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ACTION PLAN FOR CONSERVATION OF HORNBILL SPECIES IN IRANGI FOREST, EASTERN DEMOCRATIC REPUBLIC OF CONGO

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***ABSTRACT.* –** A compilation of bibliographic data on the avifauna of Irangi, D.R. Congo, from published and unpublished works shows that the Irangi area is experiencing conservation issues mainly increasing human population and new areas of land being claimed for building. Many large trees are felled to make way for agriculture and timber for building. Smaller trees are regularly cut for firewood and bushes cleared to make way for farming. Pitsawing, mining, and hunting are still widespread in the area. Up to now, six species of hornbills—*Tockus albocristatus, Tockus camurus, Ceratogymna atrata, Bycanistes cylindricus, Tockus fasciatus* and *Bycanistes fistulator*—are known to occur in this area, making Irangi forest of sufficient quality to be promoted as the twentieth Important Bird Area for D.R. Congo. It fulfils the A1 and A3 criteria. Five species of global conservation concern have been recorded at the site within the last 12 years. These are *Pteronnetta hartlaubi* (Vulnerable), *Terpsiphone bedfordi* (Near Threatened), *Francolinus nahani* (Endangered), *Afropavo congensis* (Vulnerable) and *Psittacus erithacus* (Near Threatened). The site is known to hold a significant component of the group of species whose distribution is largely confined to the Guineo-Congolian Biome. More than 77 species out of 228 species that occur in the Guineo-Congolian Biome have been recorded for the site. Using hornbills as flagship species, an urgent action plan for conserving Irangi forest is presented.

This paper was presented at the 5th International Hornbill Conference jointly organised by the National Parks Board (Singapore) and the Hornbill Research Foundation (Thailand), in Singapore on 22nd–25th March 2009.

***KEY WORDS.* –** Congo, Irangi forest, hornbill conservation, Guineo-Congolian Biome.

INTRODUCTION

The Organization of Biodiversity Information and Conservation in Congo –Kinshasa (OBICOK) is a non profit organization officially created on 3rd April 2002 (Certificate of deposit of file: number JUST.GS.112/S-KV/1204/2002). Its objectives are to increase public awareness and information on conservation matters of biodiversity in D.R. Congo and to promote research work on biodiversity in D.R. Congo.

OBICOK activities are guided by four technical commissions, including:

- Technical commission in charge of research: this is in charge of all the works related to research,
- Technical commission in charge of capacity building including workshops, conferences and attending congresses,
- Technical commission in charge of publication of news related to conservation and research matters undertaken by the organization in the newspaper called "Bedfordi Paradise",
- Technical commissions in charge of nature clubs.

Research activities were continuously undertaken in Irangi forest area in collaboration with the Ornithology Laboratory of the Centre de Recherche en Sciences Naturelles of Lwiro. Apart from published lists of the bird species that occur in the area, only one work (Kizungu, 2007) concerned the altitudinal distribution and abundance of hornbills species in Mukowa primary forest (Irangi area) while the site fulfils the criteria to be promoted as potential Important Bird Area (IBA) according to Fishpool & Evans (2001). Through this study, we analyse the Irangi site description followed by describing the birds of importance in the forest and other threatened and endemic wildlife. Threats to wildlife in the area are identified and a new IBA is proposed. Published and unpublished works related to Irangi area is listed. An action programme for conserving hornbill species and its habitat is provided.

SITE DESCRIPTION

The Irangi Area (CRSN forest) (altitude 700-1,200 m; 1°59'S;28°27'E, 15 km^2) is situated 108 km NNW from

Bukavu on the Bukavu-Walikale-Kisangani road, between Bunyakiri and Hombo in the Eastern D.R.Congo (Fig. 1). It has a high rainfall all year round and is essentially an equatorial rainforest, with a range of 1,800-2,300 mm/annum and a minimum only in July-August and January-February. The mean temperature is about 25°C and the area is characterized by the presence of fog each morning, which disappears by about 0800 hrs but affects bird activities (Kizungu, 2001; 2007). Fragmentation of the Irangi forest is due to the increasing human population, with new areas of land being cleared for building and farming. Many large trees are felled to make way for agriculture and provide timber for building and smaller trees are regularly cut for firewood and bushes cleared to make way for farming. This area of primary forest has decreased seriously due to the above reasons.

The primary forest at Irangi is characterized by canopy trees, dominated by *Gilbertiodendron dewevrei*, *Julbernardia sereti*, *Cynometra alexandri* and *Piptadeniastrum africanum*, with *Puelia ciliata* and *Aframomum* spp. dominant in the herb layer and the shrub stratum characterized by *Sapium ellipticum*, *Scaphopetalum thonneri* and *Thomandersia laurifolia* (Kizungu & Beyers, 1994). The secondary forest is dominated by *Uapaca guineensis* and *Musanga cecropioides* trees, by the shrubs and lianas *Macaranga spinosa*, *Albizia gummifera*, *Harungana madagascariensis*, *Alchornea cordifolia* and *A. floribunda*, and by under-storey plants including *Costus afer*, *Sporobolus* sp., *Panicum* sp. and *Setaria* sp. Within the secondary forest are primary forest patches composed of such characteristic tree species as *Antiaris welwitchii*, *Canarium schweinfurthii*, *Celtis dubia* and *Gilbertiondendron dewevrei* (Kizungu, 2001). In the open areas, there are fish-rearing ponds and gardens that attract some bird species. The Irangi area exhibits typical forest fragmentation. The people living near the forest collect lianas and wood for house construction, and hunt game, especially the monkey *Cercopithecus ascanius*. The people usually settle at the foot of hills where they can find water from rivers and for farmland use. Among the rich biodiversity of the forest other than birds are many plants of the Guineo-Congolian Region (e.g. *Gilbertiondendron dewevrei*, *Musanga cercropioides* and *Macaranga spinosa*), others endemic to the eastern D.R.Congo (e.g. *Polyscias kivuensis*) and important animal species including primates characteristic of lowlands such as *Cercopithecus ascanius* and the otter shrew *Potamogale velox* in the Luhoho river (Kizungu & Beyers, 1994; Kizungu 2001).

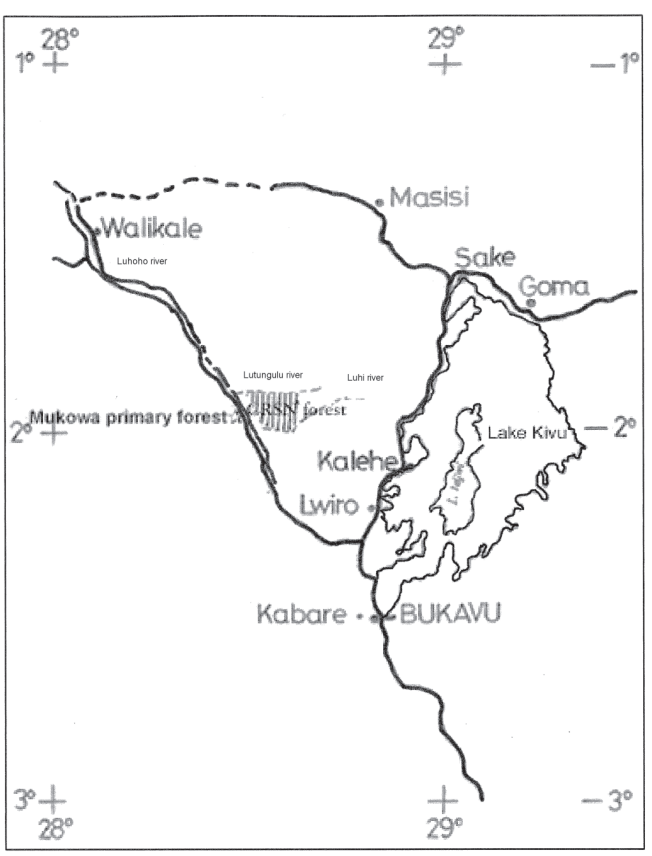

Fig. 1. Mukowa primary forest and CRSN forest on the Western and Eastern sides of the Bukavu–Walikale–Kisangani road in Irangi area.

MATERIALS AND METHODS

Information concerning site description, birds checklist, other threatened endemic wildlife of Irangi forest, threats to wildlife in the area and conservation issues of Irangi area were obtained from a review of bibliographic data from published and unpublished works conducted in Irangi area by Kizungu (2001; 2005; 2006; 2007; 2008), and Kizungu et al. (2005).

***Designation of an IBA.* –** The designation of Irangi as a new IBA followed Fishpool & Evans (2001). Indeed Fishpool & Evans (2001) give the following criteria to designate a site as an IBA.

- Globally threatened species: Category A1
  The site regularly holds significant number of a globally threatened or another species of global conservation concern.
- Restricted range species: Category A2
  The site is known or thought to hold a significant component of a group of species whose breeding distribution define an Endemic Bird Area (EBA) or a secondary area.
- Biome restricted assemblage: Category A3
  The site is known or thought to hold a significant component of the group of species which is largely or wholly confined to one biome.
- Globally important congregation: Category A4
  The site may qualify on any one or more of the four criteria listed below:
  - A4i .The site is known or thought to hold on a regular basis 1% or more of a biogeographic population of a congregation waterbird species.
  - A4ii. The site is known or thought to hold on a regular basis 1% or more of the global population of a congregation seabird or terrestrial species.
  - A4iii. The site is known or thought to hold on a regular basis at least 20,000 waterbirds or at least 10,000 pairs of seabirds of one or more species.

Table 1. Traps encountered along the route of reconnaissance and biological taxa poached from Mukowa primary forest encountered during this study. Direct observations on the ground about people's needs, which lead them to illegal activities in the forests.

Taxa	Species	Kind of traps or Equipment	Types of trap	Number of poached individuals encountered	Use	Relative frequencies of collection
Mammals	*Cricetomys gambianus*	6 traps	3	1	Food	Frequent
	Cercopithecus ascanius	2 guns	2	10	Food	Frequent
Fungi	Edible mushroom	None	None	3	Food	Unusual always got randomly
Birds	*Terpsiphone bedfordi*	None	None	2	Food	Unusual
	Andropadus latirostris	None	None	2	Food	Unusual
	Malimbus coronotus	None	None	1	Food	Unusual
Insects	Butterflies (Larvae)	None	None	Around 2kg	Food	Unusual dependent of the cycle of butterflies
Fish	*Clarias* sp.	None	None	2	Food	Usual
Trees		Pangas	None	Many	Housing, fire,	Usual (domestic uses)
		Pangas & Saws	None	Many	Embers'	Usually used domestically and for income
		Saws	None	Fair	Timbers	Usual, income and housing
		Pangas & Saws	None	Many	Gardens	Usual, food + income

- A4iv. The site is known or thought to be a "bottleneck" where at least 20,000 pelicans (Pelecanidae) and or/ stork (Ciconiidae) and/or raptors (Accipitriformes and Falconiformes), and/or cranes (Gruidae) pass regularly during spring and/or autumn migrations.

***Action plan.* –** This was elaborated following Byaruhanga et al. (2006).

RESULTS

Birds of importance in the Irangi Forest

The part of Irangi which is of conservation importance, ranges in elevation from 750m (near the main road Bukavu-Walikale-Kisangani) to 1,600m (Mount Elimu) and holds the largest tracts of transitional forest. The number of species in an area is of interest to quantitative biogeography and conservation. The same measure is also used in studies of species "diversity" where it is termed species "richness" as one of the two components of diversity, the other being "equitability". A problem for all uses is that the list of species increases with more time spent (Dawson, 1981).

At least 232 bird species are currently known from the Irangi area (Kizungu, 2006; 2007), about 66% of the known bird species in Nyungwe Forest Reserve in neighbouring Rwanda. Nyungwe is already designated as a National Park and so an action plan for conservation of the Irangi forest is needed to minimize and eventually halt damage to the forest and its wildlife. Of these, more than 70% are confined to the forest (forest dependent species). The birds in this last category include four species listed by Birdlife International (2000, 2002) as being Near-Threatened (*Terpsiphone bedfordi* and *Pteronetta hartlaubi*), vulnerable (*Afropavo congensis*) or Endangered (*Francolinus nahani*). The site is also known to hold a significant component of the group of species whose distribution is largely confined to the Guineo-Congolian Biome: 76 species out of 169 species that occur in the Guineo-Congolian Biome, Congo Domain have been recorded at the site (Table 2).

Other threatened/endemic wildlife of Irangi

Irangi is a non-protected forest with birds and mammals (such as *Cercopithecus ascanius*), endemic plants (such as *Polyscias kivuensis*), Guineo-Congolian plants (such as *Gilbertiodendron dewevrei*, *Julbernardia sereti*,*Cynometra alexandri, Piptadeniastrum africanum, Puelia ciliata, Sapium ellipticum*, *Scaphopetalum thonneri , Thomandersia laurifolia, Uapaca guineensis, Musanga cecropioides, Macaranga spinosa*, *Albizia gummifera*, *Harungana madagascariensis*, *Alchornea cordifolia, A. floribunda*, *Antiaris welwitchii*, *Canarium schweinfurthii*, *Celtis dubia* and *Gilbertiondendron*

dewevrei) and the otter shrew (*Potamogale velox*) in the Luhoho river (Kizungu, 2001) that may be threatened (Prigogine, 1985; Kizungu, 2001). Some mammals persist (*Cricetomys gambianus* and the restricted lowland primate *Cercopithecus ascanius*; Table 1) and *Dendrohyrax arboreus*, whose calls can be heard starting at 20:00 h at night. Many species of snakes are also often found along trails in the forest. Hunters were encountered returning with both *Cricetomys gambianus* and *Cercopithecus ascanius* and reported that at the main market some smoked duikers and antelopes were being sold in the Irangi area. Also, people reported that elephants have become obviously scarce in these forests but they can still be found in this area far from the main road. Some bats, which need to be identified, have been netted in the primary forest.

THREATS TO WILDLIFE IN THE AREA

Due to the increase in human population, new areas of land are being cleared for building and farming. Many large trees are felled to make way for agriculture and timber for building. Smaller trees are regularly cut for firewood and bushes cleared to make way for farming. Fires are regularly started in the area. Hunting is still widespread in the region. Many farmers carry homemade guns and children use catapults. What is surprising is that no part of Irangi enjoys conservation status. While large areas in Eastern D.R. Congo have all major vegetation types remaining more or less intact, Irangi forest is under increasing threat from farmers, pitsaweys, miners and hunters. The human population in this area continues to grow rapidly after the passage of thousands of Rwandan refugees. Of particular concern is the rapidly advancing agriculture. The rate of conversion has obviously accelerated enormously in the last five years as famine caused by the war forced people to open up much larger areas that were formerly forested.

Table 1 summarizes the traps encountered along the route of reconnaissance and taxa poached from Mukowa primary forest encountered during this study. Photographic evidence was also obtained. 2. Table 1 also presents the results of our observations on the ground about people's needs, which lead them to illegal activities in the forests and demonstrate that most poaching activities of people in Irangi forest is a result of famine and poverty. The restricted range primate *Cercopithecus ascanius* is usually poached and constitutes one of the main sources of food and income.

PROPOSAL FOR A NEW IBA

Demey & Louettte (2001) identified 19 Important Bird Areas for D.R. Congo. The Irangi forest is not one of them. Based on the new knowledge of the avifauna and according to published and unpublished works related to Irangi area as listed in annex 1, we propose that a new IBA be designated. We also found this part of the Guineo-Congolian biome to be especially important to several species of global conservation concern and the number of species confined to the Guineo-Congolian biome as well as for bird richness.

The proposed Irangi forest IBA meets the following criteria for qualification (as defined by Fishpool & Evans, 2001).

- A1. Five species of globally conservation concern have been recorded at the site within the last 12 years. These are *Psittacus erithacus* (Near threatened), *Pteronnetta hartlaubi* (Vulnerable), *Terpsiphone bedfordi* (Near Threatened), *Francolinus nahani* (Endangered) and *Afropavo congensis* (Vulnerable). However, it is not known whether they are ever present in significant number.
- A3. The site is known to hold a significant component of the group of species whose distribution is largely confined to the Guineo-Congolian Biome. More than 82 species out of 228 species that occur in the Guineo-Congolian Biome, Congo Domain have been recorded at the site (Table 1).

DISCUSSION

According to Table 3, most of the Congolese IBAs do not fulfill all the four criteria as defined by Fishpool & Evans (2001). As the Irangi site fulfills two out of these four criteria, this should be one of the reasons to promote the Irangi forest as a new IBA for D.R. Congo.

Table 2 shows that out of 77 Guineo-Congolian birds that occur in Irangi area, around 12% are represented by hornbills (six species). These are: *Tockus albocristatus*, *Tockus camurus, Ceratogymna atrata, Bycanistes cylindricus, Tockus fasciatus,* and *Bycanistes fistulator*.

Conservation action is needed in order to minimize and eventually halt the damage to the Irangi forest and its wildlife. Possible approaches to action have been outlined by Prigogine (1985), and by Kizungu (2001) and further discussions on this issue are necessary. Whatever approaches are chosen to help maintain the conservation value of Irangi forest, they must take into account the current serious political, economical, and security problems in that area.

Like Bober et al. (2001), I propose that the Albertine Rift birds could be split into a group of montane species and a group of submontane rain forest species. For the six species that define the Eastern Congo Basin (including *T. bedfordi* and *Afropavo congensis*), the Endemic Bird Area also reach well into the transitional forest (Stattersfield et al., 1998), and it can be argued that their separation from the Albertine Rift submontane forest group is arbitrary. Like Bober et al. (2001), I suggest that these two adjacent EBAs should be combined into a single unit for conservation planning. Environmental education outreach programmes must be initiated in the Irangi area with a special emphasis on the conservation of threatened species. Also, projects concerning the following theme: biodiversity monitoring and assessment, conflicts and environment, capacity building and community development, public awareness and empowerment (including women and youth) should be focused on the site. Using hornbill species as flagship, an urgent action plan (as presented in Annex 2) for conserving Irangi forest and its hornbills is needed.

Table 2. List of Guineo-Congolian birds occurring in Irangi area (Eastern D R Congo).

Scientific name	**Common name**
Pteronetta hartlaubi	Hartlaub's Duck
Bostrychia rara	Spot-breasted Ibis
Urotriochus macrourus	Long-tailed Hawk
Francolinus nahani	Nahan's Francolin
Afropavo congensis	Congo Peacock
Columba iridotorques	Western Bronze-naped Pigeon
Columba unincita	Afep Pigeon
Turtur brehmeri	Blue-headed Wood Dove
Psittacus erithacus	African Grey Parrot
Chrysococcyx flavigularis	Yellow-throated Cuckoo
Cercococcyx mechowi	Dusky Long-tailed Cuckoo
Ispidina leucontei	African Dwarf Kingfisher
Halcyon badia	Chocolate Kingfisher
Alcedo leucogaster	White-bellied Kingfisher
Tockus albocristatus	White-crested Hornbill
Tockus camurus	Red-billed Dwarf Hornbill
Ceratogymna atrata	Black-casqued Wattled Hornbill
Bycanistes cylindricus	White-thighed Hornbill
Tockus fasciatus	Pied Hornbill
Bycanistes fistulator	Piping Hornbill
Pogoniulus scolapaceus	Speckled Tinkerbird
Pogoniulus subsulphureus	Yellow-throated Tinkerbird
Indicator maculatus	Spotted Honeyguide
Sasia africanus	African Piculet
Campethera caroli	Brown-eared Woodpecker
Smithornis rufolateralis	Rufous-sided Broadbill
Hirundo nigritta	White-throated Blue Swallow
Psalidiprocne nitens	Square-tailed Roughwing
Nicator vireo	Yellow-throated Nicator
Nicator chloris	Western Nicator
Criniger chloronotus	Eastern Bearded Greenbul
Criniger calurus	Red-tailled Greenbul
Phyllastrephus icterinus	Icterine Greenbul
Phyllastrephus xavieri	Xavier's Greenbul
Bleda syndactyla	Eastern Bearded Greenbul
Neocossyphus rufus	Rufous Flycatcher-thrush
Neocossyphus poensis	White-tailed Ant-thrush
Alethe diademata	Fire-crested Alethe
Stiphrornis erythrothorax	Forest Robin
Eremomela badiceps	Rufous Brown Eremomela
Apalis nigriceps	Black-capped Apalis
Apalis rufogularis	Buff-throated Apalis
Sylvietta virens	Green Crombec
Sylvietta denti	Lemon-bellied Crombec
Hylia prasina	Green Hylia
Muscicapa cassini	Cassin's Flycatcher
Muscicapa infuscata	Sooty Flycatcher
Muscicapa sethsmitti	Yellow-footed Flycatcher
Fraseria ocreata	Sooty Flycatcher
Muscicapa olivascens	Olivaceous Flycatcher

Table 2. Cont'd.

Scientific name	Common name
Trochocercus nigromitratus	Dusky-crested Flycatcher
Dyaphorophia castanea	Chestnut Wattle-eye
Terpsiphone rufiventer	Red-bellied Paradise Flycatcher
Terpsiphone bedfordii	Bedford's Paradise Flycatcher
Erythrocerus mccalli	Chestnut-capped Flycatcher
Illadopsis albipectus	Scaly-breasted Illadopsis
Illadopsis fulvesecus	Brown Illadopsis
Anthreptes rectirostris	Green Sunbird
Anthreptes seimundi	Little Green Sunbird
Nectarinia superba	Superb Sunbird
Nectarinia cyanolaema	Blue-throated Brown Sunbird
Dryscopus senegalensis	Red-eyed Puffback
Oriolus brachyrhynchus	Western Black-headed Oriole
Onychognatus fulgidus	Purple-headed Starling
Lamprotornis purpureiceps	Chestnut–winged Starling
Ixonotus guttatus	Spotted Bulbul
Ploceus tricolor	Yellow-mantled Weaver
Ploceus bicolor	Dark-backed Weaver
Ploceus nigerrimus	Vieillot's Black Weaver
Ploceus preussi Preuss	Golden-backed Weaver
Malimbus coronatus	Red-crowned Malimbe
Malimbus malimbus	Crested Malimbe
Malimbus rubricolis	Red-headed Malimbe
Nigritta bicolor	Chestnut-breasted Negrofinch
Nigritta fusconota	White-breasted Negrofinch
Parmoptila woodhousei	Woodhouse's Antpecker
Nigritta leuteifrons	Pale-fronted Negrofinch

Table 3. Number of sites that fulfill A2& A3 IBA criteria for each biome according to Fishpol & Evans (2001).

Biomes (EBA)	Number of IBA that meet criteria	Total number of IBAs	Criteria
Albertine Rift mountain	5	8	A2
Eastern D R Congo Lowland	5	7	A2
West D R Congo and North Angola forests	1	1	A2
Upemba plains secondary Area	1	1	A2
Lake Lufira secondary area	1	1	A2
Sudan-Guinea savana	1	4	A3
Guineo-Congolian Forest	12	18	A3
Lake Victoria basin	1	5	A3
Afrotropical Highlands	7	10	A3
Zambezian	4	7	A3

Table 4. Vision, aim and objectives of the Irangi forest conservation action plan. The asterisks indicate the objective priority (*low, **medium, ***high, ****critical) to the conservation of Irangi forest.

Vision	**Indicators**
Viable forest and wildlife conservation	
Aims (Five years) Irangi forest and conservation of hornbills	Habitat destruction reduced by at least 3/4 of the Irangi forest area. Estimation of the population of the four hornbill (*Ceratogymna atrata ,Tockus fasciatus, Tropricranus albocristatus, Bycanistes cylindricus*) species found in Irangi stable or recovering at 100%.
Objectives	
1. Distribution, population size and trends of the four Hornbill species determined (***)	Population at all the known altitudinal ranges within Irangi forest determined within two years. At least three potential known altitudinal ranges survey within five years. Key known altitudinal ranges surveyed for the second time within five years.
2. The ecology of these four hornbill species better understood in the area (**)'	Information generated and disseminated on the factors that affect mortality and reproduction success of the four species within five years. Understanding of habitat requirement within two years.
3. The four species habitat quality maintained and improved at key altitudinal ranges (****)	Management actions on the ground aimed at maintaining their habitat in at least 75% of their key altitudinal ranges within five years. Monitoring programmes in place for the species and habitat at key altitudinal ranges.
4. Impact of human activities minimised (****)	Extent and quality of habitat stable at key altitudinal ranges.
5. Profile of the four hornbill species and habitat raised (***)	The status of at least one of the four species of globally conservation concern downgraded.
6. Putting in place Sites Support Group (***)	At least two functional SSG put in place.

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ANNEX 1. PUBLISHED AND UNPUBLISHED WORKS RELATED TO IRANGI AREA

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ANNEX 2. ACTION PROGRAMME

After identifying the threats to Irangi forest, there is a need for appropriate interventions and solutions to mitigate those threats. The solution in this action plan is as follows:

Vision

The long term aim of this action plan is to "totally conserve Irangi forest and its hornbill species". The five year action plan will work towards this vision.

Aim

The aim is to improve Irangi forest and the conservation status of the hornbills. The action plan hopes to achieve this aim within five years.

Objectives

Improving the conservation status of Irangi forest within five years will be achieved through five strategic objectives as shown in Table 4.

Project concepts/activities

Project concepts/activities shown below were developed that will need to be implemented in order to achieve each of the six strategic objectives of Irangi forest conservation.

Objective one: Determining the distribution, population size and trends of the four hornbill species
- Assessing the distribution of four hornbill species habitats using remote sensing, vegetation map;
- Assessing the distribution of the four species, population size and identify key sites;
- Develop and implement a monitoring method for the species and train survey team.

Objective two: Understanding the ecology of the four hornbill species found in the area
- Capacity building to undertake ecological studies;
- Assess the ecological factors influencing the four hornbill species survival and reproduction (disease, inbreeding, habitat fragmentation, competition, weather conditions, food availability, predation, dispersal, disturbance during breeding and mortality);
- Assessing habitat requirements for the four species so that we know how to manage the habitat.

Objective three: Maintenance and improvement of habitat quality at key altitudinal ranges
- Design and implement a monitoring system for the four hornbill species, habitat quality and extent of habitat using ranger based monitoring;
- Conservation of the species incorporated in management plans of the Irangi non-protected area;
- Capacity building and training people in forest management and biodiversity monitoring.

Objective four: Minimising the impact of human activities
- Identify human activities that leads to habitat destruction at key sites;
- Develop and implement programmes to involve local leaders and integrate local communities livelihoods in the conservation of Irangi forest and its wildlife;
- Explore and if appropriate, implement incentives based on conservation of the forest and its wildlife.

Objective five: Raising the profile of the four hornbill species and their habitats
- Capacity building of key stakeholders through provision of equipment and materials;
- Develop and implement awareness programmes and communication materials targeting specific audiences such as local communities, school club, decision makers, tourists.

Objective six: Putting Site Support Groups in place
- Develop Site Support Groups at key sites;
- Have a functional Species Interest Group.