

SUB-REGIONAL IMPLEMENTATION PLAN TO PREVENT POISONING OF MIGRATORY BIRDS

PRIORITY ACTIONS FOR SOUTHERN AFRICAN COUNTRIES FOR 2017-2020

(11 November 2016)



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EXECUTIVE SUMMARY

The present implementation plan has been prepared as the result of the ‘Sub-regional Workshop on Preventing Poisoning on Migratory Birds’ held on 24 August 2015 in Cape Town, South Africa. This workshop was held under the auspices of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the African-Eurasian Waterbird Agreement (AEWA) and the CMS Memorandum of Understanding on the Conservation of Birds of Prey (Raptors MOU). Based on the CMS Resolution 11.15 ‘Preventing Poisoning of Migratory Birds’ and the CMS Guidelines to Prevent the Risk of Poisoning to Migratory Birds, the goal of this plan is the provision of a clear roadmap of priority actions and implementation means according to the source of poisoning of birds for Southern African Countries for the period 2017 to 2020.

Migratory bird populations are affected by toxins originating from pesticides used to protect crops, specifically insecticides and rodenticides by both primary and secondary consumption, poison baits used for predator control, illegal harvesting and concealment of wildlife crime, veterinary pharmaceuticals (NSAIDs) used to treat livestock, and lead originating from ammunition and fishing weights. The toxic effects on the individual can be both lethal and sub-lethal. Vultures and other scavenging migratory birds are particularly affected by poison baits and the lethal effects of veterinary diclofenac, the latter being evident from the dramatic declines of South Asian populations. The need for research, particularly on the effects of neonicotinoids applied in agriculture and of poison-baits on bird species populations other than birds of prey, is emphasized.

Based on the Guidelines to Prevent the Risk of Poisoning to Migratory Birds, prepared by the CMS Working Group on Preventing Poisoning, the present document provides general key recommendations for each one of the mentioned types of bird poisoning. The substitution and the ban of use and import for high-risk pesticides (by inclusion of the criteria in the Rotterdam Convention), application of Integrated Pest Management, prevention and deterrence mechanisms against the use of poison baits, prohibition of the use of veterinary diclofenac and the phasing out of the use of lead ammunition and lead fishing weights are crucial elements in this respect.

In addition, the implementation plan presents specific recommendations related to each poison type, based on the mentioned Guidelines. These recommendations identify the concrete non-legislative and legislative activities and means by tackling different sources of origin of each poison type, mandatory implementation mechanisms and the promotion of best practice, awareness-raising and encouragement of stakeholder involvement and commitment.

Based on the geographic approach of implementation on a sub-regional level, the plan presents the outcomes of the coordinated sub-regional working groups, which framed the priorities of actions and implementation tools, including the identification of funding needs, for each poison type for the participating Southern African countries. The outcomes of the working group provide concrete specifications of the designated sub-regional initiatives, organizations and authorities involved in the implementation of the plan.

Finally, the document provides a detailed country-specific list of the prioritized activities, implementation means, responsible authorities and institutions, priority ranking and timeline. Although the contributions and comprehensiveness of the intended sets of actions differ according to the country-related priorities, this list represents a practicable basis for the evaluation of the success of different activities combatting the poisoning of migratory birds and can serve as a model for similar implementation plans in other sub-regions within as well as outside of Africa.

INTRODUCTION

The Eleventh Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species (CMS COP11, 4 – 9 November 2014, Quito, Ecuador) adopted [Resolution 11.15](#). [This Resolution](#) endorsed the [Guidelines on preventing the risk of migratory bird poisoning](#) and requested the establishment of task groups, in the context of the [CMS Preventing Poisoning Working Group](#), addressing either thematic issues (e.g. for different poison types) and/or geographical regions to progress its work. The Resolution also requested to organize regional workshops in high-risk areas/flyways to promote the implementation of the Guidelines.

In the above-mentioned guidelines, the following categories of toxins have been identified as those most likely to affect populations of migratory bird:

1. Insecticides used to protect crops;
2. Rodenticides used to protect crops;
3. Poison-bait used for predator control and harvesting;
4. Veterinary pharmaceuticals used to treat livestock;
5. Lead ammunition and fishing weights.

Migratory bird species covered by the Guidelines are those where a significant proportion of the population “*cyclically and predictably cross[es] one or more national jurisdictional boundaries*”, specifically those species listed on the Appendices of CMS, the African-Eurasian Waterbird Agreement (AEWA) and the CMS Memorandum of Understanding on the Conservation of Birds of Prey (Raptors MOU).

A ‘Sub-regional Workshop on Preventing Poisoning on Migratory Birds’ was held on 24 August 2015 in Cape Town, South Africa, in response to CMS Resolution 11.15. The workshop was jointly organized by the Secretariats of the Convention on the Conservation of Migratory Species of Wild Animals (UNEP/CMS), the African-Eurasian Waterbird Agreement (UNEP/AEWA), and the Coordinating Unit of the MOU on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU), and kindly hosted by the Government of South Africa.

This activity has been kindly sponsored by the European Commission through the GPGC*¹ Programme Cooperation Agreements with UNEP.

The purpose of the workshop was to develop and adopt a **Sub-Regional Implementation Plan** for the CMS Guidelines to Prevent the Risk of Poisoning to Migratory Birds covering the Southern African sub-region.

¹ * Global Public Goods and Challenges

PART I - DESCRIPTION OF TOXINS

Insecticides

Bird species that inhabit farmland or use farmland during migration are at risk of exposure to insecticides. Waterfowl and some gamebirds, which feed on agricultural foliage, are at potential risk. Granivorous passerines are attracted to pesticide-treated seeds. Birds that feed on agricultural pests, such as grasshoppers and earthworms, are at risk if these species take up pesticides and are then consumed by birds.

The likelihood of exposure to insecticides is influenced by a number of factors, including cultivation practices, pest types, crop types, pesticide form, and migratory bird ecology (diet and habitat preferences). Exposure may be reduced by using particular forms of pesticides, e.g., liquid over granular forms, and changing application periods for when migratory birds are not likely to be present (which can be effective given the low persistence of many of the second generation pesticides). If a migratory bird is likely to be exposed, the toxicity of the pesticide is significant. The broad-spectrum nature of organophosphates and carbamates (the most common insecticides) places any bird at risk of lethal or sub-lethal effects if it happens to be in the vicinity at the time of application, or shortly thereafter, or if it comes into contact with exposed prey.

Many of the highly toxic insecticides to birds, such as carbofuran, have been removed from the market in developed countries as a result of population declines in some bird species. Much of the effects, both sub-lethal and lethal, recorded in the literature are related to the use of these now highly regulated compounds. This could indicate that the situation has improved in areas where these highly toxic compounds are no longer used or that other substances have not yet been studied.

The implications of sub-lethal effects from exposure to second generation agricultural insecticides are little understood and are difficult to study in the field. Migratory birds may be particularly susceptible to sub-lethal effects from insecticides, which may cause reduced movement and affect migratory orientation. Further research should focus on assessing these effects on populations. Neonicotinoids have become a main replacement for the carbamates and organophosphates in many countries. Further research to understand their impacts on birds as well as monitoring of migratory bird mortality incidents associated with the use of neonicotinoids and other insecticides are needed.

Rodenticides

Rodenticides are most commonly used for agricultural purposes, such as the protection of crops and grain storage from rodent pests. Anticoagulant rodenticides (ARs) are the most widely used rodenticide to control these pests worldwide. They are also an integral component of modern agriculture for the control of rodent populations.

Migratory birds are exposed to ARs through the consumption of contaminated baits (primary) or by the consumption of contaminated prey (secondary). Birds that forage in agricultural landscapes are most likely to be exposed to anticoagulant rodenticides, as these products are primarily used in agricultural areas. However, some species' ecology will make them more likely to be exposed than others within these areas. Many raptor species are especially likely to be exposed to rodenticides due to a regular diet of rodents. Scavenging species may be especially at risk because they feed on carcasses that could be contaminated with rodenticides. The Red Kite *Milvus milvus*, for example, may be particularly susceptible to secondary poisoning because of the high proportion of carrion in its diet, including rat carcasses.

If exposure to anticoagulant rodenticides is likely to occur, the toxicity level of the AR will greatly influence the corresponding effect – whether lethal or sub-lethal. The effects, particularly sub-lethal effects, of exposure to ARs on species at both the individual and population level remain poorly understood. Sub-lethal exposure to second generation ARs (which are more commonly used and more toxic to birds than first generation ones) may hinder the recovery of birds from non-fatal collisions or accidents. They may also impair hunting ability through behavioural changes, such as lethargy, thus increasing the probability of starvation. However, there is limited evidence of these effects occurring in the field.

There is widespread exposure of raptors to rodenticides where second-generation anticoagulant rodenticides are used in agriculture, but the ecologically significant effects (both lethal and sub-lethal) from exposure are largely unknown. Additionally, it is unknown whether there are any population level effects from exposure.

In addition to research needed to determine whether there are population effects resulting from widespread exposure in some species, further research is also needed to identify the exposure rate of rodenticides in species other than raptors as some evidence indicates that grain-based baits could result in exposure to granivorous bird species.

Poison-baits

Predator control using poison-baits occurs particularly in areas with game management and livestock farming. Predator and scavenger bird species are at risk of poisoning from poison-baits targeting them directly, and also from baits targeting mammalian species (with birds becoming by-catch through secondary poisoning). The effects on species, other than birds of prey, is largely unknown and further research is needed to understand this.

In Africa and Asia, poisoning is used to harvest birds for human consumption and traditional medicine.

Due to the indiscriminate nature of many of the substances used, any birds are at risk of poisoning if they come into contact with poison-baits. The most common substances are rodenticides and insecticides, usually those that are known to farmers in the area to be highly toxic. Carbofuran appears to be used in poison-baits in many areas around the world. Many populations of birds of prey, particularly vultures, are in decline as a result of illegal poison-baits. This suggests that further work needs to be done in order to understand why poison-baits continue to be used and create effective solutions that avoids their use.

Veterinary pharmaceuticals (NSAIDs)

Non-steroidal anti-inflammatory drugs (NSAIDs) are used to treat domestic livestock for inflammation and pain relief. Diclofenac, a previously popular NSAID used for veterinary care of cattle in India, Pakistan, Bangladesh, and Nepal, is toxic to a number of vulture species and Aquila eagles. Before its ban, its use resulted in the poisoning of scavenging vultures throughout these countries by contaminating domestic livestock carcasses traditionally fed on by vultures. The promotion of veterinary diclofenac on the African continent could pose a risk to vultures in this region, including the African White-backed Vulture (*Gyps africanus*) and the endangered Cape Griffon Vulture (*Gyps coprotheres*) due to these species' sensitivity to veterinary diclofenac. However, exposure levels may be different through, for example, the removal of cattle carcasses from open areas and variation in vulture diet. The next steps aimed at tackling the toxicity of NSAIDs on raptors in Africa are to: (1) evaluate the effects of other NSAIDs on birds of prey/scavenging birds; (2) identify vulture-safe alternatives (so far only meloxicam has been shown to have low toxicity to *Gyps* vultures); (3) determine whether veterinary diclofenac/NSAIDs are toxic to other vultures and birds of prey; and (4) assess the effects of veterinary diclofenac/NSAIDs on vulture populations, especially in areas where carcasses of domestic ungulates are likely to be available for scavenging.

Lead ammunition/shot and fishing weights

Lead is highly toxic to birds causing mortality at higher concentrations, and a range of sub-lethal impacts at lower concentrations. Wherever there is anthropogenic use of lead to which migratory birds are exposed, poisoning can potentially occur. Lead poisoning in migratory birds, whether primary or secondary, through ingestion of shot and bullets can be expected to occur wherever lead ammunition is used for hunting. It follows that wherever lead shot is used, it will accumulate within the environment and the degree of contamination will be directly proportional to the intensity of use. Certain taxa, namely wildfowl and raptors, including threatened species, are more greatly affected than other groups of birds, and losses can be high. Population effects are difficult to quantify for a number of reasons, including, the lack of robust surveillance and gaps in knowledge of ingestion rates and subsequent survival. Sub-lethal impacts are particularly difficult to quantify. In most countries, there are also gaps in knowledge of the efficacy of restrictive regulations.

The effects of lead poisoning from fishing weights on migratory birds are restricted to certain susceptible species and to certain geographical areas where discarded and lost weights are present. A number of migratory species are known to suffer from lead poisoning following the ingestion of discarded or lost lead fishing weights. In

principle, most birds feeding in currently or historically fished water bodies or near-shore soils and sediments are at risk of being exposed to and ingesting lead. Species likely to feed in areas exposed to lead fishing weights, are therefore most at risk of suffering from ingested lead.

PART II - KEY RECOMMENDATIONS FROM THE CMS POISONING GUIDELINES

- i. Substitute (remove and replace) **insecticides** posing a high risk to birds with safe alternatives, and include criteria in the Rotterdam Convention to reduce risks of imports toxic to birds, promote Integrated Pest Management, and identify areas of significant risk of poisoning of migratory birds and mitigation of impacts through working with stakeholders;
- ii. Restrict/ban the use of second-generation anticoagulant **rodenticides** in open field agriculture (excluding best practice use for invasive species management); use best practice for the treatment of rodent irruptions minimizing the use of second-generation anticoagulants; and stop permanent baiting, with preventive rodent measures used instead;
- iii. Prevent/deter the use of **poison-baits** for predator control for livestock protection, game management (excluding best practice use for invasive species management), harvesting for consumption or sale and other illegal issues such as removal of scavenging birds as indicators of wildlife crime, and create or improve enforcement legislation, through deterrent mechanisms and infringement penalties, and restriction of access to highly toxic substances, with human-wildlife conflict resolved via multi-stakeholder forums;
- iv. Prohibit the use of **veterinary diclofenac** for the treatment of livestock and substitute with readily available safe alternatives, such as meloxicam, with mandatory safety-testing of all new veterinary pharmaceuticals for risks to scavenging birds before market authorization is granted;
- v. Phase out the use of **lead ammunition** across all habitats (wetland and terrestrial) with non-toxic alternatives within the next three years with Parties reporting to Conference of the Parties (COP12) in 2017, working with stakeholders on implementation; promotion of leadership from ammunition-users on safe alternatives, and remediation of lead-polluted sites where appropriate; and
- vi. Phase out the use of lead **fishing weights** in areas where migratory birds have been shown to be particularly at risk i.e. freshwater habitats, (excluding fishing weights used in coastal areas where there are significant knowledge gaps and further research is needed) with non-toxic alternatives, within the next three years with Parties reporting to the Conference of the Parties (COP12) in 2017, working with all stakeholders on implementation; and promotion of leadership from fishers on safe alternatives.

PART III – SPECIFIC RECOMMENDATIONS FROM THE CMS POISONING GUIDELINES

Insecticides used to protect crops

Non-legislative recommendations

- Identify local risk hot spots and work with local stakeholders to reduce risk;

Legislative recommendations

- Include migratory birds in the criteria under the Rotterdam Convention to reduce the risk of imports of products highly toxic to birds;
- Substitute (remove from the market and replace with environmentally safe alternatives) substances of high risk to birds and incentivize alternatives; introduce mandatory evaluation mechanisms for existing and new products;
- Adopt integrated pest management at national level and provide incentives for farmers, such as certification schemes and public support.

Rodenticides used to protect crops

Non-legislative recommendations

- Use best practice to prevent and manage rodent irruptions;

Legislative recommendations

- Restrict/ban the use of second generation anticoagulant (SGAR) in open field agriculture;
- Stop permanent baiting.

Poison-baits used for predator control and harvesting

Non-legislative recommendations

Step 1: Identify drivers of the problem and publish regular reports on poisoning incidents;

Step 2: Resolve human-wildlife conflict using multi-stakeholder forums;

Step 3: Develop and disseminate good practice for predator control and enforcement.

Legislative recommendations

Step 4: Create enforcement legislation with effective deterrent mechanisms and penalties;

- Enhance enforcement and deterrence mechanisms relating to the use of poison-baits;
- Restrict access to highly toxic substances through stronger enforcement of supply chain: the ways poisons are acquired and why the established control mechanisms do not prevent their illegal use.

Veterinary pharmaceuticals used to treat livestock

Non-legislative recommendations

- Enhance surveillance of ungulate carcasses in high risk areas for use of veterinary diclofenac and develop vulture safe zones;
- Raise stakeholder awareness on alternatives to veterinary diclofenac; promote product stewardship.

Legislative recommendations

- Prohibit the use of veterinary diclofenac for the treatment of livestock and substitute with readily available safe alternatives, such as meloxicam;

- Introduce mandatory safety-testing of non-steroidal anti-inflammatory drugs (NSAIDs); involve VICH/OECD² to evaluate and provide guidance on wider risks;
- Reduce likelihood of illegal use of human pharmaceuticals.

Lead ammunition and fishing weights and other sources of lead poisoning

Lead ammunition

- Raise awareness of lead poisoning; promote leadership from ammunition users;
- Phase out the use of lead ammunition across all habitats (wetland and terrestrial) with non-toxic alternatives within the next three years;
- Restore lead ammunition-contaminated environments.

Lead fishing weights

- Raise awareness of the issue of lead poisoning from fishing weights;
- Encourage leadership from angling organizations and manufacturers for non-toxics;
- Promote anglers' codes of practice;
- Phase out the use of lead fishing weights in areas where migratory birds are shown to be particularly at risk i.e. freshwater habitats, (excluding fishing weights used in coastal areas where there are significant knowledge gaps and further research is needed) with non-toxic alternatives, within the next three years.

Industrial pollution from lead mining and smelting processes

- Ban release of lead into the wider environment where migratory birds may be exposed directly or indirectly via bio-accumulated lead in invertebrates and small vertebrates.

Leaded paint

- Remove the toxic source and/or limiting access to lead painted structures.

Other sources of discarded lead

- Raise awareness of the hazards posed by discarded lead products to migratory birds;
- Encourage enforcement of regulatory processes in localities where migratory birds are exposed to lead risks from legal and illegal waste disposal.

² VICH/OECD: International Cooperation on Harmonisation of Technical Requirements for Registration of Veterinary Medicinal Products/Organization for Economic Cooperation and Development

PART IV: SUB-REGIONAL IMPLEMENTATION PLAN

APPROACH

Resolution 11.15, adopted at the Conference of the Parties (COP) 11 in Quito, Ecuador, requested the establishment of task groups, in the context of the CMS Preventing Poisoning Working Group, addressing either thematic issues (e.g. for different poison types) and/or geographical regions to progress its work. The Resolution also foresees the organization of regional workshops in high risk areas/flyways to promote the implementation of the Guidelines.

The Sub-Regional Implementation Plan (SRIP) and national priorities were compiled during the ad-hoc workshop held in Cape Town on 24 August 2015. During the workshop, sub-regional priorities for each of the poison types were discussed in two break-out groups, each of them supported by a facilitator. One of the break-out groups focussed on the sub-regional priorities per toxin type; the second break-out group focussed on national priorities where a few countries were going through their preliminary information on the poisoning of birds with the help of a facilitator. The SRIP that follows is based on the reports provided by each of the break-out groups and also on information provided by Range States before the workshop.

During the workshop, the Republic of South Africa (RSA) kindly offered to provide coordination for the SRIP. Precise conditions of this coordination have still to be agreed with RSA.

SUB-REGIONAL PRIORITIES BY POISON TYPE (WORKING GROUP OUTCOME)

SUB-REGIONAL PRIORITIES – INSECTICIDES AND RODENTICIDES

Legal Recommendations

Proposed Sub-regional actions:

Identify chemicals being used in each country and encourage a sub-regional study on toxicity of these chemicals and particularly their impacts on bird populations, which will feed into and/or lead to proposed recommendations for chemical/pesticide bans/restrictions at both national and international level (i.e. feeding into national legislation and eventually recommendations for the Rotterdam Convention).

Means of implementation and tools to implement activities

- Identification of poisoning hotspots within each country
- Identification of environmental impacts and risks to migratory birds
- Evidence of environmental incidents (what has occurred in each country)
- Each country creates an inventory of chemicals (listed or not under the Rotterdam Convention) and their impacts and risks to migratory birds
- Countries should propose the inclusion of identified chemicals (import, use, disposal into the environment) in the list of banned chemicals (i.e. chemicals identified from the sub-regional toxicity study)

Funding needs: There is a need for raising funds together as a sub-region for the implementation of various MEAs/MOUs (CMS, AEWA, Raptors) and to prevent poisoning in particular.

NB: GEF allocations can be considered within the framework of biodiversity conservation. Therefore, it will be beneficial to link the implementation projects to priority areas of GEF.

General discussion

Some poisoning hotspots in South Africa were identified: Lowveld, KwaZulu-Natal (KZN)

Issues/challenges/problems:

- Illegal use of pesticides in relation to rhino poaching (to obscure rhino carcasses potentially indicated by scavenging birds) – especially in the transboundary area with Mozambique and Swaziland
- There is an opportunity to use the local culture and values (i.e. the specific species affected is a cultural heritage) in crime scene investigation and a legal argument for prosecution of poisoning
- The creation of a regional strategy for transboundary management of pesticides in the region (SADC³) could be promoted as a specific initiative within the SRIP. However, the SADC may not have a mandate for the subject matter in order to cover a sub-regional strategy. Apart from that, a sub-regional strategy will duplicate the efforts under the current workshop of creating a sub-regional implementation plan
- The legal measures on pesticide and rodenticide issues will require the countries to work together sub-regionally to identify chemicals for proposed legislative control.
- Hotspots should be identified for each country as well as guidelines to tackle possible legal issues that arise from the use/abuse of banned/restricted rodenticides/insecticides.

Finance related discussions:

- Services could be provided by the CMS Secretariat to support countries in order to produce sub-regional funding proposals to submit to GEF and other funding mechanisms
- The CMS Family needs to negotiate increased funding with GEF to promote the support for national proposals under migratory species conservation
- Recommendations on liaising for joint funding can be taken forward as a sub-regional proposal to the COP

NB: Swaziland has approved the adoption of bans and restriction of certain chemicals (under the Rotterdam Convention). Nevertheless, those chemicals, which affect migratory waterbirds, were not specifically considered. There is currently work on persistent organic pollutants (POPs) being done with UNEP for an overarching national act dealing with chemicals.

³ Southern African Development Community

SUB-REGIONAL PRIORITIES – POISON BAITS

The Working Group focused on the deliberate poisoning of vultures.

The main motives for poisoning of vultures are indicated to be:

- Poisoning to remove birds as indicators of wildlife crime
- Selling of vulture parts

There is also a need for actions tackling the issue outside of southern Africa, especially because vultures are far ranging.

The main response should be to build a community of practitioners to deal with a suspected poisoning incident (Standard Operating Procedures of handling scenes, forensics, laboratory testing, enforcement, and ensuring feedback and flow of information).

A link with UNEP, dedicated Conventions and/or NGOs could ensure a stable source of funds and aid during implementation. For example, linkages of vulture poisoning to illegal wildlife trade could create possibilities for accessing funds to implement specific actions.

There is a need to develop a wildlife poisoning protocol for reporting incidents; establish centralized reporting systems coordinated by the Ministry of Environment, involving other government agencies, veterinary services, police etc.); conductance of a survey if the ‘Southern African Wildlife Enforcement Network’ (WEN-SA) possesses appropriate protocols; otherwise, preparation of a synthesis on the basis of information coming in from national reports under the WEN-SA.

NB: A system developed by Tim Snow, Wildlife Poisoning Prevention and Conflict Resolution, South Africa, regarding wildlife poisoning cases could be adapted for regional use and specific taxa of birds (by the South African police); information can be gathered from the IUCN/SSC vulture poisoning database, which includes non-birds as well, and from outside South Africa. This strategy can be easily replicated elsewhere. The Botswana Ministry of Environment has offered to host the WEN Secretariat, and Tim Snow could enter a collaboration with the Botswana Ministry of Environment (facilitated by BirdLife Botswana) regarding further steps (resources are not considered as being the limiting factor in this respect; the Vulture Specialist Group could provide support).

Zimbabwe has noted an increase in wildlife poisoning and has developed a poisoning database. The species affected and poisons used have been identified for consideration in judiciary, legislative reviews etc., but it has been realized that this is a regional rather than single-country problem (Zimbabwe has designed a poison booklet, types of poisoning, standard operating procedures (SOP) of scenes, reporting form, species centralized database, with pictures, but would like to develop a regional database).

General discussion

Further actions and implementation means:

- Produce a regional protocol for reporting incidents and publish annual regional general report(s); AEWA has an online platform which can be used to collate national reports, but this requires the development of a standardized form for the collection of data and volunteers to help in serve as a data contributor;
- There is a need to ensure that an NGO/state partnership owns/manages the database – the need arises for co-drivers at NGOs and at the South Africa government office (H. Mafumo). For example, SANBI (South African National Biodiversity Institute) possesses tools and databases for biodiversity Management and Evaluation. the Working Group members suggest that CMS hosts the database;
- An online group should be formed to join this group (Tim Snow, Humbulani Mafumo, Hanyire Tapiwanashe, Kabelo Senyatso, Andre Botha);
- An MOU/MOA will be needed to outline how the information will be processed in order to enable governments to identify the data which are relevant for them (this is a sensitive issue, e.g. the OIE, where states have incentives to submit data on wildlife disease). Additionally, engagement with SADC (Southern African Development Community) and the Africa Convention should be explored;
- Information should be shared with the SADC Wildlife Crime Prevention Forum.
- Some questions need clarification, for example, in case Botswana is volunteering for the WEN Secretariat, does it imply also volunteering to lead on the wildlife poisoning database? There is a need for institutional buy-in, rather than just having individuals or focal points;
- Training of practitioners on wildlife poisoning issues (e.g. South Africa Wildlife College), in compliance with meeting requirements of training regulator (possibly the SETA⁴), and the Endangered Wildlife Trust (EWT), which is already working on this accredited training with the College (training on-site or at the college, delivering accredited courses); it should be ensured that there are instructors at national level for delivering the training on SOP for poisoning incidences;
- Inclusion of the issue in the curriculum of training for the enforcement agencies and staff;
- Judiciary training conducted by: SA Wildlife College (Hoedspruit) – wildlife crime course offered to practitioners in the region; INTERPOL; KAZA (Kavango - Zambezi Transfrontier Conservation Area); Regional Police College in Otse (BW) – US-funded; Intergovernmental wildlife crime enforcement network (US-sponsored);
- Training in parallel with providing means of implementation in order to ensure effectiveness. The determination of appropriate funding sources is crucial in this respect.

⁴ SETA: Sector Education and Training Authority, South Africa.

SUB-REGIONAL PRIORITIES – VETERINARY PHARMACEUTICALS

No working group on veterinary pharmaceuticals was established due to lack of volunteers, but some sub-regional priorities were identified by Botswana and Namibia.

Proposed actions:

- Raise the issue of the ban of import and possession of veterinary diclofenac at SADC with follow-up implementation at the national level
- Raise the issue of mandatory testing of NSAIDs before approval for use and distribution to be followed up by a streamlined implementation in each country (e.g. testing in one country to be recognized by all others)
- Ensure registration procedures and monitoring of the use of veterinary pharmaceuticals. Veterinary diclofenac is not the only veterinary pharmaceutical that has been proven to be poisonous to vultures; registration of all toxic veterinary pharmaceuticals by the respective department/agencies of animal health. In the cases in which some of these pharmaceuticals are not registered, actions have to be taken to ensure the functioning of the mechanisms.
- Stakeholder awareness raising and professionals' education (veterinarians, apothecaries).

SUB-REGIONAL PRIORITIES – LEAD AMMUNITION AND FISHING WEIGHTS

Lead ammunition:

A psychological shift from the use of lead to non-toxic ammunition is needed amongst hunters.

This problem can be taken on through:

- Awareness campaigns

Information from scientific research should be used effectively to raise awareness. Where this information is not sufficient, gathering of more local data will be useful to raise awareness effectively. Such a study will investigate the levels of anthropogenically discharged lead in the environment and also in relevant bird species. A two- to three-year phasing out of lead ammunition is advised in the Southern African countries, whereupon the use of alternatives (non-toxic ammunition) should be enforced through legislation.

Awareness campaign for hunters intends to include:

- 1) TV interview/advert with a famous hunter who would serve as a local champion in the country.
- 2) Workshop to be held in Southern African region.
- 3) Invitation of the chair of the Danish or American Hunters Association and Vernon G. Thomas (expert) to address hunters in the Southern African region at the workshop (converted hunters can potentially best convince the non-converted).
- 4) Awareness raising on the issue of sustainable hunting management: less lead ammunition leads to less poisoning of bird populations (based on scientific studies, e.g. Thomas 2009), which in turn leads to a higher number of birds to hunt in the long-term.
- 5) Short movie and booklet to be produced.
- 6) Simplification of CMS guidelines and popularization within a document, which would address the hunter's perspective.
- 7) Ideas for campaign's slogan: Cars done! (Lead replacement fuel). Now let's do it with guns!
- 8) Awareness raising around human health highlighting the known impacts of lead on childhood development.

Fishing weights:

- Research project to determine the levels of lead in waterfowl; raptors and scavengers.
- Awareness raising and negotiations with fishing/angler associations in the region and promotion of non-toxic alternatives to phase out the use of lead fishing weights in two to three years.

IMPLEMENTATION PLAN BY COUNTRY

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
ANGOLA					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>- Identify local risk hot spots and work with local stakeholders to reduce risk</i>	Perform workshop with companies that market and use the insecticides	Ministry of Agriculture (mandate) Other stakeholders: Ministry of Environment	High	End 2018	Supplementary funding will be needed to obtain an expertise on the current situation (this should include all related costs such as hiring, equipment, etc.) Additionally, listed as recommendations: Certification schemes (i.e. quality certificates to stakeholders that conform with encouraged insecticide usage/typology) Public support
	Interviews with farmers; Identify and assign specialists/experts to study the situation on the ground	Ministry of Agriculture (mandate) Other stakeholders: Ministry of Environment	High	End 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Update existing list of pesticides currently used in the country	Ministry of Agriculture (mandate) Other stakeholders: Ministry of Environment	High	End 2018	
	Monitoring of usage of restricted/banned pesticides	Ministry of Agriculture (mandate) Other stakeholders: Ministry of Environment	High	End 2018	
	<u>Benguela area</u> – Bird hotspot with occurrence of high bird mortality without identification of causes. Research on cause of mortality and investigation of possible link to the use of pesticides or other agricultural toxins	Ministry of Agriculture (mandate) Other stakeholders: Ministry of Environment	High	End 2018	
	Encouraging farmers to use only allowed/authorized pesticides	Ministry of Agriculture (mandate) Other stakeholders: Ministry of Environment	High	End 2018	
<i>(1.2) Legislative recommendations</i>					
<i>- Improve global governance and risk assessment: include migratory bird criteria in the Rotterdam</i>	Workshops of stakeholders (farmers, sellers, Ministries)	Ministry of Environment (Implementing agency)	Medium	Start mid-2018 to end 2018	Survey on prohibited pesticides still in use: include if these belong

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<p><i>Convention to reduce the risk of imports of products highly toxic to birds</i></p> <p>The first phase of eliminating obsolete pesticides was completed (about 5 years ago). There is a list of prohibited pesticides, but limited knowledge of what is being used in practice by farmers.</p>	<p>–Commerce, Industry, Agriculture, Environment)</p>	<p>for the Rotterdam Convention)</p>			<p>to old stock to be depleted or if they are still on the market</p>
	<p>Survey among farmers to gather information on prohibited pesticides still in use</p>	<p>Ministry of Agriculture Ministry of Environment</p>	<p>Medium</p>	<p>End of 2018</p>	<p>The list of obsolete pesticides is followed by FAO (it has specific programmes like the “Prevention and Disposal of Obsolete Pesticides”)</p>
<p><i>- Substitute (remove from the market and replace with environmentally safe alternatives) substances of high risk to birds and incentivize alternatives, such as integrated pest management; introduce mandatory evaluation mechanisms for existing and new products</i></p>	<p>Promote collaboration between Ministries (meetings between relevant officials)</p>	<p>Ministry of Environment, Ministry of Agriculture, Ministry of Commerce</p>	<p>High</p>	<p>Ongoing</p>	
	<p>A new list of pesticides is currently awaiting endorsement by Parliament</p> <p>The new list will need to be accessed with time to identify the pesticides that are harmful/detrimental to migratory birds by an expertise. (NB persistent pesticides were identified by UN & FAO standards about 5 years ago – see 1.2 above).</p>	<p>Ministry of Environment Ministry of Agriculture</p>	<p>High</p>	<p>End of 2018</p>	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<p><i>- Adopt integrated pest management at national level and provide incentives for farmers, such as certification schemes and public support</i></p>	Seminars to identify the needs and improve capacity/knowledge	Ministry of Commerce	Medium	From 2017 to end 2018	
	Reduce custom duties/taxes for more environmentally friendly alternatives in order to promote their use	Ministry of Commerce	Medium	From 2017 to end 2018	
	Create a task group to identify the stakeholders to collaborate with initiating and promoting the use of Integrated Pest Management practices/other environmentally friendly agricultural pest management approaches	Ministry of Commerce	Medium	From 2017 to end 2018	
	Inquire about eco-friendly (and possibly fair-trade) activities in the country in order to evaluate the extent it is applied and could be promoted	Ministry of Commerce	Medium	From 2017 to end 2018	
(2) RODENTICIDES					
<i>(2.1) Non-legislative recommendations</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<p><i>- Use best practice to prevent and manage rodent irruptions</i> (minimizing second generation anticoagulant rodenticide use as they may impact large numbers of raptors in grassland areas)</p>	<p>Liaise with importing industries</p>	<p>Ministry of Agriculture; Ministry of Commerce, Ministry of Environment</p>	<p>Low</p>	<p>Starting from mid-2017</p>	
	<p>Establish a law on the use of rodenticides</p>	<p>Ministry of Agriculture; Ministry of Commerce, Ministry of Environment</p>	<p>Low</p>	<p>Starting from mid-2017</p>	
	<p>Information on rodenticide use is limited. Therefore, an inventory on the rodenticides used will be required as well as information on the frequency of their use</p>	<p>Ministry of Agriculture, Ministry of Environment</p>	<p>Medium</p>	<p>End 2018</p>	
	<p>Update national check lists of harmful rodenticides and identify which of them are first and/or second generation rodenticides</p>	<p>Ministry of Agriculture Ministry of Environment</p>	<p>High</p>	<p>End 2017</p>	
<p><i>(2.2) Legislative recommendations</i></p>					
<p><i>- Restrict/ban SGAR use in open field agriculture</i> (Not relevant)</p>	<p>These products are not used for large-scale agricultural production in Angola</p>	<p>Ministry of Agriculture Ministry of Environment</p>	<p>Medium</p>	<p>End 2018</p>	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<p><i>- Stop permanent baiting:</i></p> <p>Apply rodenticides only when infestations are present followed by bait removal (also non-legislative, e.g., change of business model)</p>	Conduct a survey with identified communities	Ministry of Agriculture	Medium	From mid-2017	
	There is a need to identify the use of rodenticides and the scale of use in Angola	Ministry of Agriculture Ministry of Environment	Medium	End 2018	
(3) POISON BAIT					
<i>(3.1) Non-legislative recommendations</i>					
<p><i>Step 1: Identify drivers of the problem and publish regular reports on poisoning incidents</i></p> <p>There are no reports available on the issue of poisoned baits due to lack of capacity to conduct the needed studies</p>	Conduct studies with experts and other partners	Ministry of Agriculture Ministry of Environment	Medium	From beginning of 2018	
<p><i>Step 2: Resolve human-wildlife conflict using multi-stakeholder forums</i></p>	Workshops and seminars	Ministry of Environment	Medium	End 2018	
	Increase awareness in the local communities on poisoning risks to the natural environment	Ministry of Environment Ministry of Agriculture Local Communities	Medium	End 2018	
	Awareness raising among the population	Ministry of Environment Ministry of Agriculture Local Communities	High	From beginning of 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Step 3: Education – develop and disseminate good practice for predator control and enforcement</i>	Working with contact groups and using the approach of training of trainers	Ministry of Environment Ministry of Agriculture NGOs	Medium	End 2018	
	Awareness raising of the communities on the environmental impacts, the applicable environmental laws and penalties	Ministry of Environment Ministry of Agriculture NGOs	Medium	End 2018	
<i>(3.2) Legislative recommendations</i>					
<i>Step 4: Ensure legislative/regulatory effectiveness: create enforcement legislation with effective deterrent mechanisms and infringement penalties</i>					
<i>Enhance enforcement and deterrence mechanisms relating to the use of poison-baits</i>	Updating legislation; the details on relevant migratory bird components will need to be identified and addressed	Ministry of Environment Ministry of Agriculture	Medium	End 2018	
	Suspend/withdraw hunting licenses for persons and areas where illegal poison-bait activity occurs	Ministry of Agriculture	Low	End 2018	
	Establish sentencing guidelines to ensure consistent and effective outcomes	Ministry of Agriculture Ministry of Environment	Medium	End 2018	
	Increase capacity and capability for enforcement with focused resourcing	Ministry of Agriculture	Medium	From Mid 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
		Ministry of Environment			
	Introduce vicarious liability	Ministry of Agriculture	Low	End 2018	
<i>Restrict access to highly toxic substances through stronger enforcement of supply chain: the ways poisons are acquired and why the established control mechanisms do not prevent their illegal use</i>	Remove grace periods for banned products	Ministry of Agriculture	Low	End 2018	
	Establish consistent product removal policies between countries	Ministry of Environment Ministry of Agriculture	Medium	From Mid 2018	
	Restrict access to certified professionals only	Ministry of Agriculture	Medium	End 2018	
(4) VETERINARY PHARMACEUTICALS					
<i>(4.1) Non-legislative recommendations</i>					
<i>Enhance surveillance of ungulate carcasses in high risk areas for veterinary diclofenac use and develop vulture safe zones</i>	In Angola, veterinary diclofenac is mostly used for pet animals. Therefore, there is limited risk for affecting migratory birds significantly	Ministry of Agriculture Ministry of Environment	Low	End 2018	
<i>Raise stakeholder awareness on alternatives to veterinary diclofenac; promote product stewardship (and voluntary withdrawal of NSAIDs toxic to scavenging birds)</i>	Identify and encourage veterinary clinics that use veterinary diclofenac at national level to adopt alternative treatments	Ministry of Agriculture Ministry of Environment	Low	End 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Identify the different actors and stakeholders (waste treatment companies, companies selling agro-toxic and hygiene products)	Ministry of Environment Ministry of Agriculture	Medium	End 2017	
<i>(4.2) Legislative recommendations</i>					
<i>Prohibit the use of veterinary diclofenac for the treatment of livestock and substitute with readily available safe alternatives, such as meloxicam</i>	Update legislation	Ministry of Agriculture Ministry of Environment	Low	End 2018	
<i>Develop methods to reduce the likelihood of illegal use of human pharmaceuticals (could also be Non-legislative)</i>	Veterinary diclofenac use is not prohibited in Angola, but it is not used for veterinary purposes because the cost implications are considered as being too high	Ministry of Agriculture	Low	End 2018	
	Include “not for veterinary use” on labels of human diclofenac	Ministry of Agriculture	Low	End 2018	
	Introduce mandatory reporting for pharmacies to third-party regulatory bodies and require pharmacies to record sale and purchaser details	Ministry of Agriculture Ministry of Environment	Low	End 2018	
	Require identification to purchase human diclofenac	Ministry of Agriculture	Low	End 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Increase supply and availability of “safe” veterinary products and provide subsidies to those unable to afford veterinary care	Ministry of Agriculture Ministry of Environment	Low	End 2018	
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					
<i>(5.1) Lead ammunition (including shot, pellets and bullets)</i>					
<i>(5.1.1.) Non-legislative recommendations</i>					
<i>Raise awareness of lead poisoning, particularly at key sites for migratory waterbirds; promote leadership from ammunition users, including wildlife managers, on non-toxic alternatives and best practice</i>	Hunting prohibited in general since 2003 for an indefinite period. But the issue of enforcement still prevails (the hunting ban was in relation to significant loss of wildlife after the war)	Ministry of Environment Ministry of Agriculture	Low	End 2018	
	Strengthen the enforcement measures of the law	Ministry of Agriculture Ministry of Environment	Medium	From beginning of 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Identify companies that use lead products in their production processes	Ministry of Agriculture Ministry of Environment	Medium	End 2017	
	Raise awareness among companies	Ministry of Agriculture	Medium	End 2017	
<i>(5.1.2) Legislative recommendations</i>					
<i>Phase-out the use of lead ammunition across all habitats (wetland and terrestrial) with non-toxic alternatives within the next three years</i> with Parties reporting to CMS Conference of the Parties (COP12) in 2017, working with stakeholders on implementation	Create legislative process to prohibit the use of lead ammunition	Ministry of Environment Ministry of Agriculture	Medium	End 2017	
<i>Remediate lead ammunition-contaminated environments</i>	Create legislative processes to facilitate remediation of lead ammunition-contaminated environments	Ministry of Agriculture Ministry of Environment	Medium	End 2017	
<i>(5.2) Lead fishing weights</i>					
<i>(5.2.1) Non-legislative recommendations</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Raise awareness of the issue of lead poisoning from fishing weights and solutions to the problem</i>	Further inquiries/survey to investigate the use of lead fishing weights and the magnitude of its usage in the country. This will determine the next activities to be targeted under this subject Advice can be sought from external advisors	Ministry of Fisheries and Ministry of Environment	Low	Start mid-2017	
	Remove obsolete abandoned fishing nets from wetlands	Ministry of Fisheries and Ministry of Environment	Low	Start mid-2017	
	Raise awareness among fishermen about the risks of use of lead fishing weights in their fishing nets	Ministry of Fisheries and Ministry of Environment	Low	Start mid-2017	
	Campaigns targeting fishermen (not applicable for now)	Ministry of Fisheries and Ministry of Environment	Low	Start mid-2017	
<i>Encourage leadership from angling organizations and manufacturers for non-toxic fishing weights</i>	Raise awareness among manufacturers	Ministry of Agriculture Ministry of Environment	Medium	End 2018	
<i>Promote anglers' codes of practice</i>	Raise awareness among fisherman and local communities	Ministry of Agriculture Ministry of Environment	Medium	End 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>(5.2.2) Legislative recommendations</i>					
<i>Phase-out the use of lead fishing weights in areas where migratory birds have been shown to be particularly at risk i.e. freshwater habitats, (excluding fishing weights used in coastal areas where there are significant knowledge gaps and further research needed) with non-toxic alternatives, within the next three years</i> with Parties reporting to CMS COP12 in 2017, working with all stakeholders on implementation	Create a legislation to prohibit the use of lead fishing weights	Ministry of Agriculture Ministry of Environment	Medium	End 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
BOTSWANA					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>Identify local risk hot spots and work with local stakeholders to reduce risk</i>	Undertake a survey/study to identify possible areas where insecticide (including DDT for malaria control) application constitutes a conservation issue for migratory birds (to be linked to Integrated Support Programme for Arable Agricultural Development (ISPAAD) and the Conservation Agriculture Approach promoted by the Ministry of Agriculture)	Ministry of Agriculture in cooperation with the Ministry of Environment	Medium	End of 2017	
<i>(1.2) Legislative recommendations</i>					
Generally	Include the recommendations of the Guidelines into the on-going revision processes of the Agrochemicals Act and the Wildlife Act (alignment between the two Acts to be ensured)	Ministry of Agriculture (Agricultural Act) Ministry of Environment (Wildlife Act)	High	Ongoing (End of 2017)	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
(2) RODENTICIDES					
<i>(2.1) Non-legislative recommendations</i>					
<i>Use best practice to prevent and manage rodent irruptions</i>	Extend the survey and study under priority 2.1 of Insecticides above also to rodenticides	Ministry of Agriculture (Agricultural Act) Ministry of Environment (Wildlife Act)	High	Ongoing (End of 2017)	
(3) POISON BAIT					
<i>(3.1) Non-legislative recommendations</i>					
Generally	Establish a centralised national reporting system on wildlife poisoning under the Wildlife Department	Wildlife Department	High	Mid-2017	
<i>Step 1: Identify drivers of the problem and publish regular reports on poisoning incidents</i>	Produce a regional protocol for reporting poisoning incidents.	Wildlife Department (for MOMS – Management Oriented Monitoring Systems) Other organisations, such as BirdLife Botswana for other schemes	High	Mid-2017	
	Publish annual regional reports	Wildlife Department (for MOMS -	High	Mid-2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
		Management Oriented Monitoring Systems) Other organisations, such as BirdLife Botswana for other schemes			
	Feed information into the SADC Wildlife Crime Prevention Forum	Wildlife Department (for MOMS - Management Oriented Monitoring Systems) Other organisations, such as BirdLife Botswana for other schemes	High	Mid-2017	
	Add reporting of poisoning incidents as an additional item to ongoing monitoring schemes (MOMS and others which do not possess a “poisoning incident” section)	Wildlife Department (for MOMS - (Management Oriented Monitoring Systems) Other organisations, such as BirdLife Botswana for other schemes	High	Mid-2017	
	Involve local communities in reporting poisoning incidents through regular information and awareness campaigns	NGOs (Birdlife Botswana and others)	High	Ongoing (starting from mid-2017)	
	Involve veterinary service, police, defence, health workers and other appropriate governmental services into the national	Wildlife Department	High	Mid-2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	centralised poisoning reporting system				
	Feed regularly all collected data in the regional report on wildlife poisoning for publishing	Wildlife Department	High	Ongoing	
<i>Step 2: Resolve human-wildlife conflict using multi-stakeholder forums</i>	To finalise, endorse and implement the National Predator Management Strategy	Ministry of Environment	High	Finalisation and endorsement mid-2017 Implementation: ongoing	
<i>Step 3: Develop and disseminate good practice for predator control and enforcement</i>	Develop and agree on information and awareness campaign on wildlife poisoning linked to anti-poaching work	Ministry of Environment Ministry of Agriculture supported by NGOs	High	Mid-2017	
	Implement the agreed information and awareness campaign	Ministry of Environment Ministry of Agriculture supported by NGOs	High	Ongoing (starting from Mid-2017)	
<i>(3.2) Legislative recommendations</i>					
<i>Step 4: create enforcement legislation with effective deterrent mechanisms and infringement penalties</i>	Include the recommendations of the guidelines into the on-going revision processes of the Agrochemicals Act and the Wildlife Act (alignment between the two Acts to be ensured)	Ministry of Agriculture (Agricultural Act) Ministry of Environment (Wildlife Act)	High	Ongoing (End of 2018)	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Ensure that wildlife poisoning is a key component in the UNODC (Office on Drugs and Crime) project on wildlife & forest crime analytic toolkit	Wildlife Department	High	Immediate	
<i>Judiciary training</i>	Regional: SA Wildlife College (Hoedspruit) – wildlife crime course offered to practitioners in the region by collaboration of INTERPOL KAZA (Kavango-Zambezi Trans-Frontier Conservation Area) Regional Police College in Otse (Botswana) – US-funded Intergovernmental wildlife crime enforcement network (US-sponsored)				
(4) VETERINARY PHARMACEUTICALS					
<i>Raise the issue of the ban of import and possession of veterinary diclofenac and issue of mandatory testing of NSAIDs before approval for use and distribution</i>	Raise issue of the ban of import and possession of veterinary diclofenac at SADC with follow up implementation at national level				

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Raise the issue of mandatory testing of NSAIDs before approval for use and distribution to be followed up by a streamlined implementation in each country (e.g. testing in one country to be recognised by all others)				
(5) LEAD AMMUNITION / SHOT AND FISHING WEIGHTS					
<i>(5.2.1) Non-legislative recommendations (Fishing Weights)</i>					
<i>Raise Awareness</i>	Develop an information and awareness campaign for all relevant target groups (lead-containing items)	Ministry of Environment	Medium	End of 2017	
<i>(5.2.2) Legislative recommendations</i>					
<i>Introduce ban on lead fishing weights</i>	Implementation in the ongoing revision of the fisheries regulations	Wildlife Department	High	Immediate	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
MADAGASCAR					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>Include bird criteria in the Rotterdam Convention</i>	Workshops, education, capacity building, national committee establishment, and legislation	National designated authorities for the Rotterdam Convention	High	2017/2018	
<i>Develop integrated pest management (IPM)</i>	Targeted for rice cultivation (1.1 million ha) since 1983; to be developed for sugar cane and cotton	Ministry of Agriculture with the support of FAO	High	2017	Promote the use of these methods over the years
<i>Describe and use the traditional methods</i>	Sensibilisation, awareness in the priority areas (Site of migration of the Birds) (workshop, posters, media, marionette, radio, television, booklet, guide post) Collaboration with the ONG Voarisoa (which had already identified the practices at the national level)	Ministry of Agriculture	Medium	Inventory of the traditional methods done	
<i>(1.2) Legislative recommendations</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Stop the use of Carbofuran</i>	Prohibition	Ministry of Agriculture and homologation commission	High	2017	
(2) RODENTICIDES					
<i>Not a real issue for the country except for human health in the cities and villages; no permanent baiting takes place</i>					
(3) POISON BAITS					
<i>(3.1) Non-legislative recommendations</i>					
<i>Assess the impact of the campaign to protect peanuts cultures during the dry season</i>	Study	Ministry and University	Medium	2017 – assessment done	
<i>POISON BAIT VULTURES - It is not an issue for the country as Vultures are scarce if present</i>					
(4) VETERINARY PHARMACEUTICALS					
<i>Not an issue in the country as the carcasses are not left in the wild for diverse reasons</i>					
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					
<i>Legislative recommendations</i>					
<i>Ban outside the protected areas (no hunting in protected areas)</i>	Legislation	Ministry in charge of hunting	Medium based on the	2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
			number of hunters		
<i>(5.3) Industrial pollution from lead mining and smelting processes</i>					
<i>Ban release of lead into the wider environment where migratory birds may be exposed directly from the environment or indirectly from consuming ammunition fragments within prey and carrion.</i>	Environmental impact assessment studies	Ministry of Environment	Medium	Already applicable	<u>Bio-accumulated lead in invertebrates and small vertebrates may play another but likely less significant role</u>
<i>(5.4) Leaded paint</i>					
<i>Remove the toxic source and/or limiting access to lead painted structures</i>	Lead paint no longer used in the country	Ministry of Industry and Ministry of Trade	Medium	2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
MAURITIUS					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>Shift to an organic agriculture through dissemination of best practices and incentives</i>	Action plan for an ecological agriculture (vegetables and sugar cane)	Ministry of Agriculture	High	2017-2020	Plan implemented in 5 cooperatives nearby the Ramsar site
<i>Include bird criteria in the Rotterdam Convention</i>		National designated authorities for the Rotterdam Convention	High		
<i>(1.2) Legislative recommendations</i>					
<i>Prohibit the use of neonicotinoids</i>	Legal text	Ministry of Agriculture and homologation commission	High	Text to be published by the end of 2017	
(2) RODENTICIDES					
<i>Not a real issue for the country except for human health in the cities and villages; no permanent baiting takes place</i>					
<i>(2.1) Non-legislative recommendations</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Use best practice to prevent and manage rodent irruptions</i>	Public awareness and poisoning campaigns	Health authorities as it is mainly an issue in human's settlements	Medium		Legislative actions not foreseen
(3) POISON BAITES					
<i>(3.1) Non-legislative recommendations</i>					
<i>Assess the impact of the seasonal campaigns towards the corvids around the Ramsar site</i>	Study	Sanitary health department and Ministry of Environment	Low as no incident has been reported	Assessment done	
(4) VETERINARY PHARMACEUTICALS					
<i>Not an issue in the country as the carcasses are not left in the wild for diverse reasons</i>					
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					
<i>(5.4) Leaded paint</i>					
<i>Remove the toxic source and/or limiting access to lead painted structures</i>	Lead paint no longer used in the country				Not an issue for waterbirds; Hunting is already prohibited in the Ramsar zone

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
MOZAMBIQUE					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<p><i>Identify local risk hot spots and work with local stakeholders to reduce risk</i></p> <p>Hotspots are Gaza and Tete Provinces (First Phase)</p>	<p>Organize meetings with local farmers and villagers for sensitization on the risk associated with birds' pesticide spraying</p>	<p>National Directorate of Agriculture and Forestry - Plant Protection Department; Provincial Agrarian Extension Services</p> <p>Environment quality agency, Ministry of Environment and Ministry of Land, and Rural Development</p>	<p>High</p>	<p>End 2018</p>	<p>This activity may be done during Quelea breeding and colony location (January to April)</p> <p>Bird pesticide Spraying is a deliberate action taken by local farmers to fight the bird agricultural pests. An investigation is needed to identify the chemicals and correctly deter this practice.</p> <p>Additionally, listed as recommendations:</p> <p>Certification Schemes for Integrated Pest</p>

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
					Management (IPM) Public support
	Training of local farmers and agriculture extension (to provide farmers with adequate knowledge in the use of alternative techniques using specific nets for Quelea birds control)	National Directorate of Agriculture and Forestry - Plant Protection Department; Provincial Agrarian Extension Services Environment Quality Agency, Ministry of Environment and Ministry of Land, and Rural Development	High	End 2018	
	Update the list of authorized pesticides –Knowledge about insecticides used needs to be identified.	National Directorate of Agriculture and Forestry - Plant Protection Department; Provincial Agrarian Extension Services Environment quality agency, Ministry of Environment and Ministry of Land, and Rural Development	High	End 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Collect information on distribution of industrial farmers and the types of pesticides used	National Directorate of Agriculture and Forestry - Plant Protection Department; Provincial Agrarian Extension Services Environment quality agency, Ministry of Environment and Ministry of Land, and Rural Development	High	End 2018	
	Maputo Bay harbor is a reproduction site for some birds but also hosts some activities such as cement factory and other factories where toxic waste negatively affects/kills bird species. More information will be required from the Agriculture Ministry and University (Eduardo Mondlane).	National Directorate of Agriculture and Forestry - Plant Protection Department; Provincial Agrarian Extension Services Environment quality agency, Ministry of Environment and Ministry of Land, and Rural Development	High	End 2018	
<i>(1.2) Legislative recommendations</i>					
<i>Improve global governance and risk assessment: include migratory bird criteria in the Rotterdam Convention to reduce risk of imports of products highly toxic to birds</i>	Elimination of obsolete pesticides in the framework of the Rotterdam Convention is ongoing (evaluation, whether any of these eliminated	Ministry of Agriculture and Ministry of Land, Development and Rural Development	Medium	Ongoing	Under Rotterdam Convention

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	pesticides are relevant to migratory bird poisoning)				
	Seizure of identified obsolete pesticides from ware houses, etc. done at the provincial level (stored at appropriate place in Maputo for export/safe disposal)	Ministry of Agriculture and Ministry of Land, Development and Rural Development	Medium	Ongoing	Under Rotterdam Convention
<i>Substitute (remove from the market and replace with environmentally safe alternatives) substances of high risk to birds and incentivize alternatives, such as integrated pest management; introduce mandatory evaluation mechanisms for existing and new products</i>	Update list of harmful pesticides and alternative pesticides in relation to migratory bird concerns, generally and also in the framework of the on-going Rotterdam Convention activity	Ministry of Agriculture in collaboration with Ministry of Environment and Commerce	High	2018	
	Raise awareness of the target groups (vendors, farmers and others) on the list of harmful and alternative pesticides including on the issue of migratory bird poisoning by pesticides; incorporation in the individual ministerial sectoral plans to get the necessary endorsement	Ministry of Agriculture in collaboration with Ministry of Environment and Commerce	High	2018	
<i>Adopt integrated pest management at national level and provide incentives for farmers, such as certification schemes and public support</i>	Inquiry whether Integrated Pest Management is among the actions promoted/implemented by the Ministry of Agriculture	Ministry of Agriculture	Low	End 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Forwarding inquiries to the Ministry of Agriculture for further information				
(2) RODENTICIDES					
<i>(2.1) Non-legislative recommendations</i>					
<i>Use best practice to prevent and manage rodent irruptions (minimizing second generation anticoagulant rodenticide use) as large numbers of raptors in grassland areas may be impacted</i>	Inventory on the rodenticides used and frequency of use because information on rodenticide use is limited up to now.	Liaise with importing industries Ministry of Agriculture; Ministry of Commerce; Ministry of Environment	Low	Starting from mid-2017	
	Update national check lists of harmful rodenticides and identify which of them are first and/or second generation rodenticides	Liaise with importing industries Ministry of Agriculture; Ministry of Commerce; Ministry of Environment	Low	Starting from mid-2017	
<i>(2.2) Legislative recommendations</i>					
Generally	Establish a law on the use of rodenticides				
<i>Restrict/ban SGAR use in open field agriculture</i>	Ban on the import and use of difethilone 0,025 g/Kg for rats control; this will be immediately implemented by the National Regulatory of Pesticides already created	Ministry of Agriculture and Ministry of Commerce	High	Immediately	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Stop permanent baiting: apply rodenticides only when infestations are present followed by bait removal (could also be Non-legislative, e.g., change of business model)</i>	Ministry of Agriculture is sensitizing the population on avoiding the use of permanent baiting for rodents Further information will be inquired on how this is being done by the Ministry of Agriculture	Led by the Ministry of Agriculture	High	Ongoing	
(3) POISON BAIT					
<i>(3.1) Non-legislative recommendations</i>					
<i>Step 1: Identify drivers of the problem and publish regular reports on poisoning incidents</i>	Studies to gather detailed information (there are only anecdotal observations so far)	Ministry of Agriculture, in collaboration with universities	Medium	2017	
<i>Step 2: Resolve human-wildlife conflict using multi-stakeholder forums</i>	Encourage/promote focus on birds in the existing national forum for human-wildlife conflict issues (which involves the Ministry of Environment, Rural Development, Agriculture, Tourism, NGOs, local communities in conservation areas, created under the recommendation of the government) and the strategic plan for human-wildlife conflict resolution			Ongoing	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITONAL NOTES
	(The focus has been so far on bigger mammals, e.g. elephants, lions, etc.).				
<i>Step 3: Education – develop and disseminate good practice for predator control and enforcement</i>	Education and awareness raising at all levels (technical experts, local communities, government agencies, etc.)				
<i>(3.2) Legislative recommendations</i>					
<i>Step 4: Ensure legislative/regulatory effectiveness: create enforcement legislation with effective deterrent mechanisms and infringement penalties</i>					
<i>Enhance enforcement and deterrence mechanisms relating to the use of poison-baits</i>	Enhance enforcement and deterrence mechanisms relating to the use of poison-baits	Request information from Ministry of Agriculture			
	Suspend/withdraw hunting licenses for persons and areas where illegal poison-bait activity occurs	Request information from Ministry of Agriculture			
	Establish sentencing guidelines to ensure consistent and effective outcomes	Request information from Ministry of Agriculture			
	Increase capacity and capability for enforcement with focused resourcing	Request information from Ministry of Agriculture			
	Introduce vicarious liability	Request information from Ministry of Agriculture			

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Restrict access to highly toxic substances through stronger enforcement of supply chain: identify the ways poisons are acquired and why the established control mechanisms do not prevent their illegal use</i>	Gather information by closer investigations.	Request information from Ministry of Agriculture			
	Remove grace periods for banned products	Request information from Ministry of Agriculture			
	Establish consistent product removal policies between countries	Request information from Ministry of Agriculture			
	Restrict access to certified professionals only	Request information from Ministry of Agriculture			
(4) VETERINARY PHARMACEUTICALS					
<i>(4.1) Non-legislative recommendations</i>					
<i>(4.2) Legislative recommendations</i>					
<i>Prohibit the use of veterinary diclofenac for the treatment of livestock and substitute with readily available safe alternatives, such as meloxicam</i>	Include “not for veterinary use” on labels of human diclofenac				
	Increase supply and availability of “safe” veterinary products and provide subsidies to those unable to afford veterinary care				

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
Develop methods to <i>reduce likelihood of illegal use of human pharmaceuticals</i> (could also be Non-legislative)	Introduce mandatory reporting for pharmacies to third-party regulatory bodies and require pharmacies to record sale and purchaser details				
	Require identification to purchase human diclofenac				
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					
<i>(5.1) Lead ammunition (including shot, pellets and bullets)</i>					
<i>(5.1.1.) Non-legislative recommendations</i>					
<i>(a.) Raise awareness of lead poisoning</i> , particularly at key sites for migratory waterbirds; <i>promote leadership from ammunition users</i> , including wildlife managers, on non-toxic alternatives and best practice	Investigation and evaluation of information on the use and/or ban of lead shot by the relevant ministry				
<i>(5.1.2) Legislative recommendations</i>					
<i>Remediation of lead ammunition-contaminated environments</i>	Create legislative processes to facilitate remediation				
<i>(5.2) Lead fishing weights</i>					
<i>(5.2.1.) Non-legislative recommendations</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Raise awareness of the issue of lead poisoning from fishing weights and solutions to the problem</i>	Further survey to investigate the use of lead fishing weights and the magnitude of use in the country as a basis for following concrete activities	Ministry of Fisheries Advice can be sought from external advisors	Low	Start mid-2017	
<i>(5.2.2) Legislative recommendations</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
NAMIBIA					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>Identify local risk hot spots and work with local stakeholders to reduce risk</i>	Undertake a study to identify possible areas where insecticide (including DDT for malaria control) application constitutes a conservation issue for migratory birds (to be linked to Green Schemes programme)	Ministry of Agriculture in cooperation with Ministry of Environment	Medium	End of 2018	
<i>(1.2) Legislative recommendations</i>					
<i>Initiate a legislative process</i>	Undertake a review of the relevant current legislation and produce recommendations for amendments	Ministry of Environment (in cooperation with other sectorial ministries)	High	End of 2017	
	Amending the relevant legislation following the recommendations of the review mentioned above	Responsible sectorial Ministries	High	End of 2018	
(2) RODENTICIDES					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>(2.1) Non-legislative recommendations</i>					
	Extend the survey and study under priority 2.1 of Insecticides above also to rodenticides	Ministry of Environment (in cooperation with other sectorial ministries)	High	End of 2018	
(3) POISON BAITS					
Generally	Establish a centralised national reporting system on wildlife poisoning under the Ministry of Environment	Ministry of Environment	High	Mid-2017	
<i>(3.1) Non-legislative recommendations</i>					
<i>Step 1: Identify drivers of the problem and publish regular reports on poisoning incidents</i>	Establish a centralised national reporting system on wildlife poisoning under the Ministry of Environment	Ministry of Environment	High	Mid-2017	
	Add reporting of poisoning incidents through the regional protocol as an additional item to ongoing monitoring schemes, such as Event Book and others	Ministry of Environment (for Event Book) NGOs for other schemes	High	Mid-2017	
	Involve local communities in reporting poisoning incidents through regular information and awareness campaigns	Ministry of Environment involving other sectorial ministries as well as NGOs (tbc)	High	Ongoing (starting from mid-2017)	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Involve veterinary service, police, defence, health workers and other appropriate governmental services into the centralised poisoning reporting system	Ministry of Environment involving other sectorial ministries	High	Mid-2017	
	Feed regularly all collected data for publishing in the regional report on wildlife poisoning	Ministry of Environment	High	Ongoing	
<i>Step 2: Resolve human-wildlife conflict using multi-stakeholder forums</i>	It is being addressed	Ministry of Environment	High	Ongoing	
<i>Step 3: Education – develop and disseminate good practice for predator control and enforcement</i>	Continue implementing the ongoing information campaign	Ministry of Environment, Ministry of Agriculture, NGOs	High	Ongoing	
<i>Step 4: create enforcement legislation with effective deterrent mechanisms and infringement penalties</i>	Actions linked to 1.2 under Insecticides (to review and recommend amendments to the legislation)	Ministry of Environment, Ministry of Agriculture, NGOs	High	Ongoing	
(4) VETERINARY PHARMACEUTICALS					
<i>Identify the problems and amend legislation to prohibit use of these drugs</i>	Linked up to activity 1.2 under insecticides (review and revision of legislation)	Ministry of Agriculture	High	End of 2018	
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
Generally	Linked up to activity 3.2 under insecticides (review and revision of legislation)	Ministry of Agriculture	High	End of 2018	
<i>Non-legislative recommendations</i>					
<i>Raise Awareness</i>	Develop an information and awareness campaign for all relevant target groups (lead-containing items)	Ministry of Environment & Ministry of Fisheries	Medium	End of 2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
SEYCHELLES					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
Promote best practices	Dissemination of these best practices	Ministry of Agriculture/ Seychelles Pesticides Board	Medium	2017	(Promote the use of these practices over the years)
(2) RODENTICIDES					
Control the use of rodenticides to the general public	Strengthen the pesticide act	Ministry of health and Seychelles pesticide board	High	2017-2020	
(3) POISON BAITS					
Generally: Only for stray dogs: no action requested					
<i>POISON BAITS VULTURES - It is not an issue for the country as Vultures are scarce if present</i>					
(4) VETERINARY PHARMACEUTICALS					
<i>Not an issue in the country as the carcasses are not left in the wild for diverse reasons</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					
<i>(5.1) Lead Ammunition:</i> Not an issue, no hunting					
<i>(5.2) Lead Fishing Weights</i>					
	Not a real issue on wetlands; evaluation of the impact of fishing weights along the coast in Seychelles where this activity is popular needed	Ministry of Environment	Low	2017 - 2020	
<i>(5.4) Leaded Paint</i>					
<i>Remove the toxic source and/or limiting access to lead painted structures</i>	Lead paint no longer used in the country	Ministry of Environment	Low	2017 - 2020	

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SOUTH AFRICA					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>Increased capacity, awareness and means to investigate poisoning events</i> (vultures, raptors, cranes and other bird species) to identify toxins and quantify the extent of loss	Increased capacity of rapid response teams to react to poisoning events, increased training of anti-poisoning officials (community of practice) to respond to poisoning events and address the issue appropriately.	Department of Environmental Affairs (DEA) (write a report and recommendations to Department of Agriculture, Forests and Fisheries, DAFF). DEA, DAFF, provinces for implementation	High	Report from DEA: end of 2017 Implementation: end of 2018 and Ongoing	
	Raising awareness within community of practice and general public (farmers, urban and rural areas)	DEA, DAFF, Department of Health and NGOs	High	Ongoing	
<i>Establishment of wildlife anti-poisoning forum</i>	ToR to be established at first meeting. DEA to invite stakeholders to first meeting.	DEA, DAFF	High	First meeting early 2017	
	DEA to establish sub-group within forum responsible for preventions of bird poisoning	DEA	High	First meeting early 2017	
<i>(1.2) Legislative recommendations</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Liaise with DAFF and Department of Health to restrict the import of legal pesticides that are harmful to birds</i>	DEA to liaise with DAFF to restrict import	DEA to liaise with Registrar's office DAFF, Department of Health	Medium	End 2017	
<i>Liaise with Customs and Excise; International Borders (SAP Border Police) to restrict the import of illegal pesticides that are harmful to birds</i>	Enforcement at customs and international borders	DEA to liaise with SAP; border control and customs	High	Ongoing	
<i>Control and phase out of existing stock (e.g. aldicarb)</i>	Gap analysis (comparison of actual performance with desired performance) by Forum and follow up	DEA through Forum	Medium	End 2017	
<i>Enhancement of enforcement at poisoning events</i>	Increased response to poisoning events	DEA	Medium	End 2017	
	Prosecution, increased penalties for poisoning to act as a sufficient deterrent	DEA; Department of Justice	High	DEA to follow up end of 2017; Implementation end of 2017	
	Increased training of prosecutors, poisoning specialists and specialised units responsible for enforcement;	DEA; Department of Justice	High	DEA to follow up end of 2017; Implementation end of 2017	
<i>Determine and enhance the implementation of the current Pest Management Policy (Act 36, 1947)</i>	Determine implementation timeframes; enhance implementation; enquire about possible review and update	DEA to liaise with DAFF; also function of Forum	High	End 2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Advocate viable alternatives to the use of insecticides (harmful substances)</i>	Advocate bio-farming, biological control, organic substances	DEA to initiate process with DAFF; DWAS; NGOs	High	Ongoing	
	Develop a framework of incentives for farmers	DEA through Forum	High	End 2017	
<i>Quelea Control</i>		DAFF and Provincial conservation authorities and relevant conservation entities	Low	Ongoing	
(2) RODENTICIDES					
<i>Expand available documents on best practice for rodent control</i>	Develop comprehensive Best Practice Guidelines	NGOs	High	End 2017	
<i>Advocate benefits of alternatives to ARs</i>	Measure the impact of the use of alternatives to ARs to showcase the advantages of use of alternatives	NGOs to initiate post-graduate study (Agricultural Research Council)	Medium	End 2018	
	Education on waste management to reduce the need for rodent control	All stakeholders (DEA; local government; NGOs)	High	Ongoing	
<i>Integration of traditional measures for the control of gerbils</i>	Research on the use of traditional measures (biological control) to control gerbil numbers as an alternative to the use of ARs	NGOs to initiate post-graduate study (Agricultural Research Council)	Medium	End 2018	It would be useful to document the results and publish them.

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Review registration of rodenticides</i>	Liaise with Registrar to review registration of rodenticides (ARs)	DEA to liaise with DAFF	Medium	End 2017	
(3) POISON BAITs					
<i>Collate all information on poisoning incidents at a national level</i>	Collate information of poisoning incidents in a national/regional database	DEA and SANBI; DAFF	Medium	Ongoing	
	Media publicity around poisoning incidents	ALL	High	Ongoing	
<i>Increased capacity, awareness and means to investigate poisoning events (vultures, raptors, cranes and other bird species) to identify toxins and quantify the extent of loss</i>	Increased capacity of rapid response teams to react to poisoning events, increased training of anti-poisoning officials (community of practice) to respond to poisoning events and address the issue appropriately	DEA (write a report and recommendations to DAFF). DEA, DAFF, provinces for implementation	High	Report from DEA: end of 2017 Implementation: end of 2018 and Ongoing	
	Raising awareness within community of practice and general public (farmers, urban and rural areas) around deliberate and indiscriminate poisoning	DEA, DAFF, Department of Health and NGOs	High	Ongoing	
<i>Enhancement of enforcement at poisoning events, whether indiscriminate or deliberate</i>	Increased response to poisoning events	DEA	High	Ongoing	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	Prosecution, increased penalties for poisoning to act as a sufficient deterrent	DEA; Department of Justice	High	DEA to follow up end of 2017; Implementation end of 2017	
	Escalated penalties for deliberate poisoning (i.e. poaching, use in traditional medicine, food source)	DEA; Department of Justice	High	DEA to follow up end of 2017; Implementation end of 2017	
	Escalated penalties for the possession of bird body parts (use in traditional medicine/muthi trade)	DEA; Department of Justice	High	DEA to follow up end of 2017; Implementation end of 2017	
	Increased training of prosecutors, poisoning specialists and specialised units responsible for enforcement; need for specific environmental courts and judges	DEA; Department of Justice	High	DEA to follow up end of 2017; Implementation end of 2017	
<i>Promote implementation of Norms and Standards for Damage Causing Animals</i>	Determine implementation timeframes of current Norms and Standards; ensure that poisoning issues (deliberate and indiscriminate) are taken into account in Norms and Standards	DEA to follow up	Medium	End of 2017	
<i>Restricted access to availability of highly toxic substances</i>	Liaise with Register's office to restrict availability of highly toxic substances	DEA to follow up with DAFF	High	End 2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Promote sustainable farming i.e. stop poison-baits, to resolve human-wildlife conflict using multi-stakeholder forums</i>	Multi-stakeholder engagement to prevent the use of poison baits; promotion of sustainable farming and the value of ecosystem services	ALL (DEA; DAFF and NGOs)	High	Ongoing	
<i>Stakeholder engagement around traditional beliefs and human health</i>	Investigate the possibility of changing cultural perception	DEA to engage with traditional healer's associations (through assistance of Department of Health) and NGOs	High	Mid 2017; ongoing	The identification and targeting of community leaders is crucial.
	Youth education programmes	DEA to liaise with Department of Education and Tertiary Institutions (Environmental and Natural Sciences – Zoology etc.) and NGOs	High	Mid 2017; ongoing	
(4) VETERINARY PHARMACEUTICALS					
<i>Continue to prohibit the use of veterinary diclofenac and other veterinary pharmaceuticals listed in the region</i>	Although the use of veterinary diclofenac is currently prohibited, it needs to be ensured that this regulation is not overruled in future	SAVC (South African Veterinary Council and Association); DAFF (Department of Animal Health); Onderstepoort Veterinary Institute	High	Ongoing	
<i>Enhance surveillance of animal carcasses (not only ungulate carcasses)</i>	Surveillance of all animal carcasses specifically for visceral gout (kidney failure) to check for likelihood of use of human	SAVC (South African Veterinary Council and Association); DAFF (Department of Animal Health); Onderstepoort Veterinary Institute	High	Ongoing	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	pharmaceuticals (including veterinary diclofenac)				
<i>Raising stakeholder awareness</i>	Inform veterinarians of risk of use of high risk pharmaceuticals. Veterinarians to identify pharmaceuticals. Determine whether veterinarians are continuously informed	Letter from DEA and DAFF to SAVC. Implementation: SAVC (South African Veterinary Council and Association); DAFF (Department of Animal Health); Onderstepoort Veterinary Institute; NGOs	High	Letter DEA and DAFF to SAVC Mid 2017; Implementation ongoing	
	Continued awareness with livestock and game owners of the use of potential of harmful pharmaceuticals	Letter from DEA and DAFF to SAVC. Implementation: SAVC (South African Veterinary Council and Association); DAFF (Department of Animal Health); Onderstepoort Veterinary Institute; NGOs; Farmers Associations	High	Letter DEA and DAFF to SAVC Mid 2017; Implementation ongoing	
	Reduce likelihood of illegal use of human pharmaceuticals	Letter from DEA and DAFF to SAVC. Implementation: SAVC (South African Veterinary Council and Association); DAFF (Department of Animal Health); Onderstepoort Veterinary Institute; NGOs; Farmers Associations	High	Letter DEA and DAFF to SAVC Mid 2017; Implementation ongoing	
<i>Introduce mandatory safety-testing of NSAIDs</i>	Introduce mandatory safety-testing of NSAIDs prior to legislated use	Letter from DEA and DAFF to SAVC. Implementation: SAVC (South African Veterinary Council and	High	Letter DEA and DAFF to SAVC Mid 2017;	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
		Association); DAFF (Department of Animal Health); Onderstepoort Veterinary Institute; NGOs; Farmers Associations		Implementation ongoing	
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					
<i>Raise awareness of lead poisoning originating from lead ammunition</i>	Raise awareness amongst different stakeholders (hunters)	National Hunting Associations (PHASA; CHASA; Gun Owners Association) SA Wingshooters;	Medium	End 2018	
		DEA and NGOs to target local manufacturers and importers of ammunition	Medium	End 2018	
<i>Phase-out the use of lead ammunition across all habitats</i>	Investigate options and costs of alternatives to lead ammunition; availability of alternatives at affordable rates	DEA and NGOS to liaise with importers of ammunition (Hunters Association; Gun Owners Association)	Medium	End 2018	
	Assess the extent of lead in environment (wetlands and terrestrial) coming from all different sources of lead and in particular from gunshot sources.	NGOs to initiate post-graduate study; Department of Water Affairs; Tertiary institutions (post-graduate study)	Medium	End of 2018	
	Phasing out of lead ammunition; Regulate the use of alternatives to lead ammunition. Follow	DEA	Medium	Initial documentation by end of 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	example of Eastern Cape Parks.				
<i>Raise awareness amongst different stakeholders of lead poisoning from fishing weights</i>	Investigate possibilities to raise awareness and interact with the Angling Associations	DEA and NGOs to negotiate with Angling Associations	Medium	End 2018	
	Promote the developments of Angler's code of practise	DEA and NGOs to negotiate with Angling Associations	Medium	End 2018	
<i>Promote responsible disposal of paint sweepings containing discarded lead during ship painting in dry docks</i>	Dispose of discarded lead in old paint from ships on land appropriately, avoiding spillage in sea (in harbour).	Transnet National Ports Authority	Medium	End 2018	
<i>Promote the use of lead-free paints</i>	Analysis of available leaded and non-leaded paints at a national scale	NGOs to interact with paint industry e.g. South African Paint Manufacturers Association	Medium	End 2018	Suggested to link this procedure with existing UN/international processes.
	Pressure on industry to replace leaded paints with alternatives	NGOs to interact with paint industry e.g. South African Paint Manufacturers Association	Medium	End 2018	Suggested to link this procedure with existing UN/international processes.

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
SWAZILAND					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>Identify local risk hot spots and work with local stakeholders to reduce risk</i>	Hot spots databases are existing	Ministry of Agriculture and Environment authorities and National Trust Commission	High	2017 2018 - Chemical legislation passed in Swaziland	High priority “but funds permitting; more fund raising at UNEP intended”
<i>(1.2) Legislative recommendations</i>					
<i>Include migratory bird criteria in the Rotterdam Convention to reduce risk of imports of products highly toxic to birds</i>	Party to the Rotterdam Convention and trying to implement the issue nationally Mainstreaming into national legislation for Rotterdam Convention implementation	Ministry of Agriculture and Ministry of Tourism and Environmental Affairs authorities and National Trust Commission	Medium	Process foreseen by 2020	
<i>Substitute (remove from the market and replace with environmentally safe alternatives) substances of high risk to birds and incentivise alternatives; introduce mandatory evaluation mechanisms for existing and new products</i>	Awareness campaigns and promotion of legislations for phasing out of substances	Ministry of Commerce, Industry and Trade	Low	2018	Priority low because of a lack of resources and personnel capacities for legislation in this issue; but lobbying intended to include

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
					it in the new legislation
<i>Adopt integrated pest management at national level and provide incentives for farmers, such as certification schemes and public support</i>	Already performed by Ministry of Agriculture together with environmental authority	Ministry of Tourism and Environmental Affairs and Ministry of Agriculture			
(2) RODENTICIDES					
<i>(2.1) Non-legislative recommendations</i>					
<i>Use best practice to prevent and manage rodent irruptions</i>	Mostly crop protection after harvest; use of storage facilities in the field. <i>Ecorats</i> project is in place for ecologically sound methods	Ministry of Agriculture and University	Medium	2017/2018	
<i>(2.2) Legislative recommendations</i>					
<i>Restrict/ban SGAR use in open field agriculture</i>	Awareness and limits to institutional capacity in monitoring	Ministry of Agriculture and University	Medium	2017	Priority Medium; it is intended to include rodenticides in the general chemicals legislation
<i>Stop permanent baiting</i>	Already prohibited			Already in place	
(3) POISON BAITS					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Judiciary training</i>	Wildlife crime courses with involvement of institutions and authorities: - African college Huoispreat - Interpol - Kaza (Kavango Zambesi Trans Frontier Conservation Area) - regional police college funded by the US in Botswana - intergovernmental wildlife crime enforcement network funded by the US - monitoring and data front: regional protocol to report - publish report - feed info on SADC fund				
<i>(3.1) Non-legislative recommendations</i>					
<i>Step 1: Identify drivers of the problem and publish regular reports on poisoning incidents</i>	Existing national database (which reports low frequency and only isolated cases)	Big Game Parks, National Trust Commission and Environment authorities and Ministry of Agriculture	Low	2018	
<i>Step 2: Resolve human-wildlife conflict using multi-stakeholder forums</i>	Community outreach programmes and assistance in poverty reduction. GEF programme to monitor those issues; involvement of communities; species included: hyenas, warthogs and bush pigs, occasionally leopards and goats	Big Game Parks, National Trust Commission and Ministry of Agriculture	High	2017	Various GEF funded projects are ongoing in Swaziland on various topics: Biodiversity, Climate Change, POPs and Multi Focal Areas. There

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
					might be an opportunity to form linkages for specific activities.
<i>Step 3: Develop and disseminate good practice for predator control and enforcement</i>	More targeted awareness campaigns and multi-stakeholder fora	Big Game Parks, National Trust Commission and Ministry of Agriculture	Medium	2018	
<i>(3.2) Legislative recommendations</i>					
<i>Step 4: Create enforcement legislation with effective deterrent mechanisms and penalties</i>	Existing legislation, which recognizes poison baits as criminal action; cf. also Zimbabwe		Medium	2018	
<i>Enhance enforcement and deterrence mechanisms relating to the use of poison-baits</i>		Joint operation of Ministry of Agriculture, Police and Ministry of Home Affairs National Trust Commission, Police Ministry of Justice and Constitutional Affairs (same as Zimbabwe)	Medium	Ongoing but 2017	Process of revision of legislation
<i>Restrict access to highly toxic substances through stronger enforcement of supply chain: identify the ways poisons are acquired and why the established control mechanisms do not prevent their illegal use</i>	Already illegal; Game Act restricts use. Implementation as a part of domestication of the Rotterdam Convention and implementation of chemicals legislation	Big game park, Ministry of Agriculture	Medium	2018	

PRIORITIZED ACTIVITIES		MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Poison Baits - Vultures</i>				High	2017	
(4) VETERINARY PHARMACEUTICALS						
Generally	The respective pharmaceutical substances are currently only available for human	Monitor possible changes to the present situation		Low	Ongoing 2017	
<i>(4.1) Non-legislative recommendations</i>						
<i>(4.2) Legislative recommendations</i>						
<i>Prohibit the use of veterinary diclofenac for the treatment of livestock and substitute with readily available safe alternatives, such as meloxicam</i>		Veterinary Diclofenac will be included in the chemicals legislation in order to avoid any start of use			2018, but process ongoing and should be completed	
<i>Reduce likelihood of illegal use of human pharmaceuticals</i>		None; not relevant at the moment				
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS						
<i>(5.1) Lead ammunition</i>						
		Trophy hunting: Lead will be included in the chemicals legislation		Medium	2018 under proposed new chemicals legislation	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Raise awareness of lead poisoning; promote leadership from ammunition users</i>	Produce a leaflet targeted to trophy hunters coming from abroad	Big game parks, police, National Trust Commission	Medium	2018	
<i>Phase-out the use of lead ammunition across all habitats (wetland and terrestrial) with non-toxic alternatives within the next three years</i>	Integrate lead in the upcoming chemicals legislation that is still under discussion; follow up on current ongoing processes of banning of lead paint.	Departments of Health Agriculture, Labour and Social Security Environment and Industry Commerce and Trade for importation and Defence	Medium	2018	
<i>Remediate lead ammunition-contaminated environments</i>	None; not relevant				
<i>(5.2) Lead fishing weights</i>					
not relevant				A new chemicals legislation is under discussion that is supposed to take heavy metals such as lead and mercury into consideration. Expected submission date in 2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Raise awareness of the issue of lead poisoning from fishing weights</i>	Produce a leaflet and awareness material targeted to anglers and fishermen	Big game parks, police, National Trust Commission	Medium	2018	
<i>Promote anglers' codes of practice</i> <i>Phase-out the use of lead fishing weights in areas where migratory birds are shown to be particularly at risk i.e. freshwater habitats, (excluding fishing weights used in coastal areas where there are significant knowledge gaps and further research needed) with non-toxic alternatives, within the next three years</i>		Departments of Health, Agriculture, Labour and Social Security Environment and Industry, Commerce and Trade for importation and Defense.	Low	2018	
<i>(5.3) INDUSTRIAL POLLUTION FROM MINING AND SMELTING PROCESSES</i>					
<i>Ban release of lead into the wider environment where migratory birds may be exposed directly or indirectly via bio-accumulated lead in invertebrates and small vertebrates</i>		Ministry of Environment and Natural Resources	Low	2018, but process might be longer	
<i>(5.4) LEADED PAINT</i>					
<i>Remove the toxic source and/or limiting access to lead painted structures</i>	Not illegal. Inventory done on lead in paint and phasing-out plan under discussion; funds are being sought from Sichem		Medium	2018, but foreseen 2020	Sichem: manufacturer and transporter of special chemicals
<i>(5.5) OTHER SOURCES OF DISCARDED LEAD</i>					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
ZIMBABWE					
(1) INSECTICIDES					
<i>(1.1) Non-legislative recommendations</i>					
<i>Identify local risk hot spots and work with local stakeholders to reduce risk</i>	Use of existing Hot Spots Databases Targeting and refinement of existing legislation Connect distribution of use of pesticides vs. kills	Ministry of Environment and Ministry of Agriculture	High	Inventory done by 2017	
<i>(1.2) Legislative recommendations</i>					
<i>Include migratory bird criteria in Rotterdam Convention to reduce risk of imports of products highly toxic to birds</i>	Mainstreaming the Rotterdam Convention into national biodiversity legislation Mainstreaming into national policies for the implementation of the Rotterdam Convention	Ministry of Environment and Ministry of Agriculture	High	2017	
<i>Substitute (remove from the market and replace with environmentally safe with alternatives) substances of high risk to birds and incentivise alternatives; introduce mandatory evaluation mechanisms for existing and new products</i>	Awareness raising on the need of phasing out Changes in legislation needed	Ministry of Environment, Ministry of Agriculture and Ministry of Industries and Commerce	Medium	2017	(issues with stocks need to inform people – informal channels would not stop problem of stocks)

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Adopt integrated pest management at national level and provide incentives for farmers, such as certification schemes and public support</i>	At the moment there is a need to establish an inter-ministerial committee driven by Ministry of Environment	Ministry of Environment	High	2017	Have drawn membership from existing environmental and chemicals' committees
(2) RODENTICIDES					
<i>(2.1) Non-legislative recommendations</i>					
<i>Use best practice to prevent and manage rodent irruptions</i>	Development of new strategy	Ministry of Agriculture and Ministry of Environment	High	2017/2018	
<i>(2.2) Legislative recommendations</i>					
<i>Restrict/ban SGAR use in open field agriculture</i>	Existing ban; new strategy necessary to enforce compliance is needed (potentially higher penalties needed). Awareness and institutional capacity in monitoring	Ministry of Environment and Ministry of Agriculture	Medium	2017	
<i>Stop permanent baiting</i>	Already prohibited			Already in place	
(3) POISON BAITS					

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Judiciary training</i>	Wildlife crime courses with involvement of institutions and authorities: - African college Huoispreat - Interpol - Kaza (Kavango Zambesi Trans Frontier Conservation Area) - regional police college funded by the US in Botswana - intergovernmental wildlife crime enforcement network funded by the US - monitoring and data front: regional protocol to report - publish report - feed info on SADC fund	Ministry of Environment, Ministry of Agriculture & Ministry of Home Affairs	Medium	2018(Ongoing)	
<i>(3.1) Non-legislative recommendations</i>					
<i>Step 1: Identify drivers of the problem and publish regular reports on poisoning incidents</i>	It is illegal to kill; the problem can be related to the animal control strategy; parks and wildlife authorities to be approached with their personnel. Communities around parks show low frequency of illegal killing including incidents of use of poison baits	Ministry of Environment, Water and Climate	High	2017	
<i>Step 2: Resolve human-wildlife conflict using multi-stakeholder forums</i>	Existing awareness and multi-stakeholder campaigns (communities close to park areas and important bird	Ministry of Environment Ministry of Agriculture for wildlife poisoning and	High	2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
	areas). 'Campfire Programme' to showcase the benefits to communities from wildlife	defending crops from elephants and birds			
<i>Step 3: Develop and disseminate good practice for predator control and enforcement</i>	Extend existing strategies (e.g. strategy for elephants) in order to avoid use of poison	Ministry of Environment Ministry of Agriculture	Medium	2017	
<i>(3.2) Legislative recommendations</i>					
<i>Step 4: Create enforcement legislation with effective deterrent mechanisms and penalties</i>	<p>Legislation existing, recognizing it as criminal action</p> <p>Review the regulatory framework and if necessary develop new instruments. Stricter compliance with exististing instruments</p>	Ministry of Environment, Ministry of Agriculture and police (case of Quelea control Act)	Medium	2017	
<i>Enhance enforcement and deterrence mechanisms relating to the use of poison-baits</i>	<p>Intensifying monitoring and improve institutional coordination</p> <p>Joint operation of the Ministries of Agriculture and Environment and the police and Ministry of Home Affairs</p> <p>Applicable for both Swaziland and Zambia. National authorities, National Trust Commission, police, Ministry of Justice and Constitutional Affairs</p>	Ministry of Environment & Ministry of Agriculture	Medium	Ongoing 2017	Process of revision of legislation

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Restrict access to highly toxic substances through stronger enforcement of supply chain: identify the ways poisons are acquired and why the established control mechanisms do not prevent their illegal use</i>	Restrictions existing, but identification of gaps in the system necessary; monitor efficiency through record of incidents and localities; National database existing at both Ministries		Medium (also years without reports)	2017	
<i>Poison Baits - Vultures</i>	Monitor possible occurrence; Zimbabwe also involving Birdlife Zimbabwe	Ministry of Environment	High	2017	Poaching through poisoning low, rather use of snares or guns, mostly due to human-wildlife conflict and agriculture. secondary effect not targeted to vultures
(4) VETERINARY PHARMACEUTICALS					
Only for humans	Monitor possible changes to the present situation	Ministry of Agriculture	Low	Ongoing 2017	
<i>(4.1) Non-legislative recommendations</i>					
<i>Enhance surveillance of ungulate carcasses in high risk areas for veterinary diclofenac use and develop vulture safe zones</i>	Laboratory tests and increased monitoring	Ministry of Environment & Birdlife Zimbabwe	High	2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Raise stakeholder awareness on alternatives to veterinary diclofenac; promote product stewardship</i>	Consultative meetings	Ministry of Environment and Ministry of Agriculture	Medium	2018	
(4.2) Legislative recommendations					
<i>Prohibit the use of veterinary diclofenac for the treatment of livestock and substitute with readily available safe alternatives, such as meloxicam</i>	Presently not licensed and in case they would be consulted beforehand	Ministry of Agriculture	Low	2018 but process ongoing and should be completed	
<i>Introduce mandatory safety-testing of NSAIDs; VICH/OECD to evaluate and provide guidance on wider risks</i>	Consultative meetings	Ministry of Agriculture	Low	2018	
<i>Reduce likelihood of illegal use of human pharmaceuticals</i>	Not relevant at the moment				
(5) LEAD AMMUNITION / SHOTS AND FISHING WEIGHTS					
(5.1) LEAD AMMUNITION					
Generally	Trophy hunting issue	Ministry of Environment & Ministry of Home Affairs	Low	2018	
<i>Raise awareness of lead poisoning; promote leadership from ammunition users</i>	Produce a leaflet targeted to trophy hunters coming from abroad	Ministry of Environment	Medium	2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Phase-out the use of lead ammunition across all habitats (wetland and terrestrial) with non-toxic alternatives within the next three years</i>	Verification of the status of lead products	Ministry of Environment, Ministry of Defence	Medium	2018	
<i>Remediate lead ammunition-contaminated environments</i>	Not relevant				
(5.2) LEAD FISHING WEIGHTS					
Generally	Monitoring on the release of lead from processing of crocodile skin farms would be necessary (no strategy in place yet)	Ministry of Environment	Low	2018	Zimbabwe possesses a big crocodile skin market. The processes from crocodile skin into leather involve the use of various chemicals including lead.
<i>Raise awareness of the issue of lead poisoning from fishing weights</i>	Produce a leaflet and awareness material targeted to anglers and fishermen	Ministry of Environment	High	2017	
<i>Encourage leadership from angling organisations and manufacturers for non-toxics</i>	Consultative meetings	Ministry of Environment	Medium	2017	
<i>Promote anglers' codes of practice</i> <i>Phase-out the use of lead fishing weights in areas where migratory birds are shown to be particularly at risk i.e. freshwater habitats, (excluding fishing weights used in coastal areas where there are significant knowledge gaps and further research</i>	Prescribe restrictive measures	Ministry of Environment	Low	2018	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>needed) with non-toxic alternatives, within the next three years</i>					
(5.3) INDUSTRIAL POLLUTION FROM MINING AND SMELTING PROCESSES					
<i>Ban release of lead into the wider environment where migratory birds may be exposed directly or indirectly via bio-accumulated lead in invertebrates and small vertebrates</i>	Identification of hotspots of major pollutants. Existing legislation regarding the discharge including areas in which crocodile skin farms are present	Ministry of Environment	Very High	2017 also within wider identification of hotspots of pollution in general	
	Need to monitor compliance	Ministry of Environment	Very High	2017 also within wider identification of hotspots of pollution in general	
(5.4) LEADED PAINT					
<i>Remove the toxic source and/or limiting access to lead painted structures</i>	Lead paint is illegal; No activities foreseen in the period	Ministry of Environment	Low	Ongoing	
(5.5) OTHER SOURCES OF DISCARDED LEAD					
<i>Raise awareness of the hazards posed by discarded lead products to migratory birds</i>	Identification of alternatives for the use of lead in crocodile farms (currently ongoing); consideration of the issue of crocodile export to Europe	Ministry of Agriculture and environment	High	2017	

PRIORITIZED ACTIVITIES	MEANS OF IMPLEMENTATION	RESPONSIBLE FOR IMPLEMENTATION	PRIORITY <i>High, Medium or Low</i>	TIMELINE DEADLINE	ADDITIONAL NOTES
<i>Encourage enforcement of regulatory processes where migratory birds are exposed to lead risks from legal and illegal waste disposal</i>	Intensification of monitoring	Ministry of Environment	High	2017	

ANNEX I – LIST OF PARTICIPANTS
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(24 August 2015, Cape Town, South Africa)

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