SUMMARY OF GUIDANCE ON

AGRICULTURE AND CONSERVATION OF MIGRATORY SOARING BIRDS IN THE RIFT VALLEY/RED SEA FLYWAY

Migratory Soaring Birds Project

www.migratorysoaringbirds.undp.birdlife.org

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PARTNERS OF THE MIGRATORY SOARING BIRDS PROJECT

DJIBOUTI
Association Djibouti Nature

PALESTINE
Palestine Wildlife Society

EGYPT
Nature Conservation Egypt

SAUDI ARABIA
Saudi Wildlife Authority

EGYPT
Egyptian Environmental Affairs Agency

SUDAN
The Sudanese Wildlife Society

ETHIOPIA
Ethiopian Wildlife and Natural History Society

SYRIA
Syrian Society for Conservation of Wildlife

JORDAN
Royal Society for the Conservation of Nature

YEMEN
Foundation for Endangered Wildlife

LEBANON
Society for the Protection of Nature in Lebanon

LEBANON
Ministry of Environment

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ILRIA - pollo Habtamu -
Livestock grazing in Ethiopia

INTRODUCTION

The Rift Valley/Red Sea region constitutes one of the most important flyway in the world as this route is used by millions of birds to migrate between Africa and Eurasia. Thirty-seven migratory species of soaring birds, of which 5 are globally threatened, use this corridor to move between breeding grounds and wintering areas in the three continents each year.

Full texts of both documents are downloadable at http://migratorysoaringbirds.undp.birdlife.org/en/sectors/agriculture

While on transit, the migratory birds encounter many challenges as they undergo a very demanding exercise of migrating which also exposes them to a number of threats of which some have already caused worrying declines in species populations. These include: trapping and killing, impacts from poorly managed waste and dumpsites, collision and electrocution from power infrastructure and impacts emanating from agricultural expansion and intensification.

The effect of agriculture sector on the birds can be broadly grouped into two main sets, those:

a) that emanate from agro-chemicals – posing poisoning risk; and,
b) from non-agrochemical aspects (intensification and expansion)- causing habitat degradation and destruction

The risks posed by the sector have received a worldwide attention, hence, compelling the community to take steps aimed at supporting stakeholder action that enhance conservation of the birds. For example, the issue of poisoning risks was highlighted at the 11th Conference of Parties to the Convention on Migratory Species (Quito, Ecuador, November 2014), and a conference resolution was adopted on "Preventing Poisoning of Migratory Birds" (Resolution 11.15). Moreover, the Aichi 2020 targets under the Convention on Biodiversity: Target 2, calls for mainstreaming biodiversity; Target 5, calls for reduction of habitat loss and habitat degradation; and, Target 7 calls for sustainable management of agriculture.

In an effort to contribute to these global efforts, BirdLife International through the support of GEF-UNDP has developed a tool, in form of Guidance on agriculture, whose application within the region, could make it safer for the migratory birds and other biodiversity as well.

The Guidance material is presented as two separate documents, but summarized here as Part I and II. These are, Guidance on:

PART I preventing the Risk to Migratory Birds from Poisoning by Agricultural Chemicals, and;
PART II minimizing the impacts agricultural expansion and intensification on Migratory Soaring Birds within the Rift Valley/Red Sea Flyway

Sumeet Moghe - Congregation of Griffon - Flickr

THE CONTEXT

Agriculture is an important sector in most regional economies as a contributor to gross domestic product (GDP) and employment. It is also a main source of income generation and livelihood for majority of rural population. Many countries in the region are looking to expand their agricultural sector as a way to increase food security and reduce poverty for their rapidly expanding populations. In nearly all countries of the Rift Valley/Red Sea flyway, land under agricultural use and the area under irrigation are both on increase.

Enhancing the use of agro-chemicals is often suggested as a key to achieve higher productivity of the agricultural sector. For example, pesticide subsidies are common as a way to increase their use by farmers. Agro-chemical use in the region is highly varied with some countries using limited amounts of pesticides, although potentially with substances highly toxic to birds, and other countries with heavily developed pesticide regimes.

Increased demand for more food is leading to agricultural expansion and intensification despite severely constrained water and land resources throughout many of the countries in this flyway. In East Africa, the access to additional available arable land for agricultural purposes has been the major constraint, contributing to the focus on agricultural intensification and expansion with irrigation. This scenario negatively impacts birds by the clearance of natural habitats for new planting, with the accompanying pressures of fragmentation of remaining habitats, pollution and disturbance. Moreover, contemporary farming practices change the landscape and greatly reduce the diversity and abundance of plants and animals.

Whereas many countries in the region have regulations and procedures on handling of agrochemicals, challenges remain as reports on early implementation steps reveal the absence of proper mechanisms to cover all stages of chemicals management due to a lack of sufficient resources or knowledge. Further, food production is given, as expected, high priority such that wildlife and environmental conservation considerations receive the least attention within agricultural realms. The long run effect would be having farm level productivity systems that are not sustainable.

These Guidance materials could form part of useful tools applied by stakeholders in the agriculture sector in achieving a win-win situation, where, agricultural productivity improves but in a manner that ensures environmental sustainability.

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PART I
PREVENTING THE RISK TO MIGRATORY BIRDS FROM POISONING BY AGRICULTURAL CHEMICALS

IRRI Photo (Chris Quintana) - Pesticide spraying

Major threats and mitigation recommendations

1 IMPACT ON BIRDS FROM PROTECTION OF CROPS FROM PESTS

- Crops protection against pest attack involves use of chemicals/pesticides which when ingested by birds may cause lethal or sub-lethal impacts
- The birds ecology, pest type, the form of the pesticide and mode of application can determine the effect of the chemicals on the birds
- Sometimes the chemicals used against pests, e.g. locusts, are unnecessarily highly toxic to birds
- Birds poisoning has occurred when birds have directly got into contact with poison or after feeding on contaminated organisms or food material
- Cultivation of some crop types demands use of chemicals that could be harmful to birds
- The time a chemical harmful to birds is applied can determine the exposure of the birds and therefore, the extent of subsequent poisoning
- Persistence of a chemical in the environment has implications on birds poisoning
- Application of pesticides harmful to birds has occurred in areas where pests had least impact on resources useful to man

Recommendations

- Substitute (remove and replace) substances of high risk to birds
- Apply Integrated Pest Management to change cropping strategies and reduce pesticide use
- Harvesting pests, such as quelea, as a food source
- Use best practice to prevent and manage rodent irruptions
- Restrict/ban Second-generation Anticoagulants use in open field agriculture
- Create restricted pesticide zones in high risk areas
- Prohibit practices that would permanently expose birds to poisoning

2 IMPACT ON BIRDS FROM PROTECTION OF LIVESTOCK FROM PREDATORS

- Livestock predation is the most common source of human wildlife conflict
- Poison baits are the most widely used predator eradication method
- Farmers and landowners set baits for a number of predators, including wolves, jackals, leopards, foxes, feral dogs, baboons, hyenas, caracal, sand cats and wild cats resulting in inadvertent killing of non-target animals including birds

Recommendations

- Devise alternative avenues for resolving human wildlife conflicts on assessing the root causes of the problems; these may result to use of safer methods to resolve the problems e.g. predator proof enclosures or guard dogs, beating drums, shouting, or cannon firing, could be used to discourage animals from entering the area, use of olfactory deterrents and also intensifying human vigilance over herds among others
- Educating individuals and raising awareness regarding law concerning the use of poison baits
- Improving land use planning within the area as a long-term means to discourage poisoning
- Provision of compensation and/or insurance for livestock predation through workable schemes
- Establish effective monitoring and enforcement mechanisms to reduce poison use
- Establish consistent product removal policies while prioritizing action in areas where migratory birds are likely to visit
- Promote regional collaboration on control of the chemicals
- Prohibit permanent baiting

3 IMPACT ON BIRDS FROM USE OF VETERINARY PHARMACEUTICALS FOR LIVESTOCK

- Non-steroidal anti-inflammatories (NSAIDs), such as diclofenac, are used to treat domestic livestock for inflammation and pain relief
- NSAIDs cause visceral gout that kills the birds after renal failure
- Pharmaceuticals such as diclofenac have serious impacts on scavenging birds such as vultures, e.g. the drug has caused massive vulture deaths in Asia
- Usually, very few carcasses need to be contaminated to cause massive deaths of species that feed in large flocks
- NSAIDs in use have different levels of impacts on various species of birds
- Inadequate research on the impact of the drugs to birds have led to licensing of use of pharmaceuticals that have had a serious negative impact on migratory birds

Recommendations

- Assess and monitor use of the veterinary drugs in the region/country
- Monitor disposal of domestic livestock carcasses with a view to reduce exposure of scavenging birds to contaminated carcasses
- Immediately substitute (remove and replace) diclofenac, with e.g. Meloxicam (has low toxicity to birds of prey) for veterinary use in domestic livestock
- Introduce mandatory safety-testing of NSAIDs of risk to scavenging birds

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PART II
MINIMIZING THE IMPACTS OF AGRICULTURAL EXPANSION AND INTENSIFICATION ON MIGRATORY BIRDS

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Ecological impacts of agricultural expansion and intensification on the migratory soaring birds and mitigation recommendations

ECOLOGICAL IMPACTS

- **Population sizes of the birds might be limited by severe competition at restricted stop-over sites, where bird densities are often high and food supplies get heavily depleted.**
  Soaring birds overfly large inhospitable expanses of land or sea that lack suitable wetlands for resting and refueling. Where the number of such staging posts is limited, they assemble in large numbers at the available sites that are crucial to the success of their migratory journeys. Therefore, the reduction in size of a site can have a potentially devastating impact.

- **Increased mortality of soaring birds during migration due to lack of stop overs adequate to support their migration**
  For example, in the black storks, mortality during migration and wintering periods has been established to play an important role in population decline. They have longer stop-over periods thus increasing the need to protect the ecological integrity of these sites, e.g., small water bodies, particularly, given birds repeatedly use the same sites.

- **Suitable habitats are being continually encroached upon**
  This presents a particular threat to wetlands due to increased demand for irrigation and maintenance of sufficient water resources for healthy ecosystem functioning more broadly. Also, transformation of forests into agricultural fields and human settlements presents challenges to some migratory soaring birds.

- **Soaring birds are indirectly affected by agrochemicals, predominantly through a reduction in food supplies.**
  This also reduces the number of target invertebrates and weeds. Insecticides and herbicides reduce availability of non-target and beneficial species.

- **Livestock grazing may also indirectly affect prey availability for raptors especially those reliant on rodents in grasslands.**
  Overgrazing reduces the food for the prey populations and is an issue in many parts of Africa. Overgrazing also contributes to desertification.

- **Conversion of agricultural fields into monocultures can reduce the availability, diversity and abundance of food sources.**
  One of the principal distinguishing characteristics of modern agricultural landscapes is the large size and homogeneity of crop monocultures, which fragment the natural landscape. This can directly affect abundance and diversity of natural enemies, as the larger the area under monoculture, the lower the viability of a given population.

Mitigation Recommendations

These include the following:

- **Prevent** water pollution by minimizing impacts of agricultural run-off (often associated with irrigation) through buffers and alley cropping
- **Institute** Strategic Environmental Assessment for major agricultural expansion policies and projects
- **Integrate** landscape-scale conservation into regional, national and local policies
- **Include** statutory bird criteria in environmental impact assessments for agricultural expansion, including new irrigation projects and encroachment on migratory soaring bird habitats
- **Institute** Environmental Impact Assessment and Environmental Audit for agricultural intensification
- **Ensure** the establishment of habitat connectivity through farmland at the national level
- **Establish** Sustainable Land Management to prevent overgrazing and desertification
- **Include** bird aspects in the UN Convention to Combat Desertification and the Drylands Development Centre's policy guidance and training
- **Improve** insitutions and governance for community grazing land management
- **Reduce** herbicide use through alternative weed control systems and establishment of herbicide-free conservation headlands and field margins
- **Reduce** overuse of chemical fertiliser and its related impacts on ecosystems
- **Reduce** negative impacts of floriculture on ecosystems by following best practice
- **Increase** monitoring and compliance with environmental legislation by establishing cross-compliance measures

CONCLUSION

A number of countries within the Rift Valley/Red Sea flyway have enabling legislative framework that is supportive of uptake of recommendations proposed in the Guidance. This is particularly the case as most of them are signatories to the international multilateral agreements that require party states to protect biodiversity. The established implementation mechanisms of the agreements and conventions, plus existing national legislative and non-legislative avenues, offer some of exemplary opportunities to integrate the guidance materials into their operations. As such, the application of the tools will be, in a way, fulfilling country level and international obligations as well as taking part in developing agriculture sector which respects the principles of environmental sustainability.

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