to threats and valued by Kenyans.*” In the next 10 years the strategy thematic focus will be on Cities, Counties, Information Technology and Youth (CITY). Integration is key if we are to envision a future that brings together Cities, Counties, and Communities together. In tandem, we must embrace relevant technologies and innovations that engage young Kenyans in strategies that positively influence our conservation future to the next generation. The CITY can play a critical role in the vision for future conservation of our wildlife.

This chapter provides a synoptic overview of how each of these five thematic areas can play a role in conservation, including the appreciation and use of our wildlife resources. There are three main targets; that by 2030:

- Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and county and other waste management.
- Provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

**Cities – Our Green Capitals**

Urban green spaces are critical ecosystems that support biodiversity. Integrating city and green space planning, recreational development and management, cities can become incubators of biodiversity. Functional green cities provide their residents with recreational areas, a clean environment, and promote healthy living. At the same time, animals, birds, insects, fish and plants are able to thrive in the same urban spaces. Future development of our buildings and infrastructure planning, design and development must have an environmentalist input. A sustainable City is a city that is designed with environmental concerns in mind *(see photo 5.1)*.

However, rapid urbanization has led to habitat fragmentation. Larger, continuous habitats have been divided into smaller unconnected patches (Debinski and Holt 2002). Habitat loss,

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through an increase in roads and buildings, exposes wildlife to new man-made stress (ARC 2017; Newmark 2008).


In recent decades, the world has experienced unprecedented urban growth. Today, more than half the world’s population lives in cities (UN 2014). By 2030, it is projected that 6 in 10 people will be urban dwellers with an estimated 5 billion people expected to be living in Urban areas (UN 2014). According to Thoraya Ahmed Obaid, Executive Director of the UN Population Fund “What happens in the cities of Africa and Asia and other regions will shape our common future”.

The growth of urban population has outpaced the land designated as urban. This, and lack of appropriate land and housing policies, drives the demand for expansion of cities into peri-urban and rural areas. The result is that farming, livestock rearing and open spaces for wildlife dispersal areas are shrinking at an alarming rate.

In Kenya, 12.7 million people (26.5%) of the population–lived in urban areas in 2017. The urban population of Kenya rose from 9.5% in 1968 to 26.5% in 2017, an average annual rate of 2.12% (World Bank Atlas 2017). The 10 largest cities or towns in Kenya are listed in Figure 5.2 (http://worldpopulationreview.com/countries/kenya-population/). The pie-graph shows the percentage proportion of the urban population for the major cities or urban towns.

Better urban planning and management are needed to make the world’s urban spaces more inclusive, safe, resilient and sustainable. Recognizing this, the United Nations member-countries adopted a historic standalone goal on sustainable cities in September 2015.

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The Ministry of Tourism and Wildlife is laying the foundation for Sustainable Cities through this National Wildlife Conservation and Management Strategy (NWCMS). The aim is to promote a systems approach to sustainability. The economic, socio-political and ecological systems are embedded within each other. They are then integrated together in a legitimate regulatory framework through a governance system.

Figure 5.2: Urban cities current population 2018 and projected population to 2030

Figure 5.3: Future of Nairobi City (Source of Information: Henning Larsen Architects)

For this in this strategy to become a reality, the Ministry of Tourism and Wildlife will work closely with the Ministry of Lands, County governments, the Architectural and Engineering societies of Kenya, UN-Habitat and UNEP. Through this strategy, the Ministry of Tourism and Wildlife will develop guidelines for developing Green Cities. To drive sustainable adoption of the strategy, – the ‘Mazingira Capital Award’ will be announced every five years. The award will base on the following 12 environmental indicators as adapted by the EU on Green Cities (see Science for Environment Policy 2015).
Counties – the next frontier for conservation and tourism

The constitution brought a new paradigm by imposing obligation on the State to devolve governance to county government in a bid to bring services closer to the people. Devolution in the governance of wildlife to communities and landowners where wildlife occurs as well as public participation were among the key reforms brought about by the Wildlife Act 2013. Among the devolved elements of wildlife conservation brought about by the Wildlife Act 2013 include:

- Establishment of County Wildlife Conservation and Compensation Committees to support in conservation activities and compensation process of losses occasioned by wildlife.
- Community and private conservancies’ participation in national wildlife decision making process through representation in the board of trustees of the Kenya Wildlife Service board and the board of Wildlife Research and Training Institute.
- Financing mechanism of wildlife conservation outside state protected areas through the Wildlife Endowment Fund.
- Recognition of community wildlife scouts as wildlife security officers.
- Access to wildlife resources by the people through sustainable and equitable means.

Participation of the public in decision making processes including development of subsidiary legislations under the Wildlife Act as well as declaration and variation of boundaries of National Parks and development of the National Wildlife Conservation and Management Strategy.

The principle of devolution of wildlife conservation and management is well developed within the Wildlife Act 2013. However, it is only achievable through supportive policies and strategies whose implementation is through concerted effort and goodwill by multiple stakeholders.

All counties, irrespective of their size or location, should make, a significant contribution to the management and protection of natural resources. As the sphere of government closest to the community, local government is responsible for good governance and the care and protection of local communities and their environment within a framework of sustainable development.

It is envisioned that this strategy provides a platform for the principles of Sustainable Development Goals (SDG) to be enshrined in the county government Acts. County governments need to undertake more responsibility to manage, support and regulate natural resource management (NRM) within their jurisdiction. This includes the development and implementation of land use planning schemes, managing public land including parks and protected areas, and regulating private activities.

County governments must now play a key role to adopt and enact NRM policies from the Commonwealth (references) and state governments. Examples include County Integrated Development Plans (CIDP), National Wildlife and Conservation Management Strategy, Forest Conservation and County Spatial Planning. Implemented in the right manner, these local projects will also enable the county governments to achieve the following Sustainable Goals (SDG).
Some of the strategic goals and activities in this strategy address how to get the Counties on board the conservation agenda. They include capacity building, developing tools and procedures for spatial planning, development and management of conservancies across counties and inclusion of communities and youth to manage these activities and programs.

The Ministry of Tourism and Wildlife will work with the Council of Governors to build and support Counties to enhance existing and develop new wildlife and tourism facilities. It will be based on the varying landscapes and unique potential of tourism found in each county. Kenya’s Vision 2030 envisions our country will be among the top 10 long-haul tourist destinations in the world offering a high-end, diverse and distinctive visitor experience.

**Communities – the heart of sustainable conservation**

The Constitution of Kenya (2010) recognizes that communities and private landowners are key stakeholders in wildlife management. Community wildlife associations were enshrined in the Wildlife Act (2013). Through the effort of local communities we have seen increases in wildlife conservancies, opening of wildlife corridors in some cases and restoration of some key wildlife habitats.

This initiative has brought a new paradigm focus for the State to encourage public participation in the conservation and management of environment and it has developed policy to assist in this endeavor. As part of this new initiative the decision-making in respect to conservation and management of wildlife is no longer centralized at the state level, but devolved and shared with the public.

Currently, Kenya boasts of 160 conservancies, which cover over six million hectares of land (11% of Kenya’s land mass). They directly benefit over 700,000 households and provide job opportunities to over 4,500 conservancy employees (see Figure 5.4). In addition to sparking the development of social amenities in rural communities and hosting large numbers of wildlife, conservancies in Kenya are home to some of the world’s most endangered species like the black and white rhino. Other animals are Grevy’s Zebra, hirola, wild dog, giraffes and elephants.

If landscapes are managed as a whole, the people who derive their livelihood from those landscapes must be involved. The process must protect their interests and concerns while delivering tangible benefits to the people. This is the only way to guarantee successful conservation of wildlife and natural resources for the future generations.
Figure 5.4: Facts and figures on the contribution of conservancies in conservation, tourism and employment (Source: KWCA 2017)

This strategy articulates how local communities will be better involved in conservation. The desired outcome is for both the protected area managers and the communities themselves to mutually benefit from wildlife conservation.

According to the United Nations (Department of Economic and Social Affairs), local stakeholder engagement leads to adapted and more effective solutions. Social inclusion is a core element of sustainable development/management. Sustainable development requires us to do more with less. As a people, must champion how this strategy should enable the community to engage in the following ways for successful conservation:

- Create awareness for conservation as a land use, educate communities on importance of conservation and how to tap onto wildlife resources and empower them to get involved.
- Allow access to wildlife and other natural resources as envisioned in Wildlife Act 2013 though appropriate legislation of wildlife regulations with the aim of involving communities as co-managers of this resources.
- Ensure equitable sharing of benefits from conservation related activities as well as job opportunities for communities living alongside wildlife. Without communities benefiting, the future of conservation is bleak.
- Help mitigate human-wildlife conflict and ensure prompt compensation for losses incurred as soon as they occur.
- Diversify community livelihood sources through investment in alternative compatible income generating activities including nature-based enterprises to reduce over-reliance on income from tourism.

Strategy Pillar 2 seeks to promote equitable sharing of benefits for all Kenyans, enhance access to benefits through innovative pro-wildlife nature based enterprises, and reduce the costs, and increase the benefits, of living with wildlife to ensure mutually beneficial coexistence. The Ministry of Tourism and Wildlife, in conjunction with Kenya Wildlife Services, the Kenya Wildlife Conservation Association and other key players, will have to play a key role in ensuring the success of the conservancies.

Information Technology – the gatekeeper to communication

For the successful implementation of this strategy, it is paramount that all stakeholders are able to stay up to date with the developments. Information technology is a must for the
successful future of conservation of biodiversity in Kenya. Biodiversity information, including data, should be made easily available. This is through print, digital, the Internet and any other relevant media.

Kenya is one of the countries experiencing the highest smartphone growth rate as well as Internet penetration rate in Sub-Saharan Africa (Figure 5.5). According to the quarterly sector statistics report of last quarter of 2016 by the Communications Authority of Kenya (CA mobile penetration in Kenya stood at 88% with 37.8 million subscribers up from 36.1 million in the previous quarter. In 2017 Kenya was ranked second with 43.33 million users of internet after Nigeria. Consequently, the population with access to internet grew significantly to stand at 64.3 per 100 inhabitants up from last quarter’s figure of 57.1 per 100 inhabitants.

It has been shown worldwide 1 billion youth under 30 years own a mobile phone the 18 to 24 years olds own more smartphones per head than any other age groups. In recent research on youth and mobile phones it was found out that 71% of youth said they would rather spend their last $10 on topping up their mobile phones than buying food and 80% of them said they would experience negative feelings if their could not check their phones for one day. It is therefore important for the NWCM Strategy to focus on the use of IT to communicate and also involve the youth (TotalYouthResearch.com).

![Mobile phone density and top ten countries in internet use](https://kivafellows.files.wordpress.com/2013/03/infographics.png)

**Figure 5.5:** Internet usage in Africa and mobile use amongst the youth in the world. Source: https://kivafellows.files.wordpress.com/2013/03/infographics.png and https://i.pinimg.com/736x/e1/14/65/e11465d21d7344a208860280776a7420--to-mobile-the-youth.jpg

In reality, information technology will establish a link between biodiversity conservation and Information technology and the people – including the counties, communities and the youth.
All working on biodiversity conservation can access these resources; students, professionals, grass root level organizations/NGOs, and policy makers.

The key areas where we can leverage on information technology to help in biodiversity conservation include:

- **Knowledge**: Provide basic knowledge and understanding of the environment, the biodiversity and their importance to humans and functioning of our earth.
- **Awareness**: Promote awareness and a sensibility in individual and communities about the environment, biodiversity, and its value to all of us include provision of food, medicine and other ecosystem services.
- **Attitude**: Encourage individuals and communities to value the environment and consider it important in order to inspire participation in the process of improving and protecting the environment for the betterment of their own livelihoods.
- **Skills**: Provide people with skills to identify, predict, prevent and solve environmental problems and to make them capable of utilizing limited resources in a sustainable way and of coping with unexpected vulnerabilities.
- **Participation**: Provide individuals and communities with the opportunities to actively participate in solving environmental problems and to make educated decisions about biodiversity conservation.

**Youth – investing in young people for perpetuity**

It has been recognized that young people are a major human resource for development and key agents for social change, economic growth and technological innovation. The large population of young people is an opportunity and an investment. Young people can play an active role in protecting and improving the environment. Engaging youth in environmental protection not only creates direct impact on changing youth behaviour and attitudes. Many of them end up influencing their parents, relatives and families.

The world’s youth population in 2014 was at 1.8 billion people aged between 10 and 24 and accounting to almost a third of the world’s population (UN 2015). UN defines youth as individuals between the ages of 15 and 24. Some 87 per cent live in developing countries and face challenges deriving from limited access to resources, education, training, employment, and broader economic development opportunities.
In Kenya, the proportion of children below the age of 15 is 42.4%, 18.8% is between 15 and 24 years of age, 32.4% is between 25 and 54 years of age, 3.6% is between 55 and 64 years of age, while 2.7% is 65 years or older and the median age in 19.5 years.

A recent report on understanding young people’s attitudes towards wildlife and conservation states engaging young people requires a well-planned strategy, targeting each segment with individual, relevant messages and rewards in terms of emotional, social or financial capital offered in exchange for interest and engagement. The report further recommended these actions based on four youth agendas: conditional conservationist, self-starting conservationist, non-conservationist, and philanthropic conservationist (refer to Figure 5.6 and 5.7).

This strategy, therefore, will focus on educating, engaging and inspiring youth to become leaders of conservation through a number of activities as stipulated in the strategy pillars.

**Figure 5.6:** Recommendation for action for the 4 conservation youth groups *(Source: Understanding Young People’s Attitudes towards Wildlife and Conservation report)*
The strategy will work with youth groups across the country. It will focus on youth participation to increase at all levels ranging from grass root environmental participation to policy making. Their role can be embedded in policy making through advisory bodies such as youth councils. Schools and universities will play an important role towards environmental sustainability and should emphasis more importance to environment education and practical application of conservation practices.
Chapter 6. INTEGRATION AND IMPLEMENTATION

Introduction

Strategy Integration
Kenya’s vision for a globally competitive and prosperous nation is driven by the Vision 2030 pillars (Economic, Social and Political) and the current government’s 4-Pillars of focus for the new Government 2018-2022 which have been outlined as Food security, manufacturing, affordable housing and healthcare. Underlying these are the relevant sectors that will spearhead the development agenda. The focus in implementing the strategy is how conservation helps/benefits these other sectors.

The NWCMS recognises of the critical role of the multiple high level sectors whose actions could potentially undermine ecosystems and increase the pressure on wildlife and wildlife resources; while there are opportunities for integration across sectors to contribute to achieving a stable and resilient wildlife sector in support human well being.

The key sectors identified with opportunities for coordinated strategies that provide co-benefits and win-win outcomes are listed below:-

A. **Sectors focusing on Economic/commerce and social development**
1. Agriculture - example smart agriculture, responsible use of pesticides, conservation agriculture in agroforestry systems low water consumption, pollination and agriculture etc., fisheries, blue economy
2. Energy – renewal energy, wildlife sensitive planning, etc…
3. Transport – over/under passes, appropriate corridors etc…
4. Housing – green spaces, open spaces, connectivity, flood control, climate resilience
5. Water – increasing water use efficiency, effective distribution, enhanced flows, etc… which would in turn support agriculture, and industry as a whole
B. **Sectors with Opportunities for better integration with the Strategy:**

1. Devolution and planning – county level engagement on wildlife management, spatial planning and CIDP frameworks that include conservation priorities
2. Tourism – investments that feedback to conservation
3. Education, science and technology – relevant curriculum

C. **Private Sector**

The Private sector should measure the financial, social and environmental performance of the corporation over a period of time - This is the triple bottom line and only a company that produces a **TBL** is taking account of the full cost involved in doing business. The strategy aims to incentivise and support businesses that consider Profit - People - Planet

The Private sector has established a forum that will include the wildlife sector to establish a community of practice on Business and biodiversity so that the value of natural assets is included in the business value chain.

There is need for overarching strategies common to all sectors who benefit from wildlife resources to address opportunities that help conservation and create co-benefit opportunities. Such strategies would embrace the principles such as:

- Improved consideration of impacts on wildlife of development projects
Enhanced co-ordination & Integrated planning across sectors
- Best available science and developing of decision support tools
- Compensatory mitigation for damage – offsets

Strategy implementation
Successful implementation of this NWCS will require commitment and resources by government, non-government agencies, private sector, and local communities and must include set of options to addressing the identified challenges and moving the wildlife sector forward, and elements for evaluating, learn and adjust the responses as needed in-order to achieve our goals in a changing world.

Principles of Implementation
- Inclusive
- Collaborative
- Integration
- participation

1. Institutional architecture to ensure coordination, effective implementation, sustainability, and a mechanism for review and updating the strategy (minimally every 5 years) through the Ministry of Tourism and Wildlife
2. While KWS is recognized as the key government agency tasked with implementing the strategy, it is important to recognize that the success of this strategy depends on effective collaboration and engagement of all stakeholders across the sector for collective action.
3. Government to provide enabling environment and facilitate necessary policy, legal, institutional framework

Coordination and Planning
Ministry of Tourism and Wildlife as the custodian and will provide stewardship in implementation through a National Wildlife Conservation and Management Coordination Committee - responsible for coordination, planning, review of progress, etc
- To include representatives from civil society (CAK), communities (KWCA), other NRM sectors, Council of Governors, other government Agencies
Intersectoral

Establish an inter-sectoral council at MoT&W level to ensure cross sectoral coordination
To achieve transformation of wildlife conservation in Kenya we must broaden the conversation beyond the traditional wildlife sector, identify opportunities for cross sectoral engagement, ensure cross sectoral planning, and emphasize/identify/highlight the potential benefits of wildlife conservation and ecosystem services for different sectors (e.g. open space for health, water (from habitat conservation) for agriculture and industry,

Effective natural resource management underpins the sustainable success of the governments’ four (4) pillars - food security, industrialization, affordable housing and health care; all of which depend on conservation, and functioning ecosystems for provisioning of various ecological services that support human well being.

Technical Team

This is the first National Wildlife Strategy for Kenya. The Success of this Strategy will depend on effectiveness of cross sectoral coordination and integration – inter-governmental relations, county – national government, relationship with private sector, etc

Things must be done differently.
The implementation of this Strategy will be coordinated by a dedicated Implementation and coordination team overseen by the PS office in the Ministry of Tourism and Wildlife for accountability on implementation, monitoring/reporting and outreach.

- **Strategy Programme officer** - overall programme coordination and implementation - Coordination - governmental, private and ngo, communities and landowners
  - Partnerships and Engagement/Donor Liaison - funding and proposal writing
- **Monitoring and Evaluation and Learning** - M&E, knowledge management, data, platform, etc
- **Communication and Outreach** - newsletters, reports, website

Other technical services such as environmental economist, GIS, bioinformatics, website development, database, etc will be outsourced as needed

Strategy Implementation and Coordination team - initial funding from dev partners (first 5 years), with office at Ministry - can be a transitional strategy as GoK resources are mobilized

The early establishment of this team will energize the process of implementation and ensure accountability. There is an opportunity for development partners to partner with Government and offer support and technical expertise to establish this implementation and coordination team.
County Government

- Devolution and subsidiarity as captured in the Constitution, 2010 stipulates the role of County Governments who are key partners in the implementation of this strategy. Kenya is divided into 47 Counties as per the Constitution (2010), in a devolved system of Government, which became operational in March 2013. Devolution has seen the National Government transfer certain powers, functions and responsibilities to the 47 counties. The devolved government system recognizes the right of communities to take charge of their own affairs and development and some of the functions devolved to counties that are relevant to the strategy include; environment and natural resources (including wildlife). Thus, devolution requires that wildlife management issues be factored in County Integrated Development Plans (CIDPs), which should be in line with Vision 2030 and national Government plans and strategies.

- Mechanism for harmonizing functions, integrated planning, coordinated implementation CIDP (e.g. integrated planning framework box) and Spatial Planning

- Define with the Council of Governors engagement entry-points and priority conservation strategies at county level - County level roles and responsibilities for devolved governance of wildlife - engage Council of Governors and parliamentary committees on environment and natural resources (national assembly and senate)

Wildlife and Environment Sector more broadly

- Environmental Sector Working Group at Ministerial level that brings on board NEMA, KMFRI, KEFRI, KFS, Kenya Water Towers Ministry of Lands.

- Strengthening linkages between wildlife and tourism - there is need for an annual forum to review implementation of the wildlife and tourism strategies.

- A Bi-annual tourism and wildlife conference for all stakeholders in the wildlife and environment sector

Communities

Partner with KWCA to incentivize communities to engage and benefit from wildlife conservation
**International Responsiveness:** Kenya has ratified several international multilateral environmental agreements (MEAs), which have a bearing on the national wildlife strategy such as CITES, CBD, CMS, The United Nations Convention to Combat Desertification (UNCCD), Ramsar Convention on Wetlands, United Nations Framework Convention on Climate Change (UNFCCC) and the Sustainable Development Goals (SDGs). The interventions in this strategy will contribute to the fulfillment of these MEAs.

**Development Partners**


**Implementation**

Joint planning frameworks will guide the effective implementation of the strategy -- if we are going to work together we must first plan together.

This Strategy will be implemented in 5 year plans (planning horizons) consistent with the medium term planning frameworks (MTP) for implementation of the Vision 2030. This will be complemented by other planning frameworks like the Ecosystem Planning Framework, CIDPs, Spatial planning, etc.

It is generally acknowledged that planning has not been given due consideration in most of the sectors. The challenge therefore is to demonstrate that planning can have an impact – this is especially so for spatial planning, ecosystem planning, etc. The usefulness of this approach will be demonstrated by developing integrated spatial plans in 3 priority counties – Makueni (with the goal of minimizing human-wildlife conflict and securing ecosystems and the precious services they provide to the sustainable economic development of the County).

Within the framework of 5 year plans, the wildlife strategy needs to aligned/integrated with other national plans and strategies.

**Finance and Sustainability**

1. The successful implementation of this strategies requires commitment from the Government of Kenya and all stakeholders in the wildlife sector. This includes sufficient allocation of resources from Treasury, support from conservation sector actors,
Development Partners, and the development of innovative strategies for ensuring the long term financing and mainstreaming of wildlife conservation.

2. The recognition of the real value of wildlife and ecosystem services to society through natural capital accounting and the exploration and development of innovative funding mechanisms

3. Wildlife Conservation Trust fund - the establishment of the trust fund including mechanisms to ensure effective coordination, efficient use of resources, accountability, and transparency.

4. Integrated planning and budgeting in compliance with Government procedures - including performance contracting, MTEF, etc

Historically there has been an imbalance between the financial resources availed to the sector and its contribution to the national economy and well-being of the nation. While it is appreciated that rectifying/addressing this imbalance will take time, in the meantime we need to consider nontraditional funding sources and nontraditional financing mechanisms – fees, levies, lotteries, incentives (e.g. tax breaks), local philanthropy, etc
### Budget for 5 years

<table>
<thead>
<tr>
<th>Goals</th>
<th>Description</th>
<th>Budget (KSH)</th>
<th>Budget (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1</td>
<td>MAINTAIN AND IMPROVE HABITAT AND ECOSYSTEM INTEGRITY - to reduce biodiversity loss, protect ecosystem function, enhance connectivity, and increase resilience.</td>
<td>1,760,500,000</td>
<td>17,605,000</td>
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<tr>
<td>Goal 2</td>
<td>ENHANCE SPECIES PROTECTION AND MANAGEMENT - to ensure healthier, more resilient wildlife communities and populations.</td>
<td>3,930,500,000</td>
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<td>Goal 3</td>
<td>AWARENESS AND PARTICIPATION - catalyzing support and action by all Kenyans.</td>
<td>462,000,000</td>
<td>4,620,000</td>
</tr>
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<td>Goal 4</td>
<td>Increase ACCESS, INCENTIVES, AND SUSTAINABLE USE of wildlife resources, while ensuring equitable sharing of benefits.</td>
<td>575,000,000</td>
<td>5,750,000</td>
</tr>
<tr>
<td>Goal 5</td>
<td>Increase knowledge and information access and use to support EVIDENCE BASED DECISION MAKING AND ADAPTIVE MANAGEMENT.</td>
<td>439,260,000</td>
<td>4,392,600</td>
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<td>Goal 6</td>
<td>Ensure the CAPACITY OF INDIVIDUALS, INSTITUTIONS, AND COMMUNITIES, including systems, equipment, technology and networks to meet current and emerging challenges in wildlife conservation.</td>
<td>1,125,000,000</td>
<td>11,250,000</td>
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<tr>
<td>Goal 7</td>
<td>Develop an EFFECTIVE GOVERNANCE STRUCTURE AND SUSTAINABLE FINANCING FRAMEWORK to support conservation actions, and improve accountability and transparency on conservation financing.</td>
<td>813,600,000</td>
<td>8,136,000</td>
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<td><strong>Total</strong></td>
<td></td>
<td><strong>9,105,860,000</strong></td>
<td><strong>91,058,600</strong></td>
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</tbody>
</table>

### Monitoring and Learning
- Evidence based adaptive management
- Implementation framework - matrix - with clear targets and timelines, measurable indicators and means of verification
- Integrated monitoring framework of the NWCMS and the outcomes of its implementation
- Quarterly progress reports and review
- Links with SDG and Aichi targets - streamline reporting
Review and Update

This strategy provides a vision and roadmap for transforming wildlife conservation and management in Kenya. The strategy, while based on state of the art science, expert input, public participation, and extensive review and valuation, recognizes the dynamic nature of wildlife conservation and the rapidly shifting states and challenges (e.g. population growth, land use change, climate change). With this in mind, the road map outlined in this strategy is designed to be flexible and responsive in order to effectively address the changing demands of wildlife conservation in the 21st century.

To ensure the strategy is implemented effectively and is properly aligned with emerging issues and challenges, the Strategy Implementation Committee will conduct an annual review of the implementation process, including progress against goals, prioritization and targeting to inform integrated work planning. In addition to annual reviews of strategy implementation (or is this part of the monitoring above?), the Strategy will be reviewed and updated every 5 years as prescribed in the Wildlife Conservation and Management Act, 2013 (Section ?) with Independent mid-term review.

Communication and Outreach

The purpose of communication and outreach is to ensure ownership by the people of Kenya… This Strategy is a National blueprint for wildlife conservation and management for Kenya and its people. Ownership by Kenyans is essential. To maintain ownership and facilitate achievement of the goals outlined in this document, the Strategy requires an effective communication strategy… - outlining the goals, strategies, potential for participation, progress, etc

Website for Strategy - interactive platform for tracking progress on goals, written reports, fact sheets, etc - archive of supporting documents, mechanism for engagement etc

Written materials - reports, brochures, posters, info-graphics, etc - supporting documents for the strategy (ecosystem papers, public participation, etc)

Ensure linkages with major partners. Commitment to regular communication – transparency and accountability
ANNEXES