



**ACTION PLAN FOR THE CONSERVATION OF
VULTURES IN THE CLASSIFIED FORESTS OF
SOTA, ALIBORI SUPERIEUR AND THREE RIVERS
IN BENIN (APCV-SAT)**

2024-2035

**Shared species, shared priorities, shared vision
for the future of vultures.**



Contents

Preamble

1. Background and approach

- 1.1 Background/context
- 1.2 The approach
- 1.3 Presentation of protected areas

2. Focal species and their status

- 2.1 Description of species ecology
- 2.2 Species distribution
- 2.3 Ecosystem roles
- 2.4 Threats
- 2.5 National legal framework
- 2.6 Conservation work in the sub-region

3. Action plan

- 3.1 Visions for 2035
- 3.2 Thematic objectives
- 3.3 From thematic objectives to actions towards 2035
- 3.4 Fundraising and resource mobilization

References

Preamble

The conservation plan for vultures in the Sota, Alibori Supérieur and Three rivers classified forests (APCV-SAT) for the three protected areas (Sota classified forest, Upper Alibori classified forest and the Three Rivers classified forest) in northeastern Benin reflects a strategic approach and aligned with the guidelines of the Multi-Species Action Plan for the Conservation of African-Eurasian Vultures (Vulture MsAP). Indeed, the Vulture MsAP, adopted by CMS Parties in 2017 at COP12, provides a comprehensive framework for the conservation of the 15 species of migratory African-Eurasian vultures, covering the geographical areas of 128 states. This local plan is part of this global vision and has been adapted to the specificities of the three target protected areas.

This conservation plan begins with a detailed introduction, setting out the rationale, objectives and approach used to develop it as part of the project Saving vultures in Benin: reducing habitat loss and the illegal killing of vultures through local community involvement in northeast Benin, funded by the Rufford Foundation. Each action proposed in the APCV-SAT is carefully evaluated and adapted to local realities, taking into account available data and resources specific to the protected areas concerned. The plan was designed and validated in close collaboration with the managers of the three protected areas, who share the same realities regarding vulture conservation.

1. Background and approach

1.1. Background / Context

The importance of vultures in the African ecosystem and the threats they face are crucial topics for biodiversity conservationists. In Benin, as in West Africa, vultures play a crucial role in cleaning carcasses and preventing the spread of disease (Buij et al., 2016). However, their populations have drastically declined due to poisoning, use for traditional purposes and the destruction of their habitats (Deikumah, 2020).

Four species of African vulture are currently critically endangered in the classified forests of the Sota, Alibori Supérieur and Three rivers, Scavenger Vulture (*Necrosyrtes monachus*), African Vulture (*Gyps africanus*), Ruppell's Vulture (*Gyps rueppellii*), and White-headed Vulture (*Trigonoceps occipitalis*) (BirdLife International, 2021).

The Vulture MsAP has been drafted to ensure that it is relevant to each and every one of the 128 range states covered by the plan. However, it is envisaged that each national government may decide to use the Vulture MsAP to develop a customized National Vulture Conservation Strategy, relating only to the species that inhabit their jurisdiction, and to address specific threats.

With this in mind, one of the objectives of this project is to draw up a local conservation plan aimed at putting in place urgent and preventive measures to halt the rapid decline of vultures and gradually eradicate the threats facing these birds in the Sota, Alibori Superieur and Three Rivers classified forests, with the participation of local NGOs, local community representatives and staff from Benin's Direction des Eaux-Forêts et Chasse. This extremely important conservation plan is being developed to complement and support existing national biodiversity strategies and action plans under the Convention on Biological Diversity.

The APCV-SAT aims to coordinate the efforts of forest authorities, NGOs and local communities. By identifying specific threats and defining clear objectives, this local document will serve as a practical guide to protecting these essential ecosystem species. We hope that this plan will contribute to the preservation of vultures and raise awareness among all concerned.

1.2. Approach

In September 2024, Mr Fidèle E. K. Hounnouvi, coordinator of the project: Saving vultures in Benin: Reducing habitat loss and the illegal slaughter of vultures with the involvement of the local community in north-east Benin, contacted the forestry inspectorates of Kandi and Parakou and the NGO SOS Savane to ask for their support in drawing up a local conservation plan to counter the threats to the vulture species present in the three targeted protected areas, leading to their extinction. Representatives of local populations were also contacted to be part of the process. The project team was responsible for designing the planning process. The first step in the process was to gather information on the state of knowledge concerning threats to vultures in the target protected areas, including (illegal logging, intentional poisoning, illegal trade in vulture body parts and destruction of nesting sites). This information was gathered via surveys of 450 potential individuals (farmers, herders, hunters and slaughterhouse site managers) living around the targeted protected areas, as well as documentary research through past reports of vulture projects carried out by NGOs working in the field, scientific articles and documents serving as reports on the state of bird conservation in West Africa published by CITES, IUCN and Birdlife International.

This work led to the drafting of a report analyzing the threat of persecution of vultures in Benin, and more specifically in the three targeted protected areas. However, in September 2024, four stakeholders (foresters representing the Beninese government, NGO representatives, local population representatives and members of the project team) met for a strategy development workshop. The workshop was devoted

to sharing information on vulture species and the threats they face, as well as a critical review of the existing threat analysis report. The conservation plan was then pre-validated. Exchanges continued between stakeholders until the final validation of the document in May 2025.

1.3. Présentation des Aires protégées

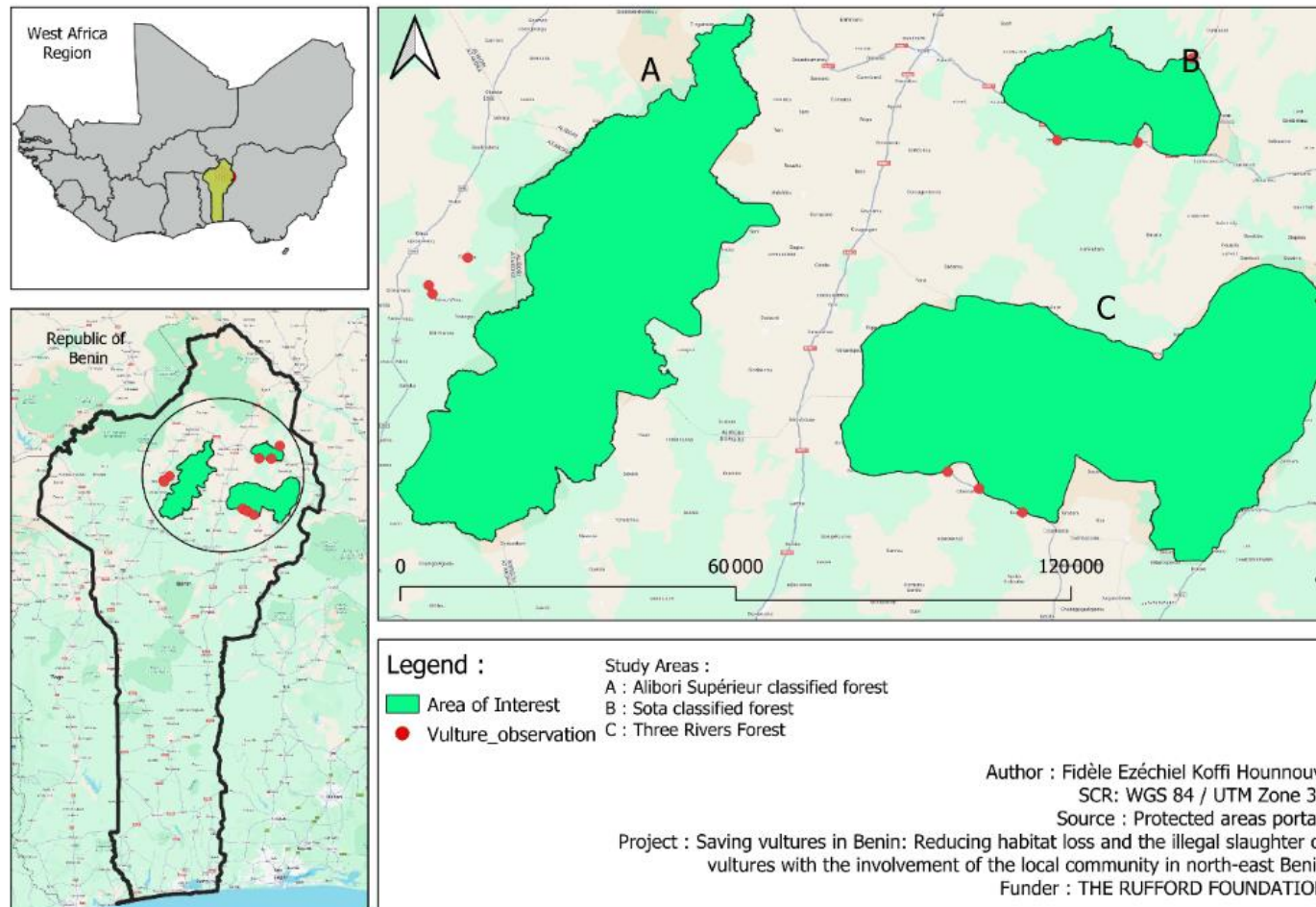


Fig. 1 : Location of targeted protected areas

The Three Rivers classified forest

The Three Rivers classified forest, with a surface area of around 270,000 ha, is located in north-east Benin (Borgou department) between latitudes 10°20' and 10°50' north and between longitudes 2°45' and 3°40' east. It takes its name from the Bouli, Tassiné and Sota rivers, which make it a preferred site for transhumance of herds during the dry season. The geological bedrock consists of rocks from the Precambrian basement and the Kandi sedimentary basin. The climate is Sudanian, with a wet period from mid-May to mid-October and a dry period from November to mid-May. The main plant formations are gallery forests, open forests and wooded savannahs, shrub savannahs and mosaics of fields and fallows, and the wildlife includes ungulates, primates, rodents, birds and reptiles.

The Sota classified forest

The Sota classified forest is a protected area in Benin, classified on May 16, 1947. It is located in the northeast of the country, in the commune of Kandi in the Alibori department. It is watered by the Sota, a right-bank tributary of the Niger, which gives it its name. It is made up of open forest and wooded savannah, with a strong agricultural and grazing base. It is located at 11° 03' north and 3° 14' east. It is irrigated by the Sota, a tributary of the Niger on the right bank, which favors the presence of gallery forests that are potential bird habitats.

Alibori Supérieur classified forest

This forest covering an area of 256,000 ha, is located in northern Benin, between 1°55' and 2°50' east longitude and between 10°05' and 11°20' north latitude. The vegetation consists of shrub savannah, tree savannah, a few patches of open forest and a mosaic of fields and fallow land. This forest is home to numerous species of flora and fauna.

2. Focal species and their status

2.1 Description of species ecology

Africa is home to 11 of the 23 vulture species currently recognized (Campbell, 2015), making it the most "vulture-rich" continent in the world. West Africa is home to eight of the 11 African species (Borrow & Demey, 2004; Deikumah, 2020), including the four species (Rüppell's Vulture, Hooded Vulture, White-backed Vulture, White-headed Vulture) on which this action plan focuses in the account of the three targeted protected areas.

- (*Necrosyrtes monachus*)



Red list category: Critically endangered (LC in 2009, EN in 2011, CR in 2015)

Ecology: The species feeds on carrion, but in urban areas it congregates on slaughterhouse disposal sites and waste dumps. It is gregarious on large carcasses but, because of its small size, is often dominated by larger species. In general, north of the equator, it is a humane species that congregates in large numbers in urban areas (Ogada and Buij, 2011). South of the equator, it is generally more solitary and found mainly in conservation areas where it relies on natural food for most of its diet. In West Africa and Kenya, it breeds throughout the year, but especially from September to July. It is an arboreal breeder that lays a single egg.

The incubation period lasts 46 to 54 days, followed by a fledging period of 80 to 130 days. The young are dependent on their parents' care for 3 to 4 months after fledging (Ferguson-Lees and Christie 2001).

- (*Gyps africanus*)



Red List category: Critically endangered (LC in 2004, NT in 2007, EN in 2012, CR in 2015)

Ecology: The Turkey Vulture is a highly gregarious species that gathers around carcasses, in thermal zones and on roosting sites. The species feeds on carrion and bone fragments from larger carcasses, mainly soft muscle and organic tissue. They hover with other vultures, which can facilitate foraging. After feeding, they often bathe with other species in preferred sites (del Hoyo et al. 1994).

- (*Gyps rueppellii*)



Red list category: Critically Endangered (LC in 1994, NT in 2007, EN in 2012, CR in 2015)

Ecology: A highly gregarious species that gathers around carrion, hovering in flocks and locating food by sight, following conspecifics, other vulture species or other scavenging raptor species. The species feeds on carrion and bone fragments from larger carcasses, mainly soft muscle and organic tissue, and is rarely content with small carrion. It follows other vultures and flocks of game or migratory animals to locate much of its food (Del Hoyo et al. 1994). The species breeds on cliffs and escarpments at a wide range of altitudes, in colonies of 10 to (at least formerly) 1000 pairs, building a platform of sticks on rocky ledges; tree nesting occurs occasionally, at

least in West and Central Africa (Rondeau et al. 2006).

- (*Trigonoceps occipitalis*)



Red list category: Critically endangered (LC in 2004, VU in 2007, CR in 2015)

Ecology: It is a predator (Murn, 2014) but also feeds on carrion and bone fragments from large and small carcasses. It feeds alone or in pairs, rarely more than two pairs congregating around larger carcasses. It often snatches food from other vulture species, consuming it nearby, and is often the first vulture species to arrive on a carcass (Mundy et al., 1992). It is known to take small or weak live prey, but can also use other raptors (del Hoyo et al. 1994). The species is thought to be a long-term resident that maintains a territory (Murn and Holloway

2014).

2.2 Ecosystem roles

Vultures are vital to ecosystems. Vultures are scavengers; they provide important ecosystem services that contribute to human well-being and health, including removing carcasses and other organic waste from the environment, reducing the spread of disease and contamination of water resources. Studies have shown that in areas depleted of vultures, carcasses take longer to decompose, with implications for the spread of disease in the wild, potentially affecting domestic animals and humans (Williams et al., 2021).

The majority of participants of our study (69%, n = 310) reported benefiting from coexisting with vultures. Among them, 65% (n = 200) valued vultures for their role in consuming carcasses in the fields, thereby maintaining environmental cleanliness (a regulatory service). Respondents stated that, without vultures, livestock owners would struggle with carcass disposal, as these scavengers remove dead cattle from communal lands. Additionally, they noted that without vultures, the environment would become uninhabitable due to the strong odor of decomposing carcasses. Vultures were also appreciated for helping locals locate missing livestock (32%, n = 100). In rural areas, cattle often graze unattended and may die without their owners knowing their whereabouts. The sight of vultures circling over a specific area serves to indicate the location of a carcass, allowing farmers to find and retrieve their missing or dead animals. Tourism was the least frequently mentioned benefit associated with vultures, cited by only 3% of respondents (n = 10).

2.3 Threats

In Benin, anthropogenic factors are at the root of these drastic declines in vulture populations, including intentional poisoning, reduced food availability, including the loss of nesting trees. The most significant threats facing West African vultures are mortality caused by intentional poisoning in the form of poisoned baits which are used illegally for the deliberate taking of vultures or their parts as fetishes for use on the basis of belief, and by poachers for medicinal but mostly mystical purposes and trade in parts/organs. Belief-based use and sentinel poisoning are both motivated by international commercial transactions.

Surveys of local populations show that the main threats to vulture species, and more specifically to the carrion vulture, are hunting (44% of respondents), poisoning with traditional tobacco (39%) and deforestation (17%), leading to the destruction of nesting sites. Tobacco leaves are crushed and sprinkled on carrion. Consumption of the poisoned carrion causes the vulture to become drowsy, making it easier to catch alive. The main reasons for hunting the species are sale for income and use in traditional medicine. The advance of agricultural fronts through deforestation is destroying the Carrion Vulture's natural habitat, and large trees (where vultures can rest in towns) have also been exploited in places, causing the species to disappear, as in Parakou (Lougbeignon and Libois, 2011). It is important to note that vultures share the same threats in the three sites targeted for this action plan.

2.4 National legal framework

All vulture species are fully protected by law no. 2002-16 of October 18, 2004 governing wildlife in the Republic of Benin. Vultures are listed in Appendix I of Decree N°2011-394 of May 28, 2011. Appendix I covers species that are fully protected and therefore prohibited from hunting and trade. Benin has passed a law n° 2021-04 of July 08, 2021 protecting and regulating international trade in endangered species of wild fauna and flora in the Republic of Benin.

2.5 Conservation work in the sub-region

Despite the protected status of vultures in Benin, they are sold openly in belief-use markets. Vendors don't seem to mind displaying and selling certain products that are fully protected by national legislation. Some vendors have been selling animal parts for generations and for traditional medicine. A study, initiated by the University of Abomey-Calavi on the vulture supply chain, worked with 16 traditional medicine markets (TMM) and 46 villages surrounding protected areas cited as vulture supply zones. The results revealed a trade network involving seven West African countries, with some specimens coming from Cameroon (Central Africa). A total of 491 specimens belonging to Egyptian, Hooded, White-faced, Rüppell's, White-backed and White-headed vultures were recorded in traditional medicine markets. SOS Savane and other local organizations have set up projects to conserve the last populations of carrion vultures (*Necrosyrtes monachus*) by improving knowledge of the use of space by carrion vultures outside protected areas; raising awareness among hunters and healers, water, forestry and hunting agents and local elected representatives of traditional beliefs in localities bordering protected areas; and restoring vulture nesting areas.

3. Action plan

3.1 Ecological and socio-cultural context of vultures in targeted protected areas

The classified forests of Sota, Three Rivers and Alibori Supérieur, located in north-eastern Benin, are still home to relict populations of vultures, notably the carrion vulture (*Necrosyrtes monachus*), African vulture (*Gyps africanus*), oricou vulture (*Torgos tracheliotos*) and Rüppell's vulture (*Gyps rueppelli*), all globally threatened with extinction. A recent study carried out by the project team in nine localities

bordering these three protected areas assessed local perceptions, traditional uses and threats to these birds of prey. The analysis, based on 450 semi-structured interviews, revealed a strong presence of scavenging vultures in inhabited areas, with over 80% of respondents claiming to have observed a vulture during the previous year. Localities close to the Alibori Supérieur forest show the highest levels of familiarity with vultures, probably linked to better coverage of awareness campaigns.

The study reveals that local populations derive direct benefits from the presence of vultures, notably their crucial role in the disposal of animal carcasses, an ecosystem service that helps limit the spread of disease. Farmers also appreciate the vultures' ability to spot animal carcasses, making it easier to locate dead livestock. However, this utilitarian recognition is outweighed by negative perceptions overall. Some 60% of respondents associate vultures with witchcraft, bad luck or death, while only a third attribute positive symbolic virtue to them (peace, prosperity, longevity). These beliefs are fuelled by traditional stories and deeply-rooted cultural representations, influencing attitudes towards them.

In terms of uses, the study revealed significant exploitation of vulture body parts, in particular the brain and bones, used for traditional healing or mystical rituals. Feathers and skulls are also prized in local pharmacopoeia. These practices, which concern all the villages surveyed, contribute significantly to the decline of local populations, with intentional poisoning identified as the main cause of vulture mortality by 70% of respondents. This situation is all the more worrying given that Benin is recognized as a nerve center for the sub-regional vulture trade, linked to traditional medicine. The scavenger vulture, because of its association with anthropized environments, is the main target of harvesting, which increases its exposure to poaching and poisoning.

Despite these alarming findings, some encouraging signs emerge from the study. Young adults (aged 18-30) were the most supportive of vulture protection, reflecting a growing awareness of biodiversity conservation among the younger generation. Solutions proposed by local communities include habitat restoration and nest tree planting (86% support), ongoing awareness-raising (84%), setting up ecoguard patrols to monitor nests (65%), and captive breeding (60%). The majority of respondents also called for tougher penalties against the illegal hunting of vultures.

The results of this survey provide a relevant basis for developing community-based conservation strategies. They underline the importance of a holistic approach combining awareness-raising, youth involvement, protection of nesting sites and the fight against illegal trade in vulture parts. Integrating these elements into the action plan for the Sota, Trois Rivières and Alibori Supérieur forests would not only help

preserve critically endangered and emblematic species, but also strengthen the links between biodiversity, local culture and sustainable development in this strategic region of Benin.

3.1. Vision 2035

Ensure the survival and prosperity of carrion vultures in the classified forests of northeast Benin (Sota, Alibori supérieur and Trois rivières), by preserving their essential ecological role by 2035.

3.2. Thematic objective

The main objectives of this action plan are to stabilize and increase the numbers of carrion vultures in target protected areas in northern Benin, while reducing the threats to these essential ecosystem species.

Thematic objective 1: Reduce intentional vulture mortality linked to illegal capture, use and trade.

Thematic objective 2: Create a positive public perception of vultures (contributing to objective 10 of the vulture action plan).

Thematic objective 3: Improve the involvement of the local population in vulture monitoring

3.3. From thematic objectives to actions towards 2035

TO 1 : Reduce intentional vulture mortality linked to illegal capture, use and trade			
Action	Timeline	Responsible collaborators	Measures of success
Initiate awareness campaigns on the impacts and socio-economic consequences of the total disappearance of vultures.	1 year (continu)	Local NGOs, media, schools, Kandi Forestry Inspectorate	<ul style="list-style-type: none"> - Number of awareness campaigns launched. - Rate of public participation and involvement in these campaigns. - Number of people made aware of the ecological and socio-economic roles of vultures.
In-depth data collection on the ecology and biology of the species for ex situ conservation.	1 year (continu)	Academics, local NGOs, Benin Department of Water, Forests and Hunting	- Regular reports on data collection progress
Map the trade markets where vultures and their parts are sold, and identify vulture trade routes in the supply region.	2 years	Academics, local NGOs, Benin Department of Water, Forests and Hunting	<ul style="list-style-type: none"> • Number of markets mapped • Precise vulture trade routes. • Rate of compliance with regulations
Setting up annual workshops for the long-term conservation of the species.	Annuellement (continu)	Benin Department of Water, Forests and Hunting.	<ul style="list-style-type: none"> • Number of annual workshops held

			<ul style="list-style-type: none"> Stakeholder participation rate
Mapping of toxic products used to poison and capture vultures.	1 year	Benin Department of Water, Forests and Hunting.	Number of toxic products identified and mapped.
Work with communities (including traditional practitioners and healers) who harvest, use and trade vultures to implement the sustainable alternative livelihoods identified.	3 years (continuu)	Local NGOs, local community representatives, Benin Department of Water, Forests and Hunting, academics	Percentage of traditional practitioners, healers and other community members involved in alternative livelihoods.

TO 2 : Create a positive public perception of vultures (contributing to Objective 10 of the vulture action plan)

Action	Timeline	Responsible collaborators	Measures of success
Creation of school libraries on Vultures in schools to perpetuate knowledge of the species among young people and future generations.	1 year (continu)	Local NGOs, local schools	- Number of libraries created - Number of students and teachers using the library
Awareness-raising and disorientation sessions for local communities on the different uses of vultures.	6 months (continu)	local NGOs, traditional practitioners, healers	- Number of awareness sessions organized
Encouraging local artists to create works featuring vultures.	1 year (continu)	Local NGOs, local artists	- Number of works of art created featuring vultures
Raising awareness among traditional practitioners and healers of the legislation governing the capture, use and trade of vultures.	1 year (continu)	local NGOs, traditional practitioners, healers	-Percentage of traditional practitioners and healers informed about legislation concerning vultures.

TO 3 : Involving the local population in vulture monitoring

Action	Timeline	Responsible collaborators	Measures of success
Creation of a local committee to protect vulture populations.	6 mois (continu)	Local NGOs, Benin Department of Water, Forests and Hunting	<ul style="list-style-type: none"> - Existence and operation of the local committee. - Number of postponements
Environmental education in different forms and for different targets	1 an (continu)	Local NGOs, schools, local communities	<ul style="list-style-type: none"> - Number of education sessions organized - Number of people reached by education programs (e.g. students, teachers, community members).
Promoting reforestation of degraded habitats	2 ans (continu)	Local NGOs, local communities	<ul style="list-style-type: none"> - Number of trees planted - Reforestation area completed
Strict application of laws on fauna and flora, with enforcement of the penalties provided for in the various legal texts.	Continuous (regular monitoring)	Benin Department of Water, Forests and Hunting, law enforcement agencies	<ul style="list-style-type: none"> - Number of offences detected and penalties applied in accordance with the law

3.4. Fundraising and resource mobilization

The establishment of an overall budget and fundraising strategy is beyond the scope of this conservation plan, which focuses instead on the key actions that should guide budgeting, fundraising and resource mobilization, and also identifies opportunities related to specific issues linked to vulture conservation in the three targeted protected areas. The costs associated with implementing the plan can be considered in terms of those related to the coordination structure and those required to implement practical conservation actions. It is important to seek pledges of funding, probably setting up a specialized body to seek funding at the earliest opportunity, as one of its priorities, this structure will help raise funds for the practical implementation of the APCV-SAT.

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