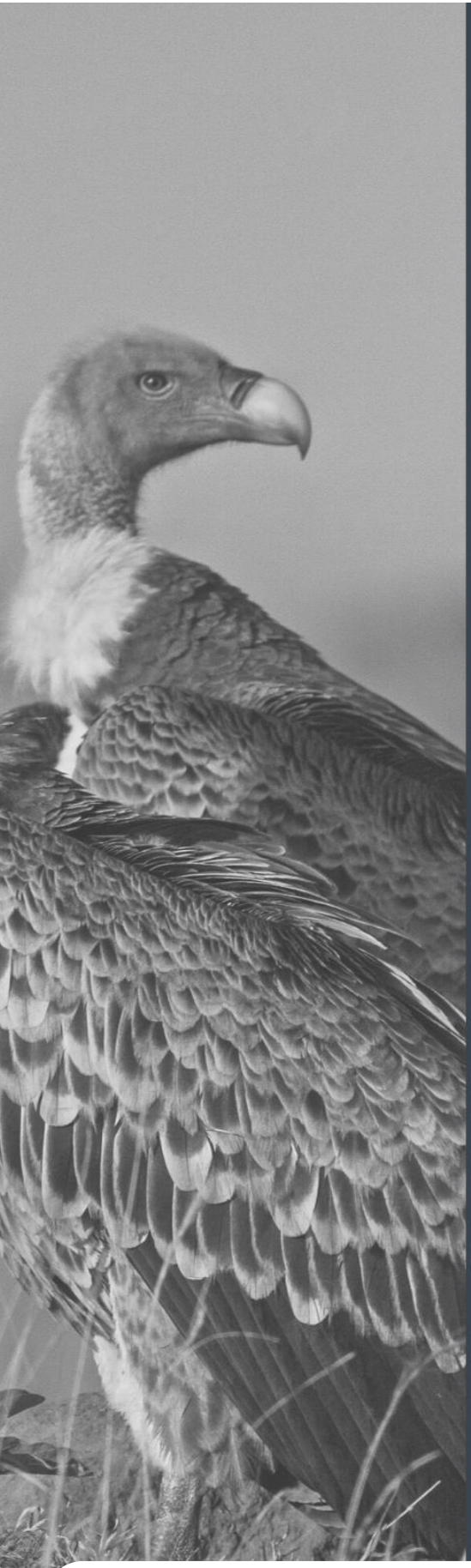

# Strategic Implementation Plan (2020 – 2023)

## For the Multi-species Action Plan to conserve African-Eurasian Vultures (Vulture MsAP), incorporating a report on implementation to date


**CMS Raptors MOU**
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## Geographical Scope
128 Range States, which host populations of one or more of the species that are the focus of the CMS Vulture Multi-species Action Plan.

## Species Scope
This plan covers 15 of the 16 species classified as the Old World vultures, Palm-nut Vulture being excluded.

## Lifespan of Plan
This plan is for implementation over three years (2020 – 2023).


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# Summary

Under mandates from the Conference of Parties to the Convention on Migratory Species (CMS) in 2014 and the Meeting of Signatories to the CMS Memorandum of Understanding on African-Eurasian Birds of Prey (Raptors MOU) the following year, a *Multi-species Action Plan to Conserve African-Eurasian Vultures* (Vulture MsAP) was developed through an extensive partnership collaboration process and was formally adopted by the CMS Parties in 2017.

The Vulture MsAP covers all 15 species of Old World vultures that are obligate scavengers. Its overall aim, over the period 2017 – 2029, is to halt and reverse the current serious population declines in these species, and to support Range States with appropriate conservation management actions. The Plan provides background on the policy context, the biology of the species and the threats affecting them, and sets out a comprehensive framework of objectives, actions, priorities and expected results; identifying the roles of key players and the mechanisms required for coordination.

CMS Parties and non-Party Range States, partners and stakeholders have been urged and encouraged to implement the Vulture MsAP as a matter of priority locally, nationally and regionally, as well as at flyway level.

A vast range of projects and activities is underway in the different regions and is already contributing to implementation of the Plan, while other proposals are being developed on a continuing basis. Data on this have been collated through a questionnaire survey of all Range States and other stakeholders that was undertaken in early 2018. Further work to elaborate the implementation agenda was undertaken at a special session of the 'Global Summit for the Flyways' in the same year.

The present document builds on this by analysing the available data on existing and planned activity, and providing an implementation 'road map' to help all concerned to take forward the evolving picture of needs, priorities and opportunities. Against the context set out here and in the Vulture MsAP itself, governments, relevant agencies, organisations and others are encouraged to use this framework to identify and strengthen the contributions they can each make to linked actions, synergies, and mobilisation of the necessary resources and support.

Section 2 provides an overview of activities which have been contributing already to implementation of the Vulture MsAP. The data that have fed into this has some limitations, but nonetheless a good impression can be gained of the type of work being undertaken and the broad areas of emphasis that are evident thus far.

Section 3 does the same for reported information about relevant activities that are currently planned or in development. Making the information available in this synthesised form, to a wider pool of stakeholders, should help to support the further charting of a way forward for practical delivery of individual items. Elements of this can be extracted and re-presented as required, in project portfolios, work programmes, funding bids and other vehicles. The intention is for this to be a springboard rather than a straitjacket, with the content being versioned and adapted for different needs from time to time.

A further special part of Section 3 sets out the pro-forma specifications of a suite of 11 'flagship projects' that were initially defined at the Global Flyways Summit referred to above. These are still provisional, and none yet benefits from a dedicated budget; so the 'portfolio' of these proposed initiatives is presented here as a way of capturing the authoritative consensus as to the priorities they represent, and offering a selection of worked-out options for ready engagement. The suite of 11 proposals is just a starting-point, and as implementation advances, the 'flagship' list could become a rolling list, with new proposals being added as others achieve support.

Section 4 presents a synthesis (under four broad headings) of the particular needs for capacity and support (other than financial assistance) that have been identified, primarily by the respondents to the 2018 questionnaire survey. The countries concerned in each case

are highlighted, and potential cross-references to relevant Objectives in the Vulture MsAP are suggested. Some differences between regions are apparent, with (for example) capacity/awareness and assistance with field-based activities being particularly needed in Africa, and policy/legal issues being emphasised more strongly in Europe. It would be desirable to evolve this line of enquiry further: (a) to investigate in more depth the specific nature of the needs perceived in each case; and (b) to begin to relate the picture of 'demand' to opportunities for 'supply', in a kind of 'support matrix' which could be maintained on an on-going basis in future.

Other needs are explored in Section 6, which offers a form of 'gap analysis' for the situation at present. Some of this comes from the inventory of existing and planned implementation activity - acknowledging necessary caveats about interpretation of the data, the summary of how the information reported so far distributes across the objectives and actions defined in the Vulture MsAP has helped to show which of these are perceived to be receiving less attention than others.

There is clearly a tendency thus far, for example, for activities in the research and monitoring category to be dominant. Activities relating to poisoning, energy infrastructure and food supply issues are also prominent. Information on belief-based use, sentinel poisoning, lead ammunition, habitat protection/management, disturbance and persecution appears less frequently. For 48 of the 124 activities listed in the Vulture MsAP (39%), no existing or planned activities were recorded in the data underpinning Sections 2 and 3.

Of the actions identified in the Vulture MsAP as 'essential' or 'critical' priorities, less has been reported so far on those that involve government-level actions for legislation, policy, regulation than those involving field or community-based action. In terms of geographical differences, Asia seems on average to have proportionately fewer activities underway or planned than the other regions.

Some other important gaps in implementation are apparent, and need urgent attention. One is the need for a full functioning framework to coordinate the Vulture MsAP's implementation internationally, and to ensure that this is maintained on a solid footing over the life of the Plan. As time goes on, the lack of sufficient coordination capacity may become an increasingly limiting factor on what can be achieved, given the strategic scale of the agenda at stake. This is discussed in Section 5 of the Strategic Implementation Plan (SIP). Linked to this is the need to develop and implement a strategy for securing the funding and other resources needed for implementing the Plan, as defined in the 'critical priority' action 12.1.3.

An effective monitoring & evaluation regime for the Plan is also currently lacking, and this becomes an increasing deficiency as time goes on. It will be vital in future for the overall implementation of the Plan to be monitored in some way, for completed/successful activities to be registered as such, for outcomes to be evaluated and lessons learnt to be captured (and fed back into on-going work). This suggests a need not only for an agreed assessment mechanism but also a more systematically organised set of activity-reporting processes than are operating at present. Aspects of this are discussed in Section 3.

An associated question is that of assessing the impact of the implementation of the Plan (and of related activities directly or indirectly stimulated by the Plan) on the conservation status of the vulture species themselves. This too requires further work.

Ultimately the intention is that this SIP should not be a static document, but instead a more dynamic kind of living resource, which will serve as a platform for guiding effort, advertising opportunities, triggering connections, relating specific progress steps to strategically-agreed objectives, helping with subsequent evaluation of success, and generally boosting awareness and practical support for vulture conservation. All concerned are invited to redouble their collective efforts to this end.

# 1. Background and Introduction

1.1 At the 11th meeting of the Conference of Parties to the Convention on Migratory Species (CMS COP11) in 2014, the Parties adopted Resolution 11.14 on a Programme of Work on Migratory Birds and Flyways. The Resolution included a mandate to develop a Multi-species Action Plan to Conserve African-Eurasian Vultures (Vulture MsAP), under the auspices of the Coordinating Unit of the CMS Memorandum of Understanding on the conservation of migratory African-Eurasian birds of prey (Raptors MOU).

1.2 At the Raptors MOU's 2nd Meeting of Signatories (MOS2) in 2015, all species of Old World vultures (except the Palm-nut Vulture) were recognised as fulfilling the CMS definition of 'migratory' and were accordingly added to Annex I of the MOU. At the same time the MOS tasked the MOU's Technical Advisory Group (TAG) with the development of an MsAP to encompass all 15 species of Old World vultures that are obligate scavengers (Bearded Vulture *Gypaetus barbatus*, Egyptian Vulture *Neophron percnopterus*, Red-headed Vulture *Sarcogyps calvus*, White-headed Vulture *Trigonoceps occipitalis*, Hooded Vulture *Necrosyrtes monachus*, Himalayan Griffon *Gyps himalayensis*, White-rumped Vulture *Gyps bengalensis*, White-backed Vulture *Gyps africanus*, Indian Vulture *Gyps indicus*, Slender-billed Vulture *Gyps tenuirostris*, Cape Vulture *Gyps coprotheres*, Rüppell's Vulture *Gyps rueppelli*, Griffon Vulture *Gyps fulvus*, Cinereous Vulture *Aegypius monachus*, and Lappet-faced Vulture *Torgos tracheliotos*).

1.3 In February 2016, following consultation with the IUCN Species Survival Commission (SSC) Vulture Specialist Group, BirdLife International, the Vulture Conservation Foundation and other specialists, the Coordinating Unit of the Raptors MOU published a Project Charter for the development of the Vulture MsAP, with the overall aim of rapidly halting current population declines in the 15 species concerned, reversing recent population trends to bring the conservation status of each species back to a favourable level, and providing conservation management guidelines applicable to all Range States covered by the Vulture MsAP.

1.4 In response to a call for nominations for a Vulture Working Group and for funding support, nearly 60 nominations were received for the Working Group and Switzerland generously offered financial support (to supplement that provided by the Environment Agency – Abu Dhabi, on behalf of the Government of the UAE, through the Raptors MOU Coordinating Unit) to develop the Vulture MsAP.

1.5 The subsequent development of the Vulture MsAP was overseen by the Coordinating Unit in partnership with BirdLife International, the Vulture Conservation Foundation and the IUCN SSC Vulture Specialist Group, supported by members of the Vulture Working Group, its Vulture Steering Group and in particular the Overarching Coordinator and three Regional Coordinators covering Africa, Asia (excluding Central Asia) and Europe (including Central Asia).

1.6 To help with the elaboration of the regional components of the Plan, four regional workshops (with further support from the host countries concerned in each case) were held in late 2016 - early 2017, covering respectively Africa, Europe & Central Asia; Asia and the Middle East. A first consolidated draft of the Vulture MsAP, incorporating the four regional components, was published in mid-February 2017. It was circulated for review to 50 specialists in advance of a fifth 'overarching' workshop in Spain, which reviewed and refined the draft. There then followed a phase of public consultation, in which the draft was circulated to all 128 Range States, as well as other partners and stakeholders. This exercise produced just under 60 responses, leading to a further revision of the text which was then tabled for consideration by the 2nd meeting of the CMS Scientific Council Sessional Committee in July 2017.

1.7 The resulting text was therefore informed by a wide range of sources including published literature, over 150 questionnaires completed by officials and vulture experts, participative workshops involving more than 200 people and a month-long public consultation exercise on the second draft which

had been emailed to over 1,000 contacts. Following its endorsement by the Sessional Committee, the Vulture MsAP (covering the 12-year period 2017-2029) was formally adopted by the CMS Parties at COP12 in October 2017[1].

1.8 CMS Resolution 12.10 pointed to numerous relevant global conservation imperatives, and indicated concern that the vulture species it addresses were among the most threatened groups of migratory birds in the world (eleven being globally threatened, eight critically so, and three being Near Threatened according to the IUCN Red List), referring to 'precipitous population declines' in the species concerned, driven primarily by poison baits set illegally a) to protect livestock from predators but unintentionally killing vultures, b) by poachers deliberately targeting vultures to prevent them drawing attention of wardens to illegally killed Elephant, and c) for the deliberate collection of vultures for belief-based use; and by vultures feeding on carcasses contaminated with the veterinary drug diclofenac in South Asia; but also due to a range of other threats including habitat loss or degradation, decreasing food availability, mortality caused by electrocution on powerline poles, collision with wind turbines and other energy generation and transmission infrastructure, human disturbance and fragmentation of remaining populations.

1.9 It further recognised that vultures provide critically important ecosystem services, offering significant economic and health benefits by cleaning up carcasses and other organic waste in the environment, while also holding special intrinsic cultural value in many countries; and it therefore emphasised the need for immediate action by Range State governments, partners, stakeholders and other interested parties to address the principal threats referred to above. Parties and non-Party Range States, partners and stakeholders were urged and encouraged to implement the Vulture MsAP as a matter of priority locally, nationally and regionally as well as at flyway level.

1.10 Parties, non-Party Range States, the United Nations Environment Programme and other relevant international organisations, bilateral and multilateral donors and all other stakeholders were also urged and invited to work collaboratively immediately to mobilise the considerable resources required for full implementation of the Action Plan.

1.11 All known threats to vultures are reviewed in the Vulture MsAP itself at regional and species levels, and the drivers behind these threats are considered. To address the threats, 12 objectives are listed for the 128 Range States covered by the Plan. This is followed by a Framework of Conservation Actions (Table 6 in Section 7.4) which identifies 124 actions within the set of 12 objectives, which are required in order to achieve 33 separate results. The table provides an overall priority for each action (essential, high or medium); a suggested timeframe for its implementation; and an indication of the relevant sub-regions in which the action is required, as highlighted in an overarching Threats Map (Figure 18). Each of the 124 actions is assigned to one of four categories: direct conservation action, education & awareness, policy & legislation, or research & monitoring.

1.12 Seventeen of the actions have been graded as 'essential' priorities (shaded in pink in the table); being those whose immediate implementation is considered most important to ensure that progress towards the goal of the Vulture MsAP is made as quickly as possible. This is not to suggest that the other actions are unimportant - Range States, partners and other stakeholders are specifically encouraged to consider carefully all of the recommended

[1] Convention on Migratory Species (2017). Conservation of African-Eurasian Vultures. Resolution 12.10 adopted by the 12th meeting of the Conference of the Parties, Manila, Philippines, 23-28 October 2017. Unusually, although this Resolution adopted the Vulture MsAP, the Plan itself was not annexed to the Resolution nor was the source document referenced; but it had been tabled at the COP as Annex 3 to Document UNEP/CMS/COP12/Doc.24.1.4, and it has since been published as Botha AJ, Andevski J, Bowden CGR, Gudka M, Safford RJ, Tavares J and Williams NP (2017). Multi-species Action Plan to conserve African-Eurasian Vultures. CMS Raptors MOU Technical Publication No. 5; CMS Technical Series No. 35. Coordinating Unit of the CMS Raptors MOU, Abu Dhabi, United Arab Emirates.

actions for inclusion and implementation, where appropriate, in relevant regional, national, species or threat-focused action plans.

1.13 Various key stakeholders are identified in the Vulture MsAP, along with their roles in achieving the 12 objectives; as well as information on barriers and policy opportunities for effecting wide-scale changes. An overview of international conventions, agreements and policies is included, together with a list of other plans and related initiatives addressing relevant species and/or threats, so as to give guidance on existing structures and possible synergies that may help to support the implementation of the Vulture MsAP. The proposed structure, approach and resources required to implement the Plan are described, and the monitoring, evaluation and review processes to be followed are set out. Key components of desired communication and fundraising plans are also described.

1.14 The Vulture MsAP contains a framework for coordination, which proposes a functional structure for facilitating implementation of the Plan. This includes the Coordinating Unit of the Raptors MoU (to have overall responsibility for guidance and oversight); an Overarching Coordinator (for oversight of day-to-day actions); Regional Coordinators (to promote and assist regional implementation); a Vulture Working Group (to facilitate communications with Range States); a Vulture Steering Group (with responsibility for progressing specific tasks); Regional Vulture Committees (to promote and facilitate communication within regions); National Vulture Task Forces (focused on the particular species in the country concerned); and the general public is also identified as a component of the structure, in respect of broad awareness-raising efforts and support. The functioning and composition of the Steering Group may be further clarified in the near future, but at the time of writing its membership (including the Coordinators) is as follows:

- André Botha – Acting Overarching Coordinator of the Vulture MsAP
- Rebecca Garbett – Partner (BirdLife Africa)
- Chris Bowden – Partner (Saving Asia's Vultures from Extinction, SAVE)
- Jovan Andevski – Acting Regional Coordinator for Europe
- José Tavares – Partner (Vulture Conservation Foundation, VCF)
- Roger Safford – Partner (BirdLife International)
- Nicola Crockford – BirdLife CMS Liaison Officer
- Mohammed Shobrak – Regional member, Middle East (Saudi Arabia)
- Ohad Hatzofe – Regional member, Europe (Israel)
- Stoyan Nicolov – Regional member, Europe (Bulgaria; Lead Egyptian Vulture Flyway Action Plan)
- Ruben Moreno-Opo – Regional member, Europe (Spain)
- Charles Musyoki – Regional member, Africa (Kenya)
- Nana Kofi Abu-Nsiah – Regional member, Africa (Ghana)
- Naeem Ashraf Raja – Regional member, Asia (Pakistan)
- Soumitra Dasgupta – Regional member, Asia (India)
- Fernando Spina – Chair of CMS Scientific Council
- Edward van Asch – CITES Secretariat
- Ivan Ramirez – Partner (BirdLife Europe and Central Asia)
- [*Position currently vacant*] – CMS Secretariat (Head of CMS Avian Species Team)
- Nick P. Williams – Coordinating Unit of the Raptors MoU
- Anne Thieme – Coordinating Unit of the Raptors MoU (second representative)

1.15 Resolution 12.10 requested the CMS Secretariat, through the Raptors MOU Coordinating Unit, to facilitate continuation of the Vulture Working Group and its associated structures (Vulture Steering Group and proposed Regional Implementation Committees) and team of coordinators, and to continue to encourage stakeholder engagement *inter alia* through regional meetings. Funding still needs to be found for this, and in particular for maintaining the team of coordinators[2].

1.16 Immediately after CMS COP12, the Endangered Wildlife Trust (South Africa), the Vulture Conservation Foundation (Netherlands) and the Royal Society for the Protection of Birds (UK), the organisations which hosted the three original coordinators, agreed to continue to support these roles to avoid loss of momentum after adoption of the Vulture MsAP, but with much reduced capacity. Subsequently however, BirdLife, including RSPB, have repositioned as (an) implementing partner(s), while emphasising the urgent need to find resources to establish a full-time coordination structure under (or reporting to) the Raptors MOU Coordinating Unit. The Saudi Wildlife Authority has offered to cover the Middle East region. The various individuals concerned, together with other representatives of BirdLife International, RSPB, VCF and the Raptors MOU Coordinating Unit, form a *de facto* 'Coordination Team' for the Vulture MsAP. They are:

- Jovan Andevski (VCF)
- José Tavares (VCF)
- Andre Botha (EWT)
- Chris Bowden (RSPB)
- Nicola Crockford (RSPB)
- Roger Safford (BirdLife International)
- Mohammed Shobrak (Taif University/Saudi Wildlife Authority)
- Anne Thieme (CU of Raptors MoU)
- Nick P. Williams (CU of Raptors MoU)

1.17 Two related plans were developed concurrently with the development of the Vulture MsAP and were consulted on separately and extensively with regard to the two species concerned. They are a *Flyway Action Plan for the Conservation of the Balkan and Central Asian Populations of the Egyptian Vulture* and a *Flyway Action Plan for the Conservation of the Cinereous Vulture*. In addition, a *Blueprint for the Recovery of Asia's Critically Endangered Gyps Vultures* was developed by the Saving Asia's Vultures from Extinction (SAVE) consortium. The Blueprint is updated annually by SAVE members and it

[2] Updates on progress since the adoption of Resolution 12.10 have been reported *inter alia* in:

(i) CMS Secretariat (2018a). Report from the Secretariat on the implementation of the COP12 Resolution and Decisions on the conservation of African-Eurasian vultures. Document UNEP/CMS/ScC-SC3/Doc.7.1.2 for the 3rd Meeting of the Sessional Committee of the CMS Scientific Council (ScC-SC3), Bonn, Germany, 29 May – 1 June 2018.

(ii) CMS Secretariat (2018b). Implementation of the Programme of Work 2018-2020. Document UNEP/CMS/StC48/Doc.14 for the 48th Meeting of the Standing Committee of the CMS, Bonn, Germany, 23 – 24 October 2018. (Includes a section on the implementation of the COP12 Resolution and Decisions on the conservation of African-Eurasian vultures).

(iii) Raptors MOU Coordinating Unit (2018). Report on implementation of the Vulture MsAP. Document UNEP/CMS/Raptors/TAG3/Doc.3.4 for the 3rd Meeting of the Technical Advisory Group, Sempach, Switzerland, 12 - 14 December 2018.

provides clear guidance in terms of regional vulture conservation priorities which are reflected in the Vulture MsAP. All three of these documents are included as Annexes to the Vulture MsAP.

1.18 In February 2018, the Raptors MOU Coordinating Unit sent a questionnaire to all 128 Range States covered by the Vulture MsAP, members of the Vulture Working Group, other stakeholders and interested parties, asking about activities completed within the preceding 12 months and any that were planned for the coming three years. More than 100 respondents provided information for some or all of the 35 information fields in the questionnaire. These data have been analysed as part of the input to the present Strategic Implementation Plan.

1.19 At the 'Global Summit for the Flyways' which took place in Abu Dhabi in April 2018, a full day was devoted to discussing the Vulture MsAP[3]. The Summit reaffirmed the importance of *'immediate, sustained and comprehensive'* implementation of the Vulture MsAP, and underlined the need for resources for coordination and for a wider *'community of implementers'* bringing together all stakeholders, including governments, conservationists, protected area managers, livestock breeders, hunters and veterinarians, drawing on synergies between them, including for example veterinary pharmaceutical and agrochemical companies and those involved in anti-poaching efforts for elephants and conservation of carnivores affected by poisoning. It also emphasised the importance of coordination of species action plans in general, but for the Vulture MsAP in particular (and the urgent need for resources to support this), given the large number of species, threats and Range States that it covers.

1.20 Several particular priority action themes in support of a '*landscape approach'* to threat reduction were also highlighted. The Summit saw a particularly urgent need to put in place rapid response mechanisms for communities and governments to tackle jointly the threat of poison baits, and safety testing for veterinary pharmaceuticals to reduce this particular proven risk. '*Vulture Safe Zones*' were proving to be crucial in South Asia, and similar landscape approaches, adapted as appropriate, held great potential for application in other regions, particularly Africa. Successful recovery programmes in Europe (where vultures are generally increasing and recolonising former ranges), and some important progress with tackling threats in South Asia (reinforced by subsequent positive data from Nepal in particular), demonstrated that effective conservation action for vultures is possible, and that there are many socio-economic benefits associated with healthy vulture populations.

1.21 Eleven '*flagship projects'* (expanding on earlier ideas for four such projects) were identified to support the future implementation of key parts of the Vulture MsAP, and these are elaborated further in Section 3 of the present Strategic Implementation Plan below. A vast range of other projects and activities is underway among partners and stakeholders in the different regions and is already contributing to implementation of the Vulture MsAP, while numerous other proposals are being developed on a continuing basis. The Vulture MsAP is one of the most significant areas of work that has progressed under the auspices of the Raptors MOU Action Plan to date[4]. Details of existing and anticipated progress are provided in Sections 2 and 3 below; while subsequent sections discuss support and capacity needs, priorities and opportunities; the coordination issue, and a gap analysis.

1.22 Thanks to a generous voluntary financial contribution from Switzerland, in late 2018 the Raptors MOU Coordinating Unit was able to proceed with the development of a Strategic Implementation Plan (SIP) for the Vultures MsAP, through the commissioning of a consultant to draft the present document, in

[3] BirdLife International (2018). A Summit for the Flyways. Declaration and outcomes of the Summit held on 23-26 April 2018, Abu Dhabi, United Arab Emirates.

[4] See Pritchard DE (in prep). Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia – Review of the Action Plan. Consultant report for the Raptors MOU Coordinating Unit and Technical Advisory Group.

consultation with the Vulture MsAP Coordination Team. As well as a plan for the future, the brief for this work included an itemisation of existing activities that are contributing to the implementation of the Vulture MsAP, which is seen *inter alia* as helping those involved to contextualise their work in the framework of the Plan.

1.23 The purpose of the SIP was then conceived as providing a "road map" for implementation which would set out and validate particular concrete priorities for the actual delivery of the Framework of Conservation Actions in the Action Plan, to act as a more specific vehicle for signposting opportunities for synergy and promoting the mobilisation of necessary resources and support. It would relate to the long term (the Vulture MsAP itself is for 2017-2029) but would put particular emphasis on the two-year period 2019-2021.

1.24 This concept and its scope were discussed further in December 2018 by the Vulture MsAP Coordination Team and by the Raptors MOU Technical Advisory Group[5]. It is clear that current situations and future needs vary between regions, with some needing less extensive additional elaboration of action agendas than others. The SIP therefore aims where possible to take a more targeted approach than the Vulture MsAP in this respect.

1.25 The role of relevant actors (such as government authorities) and mechanisms (such as national-scale and species-specific plans) has also been considered, and in relevant contexts the SIP should give added reinforcement to efforts being made in relation to advocacy, profile-raising and engagement.

1.26 A key issue stressed by the Steering Group is the essential capacity required for coordination, and ensuring that this is maintained on a solid footing over the life of the Plan. This is addressed in Section 5 below. Mapping of existing and planned implementation activity should have the logical corollary of making any important gaps apparent, prompting an exploration of the reasons for these and options for tackling them; and this is addressed in Section 6. Although this document is cast principally as a forward-looking plan, it serves at the same time as a substantial report on the implementation already carried out to date.

1.27 Ultimately the intention is that this SIP should not be regarded as a static document, but instead as a more dynamic kind of living resource, which would serve as a platform for guiding effort, advertising opportunities, triggering connections, relating specific progress steps to strategically-agreed objectives, helping with subsequent evaluation of success, and generally boosting awareness and practical support for vulture conservation. The document in this sense should be a catalyst and support for a kind of 'clearing house' function to be performed by the Vulture MsAP's coordination mechanism.

[5] Pritchard DE (2018). Vulture MsAP – developing the Strategic Implementation Plan. Discussion document circulated to the Vulture MsAP Coordination Team, December 2018, and presentation given to the 3rd Meeting of the Raptors MOU Technical Advisory Group, Sempach, Switzerland, 12 - 14 December 2018.

# 2. Overview of Existing Implementation Activity

2.1 This section presents a snapshot of activities which have been contributing already to implementation of the Vulture MsAP. It is drawn from self-reporting sources, including respondents to the February 2018 voluntary questionnaire mentioned above, as well as information provided by members of the Vulture MsAP Steering Group, Coordination Team and others. In some cases the reported activity has arisen explicitly in the context of the priorities established through the Action Plan process; in others it may have arisen independently with a different motivation but is now perceived as making a relevant contribution nonetheless.

2.2 The resulting picture is likely to be incomplete, especially perhaps in relation to Asia, where much activity has taken place in the context of the SAVE consortium but details of which have seemingly been under-represented in the consultation dialogues mentioned above. Some of the information may also be partly out of date, since matters will have continued evolving in the period between the communication of the information (particularly the 2018 survey) and the present text. The overview here may however be validly illustrative of much of the variety and nature of implementation activity that has been shown to be feasible so far. There is some inevitable bias towards knowledge about the activities of conservation organisations - the activities of governments (across all relevant sectors) are less fully documented thus far, but are obviously also crucial.

2.3 Note that the present section aims only to document the activity itself; it has been beyond the scope of the enquiries conducted so far to venture into questions of the outcomes and impacts; although clearly those are important matters to be addressed in other ways in due course.

2.4 The questionnaire introduced its topic-based sections by asking for a '*description of activities completed within the last 12 months [February 2017 – February 2018], in progress or planned over the next three years (2018–2020)*'. Respondents therefore tended to report past, present and future activities, but often not to distinguish which was which. In analysing the data therefore, judgements as to which items belong in the present section of this report and which relate instead to Section 3 below have often had to be based on a large measure of interpretation, and this may or may not be accurate.

2.5 Perhaps inevitably also a variety of different approaches was taken by respondents to the answering of the questions, with the information in some cases expounding at length on issues which were not germane to the questions, and in other cases being cryptically sketchy or ambiguous, making interpretation difficult and sometimes a matter of guesswork. One example of this is that while some multiple submissions referring to the same initiative have been easy to detect and consolidate in the compilation of results, there are other instances where it is harder to know whether two or more references that look similar are in fact referring to the same activity or not. The summary highlights in the table below should therefore be read with all these caveats in mind.

2.6 The questionnaire was structured according to the following headings:

1. Policy & legislation
2. Direct conservation actions
   - Poisoning (unintentional/intentional)
   - Mortality caused by power grid infrastructure (electrocution/collisions)
   - Decline of food availability
   - Habitat loss, degradation and fragmentation
   - Disturbance from human activities
   - Disease, climate change, others
3. Education & awareness
4. Research & monitoring
5. Support needs, investment and planned activities.

2.7 The Vulture MsAP on the other hand is structured according to the following 12 objectives (paraphrased):

1. Reducing mortality from unintentional poisoning
2. Minimising mortality from non-steroidal anti-inflammatory drugs (NSAIDs)
3. Phasing out lead ammunition
4. Reducing and eventually halting trade in vulture parts for belief-based use
5. Reducing and eventually halting 'sentinel poisoning' by poachers
6. Reducing mortality from electrocution by energy infrastructure
7. Reducing mortality from collisions involving energy infrastructure
8. Ensuring availability of safe food
9. Ensuring availability of suitable habitat
10. Reducing direct persecution and disturbance
11. Cross-cutting actions addressing knowledge gaps
12. Promotion and implementation of the Vulture MsAP.

2.8 There is therefore an evident difficulty in cross-relating the survey responses to the priorities in the Plan. In the summary Table 1 that follows an attempt has been made to do this, but in many cases this has again had to rely on a large measure of interpretation and approximation, which may or may not be accurate. In addition, many initiatives naturally involve elements of two or more of the Vulture MsAP Objectives but might typically be reported as a single project: if the individual ingredients are identified, the same initiative could be mentioned under several headings in the table; and if they are not, it might be categorised as 'cross-cutting': but neither approach is wholly ideal. These topic lists may therefore be of limited use as a framework for monitoring progress; and this point is picked up later below.

2.9 The items in the table below have been assigned as far as possible to the 12 Objectives in the Vulture MsAP, and within each of these Objectives they have been loosely clustered according to sub-topics and geographic regions. The way the original information has been provided however does not make it possible to do this in a very rigorous or complete way.

2.10 Despite the various limitations described above and the large amount of subjective interpretation that has been necessary in the compilation the list, presenting it in this way gives at least an impression of the types of activities being undertaken and some of the main areas of emphasis involved so far. This also offers an opportunity for those who are close to the detail of individual items to provide updates or corrections (e.g. to the splitting or lumping of related items) and perhaps at a later date to work towards a more rationalised and validated list.

2.11 For many of the listed items, more extensive descriptions, and information on contact details, collaborating organisations etc. are contained in a separate compilation of the raw data (several hundred pages in length) which can be consulted through the Raptors MOU Coordinating Unit as an accompanying resource for this Strategic Implementation Plan.

**Table 1: Summary of implementation activities reported by consultees and survey respondents**

**Vulture MsAP Objective 1:**
**To achieve a significant reduction in mortality of vultures caused unintentionally by toxic substances used (often illegally) in the control and hunting of vertebrates**

**Result 1.1 Improved understanding and awareness of human-wildlife conflicts and associated impacts on vultures to inform more effective mitigation approaches**

**Result 1.2 Conservation authorities, local communities and other stakeholders take collaborative action to tackle unintentional poisoning directed at vertebrate control**

**Result 1.3 Legal and policy measures respond to causes and impact of unintentional poisoning directed at vertebrate control**

*[See also items listed under Objective 5 below: in the absence of further details, activities described in generic terms as relating to "poisoning" may cover deliberate poisoning or accidental poisoning or both. The default categorisation here in unspecified cases is listing under Objective 1]*

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Establishment of a National Wildlife Poisoning Prevention Working Group under the national Department of the Environment in South Africa. Source: A Botha, *in litt*. | (1.2.6). | Africa. Intended to expand to rest of SADC following mandate received at meeting in 2015. |
| Development of integrated anti-poisoning programme in Kenya, including development, testing and implementation of rapid response protocol. Source: R Safford *in litt.*, based on information from BirdLife in Kenya and collaborating partners in Kenya. | 1.2.2 ("essential" priority). Also relevant to Objective 5. | Africa. |
| Wildlife poisoning incident response protocol adopted by Wildlife Service in Kenya, 2018. Source: A Botha input to Endangered Wildlife Trust Annual Report 2017-18. | 1.2.2 ("essential" priority). Also relevant to Objective 5. | Africa. |
| Training of rangers, police, community groups, wildlife and forestry staff on anti-poisoning measures including implementation of wildlife poisoning incident response protocol, Kenya. Source: 2018 questionnaire survey response (direct conservation actions section) and A Botha, *in litt*. | 1.2.2 ("essential" priority). Also relevant to Objective 5. | Africa. |
| Training of rangers in vulture identification and operation of poisoning response protocol in Ruaha and Katavi National Parks, Tanzania. Source: 2018 questionnaire survey response (direct conservation actions section). | 1.2.2 ("essential" priority). | Africa. |
| Training courses on poisoning interventions provided on 67 occasions in 2016-19 in 10 SADC countries as well as Kenya and Tanzania, involving 1,750 people. Source: A Botha input to Endangered Wildlife Trust Annual Report 2018-19. | 1.2.6. | Africa. |
| Following "training of trainers" event in 2016, the trainers delivered workshops on poisoning interventions to 233 people in 35 community groups in Kenya in 2017-18. Source: A Botha input to Endangered Wildlife Trust Annual Report 2017-18. | 1.2.6. | Africa. |
| Training of 30 trainers in 6 SADC countries funded by US-FWS and presented by EWT, 2018-20. Source: A Botha, *in litt*. | 1.2.6. | Africa. |
| Initial steps towards an integrated anti-poisoning programme in Zimbabwe. Source: R Safford *in litt.*, based on information from BirdLife Partners in Africa. | (Various). | Africa. |

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| Initial steps towards integrated anti-poisoning programmes in Botswana and Zambia. Source: R Safford *in litt.*, based on information from BirdLife Partners in Africa. | (Various). | Africa. |
| Balkan Anti-poisoning Project by VCF (funded by MAVA Foundation) covering six Balkan countries (AL, BH, CR, MK, GR and RS), including national anti-poisoning strategies, operational protocols and capacity building for government institutions. Source: J Andevski, *pers comm*. | 1.1.1 ("essential" priority); 1.1.2; 1.1.3; 1.2.2 ("essential" priority); 1.2.6; 1.2.3. | Europe. |
| Anti-poisoning project by VCF (funded by MAVA Foundation) covering the Mediterranean region, including establishment of European Vulture Mortality database. Source: J Andevski and J Tavares VCF, *in litt*. | 1.1.2. | Mediterranean. |
| BirdLife International project on "Safe Flyways" (funded by MAVA Foundation) - reducing vulture (and other scavenger and predator) mortality caused by poison baits and lead ammunition, in the Mediterranean region (2017-2020). Source: 2018 questionnaire survey response (support needs section). | (?).<br>Also listed under Objective 3 below. | Mediterranean. |
| Research (2005-2012 in the Pyrenees) and monitoring (by the "SAGIR" surveillance network and under the national Poison Vigilance Plan) on wildlife poisoning, including vultures, in France. Source: 2018 questionnaire survey response (direct conservation actions section). | 1.1.1 ("essential" priority). | Europe. |
| Anti-poisoning dog units established in Portugal under the LIFE-funded projects "Imperial" and "Rupis". Source: 2018 questionnaire survey response (direct conservation actions section). | (Not specifically covered, though may be partly relevant to 1.2.6). | Europe. |
| Training in anti-poisoning measures for local government staff in Extremadura, Spain. Source: 2018 questionnaire survey response (direct conservation actions section). | Possibly 1.2.2, 1.2.6. | Europe. |
| Awareness-raising concerning anti-poisoning dog unit in Eastern Rhodopes, Bulgaria. Source: 2018 questionnaire survey response (education & awareness section). | 1.1.3. | Europe. |
| Training of vets, forestry staff and volunteers in treatment of poisoned and injured vultures, Gujarat, India. Source: 2018 questionnaire survey response (direct conservation actions section). | 1.2.6.<br>The "injury" part of this may relate to other Objectives below. | Asia. |
| Leaflets disseminated to raise awareness on poisoning issues in 2017, Jharkhand, India. Source: 2018 questionnaire survey response (education & awareness section). | 1.1.3. | Asia. |

**Vulture MsAP Objective 2:**
**To recognise and minimise mortality of vultures by non-steroidal anti-inflammatory drugs (NSAIDs) and occurrence and threat of toxic NSAIDs throughout the range covered by the Vulture MsAP**

**Result 2.1 Awareness raising and regulation of veterinary NSAID use at national levels is adequate and implements CMS Resolution 11.15**

**Result 2.2 Vulture populations are maintained and/or restored by establishment of Vulture Safe Zones (VSZs)**

**Result 2.3 Vulture Safe Zones are monitored**

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| A review and assessment of Vulture Safe Zones in Asia. Included in VSZ report by Sheldon (2018), BirdLife International. | 2.2.1. | Asia. |
| Establishment by BirdLife South Africa and EWT of a Vulture Safe Zone Working Group to define and promote the VSZ concept in southern and east Africa. Two workshops to date with involvement from 7 countries in sub-Saharan Africa. Source: A Botha, *in litt*. | 2.2.1; 2.2.3. Also relevant to Objective 9. | Africa. |
| Establishment and gradual expansion of Africa's first Vulture Safe Zones in Zambia, by BirdLife Partner BirdWatch Zambia. Source: R Safford *in litt.* | 2.2.2. | Africa. |
| Ban on use of veterinary diclofenac (2014) in Iran. Source: C Bowden, *in litt*. | 2.1.2 ("essential" priority). | Middle East. |
| Initiative in progress to ban diclofenac in Saudi Arabia and Oman. Source: C Bowden and M Shobrak, *in litt* and *pers comm*. | 2.1.2 ("essential" priority). | Middle East. |
| Study undertaken on the use of diclofenac in Spain. Source: 2018 questionnaire survey response (support needs section). | 2.1.1. | Europe. |
| Advocacy by SEO (BirdLife Spain) for banning of diclofenac in Spain. Source: 2018 questionnaire survey response (direct conservation actions section). | 2.1.2 ("essential" priority); and 2.1.7. | Europe. |
| Continuing efforts to ban or prevent licensing of diclofenac in Europe, so far however with seemingly limited success. Source: R Safford *in litt.* (Further info on VCF and BirdLife Europe websites). | 2.1.2 ("essential" priority). | Europe. |
| CMS Secretariat wrote to the European Commission in 2015 making representations concerning the licensing and use of diclofenac in Europe. Source: document 3.4 for the Raptors MOU TAG3 meeting, December 2018. | 2.1.2 ("essential" priority). | Europe. |
| International Workshop on Vultures & Veterinary Drugs, Feb 2019, Greece, in context of "ReVultures" LIFE project. Source: J Andevski, *in litt*. https://www.4vultures.org/2019/03/20/report-from-the-international-workshop-of-vultures-and-veterinary-drugs/ | 2.1.7. | Europe. |
| Ban on use of diclofenac (2010) in Bangladesh. Establishment of two Vulture Safe Zones covering 25% of the country. Ban on use of ketoprofen (2017) in both of the VSZs. Source: C Bowden, *pers comm*.; and 2018 questionnaire survey response (direct conservation actions section). | 2.1.2 ("essential" priority). | Asia. |
| Extensive Vulture Safe Zone network in India (7), Nepal (3), Bangladesh (2) developed and reinforced. Source: C Bowden/SAVE, *in litt* | 2.2.1. | Asia. |
| Vulture Safe Zone established in Sindh Province, Pakistan. Source: C Bowden, *pers comm*. | 2.2.1. | Asia. |

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|---|---|---|
| Ban on use of veterinary diclofenac (2006) in India, Nepal and Pakistan. Source: C Bowden (SAVE), *in litt*. | 2.1.2 ("essential" priority). | Asia |
| Undercover searches to verify non-use of diclofenac in Nepal (with good results so far, 2018). Source: C Bowden, *pers comm*. | 2.2.4. | Asia. |
| Ban on veterinary diclofenac in Cambodia. Source: BirdLife International news, July 2019. | 2.1.2 ("essential" priority). | Asia. |
| Supply of untested NSAIDs to vets being ended by several states in India. Source: C Bowden, *pers comm*. | 2.1.2 ("essential" priority). | Asia. |
| Safety testing of NSAIDs: research programme to assess toxicity or otherwise of veterinary NSAIDs to vultures, to inform policies that would control or eliminate NSAID risks. Source: R Safford *in litt.* | 2.1.5. | Asia, and relevant to other regions. |

**Vulture MsAP Objective 3:**
**To ensure that CMS Resolution 11.15 on the phasing out the use of lead ammunition by hunters is fully implemented**

**Result 3.1 Mitigation measures in place to reduce the impact of lead poisoning on vultures**

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Establishment of a Lead Task Team as a working group of the South African National Wildlife Poisoning Prevention Working group under the auspices of the national DEAFF. Source: A Botha, *in litt*. | (?). | Africa. |
| Research on the impact of lead ammunition in South Africa, by BirdLife South Africa. Source: R Safford *in litt.* | 3.1.1. | Africa. |
| Testing of scavenging raptors for lead in Ruaha and Katavi National Parks, Tanzania, since 2016. Source: 2018 questionnaire survey response (research & monitoring section). | 3.1.1. | Africa. |
| Pilot project by VCF (funded by MAVA Foundation) working with hunters to test lead-free ammunition in France, Portugal and Balkan countries. Source: J Tavares VCF, *in litt*. | 3.1.3; 3.1.4 ("essential" priority); 3.1.5. | Europe. |
| Advocacy by group of NGOs to the regional government of Aragon, Spain concerning replacement of lead ammunition with lead-free alternatives. Source: 2018 questionnaire survey response (policy & legislation section). | 3.1.3; 3.1.5. | Europe. |
| Research on lead poisoning of vultures (particularly Bearded Vultures and Griffon Vultures) and potential for use of lead-free ammunition in Haute-Savoie and the Pyrenees, France. Source: 2018 questionnaire survey response (direct conservation actions section). | 3.1.3; (and supports 3.1.5). | Europe. |
| MAVA-funded project on "Safe Flyways" - reducing vulture (and other scavenger and predator) mortality caused by poison baits and lead ammunition, in the Mediterranean region (2017-2020). Source: 2018 questionnaire survey response (support needs section). | (?).<br>Also listed under Objective 1 above. | Mediterranean. |

**Vulture MsAP Objective 4:**
**To reduce and eventually to halt the trade in vulture parts for belief-based use**

**Result 4.1 Improved understanding of the trade in vultures and their parts informs improved conservation approaches**

**Result 4.2 Governments, local communities and other stakeholders understand scale and impact of trade in and belief-based use of vulture body parts**

**Result 4.3 All appropriate policy instruments and legal measures are established and/or aligned to reduce belief-based use of vulture body parts**

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Work to combat belief-based use of vultures in West Africa: initial small grant surveys leading to USFWS grant for Nigeria. Source: R Safford *in litt.*, based on information from BirdLife Partners in Africa. | (Various?). | Africa. |
| Document submitted to CITES COP18 (2019) by governments of Senegal, Burkina Faso, & Niger; with supporting side-event led by BirdLife (with IUCN VSG, CMS and CMS Raptors MOU), drawing attention to the threat from belief-based use and (q.v.) sentinel poisoning and recommending implementation of MsAP actions including situation analysis. Decision on West African vulture trade and management duly adopted by COP. Source: BirdLife and CITES website news stories, Aug-Sept 2019. | 4.2.1 ("essential" priority); (and will support 4.4.1). | Africa. |
| MSc study by student in South Africa looking at scale and drivers of belief-based use and its impact on vulture populations in South Africa. Source: A Botha, *in litt*. | 4.1.1 (partly); 4.1.2. | Africa. |
| Study to assess the risk to human health of consumption of poisoned vulture parts in southern Africa (2019-21), by EWT and Universities of Witswatersrand and Cape Town. Source: A Botha, *in litt*. | 4.1.6. | Africa. |

**Vulture MsAP Objective 5:**
**To reduce and eventually to halt the practice of sentinel poisoning by poachers**

**Result 5.1 Barriers to prosecuting offenders of wildlife crime are understood**

**Result 5.2 Information on sentinel poisoning incidents is properly collected, managed and shared**

**Result 5.3 Governments, local communities and other stakeholders understand scale and impact of sentinel poisoning**

**Result 5.4 Conservation authorities, communities and others take collaborative action to respond to or prevent poisoning incidents**

**Result 5.5 Legal and policy measures respond to causes and impact of poaching on vultures and are enforced**

*[See also items listed under Objective 1 above: in the absence of further details, activities described in generic terms as relating to "poisoning" may cover deliberate poisoning or accidental poisoning or both. The default categorisation here in unspecified cases is listing under Objective 1].*

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Wildlife poisoning incident response protocol adopted by Wildlife Service in Kenya, 2018. Source: A Botha input to Endangered Wildlife Trust Annual Report 2017-18. | Possibly links to 5.4.1 ("essential" priority). (Also noted under Objective 2). | Africa. |
| Work by EWT and partners with a range of entities involved in conservation law enforcement to adopt and implement poisoning response protocols similar to the Kenyan model. Source: A Botha, *in litt*. | Possibly links to 5.4.1 ("essential" priority). | Africa. |
| Work by partners in southern Africa on an early warning system to detect poisoning incidents using tracked vultures, to enable faster response. Source: A Botha, *in litt*. | Links to 5.4.1 ("essential" priority). | Africa. |
| Advocacy campaign in Botswana and KAZA region following mass poisoning in mid 2019. Source: R Safford, *in litt*. | (?). | Africa. |
| Document submitted to CITES COP18 (2019) by governments of Senegal, Burkina Faso, & Niger; with supporting side-event led by BirdLife (with IUCN VSG, CMS and CMS Raptors MOU), drawing attention to the threat from sentinel poisoning and (q.v.) belief-based use and recommending implementation of MsAP actions including situation analysis. Decision on West African vulture trade and management duly adopted by COP. Source: BirdLife and CITES website news stories, Aug-Sept 2019. | 5.2. | Africa. |

**Vulture MsAP Objective 6:**
**To substantially reduce vulture mortality caused by electrocutions linked to energy generation and transmission infrastructure**

**Result 6.1 Vulture mortality and sensitivity in relation to electrocution is better understood, including population impacts and hotspots**

**Result 6.2 Public and private sector support and widespread adoption of vulture-friendly energy infrastructure**

**Result 6.3 Energy infrastructure (electricity power grids) impacts on vultures are reduced by implementation of improved designs**

*[NB activities in this table relating to energy infrastructure may relate to both Objective 6 and Objective 7 (below) together, or they may relate only to one of these but information may not have been provided to distinguish which one. The default categorisation here is listing under Objective 6, but for overall analysis purposes it will probably be best to pool the information for Objective 6 and Objective 7 together].*

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| 25+ year working partnership between EWT and Eskom (energy sector) to make infrastructure in South Africa safer with regard to both electrocution and collision. Source: A Botha, *in litt*. | Second part of 6.2.2. Also in section on Objective 7 below. | Africa. |
| Relaunch and expansion into Kenya (and potentially beyond) of a Sensitivity Map for soaring birds and wind energy and other sectors. Source: R Safford *in litt.*, based on information from BirdLife Partners in Africa. | 6.1.2. | Africa. |
| Development of a framework for windfarm surveys in Djibouti, by BirdLife Partner Djibouti Nature. Source: R Safford *in litt*. | 6.1.3? | Africa. |
| GEF-UNDP project on mainstreaming conservation of soaring birds (including vultures) into the energy (and other) sectors along the Red Sea flyway south to Ethiopia, by BirdLife Partners and other organisations. Source: R Safford *in litt.* | Second part of 6.2.2. Also in section on Objective 7 below. | Africa. |
| Work by Vulture Conservation Foundation on mitigation of impacts of electrocution and collision on vultures in the Mediterranean region. Source: J Tavares VCF, *in litt*. | (Unclear; potentially aspects of 6.2.1; 6.2.4; 6.3.1 ("essential" priority); 6.3.3). Also in section on Objective 7 below. | Mediterranean. |
| Endangered Wildlife Trust and a range of partners working with power utilities in Africa to reduce impact of energy infrastructure on vultures (and other species). Source: A Botha, *in litt*. | Second part of 6.2.2. | Africa. |
| Sensitivity mapping of electricity infrastructure (by Endangered Wildlife Trust), and advocacy for mitigation measures, South Africa. Source: 2018 questionnaire survey response (direct conservation actions section). | 6.1.2 ("essential" priority), and potentially aspects of 6.2.1; 6.2.4; 6.3.1 ("essential" priority); 6.3.3) | Africa. |
| Monitoring of selected sections of powerlines for vulture impacts, Namibia. Source: 2018 questionnaire survey response (direct conservation actions section). | 6.1.1. | Africa. |
| Survey of vultures electrocuted on powerlines in Iran, undertaken by Iran Birds and Power Lines Committee (IBPLC), followed by installation/retrofitting of bird-safe power-lines, pylons and nest boxes, with a particular focus on Egyptian Vultures. Source: 2018 questionnaire survey response (both | 6.1.1; 6.3.1 ("essential" priority). | Middle East. |

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| policy & legislation section and direct conservation actions section). | | |
| Advocacy to energy companies on threats from power-lines, including dissemination of a book on the subject, in Iran. Source: 2018 questionnaire survey response (education & awareness section). | (?). | Middle East. |
| Advocacy by group of NGOs to the regional government of Aragon, Spain concerning identification of high-risk power-lines. Source: 2018 questionnaire survey response (policy & legislation section). | 6.1.2 ("essential" priority). | Europe. |
| Advocacy and awareness-raising activities concerning powerline impacts, Spain (2017). Source: 2018 questionnaire survey response (direct conservation actions section). | (?). | Europe. |
| A long-running collaborative project between an electricity company, the national nature conservation agency and three NGOs has undertaken adaptation of powerlines in Portugal to reduce electrocution and collision impacts on birds, including vultures. Source: 2018 questionnaire survey response (support needs section). | Links to 6.3.1 ("essential" priority). | Europe. |
| Research study published in 2017 by LPO (BirdLife in France) on wind farm impacts on birds, France. Source: 2018 questionnaire survey response (direct conservation actions section). | 6.1.1. | Europe. |
| A National Committee (CAN) exists to oversee actions to reduce the impact of power lines on birds in France. Activities include identification of sensitive areas, retrofitting mitigation devices on poles and cables, and undergrounding of new connections. Source: 2018 questionnaire survey response (direct conservation actions section). | 6.2.5. | Europe. |

**Vulture MsAP Objective 7:**
**To substantially reduce vulture mortality caused by collisions linked to energy transmission and generation infrastructure**

**Result 7.1 Vulture mortality and sensitivity in relation to collision better understood, including population impacts and hotspots**

**Result 7.2 Public and private sector support and widespread adoption of vulture-friendly energy infrastructure**

**Result 7.3 Energy infrastructure (electricity power grids) impacts on vultures are reduced by implementation of improved designs**

*[NB activities in this table relating to energy infrastructure may relate to both Objective 6 (above) and Objective 7 together, or they may relate only to one of these but information may not have been provided to distinguish which one. The default categorisation here is listing under Objective 6, but for overall analysis purposes it will probably be best to pool the information for Objective 6 and Objective 7 together].*

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| 25+ year working partnership between EWT and Eskom (energy sector) to make infrastructure in South Africa safer with regard to both electrocution and collision. Source: A Botha, *in litt*. | Second part of 7.2.3. Also in section on Objective 6 above. | Africa. |
| GEF-UNDP project on mainstreaming conservation of soaring birds (including vultures) into the energy (and other) sectors along the Red Sea flyway south to Ethiopia, by BirdLife Partners and other organisations. Source: R Safford *in litt.* | Second part of 7.2.3. Also in section on Objective 6 above. | Africa. |

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|---|---|---|
| Establishment by EWT and BirdLife South Africa of a renewable energy forum to assess and provide guidelines on reducing the impact of all renewable energy infrastructure on vultures and other wildlife. Source: A Botha, *in litt*. | (Various). | Africa. |
| Work by Vulture Conservation Foundation on mitigation of impacts of electrocution and collision on vultures in the Mediterranean region. Source: J Tavares VCF, *in litt*. | (Unclear; potentially aspects of 7.2.1, 7.2.5, 7.3.1 ("essential" priority); 7.3.4). Also in section on Objective 6 above. | Mediterranean. |
| Research study published in 2017 by LPO (BirdLife in France) on wind farm impacts on birds in France. Source: 2018 questionnaire survey response (direct conservation actions section). | 7.1.1. | Europe. |

**Vulture MsAP Objective 8:**
**To ensure availability of an appropriate level of safe food to sustain healthy vulture populations**

**Result 8.1 Understanding of role of food availability in vulture declines is improved**

**Result 8.2 Where appropriate, country-specific or more local strategies are developed and implemented to ensure availability of safe food**

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Manual of Procedures for the Use of Animal By-products for the Feeding of Scavenging Birds in Portugal published in 2018, setting out veterinary/sanitary rules and procedures for supplementary feeding. Source: 2018 questionnaire survey response (policy & legislation section). | 8.2.1. | Europe. |
| Advocacy by group of NGOs to the regional government of Aragon, Spain concerning livestock farming issues of relevance to vultures. Source: 2018 questionnaire survey response (policy & legislation section). | 8.2.3. (Categorised here under food availability but may relate to other issues as well, or instead). | Europe. |
| Food provisioning sites established for Bearded Vultures (Corsica and Pyrenees) and other vultures (Massif Central, including Griffon Vultures at Grands Causses), France. Source: 2018 questionnaire survey response (direct conservation actions section). | 8.2.1, possibly 8.2.4. | Europe. |
| LIFE-funded project "Habitat Lince Abutre" in southeastern Alentejo in Portugal included the establishment of 10 vulture feeding stations. Source: 2018 questionnaire survey response (direct conservation actions section). | 8.2.1, possibly 8.2.4. | Europe. |
| Establishment of feeding station from 2017 for Egyptian, Cinereous, Eurasian Griffon and Bearded Vultures in Dagestan, Russia. Source: 2018 questionnaire survey response (direct conservation actions section). | 8.2.1, possibly 8.2.4. | Europe. |
| Vulture feeding stations established in Serbia. Source: 2018 questionnaire survey response (direct conservation actions section). | 8.2.1, possibly 8.2.4. | Europe. |
| Several vulture feeding sites established and maintained in Balkan Mountains, Bulgaria, in the context of the "Vultures Back To Life" Project. Source: J Andevski, *in litt*. | 8.2.1, possibly 8.2.4. | Europe. |
| Several vulture feeding sites established and maintained in Rhodope Mountains, Bulgaria and Greece, in the context of the "ReVultures" LIFE Project. Source: J Andevski, *in litt*. | 8.2.1, possibly 8.2.4. | Europe. |

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| Establishment of a network of more than 150 active vulture feeding sites in southern Africa since the 1980's, through the work of the Vulture Study Group and other organisations. Accompanying guidelines on management of feeding sites published by EWT in 2008 and updated in 2012. Source: A Botha, *in litt*. | 8.2.1; 8.2.4; possibly 8.2.5. | Africa. |
| Construction commenced of a Centre for Raptor Rehabilitation and a Vulture Feeding Station in northern Morocco. Source: 2018 questionnaire survey response (direct conservation actions section). | 8.2.1. The "rehabilitation" element of this may relate to other Objectives in this table. | Africa. |

**Vulture MsAP Objective 9:**
**To ensure availability of suitable habitat for vultures to nest, roost and forage**

**Result 9.1 Nesting and roosting sites used by vultures conserved**

**Result 9.2 Rangelands conserved as suitable habitat for vultures**

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Promoting transfer of Vulture Safe Zone approaches to Africa, including development of guidelines. Work by BirdLife International, BirdLife South Africa, EWT and others. | 9.1.2. | Africa |
| Establishment by BirdLife SA and EWT of a Vulture Safe Zone Working Group to define and promote the VSZ concept in southern and east Africa. Two workshops to date with involvement from 7 countries in sub-Saharan Africa. Source: A Botha, *in litt*. | 9.1.2. Also relevant to Objective 2. | Africa. |
| Improvements in management of Majete and Liwonde National Parks in Malawi, leading to significant increase in vulture numbers. Source: R Safford *in litt*. | 9.2.2. | Africa. |

**Vulture MsAP Objective 10:**
**To substantially reduce levels of direct persecution and disturbance of vultures caused by human activities**

**Result 10.1 Reduced mortality caused by direct persecution**

**Result 10.2 Breeding success increased by reducing disturbance**

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Rescue, rehabilitation and release of illegally held vultures in Tunisia, by BirdLife Partner AAO. Source: R Safford *in litt.* | (Not specifically covered). (Illegal taking categorised here under "persecution" even though mortality is not involved). | Africa. |
| Establishment of vulture sanctuary in Fouta Djallon, Guinea. Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered). Not clear if this belongs mainly | Africa. |

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| | under Objective 10 or Objective 9. | |
| Long-standing agreement by Civil Aviation and Air Force in South Africa to observe a 2km flying buffer zone around active Cape Vulture colonies. Source: A Botha, *in litt*. | 10.2.2. | Africa. |
| Rescue and rehabilitation of occasional vagrant individual birds suffering from injury or emaciation, Hungary. Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered). Pragmatically categorised here although not a clear fit under any of the Objectives. | Europe. |
| Agreement reached with military authorities in France to avoid disturbance of vulture nest sites by helicopter flights. Source: 2018 questionnaire survey response (direct conservation actions section). | 10.2.2. | Europe. |
| Disturbance sensitive zones for Bearded-Vultures and Egyptian Vultures in France mapped and widely publicised among hunters, photographers etc., backed by regulations prohibiting close approach in the breeding season. Source: 2018 questionnaire survey response (direct conservation actions section). | 10.2.2. | Europe. |
| Study undertaken on the impacts of vultures in civil aviation in Spain. Source: 2018 questionnaire survey response (support needs section). | Should support 10.2.2. | Europe. |

**Vulture MsAP Objective 11:**
**To support vulture conservation through cross-cutting actions that contribute to addressing knowledge gaps**

**Result 11.1 Increased understanding of basic biological and ecological parameters and threats influencing vulture populations**

**Result 11.2 Vulture populations restored where extinct and restocked where there is danger of extinction**

**Result 11.3 Environmental and socio-economic values of vultures are understood and promoted**

**Result 11.4 Enhanced legal and other protection of African-Eurasian Vultures nationally and internationally**

*[NB where further details have not been provided by the original source, generically described items are included here in the "cross-cutting" category, although in some cases what is actually involved may relate more specifically to one of the other MsAP Objectives listed in this table. Further investigation might therefore result in re-categorisation in some cases].*

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Flyway Action Plan for the Conservation of the Balkan and Central Asian Populations of the Egyptian Vulture. Already annexed to the Vulture MsAP. | (Not specifically covered; but links to 11.4.3). | Europe & Asia. |
| Implementation Review of the EU Species Action Plan for Egyptian Vulture. Source: J Andevski, *in litt*. https://www.cms.int/en/publication/implementation-review-eu-species-action-plan-egyptian-vulture | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Egyptian Vulture, France (2015-2025). Source: Raptors MOU MOS2 doc10/TAG3 doc | (Not specifically covered; but links to 11.4.3). | Europe. |

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| 4.2a; and 2018 questionnaire survey response (policy & legislation section). | | |
| Single Species Action Plan for the Egyptian Vulture, Iran (in preparation). Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Middle East. |
| Single Species Action Plan for the Egyptian Vulture, Greece (2018-2022). Source: 2018 questionnaire survey response (both policy & legislation section and direct conservation actions section). | (Not specifically covered; but links to 11.4.3). | Europe. |
| Flyway Action Plan for the Conservation of the Cinereous Vulture. Already annexed to the Vulture MsAP. | (Not specifically covered; but links to 11.4.3). | All regions. |
| Single Species Action Plan for the Cinereous Vulture, European Union (2018-2028). Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Review of implementation of European Action Plan for Cinereous Vulture. Source: J Andevski, *pers comm*. https://www.birdlife.org/sites/default/files/attachments/annex_a3.4_evaluation_implementation_existing_sap_a.monachus.pdf . http://www.trackingactionplans.org/SAPTT/downloadDocuments/openDocument?idDocument=52 | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Cinereous Vulture, France. Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Bearded Vulture, European Union. Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Review of implementation of European Action Plan for Bearded Vulture. Source: J Andevski, *pers comm*. https://www.4vultures.org/2018/05/24/landmark-day-for-vulture-conservation-in-europe/ | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Bearded Vulture, France (2010-2020). Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a; and 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Griffon Vulture, France (2016-2025). Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Black Vulture, France (2011-2016): implementation completed and under evaluation in 2018. Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Bearded Vulture, South Africa. Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Single Species Action Plan for the Cape Vulture, Namibia. Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Single Species Action Plan for the Cape Vulture, South Africa. Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Blueprint for the Recovery of Asia's Threatened Vultures. Maintained by SAVE. Already annexed to the Vulture MsAP; but now being updated annually. | (Not specifically covered; but links to 11.4.3). | Asia. |
| National Multi-species Action Plan for Vultures, India. Source: Raptors MOU MOS2 doc10/TAG3 doc 4.2a. | (Not specifically covered; but links to 11.4.3). | Asia. |
| National Multi-species Action Plan for Vultures, Nepal (2014-2019); and implementation including advocacy for banning veterinary use of aceclofenac and ketoprofen, anti-poisoning measures, and integration of vulture conservation in forest management. Source: Raptors MOU MOS2 doc10/TAG3 doc | (Not specifically covered; but links to 11.4.3). | Asia. |

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| 4.2a; and 2018 questionnaire survey response (policy & legislation section). | | |
| National Vulture Conservation Action Plan for Bangladesh, 2016-2025. Prepared by IUCN country office and endorsed by Bangladesh government. Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered; but links to 11.4.3). | Asia. |
| National Vulture Action Plan in Zimbabwe produced in 2015 and officially adopted in June 2019. Sources: 2018 questionnaire survey response (policy & legislation section); R Safford *in litt.*, based on information from BirdLife Zimbabwe; and A Botha *in litt*. | (Not specifically covered; but links to 11.4.3). | Africa. |
| National Vulture Action Plans at various preparatory stages in South Africa, Kenya, Botswana and Zambia; and promised also for Nigeria. Sources: A Botha and R Safford, *in litt*. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Raptor conservation Action Plan in Balearic Islands, motivated by Vulture MsAP. Source: J Andevski, *pers comm* & *in litt*., and J Tavares VCF, *in litt*. | (Not specifically covered; but links to 11.4.3). | Europe. |
| National plan for conservation of scavenging birds in Portugal drafted in 2015 (although not yet published/officially approved). Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered; but links to 11.4.3). | Europe. |
| One meeting in 2017 to discuss a possible national raptors strategy for Morocco, to include vultures; but no further progress on this yet. Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered; but links to 11.4.3). | Africa. |
| Establishment of national Vulture Working Group in Myanmar. Source: C Bowden, *pers comm*. | (Not specifically covered). | Asia. |
| Establishment of a Vulture Conservation Working Group for South India, with advocacy and networking activities. Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered). | Asia. |
| Comprehensive LIFE-funded vulture conservation project in the Balkan Mountains, Bulgaria ("Vultures Back To Life") including reintroduction of Cinereous Vulture. Source: J Tavares VCF, *in litt*. | Includes link to 11.2.3. | Europe. |
| LIFE project on conservation of Griffon and Black Vultures in the Rhodopes, Bulgaria and Greece ("ReVultures Life"); covering veterinary practices, supplementary feeding and other measures. Source: 2018 questionnaire survey response (policy & legislation section). | (Not specifically covered). | Europe. |
| LIFE-funded project on the conservation of Egyptian Vultures, Italy (2017-2022), covering anti-poisoning measures, modification of electricity pylons, supplementary feeding (in future) and captive breeding and release (in future). Source: 2018 questionnaire survey response (direct conservation actions section); and J Tavares VCF, *in litt*. | Includes 11.2.2. | Europe. |
| LIFE-funded project on the conservation of Griffon Vultures ("Under the Griffon Vulture Wings"), Sardinia (Italy) begun in 2016, covering anti-poisoning measures, supplementary feeding, management of tourism and a restocking programme. Source: 2018 questionnaire survey response (direct conservation actions section); and J Tavares VCF, *in litt*. | Includes link to 11.2.3. | Europe. |
| Comprehensive LIFE-funded vulture conservation project ("Rupis") in the Douro canyon area, Portugal & Spain. Source: J Tavares VCF, *in litt*. | (Not specifically covered). | Europe. |
| New LIFE-funded project on Egyptian Vulture conservation in the Balkans and the Middle East. Source: J Tavares VCF, *in litt*. | (Not specifically covered). | Europe/Middle East. |
| Interreg-funded "Orniturismo" project (2017-2019) on the conservation, protection and promotion of the ornithological heritage in the neighbouring regions of Alentejo (Portugal) and Andalucia (Spain) - addresses raptors including Black Vulture | (Not specifically covered). | Europe. |

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| and Egyptian Vulture. Source: 2018 questionnaire survey response (direct conservation actions section). | | |
| Establishment of Bearded Vulture Task Force in 2006, focused on the conservation of the southern African population. Source: A Botha, *in litt*. | (Not specifically covered). | Africa. |
| Establishment of Cape Vulture Task Force 2006, managed according to Conservation Strategy approved in 2012. Source: A Botha, *in litt*. | (Not specifically covered). | Africa. |
| Department of Wildlife and National Parks in Botswana established a full-time Vulture Conservation Coordinator. Source: R Safford *in litt.*, based on information from BirdLife Botswana. | (Not specifically covered). | Africa. |
| BirdLife International funded an advocacy campaign on vulture decline in south-west Nigeria (2017). Source: 2018 questionnaire survey response (support needs section). | (Not specifically covered). | Africa. |
| Studies on the factors causing vulture declines in Burkina Faso, by BirdLife Partner NATURAMA. Source: R Safford *in litt.* | Partly links to 11.1.2, and possibly others. | Africa. |
| Research on the threats to vulture populations in Nigeria and their root causes, by BirdLife Partner NCF. Source: R Safford *in litt.* | Partly links to 11.1.2, and possibly others. | Africa. |
| Transect-based vulture population monitoring in Ruaha and Katavi Nationa Parks, Tanzania, since 2013. Source: 2018 questionnaire survey response (research & monitoring section). | Links to 11.1.2. | Africa. |
| Survey of vulture numbers in parks in Uganda, by BirdLife Partner Nature Uganda. Source: R Safford *in litt*. | Links to 11.1.2. | Africa. |
| Multi-partner research project commenced on factors affecting nest-site selection in Hooded Vultures in South Africa. Source: 2018 questionnaire survey response (research & monitoring section). | 11.1.2. | Africa. |
| Citizen science reporting of vulture sightings in Malawi, coordinated through BirdLife Partner WESM. Source: R Safford *in litt.* | May link to 11.1.2. | Africa. |
| Collaborative research by Vulture Conservation Foundation on movements of Egyptian Vultures across Europe. Source: J Tavares VCF, *in litt*. | 11.1.2. | Europe. |
| Collaborative research by Vulture Conservation Foundation on mortality and movements of Bearded Vultures across Europe. Source: J Tavares VCF, *in litt*. | 11.1.2. | Europe. |
| Research on interactions between Griffon Vultures and domestic livestock in the Grands Causses region (Olivier Duriez et al.), France. Source: 2018 questionnaire survey response (research & monitoring section). | May link to 11.1.2. | Europe. |
| Analysis of the social representations associated with vultures, with particular reference to Bearded Vultures (Régis Barbau), France. Source: 2018 questionnaire survey response (research & monitoring section). | (Not specifically covered). | Europe. |
| National census of Cinereous Vultures in Spain, 2017. Source: 2018 questionnaire survey response (research & monitoring section). | Will support 11.1.1 ("essential" priority). | Europe. |
| Monitoring coordinated by SEO (BirdLife Spain) of the breeding productivity of the Lozoya-Sierra de Guadarrama Black Vulture colony in Madrid, Spain, since 1997. Source: 2018 questionnaire survey response (research & monitoring section). | 11.1.2. | Europe. |
| Monitoring projects on Egyptian Vultures in Dagestan, Griffon Vultures in the Russian Caucasus and Cinereous and Bearded Vultures in the Altai-Sayan ecoregion, Russia. Source: 2018 questionnaire survey response (research & monitoring section). | [?]. | Europe. |

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| Research from 2014-2018 on reproductive biology and ecology of 3 vulture species in China, undertaken by Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences. Source: 2018 questionnaire survey response (policy & legislation section). | 11.1.2. | Asia. |
| National monitoring programme (numbers, breeding productivity) for Griffon Vulture, China (2014-19), undertaken by the Chinese Academy of Sciences and the China Ornithological Society. Source: 2018 questionnaire survey response (research & monitoring section). | 11.1.2. | Asia. |
| Satellite tracking of Lappet-faced Vulture in United Arab Emirates. Source: M Shobrak, *pers comm*. | 11.1.3. | Middle East. |
| Comprehensive aerial surveys of tree-nesting vulture breeding sites in South Africa by Endangered Wildlife Trust and Hawk Conservancy Trust, 2012-15. To be repeated from 2020. Source: A Botha, *in litt*. | 11.1.2. | Africa. |
| Aerial survey of vulture breeding sites in the Gorongosa National Park, Mozambique, 2018-20, by Endangered Wildlife Trust, Hawk Conservancy Trust and Boise State University. Source: A Botha, *in litt*. | 11.1.2. | Africa. |
| Vulture ringing, wing-tagging and/or tracking programmes run by Endangered Wildlife Trust and other partners in South Africa, Namibia, Zambia and Mozambique, Botswana and Swaziland; some since 2006, others from 2012. Source: A Botha input to Endangered Wildlife Trust Annual Report 2017-18 and A Botha, *in litt*. | 11.1.3. | Africa. |
| Tagging and satellite telemetry of White-backed, Hooded and White-headed Vultures in Ruaha and Katavi National Parks, Tanzania, since 2015. Linked to identification of potential poisoning areas. Source: 2018 questionnaire survey response (both direct conservation actions section and research & monitoring section). | 11.1.3. | Africa. |
| Telemetry studies on vultures since 2015 in Ruaha and Katavi National Parks, Tanzania. Source: 2018 questionnaire survey response (direct conservation actions section). | 11.1.3. | Africa. |
| Satellite tracking and population monitoring of Hooded Vultures in Uganda. Source: 2018 questionnaire survey response (research & monitoring section). | 11.1.3. | Africa. |
| Monitoring of satellite-tagged vultures in Nepal and India, by RSPB/BNHS/BLN. Source: 2018 questionnaire survey response (research & monitoring section). | 11.1.3. | Asia. |
| Tagging and tracking of Egyptian Vultures in Dagestan, Russia. Source: 2018 questionnaire survey response (direct conservation actions section). | 11.1.3. | Europe. |
| Review of the impacts of satellite tagging on vultures, commissioned by the Vulture Conservation Foundation in 2018. Interim results presented to Raptors MOU TAG3 meeting, December 2018. | Links to 11.1.3. | All regions. |
| Review and Best Practice guidance on harnessing methodology for vultures through an expert practitioners workshop and publication of outputs. Workshop by IUCN Vulture Specialist Group & SAVE, August 2019. Source: C Bowden, *in litt*. | Links to 11.1.3. | All regions. |
| Pilot study on "Evaluating the ecosystem services provided by Old World Vultures: determining their role in sustainable futures for African and Eurasian environments" by Nottingham Trent University (UK), presented as a poster at the Pathways Europe Conference, Goslar, Germany, September 2018 and available as an annex to document 3.4 for the Raptors MOU TAG3 meeting. | Undertaken as a direct response to action 11.3.1 ("essential priority") ("Conduct a Total Economic Value (TEV) study of vultures which includes their role as providers of | All regions. |

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| | ecosystem services and ecotourism attraction"). | |
| Collaborative research by Vulture Conservation Foundation on ecosystem services of vultures. Source: J Tavares VCF, *in litt*. | Will support 11.3.1 ("essential priority"). | Europe. |
| Economic analysis of ecosystem services provided by necrophagous raptors (Jean-Michel Salles *et al*.), France. Source: 2018 questionnaire survey response (research & monitoring section). | Will support 11.3.1 ("essential priority"). | Europe. |
| Programme of captive breeding for conservation of Bearded Vultures in Southern Africa, led by Bearded Vulture Task Force. Source: J Tavares VCF and A Botha, *in litt*. | 11.2.2. | Africa. |
| Bearded vulture captive breeding, reintroduction and conservation projects in France (Grands Causses/Massif Central and Corsica, LIFE GYPCONNECT project in the Pyrenees/Alps and LIFE GYPHELP project in the Alps). Source: J Tavares VCF, *in litt*. and 2018 questionnaire survey response (both policy & legislation section and direct conservation actions section). | 11.2.2. | Europe. |
| Bearded Vulture captive breeding programme EEP/EAZA in Spain, managed by VCF. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Bearded Vulture reintroduction project in Switzerland in the context of Alpine project. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Bearded Vulture reintroduction project in Italy in the context of Alpine project. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Bearded Vulture reintroduction project in France in the context of Alpine project. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Bearded Vulture reintroduction project in Grands Causses/Massif Central, France, in the context of the LIFE GYPCONNECT project. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Bearded Vulture reintroduction project in Andalusia, Spain. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Bearded Vulture reintroduction project in Maestrazgo, Castellón, Spain. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Cinereous Vulture captive breeding programme EEP/EAZA at Zoo Planckendael, Belgium. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Egyptian Vulture captive breeding programme EEP/EAZA at Prague Zoo, Czech Republic. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Reintroduction of Cinereous Vultures at two sites in Spain - Cataluña and Castilla y Leon (Burgos), implemented by GREFA. Source: 2018 questionnaire survey response (support needs section) and J Andevski, *in litt*. | May link to 11.2.3. | Europe. |
| Cinereous Vulture reintroduction project in France, implemented by LPO and Vautours en Baronnie. Source: J Tavares VCF and J Andevski, *in litt*. | May link to 11.2.3. | Europe. |
| Experimental release of Egyptian Vultures in Bulgaria (in the context of the Egyptian Vulture New Life Project) and Italy. Source: J Andevski and J Tavares VCF, *in litt*. | May link to 11.2.3 | Europe. |
| Translocation of Cinereous Vulture in Jordan. Source: M Shobrak, *pers comm*. | May link to 11.2.3. | Middle East. |
| Release of captive-bred vultures in Nepal, with high-profile publicity. High survival rates so far (2018). Source: C Bowden, *pers comm*. | 11.2.2. | Asia. |
| Reintroduction programme for Bearded Vultures in the Austrian Alps by Vulture Conservation Foundation, National Park Hohe Tauern, EGS (Verein Eulen- und Greifvogelschutz Österreich) has been underway since 1986; now part of the wider Alpine project. Source: 2018 questionnaire survey response (policy & legislation section). | 11.2.2. | Europe. |

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| Release of Griffon Vultures at Jbel Moussa, northern Morocco, in 2017, with associated publicity. Source: 2018 questionnaire survey response (direct conservation actions section). | May link to 11.2.2. | Africa. |
| Griffon Vulture restocking project in Sardinia, Italy (2015-2020), as part of Under Griffon Wings LIFE project. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |
| Griffon Vulture reintroduction project in Balkan mountains, Bulgaria (2010-2015) as part of Vultures Return in Bulgaria LIFE project. Source: J Andevski, *in litt*. | 11.2.2. | Europe. |

**Vulture MsAP Objective 12:**
**To advance vulture conservation by effective promotion and implementation of the Vulture MsAP**

**Result 12.1 Coordination Framework for the Vulture MsAP established, subject to available resources, including financial**

**Result 12.2 Effective communication strategy for the Vulture MsAP is established**

| Activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Large-scale, high-level advocacy and communications campaigns, reaching inter-governmental levels (e.g. African Council of Ministers) which have gone a long way to change attitudes to vultures. Source: R Safford *in litt.*, based on information from BirdLife Partners in Africa. | 12.2.1. | Africa. |
| Production of an awareness tool in four languages by EWT, TPF, HCT, BirdLife Africa, Cornell University and other partners, aimed at government decision-makers and promoting the implementation of the Vulture MsAP in sub-Saharan Africa. Source: A Botha, *in litt*. | 12.2.1. | Africa. |
| Production and dissemination of a documentary on vultures in Burkina Faso, by BirdLife Partner NATURAMA, 2019. Source: R Safford *in litt.* | 12.2.1. | Africa. |
| International Vulture Awareness Day organised every year since 2009. 138 organisations in 32 countries took part in 2017, and 100+ organisations in 26 countries in 2018. Source: A Botha input to Endangered Wildlife Trust Annual Report 2017-18. | 12.2.2. | All regions. |
| International Vulture Awareness Day promoted in Kenya, and vultures profiled in other similar days e.g. World Environment Day. Source: 2018 questionnaire survey response (education & awareness section). | 12.2.2. | Africa. |
| Vulture Awareness Day held near Ruaha National Park, Tanzania in 2017, with associated media coverage, dissemination of leaflets and other materials, and community film screenings. Source: 2018 questionnaire survey response (education & awareness section). | 12.2.2. | Africa. |
| Large volume of outreach activity including conference and workshop presentations, webcasts, broadcast interviews, published articles, social media activity and academic journal papers. Source: A Botha input to Endangered Wildlife Trust Annual Report 2017-18 (report includes example data on this for the year). | 12.2.1. | Africa. |
| Training of tour guides in Ruaha National Park, Tanzania, 2016-17, and teaching delivered to students. Source: 2018 questionnaire survey response (education & awareness section). | 12.2.1. | Africa. |

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| Awareness-raising initiatives on the value, importance and need to conserve vultures in Ethiopia, Uganda, Nigeria, Ghana and Sierra Leone. Source: R Safford *pers comm*, based on information from BirdLife Partners in Africa. | 12.2.1. | Africa. |
| Awareness-raising activities by Association Nationale Algerienne d'Ornithologie (ANAO) in north-east Algeria on biodiversity generally, but including vultures and including pesticide threat issues. Source: 2018 questionnaire survey response (policy & legislation section). | 12.2.1. | Africa. |
| Community-based conservation education programme concerning vultures in Queen Elizabeth National Park, Uganda. Source: 2018 questionnaire survey response (direct conservation actions section). | 12.2.1. | Africa. |
| Encouragement of student projects on vultures (as an education & awareness-raising approach) in Kenya. Source: 2018 questionnaire survey response (education & awareness section). | 12.2.1. | Africa. |
| Various communication activities in Europe by Vulture Conservation Foundation. Source: J Tavares VCF, *in litt*. | 12.2.1. | Europe. |
| Bearded Vulture interpretation activities including education programme for schools and guided viewing in the Pyrenees (2017), Spain. Source: 2018 questionnaire survey response (education & awareness section). | 12.2.1. | Europe. |
| Explicit promotion of the Vulture MsAP in communication activities associated with anti-poisoning project in the Balkans. Source: J Andevski, *in litt.* | 12.2.1. | Europe. |
| Annual meeting and updating of Asian Regional Blueprint Recovery Plan (SAVE) through reporting and responding to the updated priority actions flagged. Source: C Bowden, *in litt*. | 12.1.2 ("essential" priority). | Asia |
| Over 50 vulture education, awareness-raising and advocacy campaigns (principally concerning the impacts of NSAIDs) in Bangladesh. Source: 2018 questionnaire survey response (both direct conservation actions section and education & awareness section). | 12.2.1. | Asia. |
| Community outreach and training workshops to improve livestock husbandry, reduce disturbance and reduce use of veterinary NSAIDs in Vulture Safe Zone in Sindh, Pakistan. Source: 2018 questionnaire survey response (direct conservation actions section). | 12.2.1. | Asia. |
| International Vulture Awareness Day promoted in Uttar Pradesh, India. Source: 2018 questionnaire survey response (education & awareness section). | 12.2.2. | Asia. |
| Regular TV and other publicity concerning vultures promoted by China Ornithological Society, China. Source: 2018 questionnaire survey response (education & awareness section). | 12.2.1. | Asia. |

2.12 In addition to using Table 1 as an indication of the nature of existing activity in relation to the Objectives of the Vulture MsAP and a stimulus for implementers to check and improve the information presented, it may also serve as a basis for gaining some impression of possible opportunities for additional links or synergies, and (taking account of evolving intentions for future work, covered in Section 3 below) identifying gaps or weaker areas for attention. These considerations are addressed in subsequent sections of the SIP.

2.13 The mixed nature of activity-logging information at the 'overview' level at present, and the variable degree to which it can be related to the Objectives of the Vulture MsAP, suggests a need for a more systematic way of tracking progress against the Plan in future (and to enable eventual evaluation of its results). This issue is therefore also picked up in the context of future activities under Section 3 below.

# 3. Inventory of Key Projects and Initiatives

3.1 The aim of the present section of the SIP is not necessarily to purport to document all relevant planned or intended activities that may contribute to the achievement of the goals of the Vulture MsAP, but rather to reflect the current status of centrally-pooled knowledge about this (without having a way of assessing how complete or otherwise this is) and to highlight some particularly important or prominent examples for development, collaboration and support.

3.2 It is also not the purpose here to re-argue the case for what constitutes the most needed actions, their scientific justification, targeting or expected impacts; since that purpose has been served by the Vulture MsAP itself. Instead the emphasis is on sifting priorities, highlighting realistic likelihoods and charting a way forward for practical delivery in selected areas.

3.3 Primary sources of input for this, as with the information on existing activities presented in Section 2 above, have included consultations with the Vulture MsAP Coordination Team and the results of the February 2018 questionnaire survey of implementers and stakeholders. In addition, a core part of this section consists of a development of the proposals for the priority 'flagship projects' that were defined at the Summit for the Flyways in April 2018, as mentioned in Section 1 above.

3.4 Elements of this section may find use in other formats, and can be extracted and re-presented as required, in project portfolios, work programmes, funding bids and other vehicles. The intention is for this to be a springboard rather than a straitjacket, with the content being versioned and adapted for different needs from time to time. Its coverage may of course be expanded in this way too, and nothing here is designed to constrain the scope of whatever relevant implementation opportunities may arise in addition to those listed in this document. The SIP itself could conceivably in future be a living document that becomes periodically updated.

3.5 In addition to being a basis for mobilisation and targeting of resources (funding, support in kind, redirection of existing initiatives), this inventory could also be useful for advertising other kinds of collaboration opportunities, in the manner of a 'call for expressions of interest' to invite refinement of proposals, information about related and potentially linkable projects and programmes, a broader consensus about priorities, and maximum synergies, efficiencies and effectiveness across multiple efforts.

### 'Essential' priorities in the Action Plan

3.6 Of the 124 actions listed in the Vulture MsAP, 17 are graded as the 'essential' priorities, and for reference their titles are listed in Table 2 below. One further action is graded as a 'critical' priority, being the development and implementation of a strategy for securing the funding and other resources needed for implementing the Plan (Action 12.1.3).

## Table 2: Actions identified in the Vulture MsAP as 'essential' priorities

| Action | Vulture MsAP reference (Table 6) | Current status |
|---|---|---|
| Conduct an overall situation analysis of wildlife poisoning associated with human-wildlife conflict, with special attention to vulture mortality: covering state of knowledge, drivers and motivations, poisons used (actually or potentially), analytical capacity, hotspots, knowledge gaps and best practice on reducing conflicts and related poisoning. | 1.1.1 | Some project activities in the Balkans, the Pyrenees and Rajasthan that will contribute to this, but no overall analysis has advanced yet. |
| Implement awareness campaigns, specifically covering (a) negative impacts on vultures and other non-target species; (b) likely ineffectiveness of poisoning as a problem animal control technique; (c) impacts of poisoning on human and livestock health; and (d) legal alternatives to mitigate of human-wildlife conflict. | 1.1.3 | Awareness activities on aspects of poisoning issues underway in several countries. |
| Establish protocols and train and support relevant agency staff (conservation, rangers, police and judiciary) to rapidly respond to poisoning incidents including sharing best practice. | 1.2.2 | Some progress in parts of Africa and Europe. This action is also the subject of "flagship project" #1. |
| Review, introduce and enforce strict penalties for illegal wildlife poisoning acts, sufficient to deter future poisoning. | 1.3.2 | Review undertaken in six Balkan countries, leading to strengthened legislation in Albania. |
| Prohibit or withdraw veterinary use of diclofenac, ketoprofen and aceclofenac for the treatment of livestock and substitute it with readily available safe alternatives, such as meloxicam in all Vulture MsAP Range States. | 2.1.2 | Active advocacy efforts in several parts of Asia, Europe and the Middle East; and some bans in place in Asia, including via VSZs. State-by-State situation would be worth reviewing. Safety testing of alternatives, which will contribute to the second part of this action, is the subject of "flagship project" #8. |
| Develop a formalised approval process before market authorisation is granted for all veterinary NSAIDs and seek to identify additional safe alternatives to NSAIDs toxic to vultures. | 2.1.3 | No details reported. Safety testing of alternatives, which will contribute to the second part of this action, is the subject of "flagship project" #8. |
| Promote the implementation of CMS Resolution 11.15 by all CMS Parties as well as voluntary lead ammunition bans in Vulture MsAP range states which are not CMS Parties. | 3.1.4 | Some activities in support of this are likely to be taking place, mainly in Europe; but they are generally not being reported specifically in relation to the context of this action. |
| Initiate engagement and dialogue with relevant stakeholders, publish and share research and monitoring results on belief-based use of vultures with relevant Government departments (e.g. environment, agriculture, health) and other stakeholders to agree appropriate national actions | 4.2.1 | Issue promoted in context of CITES COP (2019). Combating trade for belief-based use is also the subject of "flagship project" #2. |
| Expand poisoning response training programmes to support conservation staff to rapidly respond to poisoning incidents. | 5.4.1 | This action is defined specifically in relation to the Vulture MsAP objective concerning "sentinel poisoning". Poisoning response work in Southern and East Africa is very probably making a contribution to this. |

| | | |
|---|---|---|
| Complete sensitivity mapping for Vulture MsAP range. Adding to existing analyses (e.g. Red Sea flyway) to identify areas where energy infrastructure poses greatest electrocution risks to vultures; combine tracking data, site prioritisation, vulture counts and other sources. | 6.1.2 | Some patchy information received on activities in Egypt, Kenya, South Africa and Spain; but more systematic information is lacking. This action is the subject of "flagship project" #10. |
| For new and existing energy infrastructure, promote the implementation of CMS guidelines by phasing out energy infrastructure designs that pose electrocution risk to vultures and other birds, and advocate retro-fitting with known bird-friendly designs within current maintenance schedules. | 6.3.1 | Retrofitting and bird-friendly new developments, or advocacy for these, are evident in several places; but the extent of this cannot be quantified, and whether or not the CMS guidelines are featuring in it anywhere is not known. |
| Complete sensitivity mapping for the entire Vulture MsAP range. Adding to existing analyses (e.g. Red Sea flyway) to identify areas where energy infrastructure poses greatest collision risks to vultures; combine tracking data, site prioritisation, vulture counts and other sources. | 7.1.2 | As for 6.1.2 above. (The separation between these two actions is proving hard to maintain, for planning and monitoring purposes). |
| For new and existing energy infrastructure, promote the implementation of CMS guidelines, including by adopting designs that reduce the risk of collision for vultures and other birds, and advocating retro-fitting with bird-friendly mitigation measures, within current maintenance schedules. | 7.3.1 | As for 6.3.1 above. |
| Census 2018–2019 + census 2028–2029 of all species to monitor the population size, breeding productivity, distribution and trends across the Vulture MsAP range. | 11.1.1 | One national census of one species reported in Spain. Several plans for future monitoring (and in a few cases census) of individual species in other countries have been reported. Otherwise a full range-wide multi-species census appears not to have advanced. |
| Conduct a Total Economic Value (TEV) study of vultures which includes their role as providers of ecosystem services and in generating eco-tourism attraction. | 11.3.1 | Preliminary work undertaken in 2018. Some other work on ecosystem services (in Europe) may provide input. Full TEV study not yet done. This action is the subject of "flagship project" #5. |
| Develop VSZ criteria and promote application and implementation of this approach to address all critical threats throughout the Vulture MsAP range. | 11.4.4 | Work has advanced to investigate and promote the extension of the VSZ approach from Asia to parts of Africa. Information reported so far has not related itself very specifically to this Vulture MsAP action, but it will no doubt be contributing. This action is also the subject of "flagship project" #11. |
| Establish a Framework to coordinate implementation of the Vulture MsAP, including central and regional coordination units to facilitate implementation, support and review across the range. | 12.1.2 | Coordination is happening in a mixture of *ad hoc* and voluntary ways, and is quite active at some regional/sub-regional levels eg through SAVE in Asia and other partners elsewhere; but a more formalised/ resourced Vulture MsAP-wide "Framework" does not yet fully exist. This action is the subject of "flagship project" #9. |

## The 'flagship projects'

3.7 As mentioned in Section 1 above, a prominent component of forward planning of initiatives to deliver the Vulture MsAP comprises the 11 'flagship projects' defined during a special session of the Summit for the Flyways in April 2018. The concepts for these are summarised below, drawing on information consolidated from the Summit process as well as correspondence and consultations held subsequently.

3.8 The 11 concepts are still preliminary outlines, and as additional collaborators come to be identified and delivery details are investigated, work should continue to elaborate the project specifications further, including in relevant cases to meet the needs of specific funding application processes. No dedicated budget-line for implementing the Action Plan as a whole has been created under CMS or the Raptors MOU, and delivery is currently totally dependent on voluntary contributions of funding or in-kind support from governments, NGOs and other donors. The 'portfolio' of projects is therefore conceived as an efficient way of capturing an authoritative consensus about priorities and offering a well worked-out set of options for ready engagement. The total cost of implementing the full suite of 11 projects was estimated in early 2018 at approximately USD 9 million.

3.9 As a package, the flagships have been designed to cover a span of activities that touches on the full taxonomic, geographical and issue-defined scope of the Vulture MsAP, but depending on the nature of support that may be offered in any given case, they may be pursued either in combination or as self-contained individual projects. The suite of 11 proposals is also a starting-point and not a conclusion: as implementation advances, the flagship list could become a rolling list, allowing new proposals to be added as others achieve support. New knowledge or emerging needs may also validly lead to changes in the suite of proposals.

3.10 The titles of the 11 proposed flagship projects are as follows:

1. Developing rapid response systems to stop vulture poisoning.
2. Combatting the trade in threatened vultures and their parts for belief-based use.
3. Conservation of the Egyptian Vulture along the Western and Eastern Flyways.
4. Converting the Vulture MsAP into an interactive online tool.
5. Evaluating the Total Economic Value of Old World Vultures and determining their role in sustainable futures.
6. Creating a Vulture MsAP communications toolkit.
7. Guidance on developing national (or regional) Vulture Conservation Strategies.
8. Safety testing veterinary non-steroidal anti-inflammatory drugs (NSAIDs) on vultures.
9. Establishing an international framework for coordination.
10. Sensitivity mapping of energy infrastructure.
11. Guidance on establishing Vulture Safe Zones.

3.11 The texts which follow summarise the core elements of each proposal as it exists at present. The state of development of each of these varies according to their respective histories of development and the status of existing work on the topics concerned (see Section 2 above), and this is reflected in some variation in the way that the individual specifications are presented. In some cases certain details remain to be determined; and these are denoted in the texts below as "TBD".

## 1. Developing rapid response systems to stop vulture poisoning

Protocols, mechanisms, training and capacity-building for rapid responses to poisoning incidents and rehabilitation of individuals of priority vulture species.
- Establishment of new systems in Eastern and Southern Africa.
- Enhancement of systems in Europe, including a database and clearing-house mechanism.

### Rationale

- Poisoning is the most acute threat to vulture species in Europe and Africa. In some parts of Europe, notably in Spain, much anti-poisoning work has been undertaken over the past 20 years, resulting in the recovery of vulture populations in some regions, and in the evolution of best practices on this issue. All EU countries have national legislation and protocols to deal with poisoning incidents. Dedicated anti-poisoning projects have been undertaken in most of the key vulture countries in Europe (Portugal, Spain, France, Italy, Bulgaria and Greece).
- Rapid response mechanisms and protocols involving local communities and governments (including enforcement agencies and veterinary authorities) have proven to be an effective and practical measure.
- Levels of engagement in all this by relevant institutions and NGO networks etc. have however been variable. Communication and exchange of knowledge and best practices between the countries concerned has also been identified as a weakness. There is a particular need to transfer and develop approaches building on the European experience into the African context. In most areas also there are no standardised protocols for dealing with poisoning incidents (appropriate forms of toxicological analysis, sampling strategies etc.) or on the rehabilitation of individual vultures that may be found in a weak or injured state.
- (Although defined in this way as a single "project" in the flagships developed by the Summit, this may perhaps be more appropriately viewed as a broader programme of several linked initiatives).

### Project objectives

- To establish rapid response mechanisms and associated protocols for cases of vulture poisoning, covering *inter alia* enforcement, toxicology methods and effective rehabilitation of affected individual birds.
- To establish a clearing house mechanism for supporting and advising on responses to vulture poisoning throughout relevant countries in Africa and Eurasia.
- To evaluate the success or otherwise of response activities.
- To promote and enhance international information-exchange and collaboration between vets, law enforcement agencies, forensic and toxicological laboratories, vulture rescue centres and other stakeholder groups.
- To create a centralised vulture poisoning database in Europe and to support the existing database for Africa.

### Key activities

- Create a clearing house mechanism and establish its governance arrangements.
- Establish capacity for immediate provision of advice service.
- Continually promote, review and update practical protocols for responding to poisoning cases and rehabilitating affected birds.
- Establish and maintain international networks of relevant practitioner/stakeholder groups.
- Design and create a centralised vulture poisoning/mortality database in Europe.
- Support the existing Wildlife Poisoning Database for Africa.
- Organise and run international training seminars.

(Some relevant activities are underway already – see Section 2 of this SIP document).

| Expected results | Vulture MsAP results supported |
|---|---|
| • Relevant practitioners and stakeholders trained in poisoning response techniques and systems.<br>• Significant increase in the number of countries where poisoning cases are dealt with adequately.<br>• Increased survival of individuals of priority species (Bearded Vulture, Egyptian Vulture, Cinereous Vulture) found injured or weakened.<br>• Significant increase in the number of poisoning cases that are followed by a criminal investigation.<br>• Significant increase in the number of poisoning cases that are followed by a conviction.<br>• Significant increase in the number of poisoning cases that are well documented. | 1.2: "Conservation authorities, local communities and other stakeholders take collaborative action to tackle unintentional poisoning directed at vertebrate control", specifically through "essential" priority action 1.2.2: "Establish protocols and train and support relevant agency staff (conservation, rangers, police and judiciary) to rapidly respond to poisoning incidents including sharing best practice". |

| Lead organisation | Other collaborators | |
|---|---|---|
| Consortium, including Vulture Conservation Foundation, BirdLife International and others. | National government agencies and NGOs. | |
| **Geographical scope** | **Timeframe** | **Approximate budget** |
| Establishment of protocols and other mechanisms will include Eastern and Southern Africa (particularly Zambia, Tanzania, Uganda, Malawi and Rwanda). Establishment of database and clearing-house mechanism will have an initial emphasis on Europe. | Overall: 6 years.<br>Majority of African component: 4 years. | Overall: USD 940,000<br>African component: USD 850,000.<br>European component: USD 90,000. |

## 2. Combatting the trade in threatened vultures and their parts for belief-based use

Reducing trade in threatened vultures and their parts in Western and Southern Africa, through strengthened policy and law enforcement and the identification of alternatives.

**Rationale**

- Trade through wildlife markets involving threatened vultures and their parts for belief-based use is a serious and neglected problem in Western and Southern Africa. This needs to be reduced, and alternative solutions promoted where possible.

**Project objectives**

- To reduce the threat to vultures from belief-based use of the birds and their parts.
- To assess the threat to human health from the consumption of poisoned vulture parts.

**Key activities**

- Situation analysis.
- Market surveys.
- Population impact studies.
- Awareness campaigns, stakeholder engagement and capacity building.
- Strengthened policy.
- Strengthened law enforcement.
- Identification and promotion of alternatives.

(Some relevant activities are underway already – see Section 2 of this SIP document).

| Expected results | Vulture MsAP results supported |
|---|---|
| • Belief-based trade and use of threatened vulture species significantly reduced in target countries.<br>• Belief-based use of vultures/vulture parts replaced by alternatives. | 4.2: "Governments, local communities and other stakeholders understand scale and impact of trade in and belief-based use of vulture body parts".<br>4.3: "All appropriate policy instruments and legal measures are established and/or aligned to reduce belief-based use of vulture body parts". |
| **Lead organisations**<br>BirdLife International (West Africa).<br>Endangered Wildlife Trust (Southern Africa) | **Other collaborators**<br>US Fish & Wildlife Service. |

| Geographical scope | Timeframe | Approximate budget |
|---|---|---|
| Southern and West Africa. | 3 years. | USD 600,000. |

## 3. Conservation of the Egyptian Vulture along its Eastern and Western Flyways

Reinforcing the Egyptian Vulture population in its Eastern and Western EU range by delivering urgent conservation measures that eliminate major known threats in the breeding grounds and along the flyways. (Two project components, for the two respective flyways.)

**Rationale**

- In relation to the Western Flyway component, the Egyptian Vulture is the only vulture species in Europe that remains in decline, and its distribution in Western Africa involves countries with the weakest vulture conservation activities and the most significant gaps in information.
- Eastern Flyway component rationale to be added.

**Project objectives**

*Western Flyway component:*

- To enhance knowledge about population size and productivity, and the factors that affect these.
- To improve understanding about relevant threats during migration and during the northern winter.
- To improve understanding about connectivity between sub-populations of the species.
- To clarify the population dynamics of the wintering population in Extremadura (Spain).
- To build stronger capacity for undertaking relevant anti-poisoning initiatives.
- To reduce the impact of known threats (poisoning, electrocution, collisions) in priority areas at all seasons throughout the flyway.
- To define regimes for livestock farming and supplementary feeding of vultures that will be optimal for the Egyptian Vulture.

*Eastern Flyway component:*

- [TBD].

**Key activities**

*Western Flyway component:*

(In Europe):

- Monitoring of breeding populations.
- Monitoring of the wintering population in Extremadura (Spain).
- Tagging of adult breeding birds.
- Monitoring of migration across the Strait of Gibraltar.
- Anti-poisoning measures.
- Mitigation measures in energy generation infrastructure to reduce electrocution and collisions.
- Supplementary feeding at selected locations.

(In Morocco):

- Monitoring of the small breeding population.
- Anti-poisoning measures, including a national action plan.

- Mitigation measures in energy generation infrastructure to reduce electrocution and collisions.
- Establishment of supplementary feeding sites.

(In Senegal and Mali):

- Monitoring of the wintering areas, including threats.
- Survey of levels of direct persecution of vultures.
- Training of local and national stakeholders in vulture conservation.

*Eastern Flyway component:*

- [TBD].

(Some relevant activities for the Eastern component are underway already – see Section 2 of this SIP document).

**Expected results**

*Western Flyway component:*

- Decline of key Egyptian Vulture populations in Europe halted.
- Mortality during migration reduced.
- Knowledge of factors affecting wintering Egyptian Vultures in Africa and in Extremadura improved.
- Knowledge of the impacts of direct persecution of Egyptian Vultures in West Africa improved.
- Capacity of vulture researchers in Morocco, Mali and Senegal improved through training/experience-exchange with Europe; and levels of engagement increased.

*Eastern Flyway component:*

- [TBD].

**Vulture MsAP results supported**

(Various).

**Lead organisation**

Vulture Conservation Foundation.

**Other collaborators**

*Western Flyway component*: In Spain - University of Barcelona, Spanish regional governments (Extremadura, Andalusia, Castilla y Leon) NP Arribes, Fundacion Migres, SEO, SPEA, ATN, LPO, AMUS, CSIC, CMS. In Morocco: Commissariat Eaux et Forets, University, GREPOM. In Senegal and Mali: [TBD].
*Eastern Flyway component*: [TBD] (Coordinated by Stoyan Nikolov).

**Geographical scope**

Fourteen Range States in Europe, the Middle East and Africa.
The Western Flyway component would focus on three key European breeding countries (Portugal, Spain and France), plus Morocco on the flyway corridor and (mainly) Senegal and Mali in the wintering grounds.

**Timeframe**

2020 – 2026.

**Approximate Budget**

*Western Flyway component*: approximately 4 million Euros. (LIFE funding application failed at first attempt - to be re-revised and submitted in 2019, but co-funding will be required in any event).
*Eastern Flyway component*: [TBD]. (Partial funding already secured from EU LIFE programme as the "Egyptian Vulture New LIFE Project", but co-funding still required).

## 4. Converting the Vulture MsAP into an interactive online tool

Making the Vulture MsAP available as an accessible, easy-to-use and interactive online resource.

**Rationale**

- The Vulture MsAP itself defines, as a high priority action, the creation of an interactive on-line version of the Action Plan to enable ongoing updating and enhancement as new information and knowledge is accumulated.
- The MsAP is an extensive document running to 166 pages and with a complex nested structure of objectives, rationales, actions, defined results, priorities, timeframes, activity categories, responsibilities and links to other plans. There is a need to make this available to implementers and other stakeholders in a form that will allow its use as a dynamic resource, providing ready accessibility to the material and offering added functionality (for example) for progressive updating of the content.

**Project objectives**

- To create a version of the Vulture MsAP which will provide an accessible, easy-to-use online resource, enhancing the efforts of implementers and other stakeholders and ultimately improving the prospects for success in achieving the Plan's vulture conservation goals.

**Key activities**

- Recruitment of a consultant developer.
- Design and development of the on-line tool.
- Testing the on-line tool.
- Agreement of a long-term plan for hosting and maintenance.
- The development of the online tool is conceived as taking place in three escalating phases:
  - *Phase I*: Conversion of the Vulture MsAP into a straightforward online version with basic index and search facilities.
  - *Phase II*: Addition of a modest level of interactivity, including database-like fields enabling user-driven production of a suite of standard output reports.
  - *Phase III*: Provision of fuller interactivity, enabling input of new data and updating of existing data via a user registration interface.

**Expected results**

- Enhanced interactive functionality for users of the Vultures MsAP.
- Enhanced levels of implementation of the MsAP itself.
- Dynamic updating of the knowledge-validation on which the MsAP is based.

**Vulture MsAP results supported**

12.2: "Effective communication strategy for the Vulture MsAP is established"; and specific "high priority" action 12.2.4: "Create an interactive on-line version of the Vulture MsAP to enable ongoing updating and enhancement as new information and knowledge is accumulated".

**Lead organisation**

CMS Raptors MOU Coordinating Unit, Abu Dhabi.

**Other collaborators**

Vulture MsAP Coordinators and Partner Organisations. Technical Advisory Group of the CMS Raptors MOU.

**Geographical scope**

All 128 Range States covered by the Vulture MsAP.

**Timeframe**

Approximately 8 months to establish: ongoing maintenance thereafter.

**Approximate budget**

Establishment: USD 45,000. (Phase I = 10K, phase II = 15K, phase III = 15K).

## 5. Evaluating the Total Economic Value of Old World Vultures and determining their role in sustainable futures

Assessing and where possible quantifying the perceived and actual values (e.g. culture, tourism, health, economy) of vultures in Africa, to motivate conservation-based changes in policy, land-use practices, and public perceptions.

**Rationale**

- High ecosystem service values of vultures are widely recognised and not in doubt, but studies are needed to quantify and promote them. In particular, there is a need to identify where and to what extent vulture conservation leads to "win-win" situations in which human societies also benefit.
- Although the Asian vulture crisis has received valuable public and scientific attention, especially in regard to its devastating consequences for human health, agriculture, economy, and even religious practices (Buechley and Sekercioglu, 2016; see also Markandya *et al*., 2008, although views on the latter are divided), little scientific evidence exists to quantify the ecosystem services provided by vultures in the African region. An understanding of their value to Africa's social and economic security is a vital missing piece in efforts to motivate conservation-based change in policy, land-use practices and public perceptions of this group of birds.

- A pilot study on "Evaluating the ecosystem services provided by Old World Vultures: determining their role in sustainable futures for African and Eurasian environments" was undertaken by Nottingham Trent University (UK), presented as a poster at the Pathways Europe Conference, Goslar, Germany, September 2018 and is available as an annex to document 3.4 for the Raptors MOU TAG3 meeting. The current project aims to build on this work with more substantive research and advocacy.

**Project objectives**

- To produce a systematic review of existing data and the current state of scientific understanding about ecosystem services provided by Old World vultures in Africa, and assessments of their value.
- To perform a "horizon-scanning" exercise to identify knowledge gaps and future research priorities (as defined by stakeholders in the field).
- Based on a field research programme, to produce an empirical determination of the perceived and actual values of vultures in Africa, as a contribution (for Africa) to the Total Economic Value (TEV) study foreseen by "essential priority" action 11.3.1 of the Vultures MsAP.

**Key activities**

- Desk-based review of literature and datasets of relevance to knowledge about ecosystem services provided by vultures in Africa.
- Consultation with field researchers and other stakeholders to produce the "horizon-scan" of knowledge gaps and research priorities, at regional and international levels.
- Fieldwork to investigate the perceived and actual values of vultures in Africa, utilising a multi-disciplinary biosocial approach with methods from the social, economic and biological sciences, and addressing values (*inter alia*) for culture, recreation, tourism, religion, agriculture, health (human and animal), trade and economy, ecology and environmental sustainability. Study sites and parameters of interest will be determined from the desk research and consultations referred to above.

(Some relevant activities are underway already – see Section 2 of this SIP document).

**Expected results**

- Economic values of vultures established and documented (including improved perspectives on the role of vultures in relation to diseases affecting human health).
- Reports and peer-reviewed publications disseminated to decision-makers and stakeholders.
- Governments influenced in their efforts for implementation of the Vulture MsAP.
- Development and implementation of evidence-based vulture conservation strategies enabled across the African continent, and potentially beyond.
- Development of government policies supported for sustainable land-use and promotion of human-wildlife coexistence.

**Vulture MsAP results supported**

11.3: "Environmental and socio-economic values of vultures are understood and promoted"; and specific "essential priority" action 11.3.1: "Conduct a Total Economic Value (TEV) study of vultures which includes their role as providers of ecosystem services and in generating eco-tourism attraction".

**Lead organisation**

Nottingham Trent University (UK). The project will be led by a multi-disciplinary team with expertise in human-wildlife conflict, carnivore and scavenger ecology and economics. Dr Whitehouse-Tedd and Dr Yarnell bring extensive experience in human-carnivore conflict research and mitigation, and a successful record of postgraduate student and research staff supervision in this field. Prof. Collins has published extensively in the fields of cultural, social, and environmental policy, and is currently working on projects relating to the economic value of wildlife trade. The project aims to recruit Ms. Fran Fitzpatrick as the lead Research Assistant. Ms Fitzpatrick is a conservation scientist with a specific concern for vultures. She recently completed a conservation science internship with IUCN SSC Small Mammal Specialist Group and has field experience in ecological monitoring and conservation research in parts of Africa, Asia and Europe.
It will be important for the leadership function also to support African institutions to lead elements of the work in their own African contexts.

**Other collaborators**

Raptors MOU Coordinating Unit (N Williams).
Endangered Wildlife Trust (A Botha, Co-Chair of IUCN Vulture Specialist Group).
(Anticipated): Vulture Conservation Foundation (Dr Louis Phipps).
(Anticipated): Hawk Conservancy (Dr Campbell Murn).
(Anticipated): National Socio-Environmental Synthesis Center (SESYNC).
These collaborators bring significant species, field and policy expertise, as well as important networks for the field-based research.

| Geographical scope | Timeframe | Approximate budget |
|---|---|---|
| African region; with fieldwork taking place initially in Southern and East Africa. | 30 months. | Desk study and conference poster (completed, 2018): GBP 5,000.<br>Staff costs (academic staff salaries and teaching buy-out; research assistant 2-year contract): GBP 50,000+.<br>Fieldwork in Southern and Eastern Africa: at least two return UK-Africa (e.g. South Africa and Kenya) airfares, domestic flights, vehicle hire, flights between African countries: GBP 10,000.<br>Participation in conferences/workshops (approx. 1 African event and 1 UK or European based event per year) requiring flights and accommodation for at least one researcher): GBP 4,000.<br>Open Access publication fees: GBP 5,000.<br>Total: GBP 74,000+ (69,000+ still to raise). |

## 6. Creating a Vulture MsAP communications toolkit

Preparation of a suite of generic communication tools.

**Rationale**

- Objective 12 of the Vulture MsAP is to advance vulture conservation by effective promotion and implementation of the Vulture MsAP. A suite of communication tools is envisaged for promoting the Plan among a variety of relevant audiences.

**Project objectives**

- Building on existing awareness materials where applicable, to develop and produce a suite of tools such as posters, leaflets, factsheets, banners, stickers and possibly video.
- To make the materials available in digital format for download by users in ways that will make them adaptable, e.g. by translating the language of texts, selecting relevant species images for the contexts concerned and otherwise tailoring them for specific purposes.

**Key activities**

- Develop tools.
- Disseminate tools.
- Obtain feedback on utility and use.

(Some relevant activities are underway already – see Section 2 of this SIP document).

| Expected results | Vulture MsAP results supported |
|---|---|
| • Vulture MsAP promoted widely and effectively with materials tailored to audiences and contexts. | 12.2: “Effective communication strategy for the Vulture MsAP is established”; and specific “high priority” action 12.2.1: “Develop and implement a communications strategy, including at national level, comprising tools to promote the conservation of vultures across the flyway in a range of languages”. |

| Lead organisation | Other collaborators |
|---|---|
| Raptors MOU Coordinating Unit, with Vulture Conservation Foundation and BirdLife | Vulture MsAP Coordinators and Partner Organisations. Technical Advisory Group of the CMS Raptors MOU. |

| Geographical scope | Timeframe | Approximate budget |
|---|---|---|
| Throughout the Range States covered by the MsAP. | 1 year for development and production; on-going use of the tools thereafter. | Minimum USD 5,000; maximum USD 25,000. |

## 7. Guidance for developing national and regional Vulture Conservation Strategies

User-friendly guidance to assist the development of strategies for vulture conservation at national or regional scales.

**Rationale**

- Strategic planning is of critical importance for articulating shared goals and building collaborative implementation efforts.
- The Vultures MsAP applies across all the 128 Range States covered by its scope. It is anticipated however that individual governments may wish to use it as the basis for developing their own tailored strategies at national level, or possibly (in cooperation with other countries) at a regional scale. Such tailored strategies would focus on the particular vulture species and conservation issues of relevance within the geographical scope concerned.
- National and regional vulture conservation strategies ideally would be developed to complement and support the more general national and regional raptor conservation and management strategies being developed by Signatories to the Raptors MOU, and the National Biodiversity Strategies and Action Plans (NBSAPs) developed by Parties to the Convention on Biological Diversity. Equivalent guidance on developing the general raptor strategies has already been published (Kovács and Williams 2012), and this will provide a starting point for drafting the vulture strategy guidance.

**Project objectives**

- To produce user-friendly guidance on developing national and regional vulture conservation strategies, including a suggested standard format.
- To support implementation of the Vulture MsAP at national and regional levels through effective strategic planning, collaboration and partnerships.
- To provide a consistent framework for supporting international monitoring and evaluation of overall progress in implementation of the Vulture MsAP.

**Key activities**

- Terms of reference agreed and lead author (consultant) appointed.
- First draft of guidance developed.
- Consultation of Vulture MsAP Coordination Team and Raptors MOU TAG on first draft.
- Revisions made and final version produced.

| Expected results: | Vulture MsAP results supported: |
|---|---|
| • Guidance produced, disseminated taken up by Range State governments.<br>• National or regional vulture conservation strategies produced by countries for which such strategies do not already exist, following the approach set out in the guidance.<br>• Implementation of strategies monitored by countries in a way that feeds consistently into an international overview of progress in implementing the Vulture MsAP. | Should give some support to 12.1: "Coordination Framework for the Vulture MsAP established, subject to available resources, including financial" and specific "high priority" action 12.1.1: "Develop a Strategic Implementation Plan for the Vulture MsAP". |

| Lead organisation | Other collaborators |
|---|---|
| Raptors MOU Coordinating Unit. | Vulture MsAP Coordination Team.<br>Raptors MOU Technical Advisory Group.<br>Other Vulture MsAP collaborating partners. |

| Geographical scope | Timeframe | Approximate budget |
|---|---|---|
| Throughout the Range States covered by the MsAP. | 6 months for development and production. | USD 5,000. |

## 8. Safety testing of veterinary non-steroidal anti-inflammatory drugs (NSAIDs) on vultures

Testing effects of a range of NSAIDs on wild-caught and temporarily captive birds, as a basis for withdrawal of vulture-toxic substances from veterinary use and replacement by alternatives.

**Rationale**

- Safety testing for veterinary pharmaceuticals, especially nonsteroidal anti-inflammatory drugs (NSAIDs), is urgently needed to manage effectively and reduce the proven risk to vultures that these drugs present. Drugs found or known to be toxic to vultures should be prohibited or withdrawn for the treatment of livestock, and substituted with readily available safe alternatives.
- Safety testing of NSAIDs is identified as a high priority action in the Vultures MsAP, and the SAVE consortium ranks it as the top priority in Asia.

**Project objectives**

- To test all 12 veterinary NSAIDs currently in use in Asia, Europe and Africa for their effects on vultures (using Himalayan Griffons), to establish which are toxic to the birds and which are safe.
- To use the results as a basis for decisions concerning the withdrawal of vulture-toxic substances from veterinary use and their replacement by alternatives.

**Key activities**

- Catching and temporary holding of wild Himalayan Griffon Vultures.
- Oral administering of NSAIDs to the birds according to a testing protocol, limiting exposure (poisoning risk) to two birds per drug tested, and testing 12 currently-used drugs in total.
- As a second step, drugs found safe by direct oral provision are tested again by administering to cattle which are then killed and the tissues fed to the vultures.
- Release of healthy birds back to the wild after the tests are complete.
- Use of the results in reviewing the licensing of veterinary NSAIDs.

| Expected results | Vulture MsAP results supported |
|---|---|
| • Toxicity status of 12 currently-used veterinary NSAIDs established.<br>• Vulture-toxic drugs withdrawn from use and alternatives substituted, based on the results of the tests. | 2.1: “Awareness raising and regulation of veterinary NSAID use at national levels is adequate and implements CMS Resolution 11.15”; and specific “high priority” action 2.1.5: “Carry out robust and mandatory safety testing on vultures and develop a formalised approval process before market authorisation is granted for veterinary NSAIDs. (Aim is to identify NSAIDs and other veterinary pharmaceuticals that are safe for vultures)”. |

| Lead organisation | Other collaborators |
|---|---|
| Veterinary Research Institute of India. | Bombay Natural History Society. |

| Geographical scope | Timeframe | Approximate budget |
|---|---|---|
| Emphasis on South Asia, although application in principle is global. | 2 - 4 years. | USD 20,000 per drug tested = USD 240,000 for 12 drugs. |

## 9. Establishing an international framework for coordination

Ensuring effective coordination of the Vulture MsAP's implementation.

**Rationale**

- A functional structure to facilitate implementation of the Vulture MsAP is listed in the Plan as an "essential" priority for driving the process forward. A proposed coordination structure for this is included in the Plan (see diagram in Section 5 below), identifying roles for the Raptors MOU Coordinating Unit, an Overarching Coordinator, 3-4 Regional Coordinators, the Vulture MsAP Working Group, the Vulture MsAP Steering Group, Regional Vulture Committees, National Vulture Task Forces, Range State governments and civil society partners and supporters.

**Project objectives**

- To elaborate further as necessary the design of the structures, mechanisms and processes required for effective international, regional and national coordination of the implementation of the Vultures MsAP.
- To establish and operate the agreed coordination structure with sufficient security of resourcing for the long term.

**Key activities**

- Overall coordination of the Vulture MsAP.
- Regional coordination of the implementation process by providing support in preparation of national and regional strategies/action plans, defining priorities and raising funds.
- Mid-term and final implementation reviews.
- Maintenance of interactive online tools and other communication resources.

| Expected results | Vulture MsAP results supported |
|---|---|
| • [TBD] | 12.1: "Coordination Framework for the Vulture MsAP established, subject to available resources, including financial"; and specific "essential priority" action 12.1.2: "Establish a Framework to coordinate implementation of the Vulture MsAP, including central and regional coordination units to facilitate implementation, support and review across the range". |

| Lead organisation | Other collaborators |
|---|---|
| Raptors MOU Coordinating Unit. | Appointed coordinators.<br>Vulture MsAP Working Group and Steering Group members.<br>[Others TBD] |

| Geographical scope | Timeframe | Approximate budget |
|---|---|---|
| Throughout the Range States covered by the MsAP. | Ending 2030. | [TBD] |

## 10. Sensitivity mapping of energy infrastructure

Helping to reduce mortality of vultures caused by electrocution and collisions.

**Rationale**

- In common with many other species of birds, vultures suffer serious levels of deaths caused by energy generation and transmission infrastructure; including power-lines, pylons and wind turbines. Impacts are sometimes intensified in particular "hot-spots" (whether by concentration of bird movements, or concentration of energy structures, or both); but it is possible for the problem to be reduced by mapping the zones of greatest sensitivity and employing effective mitigation measures.
- Sensitivity mapping projects focused on vultures have already been launched in Kenya and South Africa, and a previous "Migratory Soaring Birds" project also offers experience of methods and approaches that could now be replicated, updated and implemented across a wider area.

| | | |
|---|---|---|
| **Project objectives**<br>• [TBD] | | |
| **Key activities**<br>• [TBD]<br>(Some relevant activities are underway already – see Section 2 of this SIP document). | | |
| **Expected results**<br>• [TBD] | Vulture MsAP results supported:<br>6.1: "Vulture mortality and sensitivity in relation to electrocution is better understood, including population impacts and hotspots"; and specific "essential priority" action 6.1.2: "Complete sensitivity mapping for Vulture MsAP range. Adding to existing analyses (e.g. Red Sea flyway) to identify areas where energy infrastructure poses greatest electrocution risks to vultures; combine tracking data, site prioritisation, vulture counts and other sources".<br>7.1: "Vulture mortality and sensitivity in relation to collision better understood, including population impacts and hotspots"; and specific "essential priority 7.1.2: "Complete sensitivity mapping for the entire MsAP range. Adding to existing analyses (e.g. Red Sea flyway) to identify areas where energy infrastructure poses greatest collision risks to vultures; combine tracking data, site prioritisation, vulture counts and other sources". | |
| **Lead organisations**<br>BirdLife International.<br>Endangered Wildlife Trust.<br>BirdLife South Africa (for South Africa). | **Other collaborators**<br>Others involved in existing Kenya project, including Peregrine Fund and USAID.<br>CMS Energy Task Force.<br>[Others TBD] | |
| **Geographical scope**<br>[TBD] | **Timeframe**<br>[TBD] | **Approximate budget**<br>[TBD] |

## 11. Guidance on establishing Vulture Safe Zones

Providing support for the application in other regions of a tool initially developed and successfully applied in South Asia.

**Rationale**

- Vulture Safe Zones (VSZs) form a crucial landscape approach to vulture conservation which has been defined in South Asia. The concept builds on successful efforts to remove vulture-toxic veterinary pharmaceuticals (particularly nonsteroidal anti-inflammatory drugs or NSAIDs) from vulture habitat in that region, in order to allow the recovery and in some cases high profile reintroduction of vulture populations. Management of these VSZs is now beginning to include measures to tackle other threats to vultures.
- Appropriately adapted models based on South Asian Vulture Safe Zones show great promise and could be applied in other regions. Countries in Europe have a variety of existing mechanisms to employ, including internationally coordinated protected area networks and extensive regulatory networks. In Africa however there is a pressing need to explore and define the potential role of VSZs as a vulture conservation tool there: one pilot study has already begun to show promise (in Zambia) but a broader-scale effort is urgently required. Elsewhere, countries such as Cambodia and Myanmar are also showing interest.
- The specifics of realising Vulture Safe Zones in Africa and elsewhere are likely to involve significant differences from the circumstances that have applied thus far in South Asia. The work required will need to include some detailed re-framing and adaptation of the concept so that it may be made as appropriate as possible to the particular regional context. The development of guidance on this at the outset is therefore seen as an important prerequisite.
- A key starting-point for the way forward, in addition to the Zambian pilot mentioned above, is a consultancy report commissioned by BirdLife International and produced in December 2018 which provides a review and assessment of Vulture Safe Zones (Sheldon 2018) and includes a discussion of how they may be applied (in adapted form) in regions beyond South Asia.

| | | |
|---|---|---|
| **Project objectives**<br>• [TBD] | | |
| **Key activities**<br>• Detailed African consultation.<br>• Development of the concept.<br>• [Others TBD]<br>(Some relevant activities are underway already – see Section 2 of this SIP document). | | |
| **Expected results**<br>• [TBD] | **Vulture MsAP results supported**<br>2.2: "Vulture populations are maintained and/or restored by establishment of Vulture Safe Zones (VSZs)"; and specific "medium priority" action 2.2.2: "Promote development and implementation of new VSZs through drafting and dissemination of guidelines for identification and selection"; also supporting the second part of "medium priority" action 2.2.1: "Maintain and review network of VSZs (with emphasis on NSAIDs issue) in India, Nepal, Pakistan and Bangladesh and develop VSZ criteria for application as an approach in addressing other critical threats in other regions". | |
| **Lead organisations**<br>Endangered Wildlife Trust.<br>BirdLife International. | **Other collaborators**<br>[TBD] | |
| **Geographical scope**<br>Southern and East Africa. | **Timeframe**<br>2020 – 23. | **Approximate budget**<br>[TBD] |

## Other key planned activities

3.12 In addition to the flagship projects, there is a range of other initiatives in preparation or partly underway which form part of the picture of planned activities for the future. Some of this has taken shape explicitly in response to the priorities set out in the Vulture MsAP, while in other cases it may have been proposed independently with a different motivation but would nonetheless add an important contribution now to delivery of the Plan.

3.13 The information below is a summary of some of the main examples known at the time of writing (September 2019) from the same sources that provided the information given in Section 2 above, namely the respondents to the February 2018 voluntary questionnaire exercise, members of the Vulture MsAP Coordination Team and other consultees. The source of each individual listed item is a questionnaire response, unless stated otherwise in the table.

3.14 More details on the questionnaire survey are given in Section 2 above. In relation to future activities it asked respondents to identify those that were in hand, foreseen or intended for the 2-3 year period 2018-2020. Many of the responses did not explicitly distinguish activities of this kind from those that were already in progress or even those already completed, so the judgements made here as to which items belong in this present section and which relate instead to Section 2 above have often had to be based on a large measure of interpretation, and this may or may not be accurate.

3.15 As also with Section 2, while some submissions from different respondents which were referring to the same initiative have been easy to detect and consolidate in the compilation of results, in other cases it has been harder to know whether two or more references that look similar are in fact referring to the same activity or not. In addition, where the questionnaire asked about the 'expected results' of intended future activities, in many cases it is not clear whether the responses to this are expressing firm expectations from a concrete plan or instead merely hopes and aspirations for what might take shape in future but at present is only a 'wish list' idea. Further investigations with the original sources at a

later date might usefully work on teasing out some of these specifics.

3.16 In the meantime some judgements have been made on the information provided, to select just those items that appear to be the more firm/clear and realistic proposals. The list is therefore not a complete inventory of everything that might be attended to at some point by someone; but it should at least give an illustration of the types of issues being focused on and the nature of work being planned.

3.17 The items in the table below have been assigned as far as possible to one or other of the 12 Objectives in the Vulture MsAP, and within each of these Objectives they have been loosely clustered according to sub-topics and geographic regions. The way the original information has been provided however does not make it possible to do this in a very rigorous or complete way (it was organised by fields such as 'awareness', 'research', 'direct action', etc. rather than by the outcome topics in the 12 Objectives, making it often difficult to interpret in relation to the latter), and some of the potential activities will in any event be more cross-cutting or relevant to more than one Objective.

3.18 Despite the various limitations applying to this information, it should provide an inspiring agenda of possibilities which can serve as a rallying-point for expressions of interest from potential collaborators, and a vehicle for exploring the mobilisation of necessary resources. It can also act as a prompt for further dialogue with those intending to lead on the individual items listed here to expand on the descriptions provided to date, and where necessary to correct any of the particulars presented. Finally also, the overall picture this provides at present is a basis for reflection on whether any major gaps or imbalances are apparent in relation to where effort is likely to be directed, by comparison with the scheme of priorities set out in the Vulture MsAP (see Section 6 below).

3.19 For many individual listed items listed here, more extensive descriptions, and information on expected results and deliverables, contact details, collaborating organisations, web-links to further documents etc. are contained in the separate compilation of raw data mentioned in Section 2 above, and that compilation can be consulted through the Raptors MOU Coordinating Unit as an accompanying resource for this Strategic Implementation Plan.

**Table 3: Summary of planned activities reported by consultees and survey respondents**

**Vulture MsAP Objective 1:**
**To achieve a significant reduction in mortality of vultures caused unintentionally by toxic substances used (often illegally) in the control and hunting of vertebrates**

**Result 1.1 Improved understanding and awareness of human-wildlife conflicts and associated impacts on vultures to inform more effective mitigation approaches**

**Result 1.2 Conservation authorities, local communities and other stakeholders take collaborative action to tackle unintentional poisoning directed at vertebrate control**

**Result 1.3 Legal and policy measures respond to causes and impact of unintentional poisoning directed at vertebrate control**

*[See also items listed under Objective 5 below: in the absence of further details, activities described in generic terms as relating to "poisoning" may cover deliberate poisoning or accidental poisoning or both. The default categorisation here in unspecified cases is listing under Objective 1]*

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Plans to expand integrated anti-poisoning programmes from Kenya, Zimbabwe and Botswana to other countries in Africa. Source: R Safford, *in litt*. | (Various). | Africa. |
| Project on reducing impacts of poisoning on vultures in 6 Southern African countries, drawing also on links with partners in East Africa. To be led by Endangered Wildlife Trust: funding already secured from USWFS. Source: A Botha, *in litt*. | (Various). | Africa. |
| Poisoning intervention training for rangers, law enforcement officials and others in Southern and East Africa to (continue to) be provided by the Endangered Wildlife Trust's Vultures for Africa Programme in partnership with The Hawk Conservancy Trust. Source: IUCN Cat Specialist Group draft Guidelines for the Conservation of Lions in Africa, 2018. | 1.2.6. | Africa. |
| Continued operation of the African Wildlife Poisoning Database, jointly by the Endangered Wildlife Trust and the Peregrine Fund Wildlife. Source: IUCN Cat Specialist Group draft Guidelines for the Conservation of Lions in Africa, 2018. | 1.1.2. | Africa. |
| Implementation of the LIFE project on Egyptian Vultures in the Balkans, Middle East and Africa; including a range of capacity building activities, research on threats from poisons and a study of the effects of agrochemicals in Bulgaria. | (Various). | Europe/Africa/ Middle East. |
| Training on anti-poisoning measures (including response protocol) for rangers, police, NGOs, community groups etc. and follow-up support to impacted communities, Kenya. | 1.2.2 ("essential" priority), 1.2.6, and possibly 1.2.1. | Africa. |
| Monitoring of vulture poisoning incidents, Kenya. | 1.1.2. | Africa. |
| Production of "poisoning hot-spot maps" in Kenya to raise community awareness on the issue and guide official response actions. | 1.1.3 ("essential" priority). | Africa. |
| Research on movements in relation to poisoning hotspots in the north of Kenya. | 1.1.2. | Africa. |
| Education and awareness programmes on poisoning issues in South Africa. | 1.1.3 ("essential" priority). | Africa. |
| Vulture tagging studies to identify areas of poisoning impact, Tanzania. | 1.1.2. | Africa. |

| | | |
|---|---|---|
| Vulture tagging studies in Queen Elizabeth National Park, Uganda, mainly to identify area usage but possibly also poisoning hotspots. | 1.1.2. | Africa. |
| Training and coordination of anti-poisoning measures in South Africa, Namibia, Zambia, Botswana and Mozambique, and in game reserves in Tanzania. | 1.2.6; and possibly 1.2.3. | Africa. |
| Developing protocols for eliminating use of lethal poisons for controlling stray dogs in Ethiopia and Chad (in context of LIFE project on Egyptian Vulture). | 1.2.8. | Africa. |
| Awareness-raising workshops on alternative feral dog control options in poisoning hotspots in Ethiopia. | 1.1.3 (“essential” priority). | Africa. |
| Awareness-raising among farmers on poisoning issues in Vulture Safe Zones in Zambia. | 1.1.3 (“essential” priority). | Africa. |
| Proposal to develop a “Protocol on the Actions and Cooperation between Authorities and Organizations in Eradicating the Illegal poisoning, Killing, Trapping and Trade of Vultures and Wild Animals” in Serbia. | 1.2.2 (“essential” priority); and possibly others. | Europe. |
| Dissemination of a leaflet on poisoning risks, Serbia. | 1.1.3 (“essential” priority). | Europe. |
| Monitoring of Griffon Vulture poison levels, Serbia. | 1.1.2. | Europe. |
| Anti-poisoning measures in Spain, including training, awareness, dog patrols, and updating the national strategy on the illegal use of poison baits. | (Various). | Europe. |
| Anti-poisoning measures in Cyprus, in context of a new LIFE project. | (Various). | Europe. |
| Various activities to reduce vulture mortality from unintentional poisoning in the Balkans (in context of LIFE projects: Egyptian Vulture New Life; Vulture Back to Life; ReVultures; and Balkan Anti-poisoning Project). | (Various). | Europe. |
| Training for relevant services in implementing poisoning response protocols and toxicology analysis, operation of anti-poison dog units, expansion of anti-poisoning network, promotion of alternatives to poison baits, and development of a schools Environmental Education Kit focusing on the Egyptian Vulture and the threat of poison baits; all in Greece, in the context of LIFE project on Egyptian Vultures. | 1.1.3 (“essential” priority), 1.2.1, 1.2.2 (“essential” priority) and others. | Europe. |
| Operation of anti-poisoning dog units and campaign on poisoning risks in Italy, in context of LIFE project on Egyptian Vultures. | (Not specifically covered). | Europe. |
| Anti poison dog unit communication activities in the Eastern Rhodopes, Bulgaria. | (Not specifically covered). | Europe. |
| Anti-poisoning measures including awareness/training and a dog unit in the adjacent regions of Alentejo (Portugal) and Andalucia (Spain), targeting Black and Egyptian Vultures and other raptors, in the context of an Interreg/POCTEP project. | 1.1.3 (“essential” priority); 1.2.6; and others. | Europe. |
| Implementation of the national Poison Vigilance Plan and epidemiological surveillance network in France. | 1.1.2. | Europe. |
| Poison baits workshops in Cambodia and potentially India. Source: C Bowden, *in litt*. | (?). | Asia |
| Community training and public awareness activities to reduce incidental poisoning in targeted areas of Afghanistan. | 1.1.3 (“essential” priority) and 1.2.6. | Asia. |
| Training of veterinary staff, students and volunteers in vulture poisoning issues in India. | 1.2.6. | Asia. |
| Provision of compensation for cattle predated by carnivores in India, to deter use of poisons. | 1.2.4. | Asia. |
| Assessment of secondary poisoning risks in Rajasthan, India. | 1.1.1 (partly). | Asia. |
| Awareness-raising on accidental poisoning in Nepal. | 1.1.3 (“essential” priority). | Asia. |
| | | |

**Vulture MsAP Objective 2:**
**To recognise and minimise mortality of vultures by non-steroidal anti-inflammatory drugs (NSAIDs) and occurrence and threat of toxic NSAIDs throughout the range covered by the Vulture MsAP**

**Result 2.1 Awareness raising and regulation of veterinary NSAID use at national levels is adequate and implements CMS Resolution 11.15**

**Result 2.2 Vulture populations are maintained and/or restored by establishment of Vulture Safe Zones (VSZs)**

**Result 2.3 Vulture Safe Zones are monitored**

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Research on NSAIDs in South Africa. | (2.1.1?); (2.2.4?). | Africa. |
| Workshops for awareness-raising and advocacy on NSAIDs and other veterinary medicines among veterinary departments in 5 states in Nigeria. | 2.1.7. | Africa. |
| Establishment of Vulture Safe Zones with supplementary feeding and protection of large trees, Zambia. | 2.2.1. | Africa. |
| Advocacy to ban use of diclofenac in Spain. | 2.1.2 (“essential” priority). | Europe. |
| University-led research project on diclofenac and other NSAIDs in Spain and Portugal. | (2.1.1?); (2.2.4?). | Europe. |
| In the context of a LIFE project on Egyptian Vultures in the Balkans, Middle East and Africa – study of effects of NSAIDs in Bulgaria. | (Not specifically covered). | Europe. |
| Veterinary drug use survey and toxicology analyses addressing Egyptian, Cinereous, Bearded and Griffon Vultures; Armenia. | 2.1.1. | Europe. |
| Enforcement of ban on diclofenac in Afghanistan. | (Supports) 2.1.2 (“essential” priority). | Asia. |
| Implementation of the national Vulture Conservation Action Plan 2016-2025 for Bangladesh, including Vulture Safe Zones and NSAID bans. | 2.1.2 (“essential” priority); 2.2.1; and probably others. | Asia. |
| Undercover pharmacy survey in Bangladesh. | 2.2.4. | Asia. |
| Notification of the Vulture Safe Zone in Sindh, Pakistan, as a protected area under the Sindh Wildlife Protection Act. | 2.2.1. | Asia. |
| Community capacity-building, training, nest protection activities, establishing Nature Clubs in local schools and media coverage to raise awareness in the Vulture Safe Zone in Sindh, Pakistan. | 2.2.3. | Asia. |
| Advocacy activities by WWF towards bans on aceclofenac and ketoprofen in Pakistan. | 2.1.2 (“essential” priority); | Asia. |
| Research on availability of NSAIDs, Pakistan. | 2.2.4. | Asia. |
| Various NSAID monitoring activities and implementation of national Action Plan for vultures in Nepal (focusing mainly on NSAIDs and VSZs). | (Various). | Asia. |

**Vulture MsAP Objective 3:**
**To ensure that CMS Resolution 11.15 on the phasing out the use of lead ammunition by hunters is fully implemented**

**Result 3.1 Mitigation measures in place to reduce the impact of lead poisoning on vultures**

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Lead testing of vultures in selected game reserves in Tanzania. | 3.1.1. | Africa. |
| Advocacy activities for policy reform in the autonomous community of Aragon, Spain, including for a ban on lead ammunition. | 3.1.2. | Europe. |
| Investigation of alternatives to lead ammunition in the context of LIFE project on Bearded Vultures, France. | 3.1.5. | Europe. |
| Review of hunting laws in Switzerland, including potential ban on lead ammunition. | 3.1.2. | Europe. |

**Vulture MsAP Objective 4:**
**To reduce and eventually to halt the trade in vulture parts for belief-based use**

**Result 4.1 Improved understanding of the trade in vultures and their parts informs improved conservation approaches**

**Result 4.2 Governments, local communities and other stakeholders understand scale and impact of trade in and belief-based use of vulture body parts**

**Result 4.3 All appropriate policy instruments and legal measures are established and/or aligned to reduce belief-based use of vulture body parts**

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Decision on West African vulture trade and management adopted by CITES COP18, including actions to gather information and review issue of belief-based use and (q.v.) sentinel poisoning. Source: R Safford, *in litt* and CITES website. | 4.1.1. | Africa. |

**Vulture MsAP Objective 5:**
**To reduce and eventually to halt the practice of sentinel poisoning by poachers**

**Result 5.1 Barriers to prosecuting offenders of wildlife crime are understood**

**Result 5.2 Information on sentinel poisoning incidents is properly collected, managed and shared**

**Result 5.3 Governments, local communities and other stakeholders understand scale and impact of sentinel poisoning**

**Result 5.4 Conservation authorities, communities and others take collaborative action to respond to or prevent poisoning incidents**

**Result 5.5 Legal and policy measures respond to causes and impact of poaching on vultures and are enforced**

*[See also items listed under Objective 1 above: in the absence of further details, activities described in generic terms as relating to "poisoning" may cover deliberate poisoning or accidental poisoning or both. The default categorisation here in unspecified cases is listing under Objective 1].*

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Decision on West African vulture trade and management adopted by CITES COP18, including actions to gather information and review issue of sentinel poisoning and (q.v.) belief-based use. Source: R Safford, *in litt* and CITES website. | 5.2. | Africa. |

**Vulture MsAP Objective 6:**
**To substantially reduce vulture mortality caused by electrocutions linked to energy generation and transmission infrastructure**

**Result 6.1 Vulture mortality and sensitivity in relation to electrocution is better understood, including population impacts and hotspots**

**Result 6.2 Public and private sector support and widespread adoption of vulture-friendly energy infrastructure**

**Result 6.3 Energy infrastructure (electricity power grids) impacts on vultures are reduced by implementation of improved designs**

*[NB activities in this table relating to energy infrastructure may relate to both Objective 6 and Objective 7 (below) together, or they may relate only to one of these but information may not have been provided to distinguish which one. The default categorisation here is listing under Objective 6, but for overall analysis purposes it will probably be best to pool the information for Objective 6 and Objective 7 together].*

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Work by Vulture Conservation Foundation on mitigation of impacts of electrocution and collision on vultures in the Mediterranean region. Source: J Tavares VCF, *in litt*. | (Unclear; potentially aspects of 6.2.1; 6.2.4; 6.3.1 ("essential" priority); 6.3.3).<br>Also in section on Objective 7 below. | Mediterranean. |

| | | |
|---|---|---|
| Insulation of 2000 dangerous pylons along the flyway of the Egyptian Vulture in the Balkans, Middle East and Africa (in context of LIFE project on Egyptian Vulture). | Links to 6.3.1 ("essential" priority). | Europe/Middle East/Africa |
| Mapping of powerlines within the Red Sea flyway, Egypt. | 6.1.2. | Africa. |
| Production of a brochure for the energy sector in Egypt. | Second part of 6.2.2. | Africa. |
| Field survey of electrocution impacts of powerlines in South Africa. | 6.1.1. | Africa. |
| Survey of electrocution impact of vultures of a key section of powerline in Uganda. | 6.1.1. | Africa. |
| Promotion of bird-friendly electricity transmission designs to reduce electrocutions in Ethiopia. | Potentially 6.2.1 and 6.3.1 ("essential" priority). | Africa. |
| Operation of the National Avifauna Committee to coordinate measures addressing electrocution, including powerline and pylon modifications in the context of the LIFE GYPCONNECT project, France. | Links to 6.2.5. | Europe. |
| Insulation of at least 130 dangerous pylons in the Studen Kladenets SPA in the Eastern Rhodopes, Bulgaria. | Potentially 6.2.1 and 6.3.1 ("essential" priority). | Europe. |
| Insulation of selected powerlines close to Egyptian Vulture nests in Greece, in the context of a national Action Plan for the species. | Potentially 6.2.1 and 6.3.1 ("essential" priority). | Europe. |
| Insulation of 500 pylons in Italy, in context of LIFE project on Egyptian Vultures. | Potentially 6.2.1 and 6.3.1 ("essential" priority). | Europe. |
| Pilot project on insulation of powerlines to reduce electrocution in Switzerland. | Potentially 6.2.1 and 6.3.1 ("essential" priority). | Europe. |
| Development of financing and agreement frameworks for retrofitting powerlines to reduce electrocution risk in Spain. | Probably 6.2.3. | Europe. |
| Advocacy activities for policy reform in the autonomous community of Aragon, Spain, including for mapping of high-risk powerlines. | 6.1.2 ("essential" priority); policy reform not specifically covered, but may link to 6.2.4. | Europe. |
| Photography festival on theme of birds and powerlines, Iran. | Not specifically covered. | Asia. |
| Employment of mitigation measures to reduce electrocution by powerlines in in targeted areas of Afghanistan, supported by EIA of new electricity projects. | Potentially 6.2.1 and 6.3.1 ("essential" priority). | Asia. |

**Vulture MsAP Objective 7:**
**To substantially reduce vulture mortality caused by collisions linked to energy transmission and generation infrastructure**

**Result 7.1 Vulture mortality and sensitivity in relation to collision better understood, including population impacts and hotspots**

**Result 7.2 Public and private sector support and widespread adoption of vulture-friendly energy infrastructure**

**Result 7.3 Energy infrastructure (electricity power grids) impacts on vultures are reduced by implementation of improved designs**

*[NB activities in this table relating to energy infrastructure may relate to both Objective 6 (above) and Objective 7 together, or they may relate only to one of these but information may not have been provided to distinguish which one. The default categorisation here is listing under Objective 6, but for overall analysis purposes it will probably be best to pool the information for Objective 6 and Objective 7 together].*

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Work by Vulture Conservation Foundation on mitigation of impacts of electrocution and collision on vultures in the Mediterranean region. Source: J Tavares VCF, *in litt*. | (Unclear; potentially aspects of 7.2.1, 7.2.5, 7.3.1 ("essential" priority); 7.3.4).<br>Also in section on Objective 6 above. | Mediterranean. |

| | | |
|---|---|---|
| Field survey of collision impacts of powerlines in South Africa. | 7.1.1. | Africa. |
| Promotion of bird-friendly electricity transmission designs to reduce collisions in Ethiopia. | Probably 7.2.1 and 7.3.1 ("essential" priority). | Africa. |
| Mitigation measures and monitoring of Egyptian and Griffon Vultures at windfarm sites in Egypt. | 7.1.4 and (probably) Probably 7.2.1 and 7.3.1 ("essential" priority). | Africa. |
| Development of a sensitivity map for collision risks in Kenya. | 7.1.2. | Africa. |
| Collision mitigation measures at a windfarm development, Kenya. | Probably 7.2.1 and 7.3.1 ("essential" priority). | Africa. |
| Measures to reduce powerline collisions in Nigeria. | Probably 7.2.1 and 7.3.1 ("essential" priority). | Africa. |
| Installation of collision-preventing diverters on two power lines in the Studen Kladenets SPA in the Eastern Rhodopes, Bulgaria. | 7.3.3. | Europe. |
| Operation of the National Avifauna Committee to coordinate measures addressing collision risk, including powerline and pylon modifications in the context of the LIFE GYPCONNECT project, France. | Links to 7.2.6. | Europe. |
| Development of financing and agreement frameworks for retrofitting powerlines to reduce collision risk in Spain. | Probably 7.2.4. | Europe. |
| Pilot project on marking of powerlines to reduce collisions in Switzerland. | Potentially 7.2.1 and 7.3.1 ("essential" priority). | Europe. |

**Vulture MsAP Objective 8:**
**To ensure availability of an appropriate level of safe food to sustain healthy vulture populations**

**Result 8.1 Understanding of role of food availability in vulture declines is improved**

**Result 8.2 Where appropriate, country-specific or more local strategies are developed and implemented to ensure availability of safe food**

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Provision of vulture feeding sites in South Africa. | 8.2.1; possibly 8.2.4. | Africa. |
| Research on food availability, nutrition, and effects of feeding stations, South Africa. | 8.1.1; 8.2.4. | Africa. |
| Supplementary feeding of Hooded Vultures in Kampala, Uganda. | 8.2.1, possibly 8.2.4. | Africa. |
| Establishment of a supplementary feeding station for Griffon and Egyptian Vultures at Jbel Moussa Nature Reserve, Morocco. | 8.2.1, possibly 8.2.4. | Africa. |
| Modelling of vulture food web dynamics to enable predictions of future trends, Ethiopia. | 8.1.1. | Africa. |
| Establishing supplementary feeding sites for Egyptian Vulture in Crete, Bulgaria and Greece, and maintaining those in Albania (in context of LIFE project on Egyptian Vulture). | 8.2.1, possibly 8.2.4. | Europe. |
| Supplementary feeding of vultures with dead animals from animal breeders in the Eastern Rhodopes, Bulgaria. | 8.2.1, possibly 8.2.4. | Europe. |
| Establishment of 8 supplementary feeding sites for vultures in Greece, and continued operation of two existing ones. | 8.2.1, possibly 8.2.4. | Europe. |
| Establishment of additional supplementary feeding stations for vultures in Serbia. | 8.2.1, possibly 8.2.4. | Europe. |
| Provision of supplementary feeding for vultures at a total of 42 sites in Italy. | 8.2.1, possibly 8.2.4. | Europe. |
| Monitoring Griffon Vulture feeding stations, in Italy, in the context of a LIFE project. | 8.2.4. | Europe. |
| Continued operation of supplementary feeding sites for Bearded Vultures in Corsica and the Pyrenees, Griffon | 8.2.1, possibly 8.2.4. | Europe. |

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|---|---|---|
| Vultures in the Grands Causses and other Vultures in the Massif Central, France. | | |
| Study of vulture supplementary feeding sites in the Balkans under preparation by VCF. Source: J Andevski, *in litt*. | 8.1.1. | Europe. |
| Evaluation of the national application of feeding of necrophages in Spain. | 8.2.4; possibly supports 8.2.5. | Europe. |
| Regulation on management of by-products from game species of animals, Spain. | 8.2.1. | Europe. |
| Implementation of provisions for feeding of avian scavengers with abandoned farm carcases and hunting by-products, and other management best practices on extensive farms, Spain. | 8.2.1; possibly 8.2.3. | Europe. |
| Advocacy activities for policy reform in Aragon, Spain, covering inter alia provision of vulture feeding sites and livestock management measures. | 8.2.1; possibly 8.2.3. | Europe. |
| Maintenance of 10 supplementary feeding sites for vultures in southeastern Alentejo, Portugal,.and exchange of experiences on this with Spain. | 8.2.1, possibly 8.2.4. | Europe. |
| Implementation of the "Manual of Procedures for the Use of Animal Byproducts for the Feeding of Scavenger Birds" in Portugal. | 8.2.1. | Europe. |
| Establishment of 2-3 supplementary feeding stations on a trial basis in southern Kazakhstan, and monitoring vultures with camera traps at feeding stations in Karatau and Ustyur. | 8.2.1; 8.2.4. | Asia. |
| Maintaining supplementary feeding site in western lowlands of Nepal. | 8.2.1, possibly 8.2.4. | Asia. |
| Monitoring of feeding station in Bangladesh. | 8.2.4. | Asia. |

**Vulture MsAP Objective 9:**
**To ensure availability of suitable habitat for vultures to nest, roost and forage**

**Result 9.1 Nesting and roosting sites used by vultures conserved**

**Result 9.2 Rangelands conserved as suitable habitat for vultures**

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Identification of vulture hot-spots in Uganda. | 9.1.1. | Africa. |
| Expedition to search for Egyptian Vulture colonies in the Atlas mountains, Morocco. | 9.1.1. | Africa. |
| Identification of potential vulture conservation areas in Ethiopia. | 9.1.1. | Africa. |
| Studies on habitat requirements of vultures in Mozambique. | (Not specifically covered; but may support 9.2.2). | Africa. |
| Studies on spatial ecology, satellite tracking and monitoring of breeding colonies of vultures in Zambia. | 9.1.1. | Africa. |
| Aerial and road transect surveys of vultures in Zimbabwe, and monitoring of selected breeding populations. | 9.1.1. | Africa. |
| Telemetry studies to identify area usage by vultures (including possible corridors) in Selous Game Reserve and possibly also Maswa GR, Tanzania. | 9.1.1. | Africa. |
| Vulture tagging studies in Queen Elizabeth National Park, Uganda, to identify area usage. | 9.1.1. | Africa. |
| Studies on spatial ecology, habitat requirements, ecosystem services and monitoring of breeding colonies of vultures in South Africa. | 9.1.1, and may support 9.2.2. | Africa. |
| Research on factors affecting nest site selection by Hooded Vultures in South Africa. | 9.1.1. | Africa. |
| Monitoring of breeding of Lappet-faced Vultures in the Namib, Namibia (plus ringing & tagging of young, monitored by camera traps); and of all vultures on selected farms. | 9.1.1. | Africa. |

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|---|---|---|
| Poster for Comoé National Park authority, Ivory Coast, and awareness campaign for local authorities about the importance of the Park for vultures. | Should support 9.2.2. | Africa. |
| Implementation of management plan for a protected area for vultures at Fouta Djallon, Guinea. | 9.2.2. | Africa. |
| Study of loss of habitat to fire, addressing Egyptian, Cinereous, Bearded and Griffon Vultures; Armenia. | 9.1.1. | Europe. |
| Studies leading to proposals for Natura 2000 sites in Crete, with Bearded and Griffon Vultures being among the priority target species. | 9.1.2. | Europe. |
| In the context of a LIFE project on Egyptian Vultures in the Balkans, Middle East and Africa – monitoring territory occupancy and productivity (Balkans). | 9.1.1. | Europe. |
| Researching spatial ecology of Griffon and Cinereous Vultures with telemetry; annual monitoring of Griffon Vulture breeding productivity and roosting and feeding sites of Cinereous Vultures; and building artificial nests for Cinereous Vultures; all in the Eastern Rhodopes, Bulgaria. | 9.1.1; partly 9.1.2. | Europe. |
| Evaluation of potential sites for additional protected areas in Serbia. | 9.1.2. | Europe. |
| Monitoring of Egyptian Vulture nest sites in Italy, by direct observation and webcams. | 9.1.1. | Europe. |
| Road transect surveys and breeding site surveys, Nepal. | 9.1.1. | Asia. |
| Research on factors affecting vulture breeding success and habitat availability, Pakistan. | 9.1.1. | Asia. |
| Monitoring distribution and nesting of vultures in Azerbaijan. | 9.1.1. | Asia. |

**Vulture MsAP Objective 10:**
**To substantially reduce levels of direct persecution and disturbance of vultures caused by human activities**

**Result 10.1 Reduced mortality caused by direct persecution**

**Result 10.2 Breeding success increased by reducing disturbance**

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Education and awareness programmes on disturbance issues in South Africa. | 10.2.1. | Africa. |
| Creation of local nest-site caretakers in Niger and Nigeria (in context of LIFE project on Egyptian Vulture). | (Not specifically covered; but could link to 10.1.2). | Africa. |
| Advocacy for updated hunting legislation in Syria, to give full protection to all raptors including vultures. | 10.1.1; 10.1.3. | Middle East. |
| Public awareness activities to address poaching and accidental killing of vultures in Armenia, plus seminars for hunters groups on reducing poaching, supported by initiatives to redirect interest in vultures into artworks, monitoring etc. | 10.1.2; 10.2.1. | Europe. |
| Nest guarding programmes for the Egyptian Vulture in Bulgaria and Greece (in context of LIFE project on Egyptian Vulture). | (Not specifically covered; but could link to 10.1.2). | Europe. |
| Measures to manage the potential impact of tourism pressures on Griffon Vulture breeding sites, Serbia. | 10.2.3. | Europe. |
| Redirection of visitors to reduce disturbance of selected vulture nest sites in Sardinia, Italy. | Possibly 10.2.2. and/or 10.2.3. | Europe. |
| Nest guarding and camera surveillance at Griffon Vulture colonies in the Eastern Rhodopes, Bulgaria. | (Not specifically covered). | Europe. |
| Restriction of access to vulture breeding sites within community forests, Nepal. | Probably 10.1.1. | Asia. |

**Vulture MsAP Objective 11:**
**To support vulture conservation through cross-cutting actions that contribute to addressing knowledge gaps**

**Result 11.1 Increased understanding of basic biological and ecological parameters and threats influencing vulture populations**

**Result 11.2 Vulture populations restored where extinct and restocked where there is danger of extinction**

**Result 11.3 Environmental and socio-economic values of vultures are understood and promoted**

**Result 11.4 Enhanced legal and other protection of African-Eurasian Vultures nationally and internationally**

*[NB where further details have not been provided by the original source, generically described items are included here in the "cross-cutting" category, although in some cases what is actually involved may relate more specifically to one of the other MsAP Objectives listed in this table. Further investigation might therefore result in re-categorisation in some cases].*

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Development by Vulture Conservation Foundation of several further (unspecified) project concepts for submission for EU LIFE funding, relating to Vulture MsAP implementation *inter alia* in Spain, France, Balkan countries and Morocco. Source: J Tavares and J Andevski, *in litt*. | [?]. | Europe/Africa. |
| "VISA4Vultures" Vulture Initiative for Sub-Saharan Africa, in development by the IUCN Vulture Specialist Group, to be operated as a GIS-based metadata project for collating information about progress towards Vulture MsAP objectives, to highlight knowledge gaps, promote connectivity between stakeholders and minimise duplication of effort. Source: https://www.visa4vultures.org/. | (Not specifically covered). | Africa. |
| European Vulture Conference, Portugal, October 2019, organised by Vulture Conservation Foundation. Featuring a specific session on the Vulture MsAP. Source: J Tavares and J Andevski, *in litt*. | (Not specifically covered). | Europe/Africa /Asia. |
| Plans for a regional training / capacity-building workshop for the Middle East region in 2019. Resourcing and other support for this (including experience to be transferred from VCF in Europe) still required. Source: M Shobrak, *pers comm*. | (Not specifically covered). | Middle East. |
| Development and implementation of a national Action Plan for Egyptian Vultures in Cape Verde. | (Not specifically covered; but links to 11.4.3). | Africa. |
| National Action Plan for vultures, Guinea. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Launching a National Action Committee on Vultures in Nigeria, with an associated "roadmap" of policy & legal measures. | (Not specifically covered). | Africa. |
| Aiming to develop a national Action Plan for vultures in Tanzania. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Development of a national Vulture Conservation Plan for Ethiopia. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Implementation of national Action Plan for vultures in Zimbabwe. | (Not specifically covered; but links to 11.4.3). | Africa. |
| Achieving synergies between the Vulture MSAP and the CMS African Eurasian Migratory Landbirds Action Plan | (Not specifically covered). | Africa/Europe/Middle East/Asia. |

| | | |
|---|---|---|
| (objective highlighted by Switzerland; but should be common to all). | | |
| National Action Plan for three species of Vultures, Greece. Source: J Tavares VCF, *in litt*. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Single Species Action Plan for the Griffon Vulture, Croatia. Source: J Tavares VCF, *in litt*. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Aiming to develop a national Action Plan for Egyptian Vultures in Turkey. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Implementation of national Action Plan for Egyptian Vulture, Greece. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Production of a raptor and owl conservation strategy, Switzerland. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Implementation of national Action Plans for Bearded, Griffon and Egyptian Vulture, and evaluation of Action Plan for Black Vulture, France. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Strategy & conservation plan for the Bearded Vulture, Spain. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Implementation of the National Plan for the Conservation of Scavenger Birds in Portugal. | (Not specifically covered; but links to 11.4.3). | Europe. |
| Annual update of the SAVE Blueprint Recovery Plan for Gyps vultures in Asia. | (Not specifically covered; but links to 11.4.3). | Asia. |
| Implementation of the national Vulture Conservation Action Plan 2016-2025 for Bangladesh, including captive breeding. | (Not specifically covered; but links to 11.4.3 and probably to 11.2.3). | Asia. |
| Proposals for development of Vulture Conservation Action Plans (and associated Management Plans) at State level in India. | (Not specifically covered; but links to 11.4.3). | Asia. |
| Proposal submitted to Disney Conservation Fund for series of vulture workshops to develop proposals for improved policy and legislation in Armenia. | May possibly link to 11.4.2; otherwise not specifically covered. | Europe. |
| Review of the reintroduction and rehabilitation plan for Griffon Vultures in Morocco. | Should link to 11.2.1. | Africa. |
| Establishing a captive breeding and restocking programme for Egyptian Vultures in the Balkans (in context of LIFE project on Egyptian Vulture). | 11.2.2. | Europe. |
| Ongoing monitoring of reintroduced Bearded Vultures in Austria, by VCF and local organisations. | 11.2.2? | Europe. |
| Feasibility study for the captive breeding and release of Egyptian Vultures in Greece, in the context of LIFE project. | 11.2.2. | Europe. |
| Restocking programme aiming to release 60 vultures by 2020 in Sardinia, Italy. | Links to 11.2.3. | Europe. |
| Training on vulture management for community vanguards/site support groups in Nigeria, and promotion of alternative livelihoods. | (Not specifically covered). | Africa. |
| Knowledge-exchange for capacity-building on field research & monitoring techniques for vultures in Ethiopia. | (Not specifically covered; may possibly support 11.1.4). | Africa. |
| In the context of a LIFE project on Egyptian Vultures in the Balkans, Middle East and Africa – monitoring migration at bottleneck sites; monitoring wintering populations (Africa); feasibility study on re-stocking (Balkans); study of genetics (Balkans) threat assessment (including use of telemetry); assessment of the use of VMPs (Greece); and an ethnographic study. | Should support 11.1.2, and possibly others. | Europe/Middle East/Africa. |
| Repeat, commencing in 2020, of the aerial surveys of tree-nesting vulture breeding sites in South Africa previously carried out in 2012-15 by Endangered Wildlife Trust and Hawk Conservancy Trust. Source: A Botha, *in litt*. | 11.1.2. | Africa. |
| Survey of vulture distribution and threats, and monitoring of Lappet-faced Vulture, Hooded Vulture and African Vulture at Luengue-Luiana National Park; and Monitoring of the Palm-nut Vulture at Quiçama National Park, both in Angola. | 11.1.2. | Africa. |

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|---|---|---|
| Research on reintroduction, rehabilitation and release programmes, survival rates and effects of education, South Africa. | 11.2.1. | Africa. |
| Post-mortems on dead vultures, and research projects on diseases in South Africa. | 11.1.4. | Africa. |
| Vulture tracking activity in Namibia, involving c20 birds. | 11.1.3. | Africa. |
| Monitoring of breeding White backed Vultures in Murchison Falls National Park, Uganda; and monitoring and assessment of Hooded Vultures elsewhere in the country, including with satellite telemetry. | 11.1.2, 11.1.3. | Africa. |
| Aerial surveys of Ruppell's Vulture breeding sites in Kenya, possible research on disease transmission at carcasses; and annual road surveys. | 11.1.2, 11.1.4. | Africa. |
| Studies on vulture disease ecology, Kenya. | 11.1.4. | Africa. |
| Roadside transect surveys and tagging/satellite telemetry in selected game reserves in Tanzania. | 11.1.2, 11.1.3. | Africa. |
| Tagging and monitoring of Hooded, White-backed and White-headed Vultures in the Comoé National Park, Ivory Coast; and identifying the role of these species in local societies. | [?]. | Africa. |
| Monitoring of vulture numbers and breeding productivity in Guinea. | Will support 11.1.1 ("essential" priority). | Africa. |
| Monitoring and conservation status assessment of Egyptian Vulture, Cape Verde. | Will support 11.1.1 ("essential" priority). | Africa. |
| Tagging and satellite tracking of White-headed, Ruppell's, White-backed, Lappet-faced, and Bearded Vultures in Ethiopia (following previous work on Hooded and Egyptian Vultures). | 11.1.3. | Africa. |
| Studies in Ethiopia on local inhabitant perceptions of vultures, population distributions and related environmental factors. | May partly support 11.1.2. | Africa. |
| Monitoring Egyptian and Griffon Vultures in protected areas in Egypt. | May support 11.1.1 ("essential" priority). | Africa. |
| Monitoring of vulture (and other raptor) migration at the Jbel Moussa Nature Reserve, Morocco. | Possibly 11.1.3? | Africa. |
| Breeding population studies of Egyptian Vultures in north-east Algeria. | 11.1.2. | Africa. |
| Monitoring of migrating vultures along the flyway in Syria, in the context of a LIFE project. | Possibly 11.1.3? | Africa. |
| Breeding productivity studies, threat assessment and hunter survey, all addressing Egyptian, Cinereous, Bearded and Griffon Vultures; Armenia. | May support 11.1.1 ("essential" priority) and/or 11.1.2. | Europe. |
| Monitoring of Griffon Vultures breeding productivity, Serbia. | May support 11.1.1 ("essential" priority) and/or 11.1.2. | Europe. |
| Annual monitoring of breeding Griffon and Bearded Vultures in Crete, Greece. | May support 11.1.1 ("essential" priority) and/or 11.1.2. | Europe. |
| Monitoring of breeding and migrating Egyptian Vultures in Italy, and GPS tracking to assess threats, in the context of a LIFE project. | 11.1.3. May also support 11.1.1 ("essential" priority) and/or 11.1.2. | Europe. |
| Monitoring Griffon Vulture population numbers, breeding productivity, dispersal and survival rates; satellite telemetry and carcass toxicology in Italy, in the context of a LIFE project. | 11.1.3; 11.1.4. May also support 11.1.1 ("essential" priority) and/or 11.1.2. | Europe. |
| Monitoring of Bearded and Griffon Vulture populations using observer networks in the Hohe Tauern National Park, Austria. | 11.1.2? | Europe. |
| Research on vulture-livestock interactions (Griffon Vulture), cultural aspects (particularly Bearded Vulture) and ecosystem services (necrophagous raptors generally) in France. | Partly may support 11.3.1 ("essential" priority); otherwise not specifically covered. | Europe. |

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|---|---|---|
| Monitoring of breeding Griffon, Black, Bearded, Cinereous and Egyptian Vultures in Spain. | 11.1.2? | Europe. |
| Research on possible disease impacts in Bearded Vultures in Spain, related to climate change. | 11.1.4? | Europe. |
| Research on interactions between vultures and hunting, agriculture and aviation; Spain. | (Not specifically covered). | Europe. |
| Monitoring of breeding Black Vultures in Alentejo, Portugal; in the context of an Interreg/POCTEP project. | 11.1.2? | Europe. |
| Re-stocking of Griffon Vultures in Cyprus, in context of a new LIFE project. | 11.2.2. | Europe. |
| Monitoring of breeding vultures in Russia: Egyptian Vultures in Dagestan, Griffon Vultures in the Caucasus and Cinereous and Bearded Vultures in the Altai-Sayan ecoregion. | 11.1.2? | Europe/Asia. |
| Monitoring vulture populations using road transect walk surveys, Afghanistan. | 11.1.2? | Asia. |
| Vulture population survey; community based nest monitoring; rescue, rehabilitation, ringing and wing tagging of Himalayan Griffon Vultures; and carcass testing and survey: Bangladesh. | 11.1.2?, 11.1.4; other aspects not specifically covered. | Asia. |
| Monitoring and productivity assessment of Griffon Vulture, China. | 11.1.1 (“essential” priority); possibly 11.1.2. | Asia. |
| Monitoring of vultures in Gurarat and Jharkhand, India. | [?]. | Asia. |
| Satellite monitoring of tagged vultures in India and Nepal. | 11.1.4. | Asia. |
| Development of guidelines on vulture harnessing and tagging. Source: A Botha, *in litt*. | Will support 11.1.4. | All regions. |

**Vulture MsAP Objective 12:**
**To advance vulture conservation by effective promotion and implementation of the Vulture MsAP**

**Result 12.1 Coordination Framework for the Vulture MsAP established, subject to available resources, including financial**

**Result 12.2 Effective communication strategy for the Vulture MsAP is established**

| Planned activity | Relationship to Vulture MsAP | Region |
|---|---|---|
| Development of a Resource Mobilisation Plan for the MsAP. Source: N Williams, *in litt*. (Supported by comments from others, e.g. VCF). | 12.1.3 (“critical” priority). | All regions. |
| Development of a Communications Plan for the MsAP. Source: N Williams, *in litt*. | 12.2.1. | All regions. |
| Development of a monitoring & evaluation regime for the Vulture MsAP. Source: current SIP review. | Links to 12.2.2 (“essential” priority). | All regions. |
| Production of derivative plans focusing on particular species, countries, flyways or conservation issues to deliver sub-elements of the Vulture MsAP. Source: R Safford, *in litt*. (Supported by comments from N Williams). | Links to 12.2.2 (“essential” priority). | All regions. |
| Further development of the “Year of the Vulture” initiative, by partners including the Raptors MOU Coordinating Unit, the IUCN Vulture Specialist Group, The Peregrine Fund and the Endangered Wildlife Trust. Source: Document 3.1 for Raptors MOU TAG3 meeting, November 2018. | 12.2.1 (and possibly others). | Potentially all regions. |
| Celebration of Vulture Awareness Days in various countries. | 12.2.2. | Africa/Europe/Middle East/Asia. |
| Events, artworks, celebrity ambassadors, publications, media campaign, schools education programme and range of capacity building activities as part of LIFE project in Egyptian Vultures in the Balkans, Middle East and Africa. | 12.2.1. | Europe/Middle East/Africa. |

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|---|---|---|
| Awareness-raising events and brochure on threats to vultures for schools, hunters and farmers in north-eastern Algeria. | 12.2.1. | Africa. |
| Awareness raising and capacity-building programme in Fouta Djallon, Guinea. | 12.2.1. | Africa. |
| Media campaign and brochure on vultures, and specific awareness raising and capacity-building programme in Fouta Djallon, Guinea. | 12.2.1. | Africa. |
| Brochures for communities and education activities in schools, Cape Verde. | 12.2.1. | Africa. |
| Distribution of posters on vultures, Morocco. | 12.2.1. | Africa. |
| Education materials for schools and other publications and training activities in selected hot-spot areas for vultures, South Africa. | 12.2.1. | Africa. |
| Education and awareness including through vulture counts, Gambia. | 12.2.1. | Africa. |
| Providing information via a website and social media, and a leaflet on vulture status & threats translated into local languages, Ethiopia. | 12.2.1. | Africa. |
| Talks in schools, posters and radio broadcasts on vultures in Zambia. | 12.2.1. | Africa. |
| Developing a vulture awareness strategy and producing leaflets and radio broadcasts, Zimbabwe. | 12.2.1. | Africa. |
| Posters and other awareness materials on vultures for hunters and schools, Syria. | 12.2.1. | Middle East. |
| Vulture watching with guided trails and webcams at nest sites of Cinereous, Griffon, and Egyptian Vulture in Armenia; promoted through broadcast media, social media and tourism networks. | 12.2.1. | Europe. |
| Talks, broadcasts and an annual Bearded Vulture counting event in the Hohe Tauern National Park, Austria. | 12.2.1. | Europe. |
| Short film, children's booklet and an annual "vultures youth camp" in the eastern Rhodopes, Bulgaria. | 12.2.1. | Europe. |
| Public/community awareness activities, website, national media campaign and development of a schools Environmental Education Kit in the context of a LIFE project on Egyptian Vultures, Greece. | 12.2.1. | Europe. |
| Awareness activities in schools and among tourism operators, in the context of a LIFE project on Egyptian Vultures, Italy. | 12.2.1. | Europe. |
| Series of leaflets, activities in schools and publication of an annual magazine, in the context of a LIFE project on Griffon Vultures, Italy. | 12.2.1. | Europe. |
| Development of vulture-watching facilities and a website in Alentejo, Portugal, in the context of an Interreg/POCTEP project. | 12.2.1. | Europe. |
| Communication and awareness campaign (website and social media) by VCF. | 12.2.1. | Europe. |
| Distributing posters during fieldwork, Azerbaijan. | 12.2.1. | Asia. |
| Creation of a special page for vultures in the website of the Association for the Conservation of Biodiversity of Kazakhstan, supported by social media activity. | 12.2.1. | Asia. |
| TV programmes and other awareness activities by the Ornithological Society in China. | 12.2.1. | Asia. |
| Publication of an annual vulture bulletin, and leaflets and information centres to promote feeding sites as tourism destinations, Nepal. | 12.2.1. | Asia. |
| Annual award for contributions by individuals/communities to vulture conservation, Nepal. | 12.2.1. | Asia. |

## Relationship of existing and planned activities to the Actions defined in the Vulture MsAP

3.20 The information in the column in Tables 1 and 3 above headed 'Relationship to Actions in the Vulture MsAP' is approximate, and as explained in the text earlier, these linkages, although they undoubtedly exist in most cases, are often not revealed by the ways in which the source information has been provided. Nonetheless the tables provide some initial indication on this issue, and this should be elaborated further in the course of putting the Strategic Implementation Plan into practice.

3.21 More caution needs to be expressed concerning the apparent relative frequency with which the individual actions are referenced, since this is to a large extent an artefact of the way in which providers have chosen to categorise their information (e.g. in the case of questionnaire respondents, the choice of the section of the questionnaire to which they chose to allocate an item), and whether for example an activity covering several countries is listed once only or is repeated for each country concerned. (These aspects have been moderated to a degree in compiling the tables, but the nature of the data has not allowed this to be done comprehensively). Also as noted above, a number of items are not described fully enough to identify the relevant linkages.

3.22 Bearing these limitations in mind, the frequency information at least gives some indication as to some general tendencies in where emphasis is being put. This is summarised in Table 4 below, aggregated at the 12 Objectives level, and for illustrative purposes only. (For simplicity, all linkages identified as 'possible' or 'probable' have been included in the underlying analysis along with the more 'unambiguous' occurrences). NB. The 'flagship projects' have not been added to the totals, since several of those overlap with the independently-reported activities, and including the flagships in this analysis would therefore lead to some double-counting.

3.23 At the disaggregated level of the 124 Actions, cases where no activity (past or future) has been reported for a given action probably represent on average a more confident finding (i.e. less ambiguity) than the other records, and these 'nil records' are useful for a consideration of gaps in implementation (see Section 6 below).

**Table 4: Volume of reported existing and planned activity against each Vulture MsAP Objective**

| Vulture MsAP Objective | Number of existing activity items listed | Number of planned activity items listed | Total |
|---|---|---|---|
| 1. Reducing mortality from unintentional poisoning | (22) | (32) | (54) |
| 2. Minimising mortality from non-steroidal anti-inflammatory drugs (NSAIDs) | (20) | (16) | (36) |
| 3. Phasing out lead ammunition | (9) | (4) | (13) |
| 4. Reducing and eventually halting trade in vulture parts for belief-based use | (4) | (1) | (5) |
| 5. Reducing and eventually halting "sentinel poisoning" by poachers | (4) | (1) | (5) |
| 6. Reducing mortality from electrocution by energy infrastructure | (21) | (25) | (46) |
| 7. Reducing mortality from collisions involving energy infrastructure | (7) | (20) | (27) |
| 8. Ensuring availability of safe food | (18) | (36) | (54) |
| 9. Ensuring availability of suitable habitat | (3) | (24) | (27) |
| 10. Reducing direct persecution and disturbance | (4) | (11) | (15) |
| 11. Cross-cutting actions addressing knowledge gaps | (75) | (71) | (146) |
| 12. Promotion and implementation of the Vulture MsAP | (20) | (30) | (50) |
| | | | |
| "Essential"/"critical" priority actions (see para 3.6 above) (18, combined for all relevant objectives) | (38) | (46) | (84) |

**Table 5: Volume of reported existing and planned activity in each region**

| Region | Number of existing activity items listed | Number of planned activity items listed | Total |
|---|---|---|---|
| Africa | (127) | (90) | (217) |
| Asia | (26) | (36) | (62) |
| Europe | (78) | (87) | (164) |
| Middle East | (7) | (3) | (10) |
| Multi-region | (11) | (17) | (28) |

3.24 There is clearly a tendency, thus far, for activities in the research and monitoring category to be dominant. This might indeed be expected in the early phases of implementation of the Vulture MsAP, when there are more knowledge gaps that need to be filled. The same category however (Objective 11) also includes activities relating to Species Action Plans and other multi-topic initiatives, and the Vulture MsAP allocates reintroduction projects to this category as well: so the high numbers here mask several issues.

3.25 Otherwise, activities relating to poisoning, energy infrastructure and food supply issues are all prominent. Information on belief-based use, sentinel poisoning and lead ammunition appears less frequently, but to an extent these are more specific/localised issues so this is probably not surprising. (Sentinel

poisoning probably features additionally anyway in some of the other items that are characterised simply as 'poisoning' in a more generic sense). Activities relating to habitat protection/management, disturbance and persecution are also less frequently mentioned.

3.26 More items have been reported for Africa than for other regions. This could be an artefact of varying approaches taken to reporting; and it should be noted also that there are more large projects in Europe (e.g. those funded by the EU) and to some extent in Asia, (e.g. through SAVE) which cover packaged portfolios of several activity topics yet are reported as a single item in the tables here.

3.27 The 18 actions identified in the Vulture MsAP as 'essential' or 'critical' priorities appear on average to be receiving reasonably good attention, although some more so than others. Those relating to awareness, capacity-building, research and other field-based implementation appear to be advancing in a number of places; but less has been reported so far on those that involve government-level actions for legislation, policy, regulation, etc. – which it could be argued have longer development timeframes in any case.

3.28 The issues identified by this crude analysis as receiving less attention than others are addressed further in Section 6 ('gap analysis') below.

### Monitoring and evaluation

3.29 One of the key future implementation items identified above is the development of a monitoring & evaluation regime for the Vulture MsAP, since this does not yet properly exist. It will be vital in future for the overall implementation of the Plan in some way to be monitored, for completed activities to be registered as such, for outcomes to be evaluated and lessons learnt to be captured (and fed back in to on-going work).

3.30 This suggests a need not only for an agreed assessment mechanism but also a more systematically organised set of activity-reporting processes than are operating at present, as evidenced by the largely *ad hoc* and inconsistently categorised information that has been available thus far for the analysis in Section 2 (particularly) of the present document.

3.31 A logically associated (but more difficult) question is that of assessing the impact of the implementation of the Plan (and of related activities directly or indirectly stimulated by the Plan) on the conservation status of the vulture species themselves. This too requires further work.

3.32 Section 8.3 of the Vulture MsAP states that '*To avoid placing an unnecessary additional burden on Range State governments, it is proposed that existing CMS practices be followed in terms of monitoring and evaluation during implementation of the Vulture MsAP*'. This suggestion is described mainly in terms of synchronisation of timeframes, such that all those involved in the coordination and steering arrangements for the Vulture MsAP would feed information in to periodic reports to be compiled by the Overarching Coordinator in time for the relevant document submission deadlines for CMS COPs and Raptors MOU Meetings of Signatories. Such reports would therefore become available at roughly three-yearly intervals (with duplication between the reports for the nearest pairings of COP/MOS being avoided as far as possible). Coordination with the respective National Focal Points/National Contact Points for the Convention and the MOU, respectively, would be expected, to minimise any duplication of effort. Input would be drawn from non-Party/non-Signatory Vulture MsAP Range States in a comparable manner.

3.33 The Vulture MsAP further envisages that a mid-term progress report would be produced in 2023, both to assess progress and to identify any adjustments that may be required; followed by a final implementation report in 2029, which would be submitted to CMS COP16 and would as far as possible assess outcomes and impacts as well as activities.

3.34 As well as synchronisation of timeframes, it will be important to seek

efficiency in relation to sources of information. Implementing organisations, networks and governmental authorities will need to liaise over compilation of a coherent picture for the countries concerned, that reflects both statutory and non-statutory contributions and minimises duplication.

3.35 A formal template for National Reports to Meetings of Signatories of the Raptors MOU is due to be developed by early 2020, and there should be some opportunity for this to include questions relating to implementation (where applicable) of the Vulture MsAP.

3.36 The equivalent template for reporting to the COPs of CMS contains nothing that is specifically directed to the Vulture MsAP; but some of its sections give the possibility for respondents to identify species or species groups when reporting on certain issues (e.g. Range State status, pressures and threats; major changes in conservation status; and exceptions to legal prohibition of taking Appendix I species); and it might be possible (as a separate dedicated exercise) to mine the CMS reports dataset for references to vultures. Vulture references might also occasionally appear in the free-text fields associated with other questions in the template, and those could similarly be mined (although findings in that regard would be less robust, as there is no systematic expectation to provide information to this degree of specificity in answering those questions).

3.37 The inventory of reported activities that has fed into the present SIP might contribute to some kind of baseline for further monitoring. It does have some problems in this regard however, as noted already above. The 2018 implementation questionnaire survey drew a large volume of response information, and might be thought to constitute some kind of precursor to a potentially repeatable format for periodic update reports. As noted, however, its structure of topics does not neatly match the structure of topics in the Vulture MsAP itself.

3.38 Intuitively it might be expected that a monitoring & evaluation regime should be designed to relate directly to the framework of aims and objectives in the Action Plan. This would of course be an entirely logical approach; but the framework has several in-built drawbacks as a basis for this.

3.39 In relation to the 12 Objectives, for example:

- Objective 1 is framed in terms of unintentional poisoning; but many relevant activities may relate to both intentional and unintentional poisoning and/or may not distinguish between the two.
- The only Objective that concerns intentional poisoning is Objective 5 on ‘sentinel poisoning’, but there may be relevant activities addressing other kinds of intentional poisoning which do not seem to find a place within this scheme.
- Many generically-framed activities relating to poisoning may be contributing to Objective 5, but may not distinguish that particular type of poisoning scenario from others, and may indeed not be able to do so if the activity concerned covers both.
- Vulture Safe Zones are categorised under Objective 2 on NSAIDs, but (perhaps increasingly) thinking and activity in relation to the concept of VSZs has expanded to include other threats.
- There is some overlap/reporting ambiguity between Objective 2 (in so far as it relates to VSZs) and Objective 9, which covers habitat-based measures.
- Activities relating to Objective 6 (on electrocution) are frequently hard to separate from activities relating to Objective 7 (on collisions), since they are often simply addressing energy infrastructure issues in a combined way; or reports refer to ‘energy infrastructure’ without specifying which issue(s) is/are being addressed. There is certainly some duplication of information between these two Objectives.

- There is some overlap between Objective 8 (food availability) and Objective 9 (habitats for nesting, roosting and foraging), in relation to activities focused on areas, ecosystems and habitats.
- 'Cross-cutting' Objective 11 has been used as the Objective under which to allocate activities that are inherently strategic and cross-cutting, such as strategies and action plans; but also others that are much more specific, such as captive breeding programmes.
- Many projects address several of the Vulture MsAP Objectives in combined packages of work. There has so far been no consistent approach to deciding whether these are (a) reported multiple times under each of the relevant Objectives; (b) reported once under whichever Objective is deemed to be the dominant one; or (c) reported by default under "cross-cutting" Objective 11 (even though the listed "results" under this Objective are much more narrow and specific than would strictly allow this),
- Objective 12, strictly speaking, concerns coordination for the Vulture MsAP and an overarching communications strategy for its implementation, but it has come to be seen as the one context for all unspecified communications, awareness and capacity-building activities, which otherwise do not find a place within the scheme.

3.40 Then in relation to the 33 'Results':

- These are a heterogeneous mix of different levels of aspiration, including some results that can almost immediately be claimed to have been achieved (e.g. 'collaborative action is taken'; 'sites are monitored') and some that lie at a demanding opposite extreme (e.g. 'populations are maintained/restored').
- Those results that express a direction of travel but do not describe any intended end-state (target) are difficult to use as a basis for meaningful monitoring & evaluation (e.g. 'mortality reduced'; 'breeding success improved'; 'protection enhanced').
- Some results are framed in a way which makes it inherently impossible, in any practical sense, to define and verify the achievement of a target end-state – the many that are phrased along the lines of '(issue X) is understood' are examples of this.

3.41 And finally, in relation to the 124 'Actions':Here, there are numerous cases of duplication and overlap, both within the lists of Actions for each of the Objectives, and between the lists for the different Objectives. Assigning a given activity to these can therefore often be fraught with difficulty – it could either be reported multiple times against all of those that apply, or an artificial choice could be forced to allocate it to one, thereby more accurately reflecting the overall level of investment but under-reporting progress in relevant areas.

3.42 The full development of a monitoring & evaluation regime is an important piece of work which should build upon this Strategic Implementation Plan, and should follow as soon as possible after it. As well as a consideration of the most appropriate framework of objectives and defined targets to report against, and the reporting process itself, consideration will also need to be given to defining suitable *indicators* that can be agreed as a practical basis for evaluating the extent (and ideally also impact) of progress. As also mentioned above, the process of evaluation should be designed, in addition, to feed any lessons learnt into interim course-corrections and/or relevant post-Plan-period decisions and initiatives.

# 4. Mapping of Support and Capacity Needs, Priorities, and Opportunities

4.1 The February 2018 stakeholder questionnaire included a question that asked: 'Apart from direct financial support, what three things do you most need to assist in implementing conservation activities to benefit vultures?'. Despite the injunction in the opening part of this question, answers from four countries (Afghanistan, Algeria, India, Tanzania) nonetheless did cite financial support.

4.2 The other responses are summarised in Table 6 below. An attempt has been made (in the third column) to relate these responses to the Objectives in the Vulture MsAP, but the information provided has not always made this possible, so these cross-references should be taken as approximate indications only.

**Table 6: Support needs cited by survey respondents**

| ***Awareness, education, capacity, engagement, coordination (Africa 18, Asia 5, Europe 8, Middle East 2)*** | | |
|---|---|---|
| **Activity type** | **Country/ies** | **(Possible) links to Vulture MsAP Objectives** |
| Training/capacity-building/education/recruitment of volunteers/local partners. | Algeria, Bulgaria, Russia. | 12 |
| Capacity-building for reserve managers. | Guinea. | 9 |
| Capacity building in the trapping and tagging of vultures. | Zambia. | 11 |
| Training in rapid response to poisoning incidents. | Zambia. | 1 |
| Capacity to lead workshops on poisoning and electrocution issues. | "Horn of Africa" countries (Ethiopia, Djibouti, Somalia, Eritrea). | 1, 6 |
| Capacity-building (unspecified). | Cape Verde, Greece, Italy, Kenya, Namibia, South Africa, Syria. | ? |
| Creation of supporter groups at community level. | Azerbaijan. | 12, ? |
| Community/schools education activities in local languages. | South Africa. | 12? |
| Links to other national and international experts/organisations. | Angola, Iran, Zambia. | 12, ? |
| Cooperation with other conservation interests (e.g. large carnivores). | Asia region, Africa region. | 12, ? |
| Transboundary cooperation. | Nepal. | ? |
| Coordination with agriculture sector over food resources for vultures. | France. | 8 |
| Promotion and awareness-raising activities (general). | Armenia, Bulgaria, China, Greece, India, Kenya, Morocco, Uganda. | 12? |
| Support for printing information materials. | Namibia. | ? |
| Establishment of a national vulture protection day. | Guinea. | ? |

| *Legislation, policy & planning (Africa 5, Asia 2, Europe 15, Middle East 0)* | | |
|---|---|---|
| **Activity type** | **Country/ies** | **(Possible) links to Vulture MsAP Objectives** |
| A ban on lead ammunition. | Austria, Portugal, Switzerland. | 3 |
| A ban on Diclofenac. | Portugal, Spain. | 2 |
| Other new legislation. | Egypt. | ? |
| New policies or guidance. | Egypt, Italy, Spain. | ? |
| An anti-poisoning action plan. | Greece. | 1 |
| Activation of a national action plan for avian scavengers. | Portugal. | ? |
| Establishment of Vulture Safe Zones. | Nepal. | 2 |
| Application of statutory planning and assessment provisions (e.g. for infrastructure). | Spain. | 6, 7, ? |
| Sensitivity mapping as an input to infrastructure planning. | Greece. | 6, 7 |
| Greater political will, compliance/enforcement etc. | Greece, Kenya, Portugal, Serbia, Spain, Tanzania, Asia region, Africa region. | ? |
| *Research & monitoring (Africa 8, Asia 3, Europe 6, Middle East 2)* | | |
| **Activity type** | **Country/ies** | **(Possible) links to Vulture MsAP Objectives** |
| Marking and telemetry activities. | Algeria. | 11 |
| Improved knowledge of vulture ecology/biology and/or threats. | Egypt, Serbia. | 11 |
| Support for field research/monitoring. | Cape Verde, Egypt, Russia, Switzerland, Syria. | 11 |
| Monitoring breeding sites. | Azerbaijan. | 11 |
| Support for laboratory analyses. | India, Nepal, Zimbabwe. | 1, 2, 3, 11 |
| Support for data processing or analysis. | Armenia. | 11 |
| Assessing/promoting specific economic, environmental and/or social values of vultures. | Armenia, Egypt, France, Guinea, Syria. | 11 |
| Scientific support (unspecified). | Angola. | 11 |
| *Other field-based activities (Africa 8, Asia 3, Europe 2, Middle East 0)* | | |
| **Activity type** | **Country/ies** | **(Possible) links to Vulture MsAP Objectives** |
| Application of mitigation measures (e g. for windfarms, powerlines). | France, Morocco, African region. | 6, 7 |
| Artificial feeding stations. | Azerbaijan, Morocco, Serbia. | 8 |
| Provision of a vulture hospital. | South Africa. | 1, 2, 6, 7 |
| Permissions for site access, vulture transport, tagging etc. | India, Uganda. | ? |
| Provision of equipment (vehicles, tracking equipment, cameras etc.). | India, Kenya, Namibia, South Africa. | ? |

4.3 Table 6 above gives one rather rough impression of a kind of future 'needs assessment', which helpfully identifies a few (mostly generically-expressed) priorities in particular places. Some differences in apparently preponderant needs between different regions are apparent too, with (for example) capacity/awareness and assistance with field-based activities being particularly emphasised in Africa, and policy/legal issues being emphasised more strongly in Europe.

4.4 Ultimately it would desirable to evolve this line of enquiry further: (a) to investigate in more depth the specific nature of the needs perceived in each of the cases that have fed into the summary above; and (b) to begin to relate the picture of 'demand' to opportunities for 'supply', in a kind of 'support matrix' which could be maintained on an on-going basis in future.

4.5 As part of this (at a greater level of detail in future), such a strategic overview could potentially help to show where people/initiatives/places that have needs in common could be connected or grouped together; and this might suggest how capacity building support, mutual self-help and/or other solutions might be facilitated in the most effective way. This could/should include helping to put relevant people in touch with each other (if they are not already) to seek synergies/avoid incoherence between parallel intentions/aspirations that cover similar ground.

4.6 There would seem to be an opportunity to use the present SIP as a catalyst for some of this. It (or a summary of it) could help to advertise the in-progress action agenda more widely, and to promote a call for engagement or expressions of interest in delivery/collaboration from stakeholders and relevant activity implementers who are not yet linked in to the Vulture MsAP's scheme of aims and priorities and/or its family of collaborating organisations and networks. The Action Plan itself has already shown some potential in this regard (e.g. in the case of Nottingham Trent University's engagement in the economic valuation work referred to in Section 2 above).

4.7 Wider issues of synergistic delivery go beyond the scope of the present SIP; but it may be worth noting that specific opportunities have received some discussion in connection with (for example) the African Wildlife Poisoning Database, the Vulture Initiative for Sub-Saharan Africa (VISA) initiative for metadata, CITES, the African Carnivores Initiative, the African Lion Working Group, the IUCN SSC Cat Specialist Group and the community of mammalian and avian carnivore conservationists and researchers more generally in Southern and East Africa. Tools such as 'needs assessments' and 'support matrices', in the forms hinted at here, might help towards a kind of 'opportunity mapping' approach that could maximise the efficient capacity-sharing potential offered by further collaborations in this vein.

# 5. Coordination

5.1 Section 3 above has already indicated that the establishment of an international framework for coordination of the Vulture MsAP's implementation is a key need, and it has presented it in that section as Flagship Project No. 9. This present section expands on some of the considerations relating to this.

5.2 In Resolution 12.10 in 2017, the CMS Parties requested the Convention Secretariat, working through the Coordinating Unit of the Raptors MOU *'to facilitate continuation of the Vulture Working Group and its associated structures (Vulture Steering Group and proposed Regional Implementation Committees) and team of coordinators, including by continuing to encourage engagement, communication, cooperation and collaboration between the stakeholders, by means of (regional) meetings and workshops, subject to the availability of funds'.*

5.3 Result 12.1 of the Vulture MsAP itself is *'Coordination Framework for the Vulture MsAP established, subject to available resources, including financial'*, and the specific action 12.1.2 ('*Establish a Framework to coordinate implementation of the Vulture MsAP, including central and regional coordination units to facilitate implementation, support and review across the range'*) is rated as an 'essential' priority.

5.4 During the development of the Vulture MsAP, sufficient funding was obtained to support the roles of an Overarching Coordinator and three Regional Coordinators. With the finalisation of the Plan, that funding came to an end. The same organisations that provided the initial coordination have continued as far as they have been able to with their own resources, but the overall capacity is obviously much less than it was, and there is a clear concern now about how the coordination functions can be sustained as things go forward.

5.5 Subsequently (November 2018) BirdLife International, which had underwritten key parts of the coordination structure, indicated that its role would in future be shifting to that of an 'implementing partner' rather than a 'coordinating partner'. The ingredients of this role have been spelled out by BirdLife in a way which might provide a useful model for other partners and collaborators to consider following (adapted of course to their own contexts), to help focus attention further on the specifics of practical implementation. The BirdLife example is summarised in the box below[6].

[6] Based on information (paraphrased) from R Safford, *in litt*.

**BirdLife International intends (particularly in South and South-east Asia through the SAVE consortium for its five participating countries but also with increasing attention to China, Myanmar and Bhutan; and in Africa particularly but not only in those countries where BirdLife Partners are present), to:**

1. Stimulate and support BirdLife Partner and other stakeholder engagement in the implementation of the Vulture MsAP, advocacy for its endorsement and developing projects for its implementation.

2. Mainly through national Partners, promote development of national and multi-country vulture action plans based on the Vulture MsAP.

3. Directly or through national Partners, promote policy development in favour of MsAP implementation at national, subregional and regional levels, as well as in the private sector.

4. Directly or through national Partners, develop and implement communication plans and activities in support of MsAP implementation, including relevant news stories which explicitly promote the MsAP as the framework for delivering vulture conservation in Africa and Eurasia.

5. Provide technical or scientific support to the MsAP as appropriate via the Technical Advisory Group, as was done previously for example with the preparation of the MsAP and the listing of vultures on CMS Appendix I. (Expected to be done under contract to the Raptors MOU Coordinating Unit).

6. Contribute to the organisation, and potentially facilitation, of meetings and other initiatives to advance implementation of the Vulture MsAP, as was done previously for example with the Summit for the Flyways in 2018).

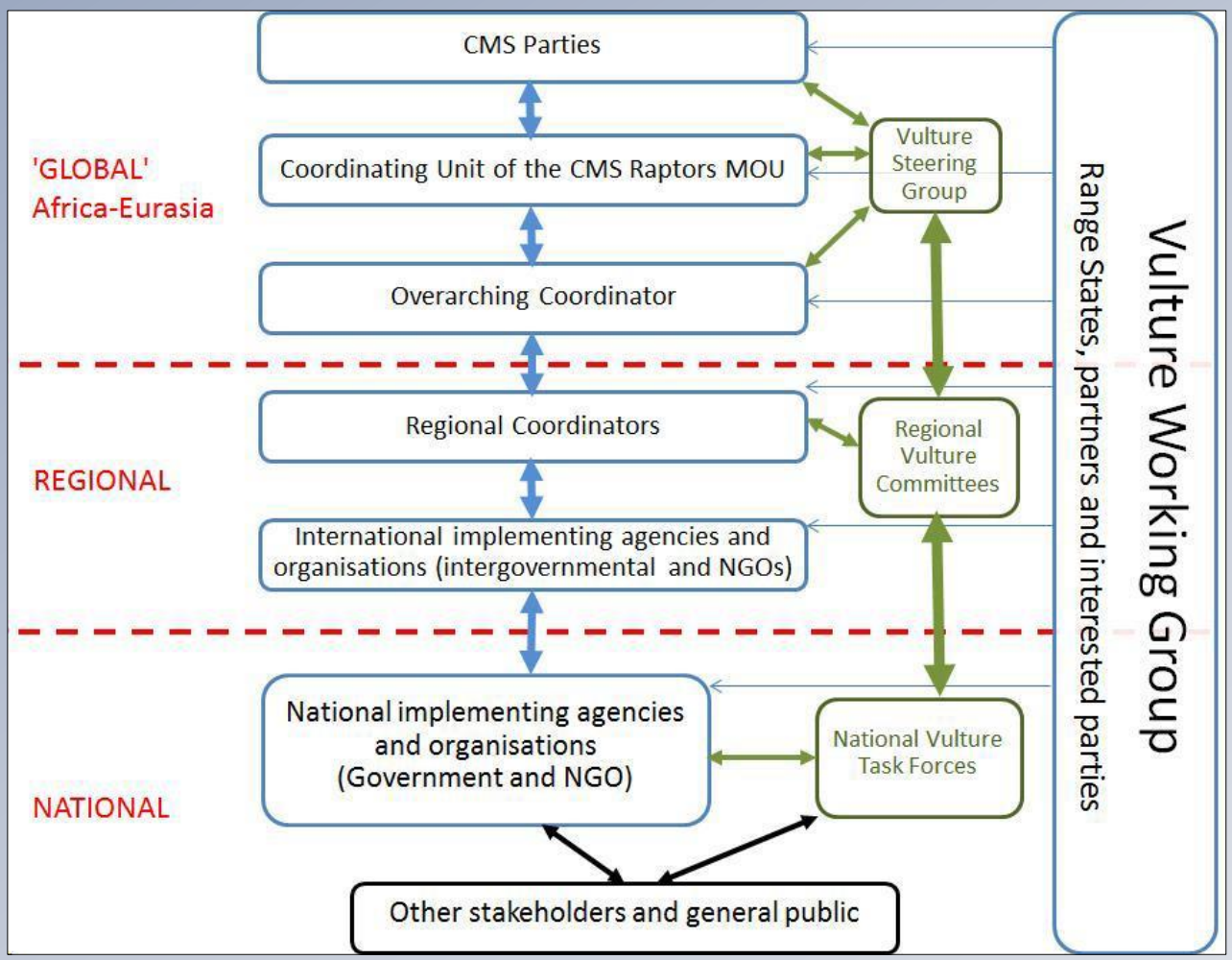
7. Summarise Partnership progress and engage in international fora as appropriate e.g. CMS COP side events and meetings.

8. Contribute to concise summary reports of progress to the Raptors MOU Coordinating Unit on behalf of the BirdLife Partnership, according to an agreed schedule, as a contribution to wider CMS reporting processes.

9. Participate in Vulture MsAP Coordination Team teleconferences, through staff who will in turn liaise with regional colleagues, and these might themselves occasionally participate.

5.6 An overall proposed coordination structure for the Vulture MsAP is included in the Plan, identifying roles for the Raptors MOU Coordinating Unit, an Overarching Coordinator, 3-4 Regional Coordinators, the Vulture MsAP Working Group, the Vulture MsAP Steering Group, Regional Vulture Committees, National Vulture Task Forces, Range State governments and civil society partners and supporters. This is summarised in the diagram below.

**Figure 1: Proposed coordination framework to oversee implementation of the Vulture MsAP. Arrows indicate reporting or supervision/advisory relationships. Green arrows and boxes indicate primarily advisory structures**




5.7 The aim of Flagship Project 9 would now be (i) to elaborate further as necessary the design of the structures, mechanisms and processes required for effective international, regional and national coordination of the implementation of the Action Plan; and (ii) to establish and operate the agreed coordination structure with sufficient security of resourcing for the long term.

5.8 Securing sufficient resourcing for the long term for a coordination process is likely to appeal to a smaller range of potential funders than more short-term 'project'-based proposals

would. A group of governments with strong interests in the subject might be the best prospect, given especially that the Vulture MsAP arises from and reflects objectives that have been intergovernmentally agreed in the context of CMS and the Raptors MOU. Relevant countries should therefore be encouraged to consider this, each perhaps pooling a share of the expected costs so that the burden on any one of them would be relatively small. A philanthropic foundation with relevant interests could be an alternative option (or could be an additional contributor).

5.9 Costing a coordination budget and looking for funds for that amount need not be the only scenario. Much might be done through support-in-kind, such as hosting of office space or provision of other overheads, or through staff secondments. A standalone coordination entity might not necessarily be the most cost-effective solution, and it would be unfortunate for the maintenance of such a thing to compete for resources with the practical implementation of vulture conservation activities in the ground. There might therefore be ways of minimising overheads further by distributing the function to some extent across relevant existing programmes and networks.

5.10 To an extent this is exemplified already by the manner in which the SAVE consortium in South and South-East Asia functions largely as a devolved network, with regular meetings to review progress, to keep things up to date and to fuel momentum. Active work by members of the Vulture MsAP Coordination Team in Europe (notably the VCF) has also been largely effective in keeping on top of stakeholder engagement, reinforced by project activities, conferences and other meetings. Dedicated and energetic efforts continue to be made also by members of the Coordination Team in Africa; but the number of countries and the scale of the challenges there make overall coverage much less complete. Clearly these needs are going to vary from one region to another.

5.11 There should be no doubt that the preferred scenario is that framed by Flagship Project 9; but in the event that (or for so long as) that project does not fully generate the resources being sought, a more 'mixed economy' model may need to be contemplated that combines several partial ingredients to meet the overall need.

5.12 Either way, this remains an essential need which is not yet being met in the way intended, and it should be the basis of a priority appeal for urgent support, of whatever kind. As time goes on, the lack of sufficient coordination capacity may become an increasingly limiting factor on what can be achieved, given the strategic scale of the agenda at stake. The coordination role is also critical to the growing need to address the current absence of a functioning monitoring & evaluation regime for the Vulture MsAP, as discussed in the final part of Section 3 above.

# 6. Gap Analysis

6.1 The inventories of reported activities in Sections 2 and 3 above give one potential 'broad-brush' impression of where gaps in existing or planned activity might currently lie. As noted in Section 3, Vulture MsAP objectives for which items have been less frequently reported than others include those relating to belief-based use, sentinel poisoning and lead ammunition, habitat protection/management, disturbance and persecution.

6.2 Of the actions identified in the Vulture MsAP as 'essential' or 'critical' priorities, less has been reported so far on those that involve government-level actions for legislation, policy and regulation than those involving field or community-based action. In terms of geographical differences, Asia seems on average to have proportionately fewer activities underway or planned than the other regions.

6.3 As also noted, however, all this information needs to be treated with great caution, since some activities relating to these objectives may be hidden within more generically-reported work, or they may be taking place and be so far unreported. In this sense, much of what can be said in relation to 'gaps' at present may relate to gaps in *reporting* rather than gaps in actual *implementation*.

6.4 124 Activities are listed under the 12 Objectives in the Vulture MsAP. For 48 of these (39%), no existing *or* planned activities were recorded in the data underpinning the tables in Sections 2 and 3 above. For each of the 12 Objectives, the proportion of associated actions representing a 'zero information' gap of this kind are as follows (in descending order of the size of the 'gap', i.e. worst first):

| Vulture MsAP Objective | % of actions with no activity recorded |
|---|---|
| 5. (Reducing and eventually halting "sentinel poisoning" by poachers) | 91% |
| 4. (Reducing and eventually halting trade in vulture parts for belief-based use) | 56% |
| 9. (Ensuring availability of suitable habitat) | 50% |
| 12. (Promotion and implementation of the Vulture MsAP) | 43% |
| 11. (Cross-cutting actions addressing knowledge gaps) | 38% |
| 1. (Reducing mortality from unintentional poisoning) | 36% |
| 7. (Reducing mortality from collisions involving energy infrastructure) | 35% |
| 2. (Minimising mortality from non-steroidal anti-inflammatory drugs (NSAIDs)) | 33% |
| 6. (Reducing mortality from electrocution by energy infrastructure) | 29% |
| 8. (Ensuring availability of safe food) | 29% |
| 3. (Phasing out lead ammunition) | 0% |
| 10. (Reducing direct persecution and disturbance) | 0% |

6.5 This is illustrative only – the degree of quantification is somewhat spurious, and the difference between e.g. 'zero entries' (included in the analysis above) and 'single item entries' (not included) may often not be meaningful. Notably also, the high figures for belief-based use and sentinel poisoning issues may be affected by the fact that these issues are relevant only to some countries, and not to others (although in principle these figures should be independent of the number of countries that are relevant in each case). The rough rank order of absences however perhaps at least has some value as an indication of 'apparent gaps' which might or might not prove (on further investigation) to be real gaps.

6.6 Of the 18 actions identified as 'essential' or 'critical' priorities in the Vulture MsAP, three are among the actions that have no activity recorded. They are:

- 'Review, introduce and enforce strict penalties for illegal wildlife poisoning acts, sufficient to deter future poisoning' (1.3.2).
- 'Develop a formalised approval process before market authorisation is granted for all veterinary NSAIDs and seek to identify additional safe alternatives to NSAIDs toxic to vultures' (2.1.3).
- 'Develop VSZ criteria and promote application and implementation of this approach to address all critical threats throughout the Vulture MsAP range' (11.4.4). (Note however that some steps towards this have been recorded under Objective 2).

6.7 Several other important kinds of 'gap' have been highlighted by other parts of the present SIP, notably:

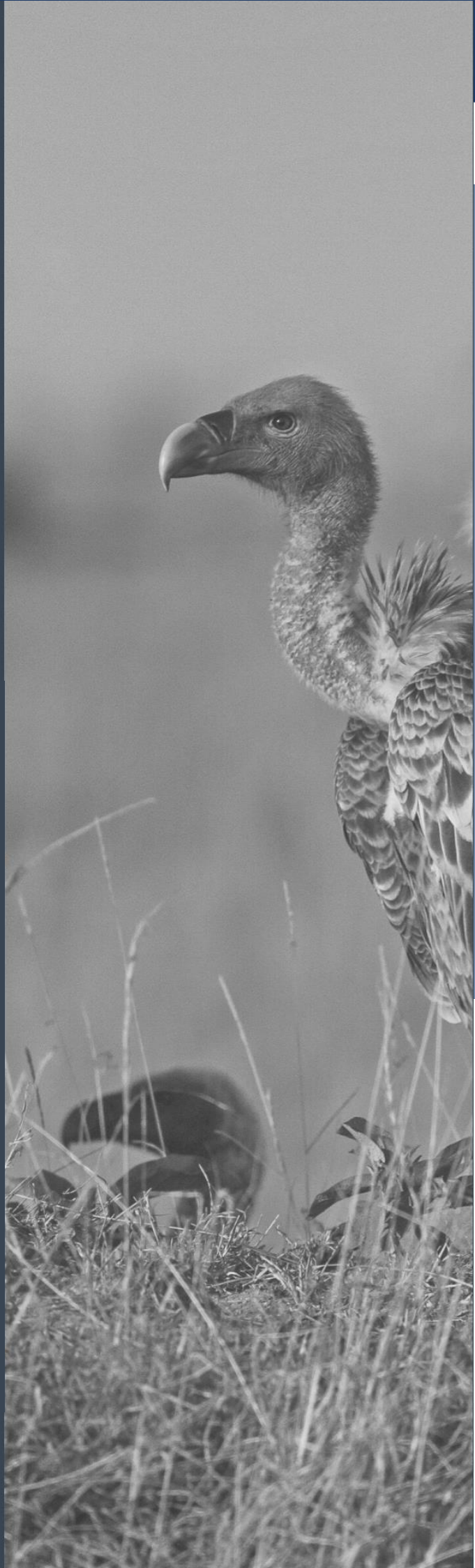
- the issues highlighted in the capacity and support needs assessment in Section 4;
- the need for a full functioning framework for coordinating the Vulture MsAP's implementation internationally, as defined in 'essential' priority action 12.1.2 and Flagship Project No. 9, and as discussed in Section 5 above;
- the need to develop and implement a strategy for securing the funding and other resources needed for implementing the Plan, as defined in 'critical' priority action 12.1.3; and,
- the need to develop and implement an effective monitoring & evaluation regime for the Plan, as discussed in Section 3 above.

6.8 The Vulture Conservation Foundation in 2015-18 examined the results of implementation reviews of EU Single Species Action Plans for three species (Egyptian Vulture, Cinereous Vulture and Bearded Vulture), and compared these with the framework of Objectives and actions in the Vulture MsAP. A close correspondence was found, or in other words few gaps from the Vulture MsAP perspective (either in scope or in actual delivery) in relation to these three species in the EU[7]. Positive results included an increase in the populations of Cinereous and Bearded Vultures, particularly in the EU Range States. Some of the weaker aspects noted however included the following:

- Implementation of the Plan for the Egyptian Vulture was overall less satisfactory than for the other two species;
- The first cycle of SAPs had no actions addressing electrocution in relation to the Cinereous and Bearded Vultures, but this (a) was addressed via actions in projects on other raptor species in the same areas and (b) was included in a subsequent cycle of SAPs (and other projects) for the vulture species themselves;
- Although much good investment has been made in anti-poisoning activities, and good success has been recorded in some places, this category of threat remains serious, and efforts to combat it need to increase further;
- Conservation effort and funding in neighbouring non-EU countries (eg. in the Balkans and Caucasus) is much weaker, and this therefore weakens the ability to achieve intended outcomes at the population and flyway scale;
- Reviews and evaluations of plans and strategies need to be strengthened, to help in guiding future planning and investment;
- Regional coordination also needs to be strengthened.

[7] This paragraph draws on information provided in 2019 by J Andevski, *in litt*.

6.9 A final ‘gap’ to mention concerns an aspect of the role of the CMS Raptors MOU as context and support for the Vulture MsAP, namely the geographical scope of the MOU. The Vulture MsAP covers 15 species of vultures, all of which are listed in Annex 1 of the MOU. Eleven of these were added to that Annex at the second Meeting of Signatories in 2015, but the known distributions of these go beyond the countries which Annex 2 identifies as Range States of the MOU. Consideration is therefore currently being given to whether Annex 2 might need to be extended to include these countries (Brunei Darussalam, Cambodia, North Korea, Laos, Malaysia, Philippines, Singapore, South Korea and Thailand).

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