

# Master Plan 2020- 2025

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*Leo Foundation, formally called Foundation Panthera Leo Leo, was founded on April 24, 2008. Our vision is to secure viable carnivore populations by reversing the decline of lions and other large carnivores, such as leopard, tiger, fishing cat, hyaena and painted dog.*

*We have ongoing projects in Benin, Cameroon, Senegal, Kenya, Nepal and India, where we work together with local partners, such as research institutes, governmental organisations, local NGO's and park management. The Leo Foundation offers expertise, knowledge and financial support through fundraising.*

## Our vision

Lions and other large carnivores will co-exist in harmony with the people with whom they share the same space.

## Our Mission

1. Secure viable carnivore populations by reversing the decline of lions and other large carnivores
2. Create conditions so that these populations will continue to co-exist with people.

## Our Statutory Objectives

We have the following statutory objectives:

1. Promoting conservation of the lion in Africa and India.
2. Sharing of best practices for responsible management of lion populations in Africa and India, with special attention to responsible tourism, local income generation and mitigation of conflicts.
3. Promoting responsible management of other large carnivores.
4. Stimulating knowledge gathering and the exchange of knowledge on conservation and management of large carnivores.
5. Informing and creating awareness among wildlife managers, local communities and target groups in the Netherlands on the threats faced by lions and by other large carnivores and on conservation action needed to protect them.

We intend to achieve our statutory objectives through the formulation, funding and implementation of projects which stimulate responsible management and protection of lions and other large carnivores. We provide advisory services, if required, and also work towards our goals

by preparing and distributing both scientific and popular publications and articles, as well as by contributing to radio and television programmes.

## Our approach

To bring focus to our work we define five main themes for 2020-25. In each of the five themes, targets and activities are listed. Our approach in general is that we try to find our own niche and establish partnerships and add value.

### Themes

1. Monitoring, research and information gathering and provisioning
2. Human-carnivore conflict: to reduce the frequency of large carnivore predation on livestock and humans, and (subsequent) retaliatory killing of carnivores, thereby promoting peaceful human-carnivore coexistence.
3. Capacity building: to strengthen the capacity within key institutions (Ex, NGO's, tourism and others) and local communities to conserve large carnivores in key areas.
4. Environmental education and increasing awareness: we contribute to environmental education programmes targeting students of elementary and high schools, their teachers and parents, both in our target countries and in The Netherlands.
5. Communication: we post updates on our projects and disseminate scientific information on the conservation of large carnivores via our website, social media, print and television media to the larger public.

*[For each of the above-mentioned themes we define specific targets and target activities. Where applicable, activities are prioritized as high, medium or low. High priority activities are our primary focus and low priority activities are taken-up when an opportunity arises. We engage in our project activities by;*

1. *Doing it ourselves (in collaboration with local partners),*
2. *Supporting local partners who have projects that align with our themes and targets.]*

## Theme 1: Monitoring, research and information gathering and provisioning

One *target* has been defined for this theme and possible activities are listed

Target 1	Supporting surveys of large carnivore distribution and status.
Activities	<ul style="list-style-type: none"> <li>a) Monitoring carnivore presence and population trends of lions and other carnivores.</li> <li>b) Monitoring local threats to lions and other large carnivores.</li> <li>c) Monitoring home ranges and movements of lions and other carnivores by using GPS satellite collars.</li> <li>d) Assessing diet composition, in order to understand the reliance of carnivores on livestock</li> <li>e) Identifying conflict areas for human-carnivore conflict, and assess the nature of the conflict (livestock targeted as prey, the risk for humans).</li> <li>f) Sending out rapid response teams of rangers to prevent conflicts when lions and other large carnivores approach livestock boma's (information available through satellite collars).</li> <li>g) Establishing a professional network with other large carnivore researchers, e.g. through the IUCN Cat specialist group and the African Lion Working Group.</li> <li>h) Surveying or supporting surveys for carnivores.</li> </ul>

## Theme 2: Human-carnivore conflict

In this theme, three *targets* are defined. For each target, activities are listed.

In this theme *target* priorities are not established. *Targets* can be prioritised according to the needs of the project.

Target 1	Supporting communities to mitigate the loss of human lives and livestock.
Activities	<ul style="list-style-type: none"> <li>a) Identifying key areas where carnivore populations are threatened by human-carnivore conflict.</li> <li>b) Identifying circumstances that contribute to livestock losses and risks for humans.</li> <li>c) Developing and disseminating effective strategies for reducing losses.</li> <li>d) Working with local communities to implement mitigation techniques, such as bomas and/or consolation schemes.</li> </ul>
Target 2	Initiating and developing community development programmes to promote tolerance to carnivores.
Activities	<ul style="list-style-type: none"> <li>a) Identifying key areas where economic incentives and tourism built around carnivores could benefit local communities around important areas for</li> </ul>

carnivore conservation.

- b) Encouraging appropriate distribution of revenues around hotspots to local communities.
- c) Examining alternatives for regions where tourism is unlikely to provide sufficient incentive for conservation. Examples are "snare handicraft", beekeeping, vegetable gardening and human-carnivore conflict workshops to prevent and mitigate conflicts.

Target 3 Activities	Supporting the anti-poaching effort to prevent loss of prey and illegal killing of carnivores. <ul style="list-style-type: none"> <li>a) Identifying key areas where the prey base for target carnivores are threatened by poaching and/or illegal intrusion into protected areas.</li> <li>b) Identifying key areas where poaching activities are directly targeting large carnivores, both for the local market and for the export of body parts (bones etc.).</li> <li>c) Implementing and supporting activities that reduce poaching and intrusion into protected areas.</li> </ul>
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### Theme 3: Capacity building

In this theme, *five targets* are defined.

Target1 Activities	Supporting PhD students from the target countries. <ul style="list-style-type: none"> <li>a) Recruiting suitable candidates to apply to a PhD program in the Netherlands or Belgium.</li> <li>b) Supporting their application process to the associated graduate schools.</li> <li>c) Supporting selected PhD students to spend time in the Netherlands/Belgium to work on their proposal, data and, ultimately, their thesis.</li> <li>d) Supporting the participation of MSc students within a supported PhD research.</li> <li>e) Supporting fundraising for necessary field equipment.</li> <li>f) Supporting fundraising for other research costs of PhD or Master student</li> </ul>
Target 2 Activities	Supporting national and regional level conservation activities. <ul style="list-style-type: none"> <li>a) Appointing of National Carnivore Coordinators in target countries and regions with key carnivore populations.</li> <li>b) Supporting the existing regional large carnivore network in West and Central Africa (ROCAL).</li> <li>c) Supporting the development and implementation of regional and national carnivore conservation strategies, especially in West and Central Africa.</li> </ul>
Target3 Activities	Supporting the management staff at the National Park level. <ul style="list-style-type: none"> <li>a) Strengthening conservation skills of park wardens through workshops,</li> </ul>

courses and knowledge sharing.

- b) Strengthening skills of conservation staff (wardens, village-guards and eco-guards) for effective conservation of key carnivore populations.
- c) Supporting conservation staff with acquiring necessary field equipment.
- d) Incorporating large carnivore conservation education into curricula and training courses for management staff ( warden, rangers, eco-guards).
- e) Training community and conservation guards in monitoring techniques and anti-poaching tools.

Target 4 Supporting local conservation practitioners and NGOs involved in large carnivore conservation.

- Activities
- a) Providing support for fundraising for carnivore conservation efforts (staff training, surveys, human dimension management, conflict resolution, monitoring impact etc.) for NGOs involved in large carnivore conservation (Local, Dutch, International).
  - b) Providing consultatory support for carnivore conservation efforts (staff training, surveys, human dimension management, funding, conflict resolution, monitoring impact etc.) of NGOs ( local, Dutch, international)
  - c) Providing training workshops for staff of NGOs involved in large carnivore conservation ( Local, Dutch and International)

Target 5 Raising awareness through programmes developed around key areas and the general public.

- Activities
- a) Identifying government and community stakeholders best placed to influence carnivore conservation.
  - b) Increasing dialogue with government stakeholders to improve carnivore conservation measures, science-based hunting quota and anti-poaching support.

Disclaimer: We are not involved in the procurement of arms and ammunition for rangers for combatting the economic poaching of lions and other large carnivores by organized and armed gangs, although we may provide non-lethal equipment.

*[Note: In this theme “target” priorities are not established. We maintain flexibility and “target” can be prioritised according to the needs in the target country.]*

## **Theme 4: Environmental Education and Increasing Awareness**

We intend to contribute to environmental education programmes and target students from elementary to high school, as well as their teachers and parents. We do this in both in our target countries as well as in The Netherlands.

*Two targets* are defined in this theme

Target 1	Targeting pupils, students and teachers of elementary and high schools in the Netherlands.
Activities	<ul style="list-style-type: none"> <li>a) Developing an online teaching package on large carnivores with a special focus on the African lion for pupils of elementary schools.</li> <li>b) Developing an online education package on large carnivores with a special focus on the African lion for high school students.</li> <li>c) Training the trainers: develop an instruction manual for teachers.</li> </ul>
Target2	Targeting pupils, students and teachers of elementary schools and high schools in target countries in the South (Focus on West and Central Africa).
Activities	<ul style="list-style-type: none"> <li>a) Training the trainers: develop instruction manuals for teachers on lion conservation.</li> <li>b) Providing awareness education material for teachers to educate pupils of elementary schools on large carnivores with a special focus on the African lion.</li> <li>c) Providing awareness education material for teachers to educate students of high schools on large carnivores with a special focus on the African lion.</li> <li>d) Organising children's' bush-camps for local schoolchildren. Our main focus area is West and Central Africa</li> </ul>

*[Note: In this theme target" priorities are not established. Targets can be prioritised according to the needs of the project.]*

## **Theme 5: Communication**

To disseminate and facilitate the dissemination of scientific information on the conservation of large carnivores via various media platforms (website, social media, TV, radio, print) to the larger public in The Netherlands, the target countries and internationally.

*Three targets* are defined in this theme.

Target 1	Initiating and supporting a multi-pronged media campaign in The Netherlands on the importance of large carnivore conservation.
Activities	<ul style="list-style-type: none"> <li>a) Sending out press releases on important events related to large carnivore conservation for newspapers and other periodicals.</li> <li>b) Holding interviews on important issues related to large carnivore conservation with major newspapers.</li> <li>c) Holding public lectures on carnivore conservation and projects supported by the Leo Foundation in particular.</li> <li>d) Participating in television broadcasts on national and regional television.</li> <li>e) Participating in national geographic broadcasts.</li> <li>f) Updating our website with news on Leo Foundation projects and important news in the field of large carnivore conservation.</li> </ul>

- g) Updating our social media accounts (Facebook, LinkedIn) with news on Leo Foundation projects and important news in the field of large carnivore conservation.
- h) Establishing and maintaining an internet platform (website, FaceBook) to collate information to facilitate data sharing.

Target 2            Initiating and supporting a multi-pronged media campaign in target countries (focus on West and Central Africa) highlighting the importance of large carnivore conservation.

- Activities
- a) Sending out press releases on important events related to large carnivore conservation for newspapers and other periodicals.
  - b) Holding interviews on important issues related to large carnivore conservation with major newspapers.
  - c) Participating in national radio and television broadcasts on national and regional television.

Target 3            Initiate media campaigns internationally (not target countries of Leo Foundation projects) on the importance of the conservation of large carnivores.

- Activities
- a) Sending out press releases on important events related to large carnivore conservation for newspapers and other periodicals.
  - b) Holding interviews on important issues related to large carnivore conservation with major newspapers
  - c) Ensuring outreach via the Leo Foundation website and social media channels targets an international audience (Dutch and English text available).

*[Note: In this theme “target” priorities are not established. We maintain flexibility and “target” can be prioritised according to the needs in the target country.]*



## Our projects

Our projects mainly focus on the lion and other large carnivore conservation in key areas in West- and Central Africa, and to a lesser extent in East Africa. In the last years, Leo Foundation has also started to support large carnivore projects in Asia.

For lion conservation, we follow the policy guidelines and the conservation and management strategies as outlined in the Conservation Guidelines for the African Lion (2019), and more locally in the regional Lion Conservation Strategy for West and Central Africa, and the regional Lion Conservation Strategy for East and Southern Africa, both published in 2007. Within the framework of these guidelines, the Leo Foundation has adopted the following projects since 2008.

### Lion projects in West- and Central Africa

Lions in West and Central Africa are regionally endangered and currently surviving in small fragmented populations in protected areas only. The main threat to lions is human-lion conflicts. Habitat encroachment by humans and pastoralists killing lions in retaliation for livestock depredation are the main issues. It is well recognised that livestock depredation can have serious impacts on local development around protected areas. Damage to cattle from lion predation generally is between 2 and 10 per cent of the stock per year. Such high animal losses can amount to extensive financial damage to communities living around parks.

Retaliatory or pre-emptive lion killing threatens lion populations. If lions are targeted by poisoning, this affects the entire carnivorous guild, including other regionally threatened species, such as vultures. The lion is a keystone and umbrella species: local extinction may open up the ecosystem for other predators (leading to increased predation levels on smaller mammals and birds), influence grazing and browsing patterns of ungulates (following the landscape of fear) and could lead to instability of the ecosystem. In addition, the presence of lion serves an important cultural aspect, as well as the potential for the development of the tourism industry.

To avoid the further decline of lions and other large carnivores, we need to have insights into nature and extent of the human-carnivore conflict and come up with ideas to solve this. Conflict mitigation is feasible and ultimately more effective, both for the ecological system, as well as for the development of human populations living there. The sustainability of our projects in terms of long term (> 5 years) impact is guaranteed through the financial benefits derived from both lion conservation and mitigation measures. Local communities, in particular, will benefit through reduced livestock losses as a result of improved livestock guarding techniques, which will contribute substantially to poverty alleviation throughout the project area.

### North Cameroon-North Nigeria lion projects

For our involvement in large carnivore conservation in North Cameroon and North Nigeria, we will shift our focus from implementing projects by the Leo Foundation to supporting projects of local NGOs, such as ACEEN and the Mayo Oulo foundation. The Bénoué-Gumti area is an extensive conservation complex, consisting of four National Parks (NP) connected by hunting zones (HZ) or



conservation areas, with a total surface area of approximately 30,000 km<sup>2</sup>. The parks are, from West to East: Faro NP, Bénoué NP and Bouba-Ndjida NP in Cameroon and Gashaki-Gumti in Nigeria. Research showed a significant difference between lion densities in parks and hunting zones, with lower densities inside hunting zones. The isolated population in Waza NP, in the extreme North of Cameroon and interactions with Nigerian lion populations, will also be included in this project.

This ecosystem can be characterized as Sudan-Guinea Savannah, the transition area between the dry Sahel Savannah to the North and the rainforest ecosystems to the South. It consists of relatively thick woodland with pockets of grassland, floodplains and highland. The lion population in this area is estimated at 200 individuals, a guesstimate derived from intensive surveys (Bénoué NP: (40 lions; Bouba-Ndjidda NP: 60 lions).

In the past, our main focus has been monitoring, research and information gathering and provisioning (Theme 1) and mitigating human-carnivore conflict (Theme 2). In the future, during 2020-2025 our focus shifts to the capacity building and to lobby for policy revisions - targeting politicians who can help lion conservation (Theme 3). The focus will also lay on organising workshops, training of lion guards and park staff, and an awareness campaign targeting local people (Theme 2, Theme 3 and Theme 5).

### **Pendjari lion project**

***For our involvement in large carnivore conservation in Benin, we will shift our focus from implementing projects by the Leo Foundation to supporting projects of local NGOs.***

Lion populations in Benin have declined from a few thousand in the 18<sup>th</sup> century to just a few hundred now. Lions of Pendjari NP in Benin regularly kill livestock outside the national park leading to retaliatory lion killings by the local people. The projects in these areas aim to 1) enhance the implementation of the national lion conservation strategies and action plans (Theme 3), 2) raise awareness among local people (Theme 4), 3) training of lion guards and park staff (Theme 3) and 4) monitor lion movement and analyse movement patterns of lions (Theme 2), so that adequate measures can be taken to mitigate loss of livestock due to lion predation (Theme 1).

In the North of Benin is the Pendjari Biosphere Reserve (4,711 km<sup>2</sup>) situated, consisting of a strictly protected park (2,660 km<sup>2</sup>) and two hunting zone (2,051 km<sup>2</sup>), which allow safari hunting during the dry season. Latest estimates suggest that some 350 adult lions survive in the whole complex of W, Arly and Pendjari (WAP), with only 80-90 lions in Pendjari NP and adjacent hunting zones.

The park is surrounded by agricultural areas owned by local communities. During the wet season, wild herbivores are dispersed throughout the region, while in the dry season animals concentrate in the park for its permanent water points. Lions inhabiting Pendjari NP regularly kill livestock outside the national park, leading to the retaliatory killing of lions by local people.

In the new phase of these projects, our scope is widened from lions to other large carnivores, covering case studies for conflict mitigation and the monitoring of GPS collared lions. Local

communities will be assisted with the construction of small bomas for the safekeeping of livestock during the night.

### **Niokolo-Koba lion project**

*For our involvement in large carnivore conservation in Senegal, we will shift our focus from implementing projects by the Leo Foundation to supporting projects of local NGOs.*

Lion populations in Senegal have declined steeply to just a few dozen now. Lions of Niokolo-Koba NP in Senegal regularly kill livestock outside the national park leading to retaliatory lion killings by the local people. The projects in these areas during the period 2020-2025 aim to 1) enhance the implementation of the national lion conservation strategies and action plans (Theme 3), 2) raise awareness among local people (Theme 4), 3) training of lion guards and park staff (Theme 3) and 4) monitor lion movement and analyse movement patterns of lions (Theme 1), so that adequate measures can be taken to mitigate loss of livestock due to lion predation (Theme 2).

The scope is widened from lions to other large carnivores, such as cheetah, leopard, painted dog and spotted hyaena. The Niokola-Koba NP (9,130 km<sup>2</sup>) is located in the Sudano-Guinean zone. Watered by large waterways (the Gambia, Sereko, Niokolo and Koulountou), it comprises a wide range of ecosystems, such as gallery forests, herbaceous savannah floodplains, ponds, dry forests and rocky slopes and hills. Lions occur here, as well as the Derby eland, and painted dogs. Recent surveys showed that a population approximately 20 adult lions may survive inside Niokolo-Koba NP and there is evidence for the presence of a population of painted dogs. Master students may contribute to this project as well.

## **Lion projects in East Africa**

Our lion projects in East Africa are located in Kenya, specifically Amboseli NP, Nakuru NP, Meru NP and Nairobi NP. Lion populations in Kenya are suspected to have decreased considerably over the last two decades, mainly due to habitat loss and conflict with people and their livestock. In 2004 the number of free-ranging lions in Kenya was estimated at 2,000 individuals.

### **Amboseli NP lion project**

Amboseli NP covers 392 km<sup>2</sup> and forms part of the Amboseli ecosystem (3,000 km<sup>2</sup>). The park is surrounded by group ranches owned by local Maasai communities. During the wet season, wild herbivores disperse throughout much of the Amboseli ecosystem, while in the dry season animals concentrate in the park as it has permanent springs originating from meltwater from nearby Mount Kilimanjaro. In the dry season, Maasai are allowed to enter the park with their livestock for access to water. Consequently, lions are confronted with livestock both inside and outside the park, in addition to their natural prey species. Between 2001 and 2006 retaliatory killing of lions increased from 21 to 44 lions in the Amboseli area. Kenya Wildlife Services initiated the Amboseli lion project to gain insight if livestock was habitually killed by the same lions, or occasionally killed by several lions. The Leo Foundation is supporting a study on the population size and structure of the lion populations and the contribution of livestock to the diet of lions (Theme 1). By fitting lions with a satellite collar, we obtain more insight into lion movements and behaviour,

which can contribute to preventing and mitigating conflicts with Maasai livestock owners (Theme 2) Master students may contribute to this project.

### **Nairobi NP lion project**

Nairobi NP (117 km<sup>2</sup>) is south of the Athi-Kaputiei plains and is situated in the urban area of Nairobi. The park protects just about 5% of the Athi-Kaputiei ecosystem but is fundamental for herbivores during the dry season owing to the abundant richness of water. The grassland is enriched by the soil containing phonolitic lava, which provides high-quality forage. This excellent grazing territory explains the large occurrence of large mammals, but also attracts pastoralists. Human-lion conflicts occur increasingly with the urban community. KWS has reported on lions attacking giraffes in a captive-breeding facility, lions crossing through the protective fences and lion predation on domestic dogs in urban environments. The latest estimates show that around 35 lions remain in Nairobi NP.

Main activities during 2020-2025 for the Nairobi lion project are the continued monitoring of satellite GPS collared lions (Theme 1), support research on human-carnivore conflicts (Theme 2), training of KWS staff (Theme 3) and support to an awareness campaign for local people (Theme 4). Master students may contribute to this project.

### **Lake Nakuru NP lion project**

Lake Nakuru NP lies within the Great Rift Valley region of Kenya (Kenya Wildlife Service, 2018). The park was established in 1961 and occupies an area of 189.7 square kilometres (from which up to about 40km<sup>2</sup> maximum can be occupied by the lake itself). It lies between latitudes 0°17' and 0°30' South and longitudes 36°2' and 36°9' East (Kassily, 2002). The park is totally fenced, the fence was constructed in 1976 and solar electric fences were installed in 1986 (Mwasi, 2002). The mean annual temperature is 27 degrees with long-lasting rainy periods between March and May (Kassily, 2008).

The African buffalo in Lake Nakuru NP has increased in the last decades. Large herd sizes of buffalo can cause danger in hunting attempts for lions. Possibly, as a result, a recent decrease in the lion population is observed in this park. Adjacent to the park is a Conservancy and a commercial cattle farm of Soysambu. Lions escaping from Lake Nakuru NP create human-carnivore conflicts in this livestock ranch. The Leo Foundation has signed an agreement with KWS and Soysambu Conservancy as well as with savannah Tracking Ltd for a lion conservation project in Nakuru NP. For the period 2020-2025 our project aims at assessing the lion population structure, the lion's diet in general, the presence or absence of buffalo avoidance and human-lion conflicts in relation to the inclusion of livestock in the diet of these lions in Lake Nakuru National Park (Theme 1). We also intend to assist Soysambu Conservancy with conflict prevention and mitigation in close collaboration with KWS, Soysambu and Savanah tracking Ltd (Theme 2) and with support to local education programmes (Theme 3), awareness-raising and media campaigns (Theme 4). Master students may contribute to this project.

## Meru NP lion project

Meru NP, established under legal notice 4756 of 18/12/66, boundary plan number 204/37, covers an area of approximately 884 km<sup>2</sup> (J. Sitenei et al, 2014). The park was established as a game reserve in 1957 by Meru County Council and gazetted as a National Park in 1967. It is located in the Eastern Province, 0°20'~0°10'S, 38°0'~38°25'E (Fig. 2). It is situated between 300 m above sea level at the Tana River and 1000 m at the base of the Nyambene Hills. It is a component of a single ecosystem encompassing the Kora National Park, Bisinadi, and Rahole reserves (Sitenei et al, 2014)

Meru NP is not neighbouring any big cities and is located in a rather remote area, but the borders of the park are still inhabited by livestock owners of Boran and Somali ethnic groups, leading to conflicts between humans and wildlife. The park is not fenced, like Lake Nakuru NP, enabling herbivore migration, but also enabling lions and other carnivores to go outside of the park borders and to come in close contact with livestock. Nomadic livestock owners also illegally enter the park to let their cattle graze. Because most local farmers are financially reliant on their livestock, the killings have a severe economic impact. It is, therefore, important to assess the damage caused by lions to the local farmers and define the movements and home range of the local lion populations. Leo Foundation has signed an Agreement with KWS and Born Free Foundation to implement a project in Meru NP. Our project aims during 2020-2025 at assessing the lion population structure, the lion's diet in general (Theme 1) We also intend to assist KWS and Born Free Foundation with conflict prevention and mitigation through collared lions (Theme 2) and with support to local education programs (Theme 3), and support to awareness-raising and media campaigns (Theme 4). Master students may contribute to this project.

## Carnivore Projects in Asia

### Nepal Leopard Project

During the last two decades, human-carnivore conflicts are increasing in many parts of Nepal. In areas surrounding protected areas, successful habitat restoration measures through effective management of buffer zone and corridors have provided additional habitats for predators. The community forests in mid hills of Nepal has also contributed to restoring forest cover providing habitat for leopard. Although forest cover has increased, prey density is still very low and leopards frequently attack livestock. Occasionally they also attack humans which also leads to retaliatory killing of leopards.

Such a conflict is intense in the capital city itself. Kathmandu valley is surrounded by the forested hills including Shivapuri Nagarjun National Park in the North. There are frequent reports of leopard straying in the suburban areas in outskirts (sometimes in the core too) of Kathmandu valley in recent years. Some of them are killed in retaliation by the locals and some are rescued by Central Zoo in Kathmandu. The zoo has reached its maximum capacity to hold leopards, thus, these leopards are released into the wild. Releasing them back into the wild without post-release monitoring is risky for both people and leopard. Due to the lack of database system and post-release monitoring, we are not sure if the same leopard is repeatedly coming into the human settlement or if these are different individuals. We also lack information on how these leopards

use sub-urban habitats. A better understanding of this will enable us to devise necessary mitigation measures to reduce the conflict. The Leo Foundation has signed an agreement with NTNC in order to support a leopard project. This project categorizes issues under human-carnivore conflict in two broad themes – leopard ecology and socio-economic impact of human-carnivore conflict. Major objectives for the period 2020-2025 are support to close monitoring by NTNC of the leopards, by using GPS collars and investigating home range, activity pattern and diets of leopards living in human-dominated landscapes (Theme 1). In addition, we are assessing the economic loss, determinants of attitude, tolerance and perception towards leopard among inhabitants of high human-leopard conflict areas (Theme 2), and will develop an early warning system for local villagers based on satellite GPS data of leopards (Theme 2). Master students may contribute to this project.

### **Nepal Fishing cat project**

The fishing cat is a medium-sized wild cat distributed in South and Southeast Asia. Due to its elusive character, this species is not well covered by scientific research. It is listed as ‘Vulnerable’ on the Global IUCN Red List. Fishing cats are aquatic specialists and are typically found close to wetlands such as rivers, streams, oxbow lakes, swamps and mangroves feeding primarily on fish. Fishing cats are threatened by habitat destruction and human persecution. The rapid disappearance of wetlands throughout their range has put them in many countries on the brink of extinction or resulted in their complete extirpation locally. Despite their threatened status, limited information is available about the ecology of fishing cats in the wild. In Nepal, they are distributed along the Terai region with discrete populations in Koshi Tappu Wildlife Reserve, Parsa, Chitwan, Bardia and Shuklaphanta National Parks. Outside the Protected Areas fishing cat is mainly recorded from Jagdishpur reservoir (a Ramsar site). No evidence is available about a possible genetic exchange between these populations and the different populations may well be isolated from each other, which may result in inbreeding depression. To fill the information gap on the ecology of fishing cats, this PhD research aims to study population size and distribution, threat status, ecology and population linkages of fishing cats as well as their relationship with local communities in Nepal. The Leo foundation has signed an agreement with NTNC in order to implement a project on the fishing cat in Nepal. Main aims during 2020-2025 are establishing the population size, structure and distribution of fishing cats in Nepal, as well as establishing the home ranges and movements of fishing cats in protected areas and in human-dominated landscapes (Theme 1). In addition, we aim to identify the diet of fishing cat inside protected areas and in human-dominated landscapes (Theme 1). Master students may contribute to this project.

### **Lion Conservation Awareness, Gir Reserve, Gujarat, India**

Successful conservation management has resulted in an increasing lion population in the agro-pastoral landscape outside forest areas of the Gir landscape. Because of this increase, the focus has shifted from conservation management to human-carnivore conflict mitigation, minimizing lion mortality due to accidents, habitat expansion for the lion and movement facilitation by establishing wildlife corridors. In this landscape, the attitude of local people towards lion has been one of cultural tolerance and coexistence. The continued survival of lions in the landscape, however, would depend on careful management planning as well as fostering tolerance of local



people. The Leo foundation will sign an agreement with the Carnivore Conservation and Research Foundation India (CCR) to implement a project during 2020- 2025 aiming to establish an awareness campaign and an environmental education program for 2000 pupils at 20 elementary schools in villages around the Gir reserve (Theme 4). CCR considers sensitizing and creating awareness of the environment among children is one of the important means of achieving this conservation.

### **Conservation Awareness, Panna NP, India**

This project is conceptualised based on the findings of a long term study conducted by Shekhar Kolipaka in the Panna region of Madhya Pradesh State, India (<http://hdl.handle.net/1887/59916>).

Tiger conservation landscapes in India encompass mosaics of protected areas, private lands and multiple-use public lands. Effective ways to manage areas outside PA's for the coexistence of people and tigers (including other wildlife) are being explored by government managers and conservationists. In India, the Hindu religion and tribal communities subscribe to animistic beliefs and have at their core an ethos of stewardship that values the natural world. Religious leaders and religious institutions (formal and informal) play an active role in the transmission of these beliefs and in the adherence of norms established around core values. For this reason, religious leaders and institutions have a unique voice in their communities to inspire social and behavioural change, and therefore their involvement in being part of the solution for coexistence is compelling. Conservation outside protected areas can significantly benefit by involving religious leaders from various traditions and by mobilising grassroots religious networks to promote the protection of forests and wildlife, resist illegal felling and poaching of wild animals. Likewise, their support can be invaluable in resolving amiably wildlife conflicts about livestock losses.

The proposed study is a first attempt to solicit individual support and build partnerships between religious leaders and conservation programs (privately governed or government implemented). The objective is to listen and to ask, to discuss and then see how partnerships with religious leaders might shape. Here, the focus is both on what the faith leaders can do and what the partnerships might do. The project members use an action research approach and involve local faith leaders and assess various factors that transpire during the pre-engagement stage, during the actual engagement process and post-engagement and develops an understanding of the idea of involving faith leaders and developing local conservation partners. During 2020-2025 this research is conducted while actually involving them to engage local communities around Panna National Park and increasing local awareness on local wildlife poaching and disturbance of natural heritage sites (Theme 4). Master students may contribute to this project.?

## Overview of targets and activities for the identified working themes for 2020-2025.

Priority	Theme Target activity	Senegal	Benin	Cameroon	Kenya	Asia	other	Netherlands and
<b>1</b>								
<b>1.1</b>		<i>Supporting surveys of large carnivore distribution and status</i>						
1.1a	Monitoring carnivore presence and population trends of lions and other carnivores.	X	X	X	X	X		
1.1b	Monitoring local threats to lions and other large carnivores.	X	X	X	X	X		
1.1c	Monitoring home ranges and movements of lions and other carnivores by using GPS satellite collars.				X	X		
1.1d	Assessing diet composition, in order to understand the reliance of carnivores on livestock				X	X		
1.1e	Identifying conflict areas for human-carnivore conflict, and assess the nature of the conflict (livestock targeted as prey, the risk for humans).	X	X	X	X	X		
1.1f	Sending out rapid response teams of rangers to prevent conflicts when lions and other large carnivores approach livestock boma's (information available through satellite collars).				X	X		
1.1g	Establishing a professional network with other large carnivore researchers, e.g. through the IUCN Cat specialist group and the African Lion Working Group.	X	X	X	X	X		
1.1h	Surveying or supporting surveys for carnivores.	X	X	X	X	X		
<b>2</b>								
Priority	Theme Target activity	Senegal	Benin	Cameroon	Kenya	Asia	other	Netherlands and
<b>2.1</b>		<i>Supporting communities to mitigate the loss of human lives and livestock.</i>						
2.1a	Identifying key areas where carnivore populations are threatened by human-carnivore conflict.	X	X	X	X	X		
2.1b	Identifying circumstances that contribute to livestock losses and risks for humans.	X	X	X	X	X		
2.1c	Developing and disseminating effective strategies for reducing losses.	X	X	X	X	X		
2.1d	Working with local communities to implement mitigation techniques, such as bomas and/or consolation schemes.	X	X	X	X	X		
<b>2.2</b>		<i>Initiating and developing community development programmes to promote tolerance to carnivores.</i>						
2.2a	Identifying key areas where economic incentives and tourism built around carnivores could benefit local communities around important areas for carnivore conservation.	X	X	X	X	X		
2.2b	Encouraging appropriate distribution of revenues around hotspots to local communities.	X	X	X				



2.2c		Examining alternatives for regions where tourism is unlikely to provide sufficient incentive for conservation. Examples are "snare handicraft", beekeeping, vegetable gardening and human-carnivore conflict workshops to prevent and mitigate conflicts.	X	X	X			
<b>2.3</b> <i>Supporting the anti-poaching effort to prevent loss of prey and illegal killing of carnivores.</i>								
2.3a		Identifying key areas where the prey base for target carnivores are threatened by poaching and/or illegal intrusion into protected areas.			X	X		
2.3b		Identifying key areas where poaching activities are directly targeting large carnivores, both for the local market and for the export of body parts (bones etc.).			X	X		
2.3c		Implementing and supporting activities that reduce poaching and intrusion into protected areas.			X	X		
	Priority	<b>Theme</b> <i>Target activity</i> <b>Capacity Building</b>	Senegal	Benin	Cameroon	Kenya	Asia	other Netherlands and
<b>3</b>								
<b>3.1</b> <i>Supporting PhD students from the target countries.</i>								
3.1a		Recruiting suitable candidates to apply to a PhD program in the Netherlands or Belgium.	X	X	X	X	X	
3.1b		Supporting their application process to the associated graduate schools.	X	X	X	X	X	
3.1c		Supporting selected PhD students to spend time in the Netherlands/Belgium to work on their proposal, data and, ultimately, their thesis.	X	X	X	X	X	
3.1d		Supporting the participation of MSc students within a supported PhD research.	X	X	X	X	X	
3.1e		Supporting fundraising for necessary field equipment.	X	X	X	X	X	
3.1f		Supporting fundraising for other research costs of PhD or Master students.	X	X	X	X	X	
<b>3.2</b> <i>Supporting national and regional level conservation activities.</i>								
3.2a		Appointing of National Carnivore Coordinators in target countries and regions with key carnivore populations.	X	X	X			
3.2b		Supporting the existing regional large carnivore network in West and Central Africa (ROCAL).	X	X	X			
3.2c		Supporting the development and implementation of regional and national carnivore conservation strategies, especially in West and Central Africa.	X	X	X			
<b>3.3</b> <i>Supporting the management staff at the National Park level.</i>								
3.3a		Strengthening conservation skills of park wardens through workshops, courses and knowledge sharing.	X	X	X	X		
3.3b		Strengthening skills of conservation staff (wardens, village-guards and eco-guards) for effective conservation of key carnivore populations.	X	X	X	X		
3.3c		Supporting conservation staff with acquiring necessary field equipment.	X	X	X	X		
3.3d		Incorporating large carnivore conservation education into curricula and training courses for management staff ( warden, rangers, eco-guards).	X	X	X	X		
3.3e		Training community and conservation guards in monitoring techniques and anti-poaching tools.	X	X	X	X		

3.4		<i>Supporting local conservation practitioners and NGOs involved in large carnivore conservation.</i>							
3.4a		Providing support for fundraising for carnivore conservation efforts (staff training, surveys, human dimension management, conflict resolution, monitoring impact etc.) for NGOs involved in large carnivore conservation (Local, Dutch, International).	X		X	X	X		
3.4b		Providing consultatory support for carnivore conservation efforts (staff training, surveys, human dimension management, funding, conflict resolution, monitoring impact etc.) of NGOs ( local, Dutch, international)	X		X	X	X		
3.4c		Providing training workshops for staff of NGOs involved in large carnivore conservation ( Local, Dutch and International)	X		X	X	X		
3.5		<i>Supporting national and regional level conservation activities.</i>							
3.5a		Identifying government and community stakeholders best placed to influence carnivore conservation.			X				
3.5b		Increasing dialogue with government stakeholders to improve carnivore conservation measures, science-based hunting quota and anti-poaching support.			X				
Priority	<b>Theme</b> <i>Target activity</i> <b>Environmental Education and Increasing Awareness</b>		Senegal	Benin	Cameroon	Kenya	Asia	and other	Netherlands
4									
4.1		<i>Targeting pupils, students and teachers of elementary and high schools in the Netherlands.</i>							
4.1a		Developing an online teaching package on large carnivores with a special focus on the African lion for pupils of elementary schools							X
4.1b		Developing an online education package on large carnivores with a special focus on the African lion for high school students.							X
4.1c		Training the trainers: develop an instruction manual for teachers							X
4.2		<i>Targeting pupils, students and teachers of elementary schools and high schools in target countries in the South (Focus on West and Central Africa).</i>							
4.2a		Training the trainers: develop instruction manuals for teachers on lion conservation.	X	X	X	X	X	X	
4.2b		Providing awareness education material for teachers to educate pupils of elementary schools on large carnivores with a special focus on the African lion.	X	X	X	X	X	X	
4.2c		Providing awareness education material for teachers to educate students of high schools on large carnivores with a special focus on the African lion	X	X	X	X	X	X	
Priority	<b>Theme</b> <i>Target activity</i> <b>Communication</b>		Senegal	Benin	Cameroon	Kenya	Asia	and other	Netherlands
5									
5.1		<i>Initiating and supporting a multi-pronged media campaign in The Netherlands on the importance of large carnivore conservation.</i>							
5.1a		Sending out press releases on important events related to large carnivore conservation for newspapers and other periodicals.							X
5.1b		Holding interviews on important issues related to large carnivore conservation with major newspapers.							X



have an agreement with the National Trust for Nature Conservation Nepal (NTNC) and in India, we intend to collaborate with the Carnivore Conservation and Research Foundation. We envision expanding our partnership base and increase the strength of the existing network.

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