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**Agenda Item 3: Global, Regional and National Guidance/Best Practices on
Wildlife Hazard Management**

**WILDLIFE HAZARD MANAGEMENT AT MAJOR AIRPORTS IN PAKISTAN:
CHALLENGES AND STRATEGIES**

(Presented by Pakistan)

SUMMARY

This paper outlines the key challenges faced by Pakistan in managing wildlife hazard at its airports, and details the ongoing strategies and interventions by the Pakistan Airports Authority (PAA) to mitigate associated risks.

1. INTRODUCTION

1.1 Wildlife strikes continue to pose a significant risk to aviation safety worldwide, and Pakistan is no exception. As urban sprawl intensifies around major airports, traditional approaches to managing wildlife risks are being tested.

Challenges in Wildlife Hazard Management

1.2 Karachi and Lahore, the two megacities of Pakistan, have populations of approximately 20 million and 13 million respectively. Both cities are experiencing rapid urban expansion, particularly around key infrastructure such as airports. With the rise in commercial and residential developments around Lahore and Karachi airports, managing wildlife hazards effectively demands increased efforts.

1.3 While Karachi and Lahore airports are now surrounded by dense urban environments, Islamabad International Airport (IIAP) presents a contrasting scenario. Located at a distance from the city, it is surrounded by relatively undeveloped land, dense vegetation, and the nearby Rama Dam, which creates a unique ecological environment. Although less urbanized, the presence of natural water bodies and forest cover still attracts diverse wildlife, posing its own challenges.

1.4 IIAP Islamabad is a greenfield airport constructed on over 4000 acres of land in a largely uninhabited area. The surroundings of the airport, with dense vegetation, have long been home to wildlife such as wild boars and wild dogs. The environment conditions create potential for wildlife entry into aerodrome.

Peak Seasons in Wildlife Activity

1.5 Pakistan uses an in-house developed software, Safety Data Collection and Processing System (SDCPS) that shows real-time statistics of safety related parameters, accessible to Regulator as well as Service Providers. All wildlife strikes and other safety related data are recorded on this software, which is used for analysis of trends and identification of problem areas. Analysis of data on SDCPS for the past few years reveals that wildlife activity at the airports generally follows a pattern as shown in the table below:

Peak Seasons in Wildlife Activity			
Airport	JIAP Karachi	AIAP Lahore	IIAP Islamabad
Trend	Cyclical trend	One steep peak	Relatively flat with one peak
Peak seasons	First: Jan–Mar (Migratory influx)	Jun-Oct (Monsoon)	Jun-Sep (Monsoon)
	Second: Aug–Oct (Monsoon & post monsoon)		

2. DISCUSSION

2.1 WHM Strategy

- Airport habitat management
- Focus on identification of species
- Stakeholder engagement
- Collaboration with experts
- Exploring technological innovations

2.2 A brief description of the activities taken for wildlife hazard management at PAA airports is given below:

Habitat Management

- a) **Routine Surveys:** Regular surveys conducted to identify bird attraction sites and species hotspots in and around the airports, as well as thorough inspection of airport fencing and boundary walls.
- b) **Seasonal Denesting:** Coordinated denesting campaigns during kite breeding season (mid-Sept to mid-Nov), following expert guidance.
- c) **Waste and Structure Management:** Removal of junk and abandoned structures that serve as nesting or hiding spots.
- d) **Vegetation Control:** Use of chemical herbicides to control wild growth within and around airfields.
- e) **Insect Control:** Deployment of pesticides to reduce insect populations that attract birds.
- f) **Insect Clearing:** Operation of Runway Sweeper every morning for removal of dead insects that accumulate around runway lighting.
- g) **Drainage Maintenance:** Frequent cleaning of storm water drains and installation of iron barriers to limit animal access to the airfield.
- h) **Stakeholder Engagement:** Increased frequency of site activities and meetings involving multiple airport functionaries and city authorities.

Visual and Pyrotechnic Deterrents

- a) **Scarecrow Deployment:** Strategic placement to deter bird roosting.
- b) **Reflective Materials:** Use of recycled CDs mounted on frangible boards along runways to deter birds.
- c) **Mobile Patrol Systems:** Patrolling vans equipped with high-intensity lights and hooters to disperse birds.
- d) **Pyrotechnics:** Controlled use of bird repellent cartridges and crackers.

Acoustic Measures

- a) **Distress and Predator Calls:** Use of locally-developed audio equipment to simulate natural threats.
- b) **Ultrasonic Devices:** Devices using sound that is beyond the hearing ability of humans to scare birds without causing noise pollution.

Collaboration with experts

- a) Engagement with academic institutions and industry experts for surveys and assessments.
- b) Ongoing proposals for formal partnerships with universities and research groups to support continuous improvement in WHM practices and training of WHM personnel.

Recruitment of a full-time Wildlife Hazard Manager

- a) The hiring process is underway for a dedicated Wildlife Hazard Manager in Pakistan Airports Authority (PAA), tasked with leading WHM efforts across all airports.

Equipment Procurement

- a) Efforts are ongoing to procure modern WHM equipment for real-time bird activity monitoring, strike recording, and deterrent systems.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the actions undertaken by Pakistan to mitigate wildlife hazards at major airports;
- b) provide recommendations for enhancing WHM strategies;
- c) share regional experiences and best practices from other airports in the APAC Region facing similar challenges

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