The Coordinating Unit of the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU)

Saker Falcon Task Force

A proposed governance and management system for the Adaptive Management Framework for the sustainable use of the Saker Falcon *Falco cherrug*

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List of Abbreviations

CBD	-	Convention on Biological Diversity
CITES	-	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	-	Convention on the Conservation of Migratory Species of Wild Animals
COP	-	Conference of Parties
CU	-	Coordinating Unit
EU	-	European Union
IAF	-	International Association for Falconry and Conservation of Birds of Prey
IUCN	-	International Union for Conservation of Nature
MEA	-	Multilateral Environmental Agreement
MoS	-	Meeting of Signatories
MOU	-	Memorandum of Understanding
NDFs	-	Non-Detriment Findings
NGO	-	Non-governmental Organization
Raptors MOU	-	MOU on the Conservation of Migratory Birds of Prey in Africa and Eurasia
SakerGAP	-	Saker Falcon Global Action Plan
SDMS	-	Saker Data Management System
SakerID	-	Saker Identity Database
SFQMS	-	Saker Falcon Quota Management System
STF	-	Saker Falcon Task Force
UAE	-	United Arab Emirates
UNEP	-	United Nations Environment Programme

GOVERNANCE OF THE ADAPTIVE MANAGEMENT FRAMEWORK (AMF) FOR THE SUSTAINABLE USE OF THE SAKER FALCON

- EXECUTIVE SUMMARY -

- The SakerGAP identifies 'unsustainable trapping/harvest on the breeding grounds and along the migration routes' as the second leading cause of the decline of the Saker Falcon following the electrocution of Sakers on medium-voltage power lines as the top threat. Based on the available reports of MEAs, national governments and conservation NGOs, the illegal, unsustainable trade of unregistered wild Saker Falcons is ongoing in several Range States on the breeding grounds, migration routes and wintering sites.
- Reducing severe illegal harvest, trapping, and trade of wild Saker Falcon populations requires reforming international environmental governance regarding the Saker Falcon.
- A three-level (international, national and local) governance and management hierarchy may ensure the collaboration of breeding and non-breeding Range States and stakeholders along flyways.
- An Adaptive Management Framework (AMF) for the sustainable use of wild Saker Falcons can be effective only if breeding, non-breeding and user Range States act together concertedly along Saker Falcon flyways. It also requires a consensus among the main stakeholders that using specific populations of the Saker Falcon can be sustainable and acceptable.
- Any legal taking of the Saker Falcon is allowed within the global legal frameworks of CITES and CMS. Currently, Mongolia is the only Range State where CMS allows the legal taking of the Saker Falcon. Implementing an AMF that includes harvesting or taking of the Saker Falcon beyond the Mongolian population would contravene Article III.5 of CMS unless it is limited to populations or the entire species previously delisted from Appendix I.
- Under CITES, international trade in the Saker Falcon may be authorised only if the relevant authorities of the exporting country are satisfied that the specimens were legally obtained and that trade will not be detrimental to the species' survival in the wild (through a so-called Non-Detriment Findings assessment). A zero quota is currently recommended for the international trade of wild Saker Falcons, but moderate legal international trade is ongoing.
- In the future, it is essential that trapping and trade data within and between Range States and under CMS and CITES are collected and analysed co-ordinately. This will enable an international coordinating body to determine whether global use continues to threaten wild Saker Falcon populations. Similar assessments exist only on a country-by-country basis, which hinders the comprehensive evaluation of the flyway-level or global impact of taking and trading in a long-distance migratory species such as the Saker Falcon.
- The precautionary principle must be considered when managing a globally threatened species. Significant knowledge gaps and the lack of resources for surveys and conservation hinder global conservation improvement and the possible delisting of the Saker Falcon. Therefore, research and monitoring supporting the implementation of the AMF should focus on specific breeding populations or viable population units and their related flyways.
- Viable population management units (exceeding 100 breeding pairs) can be identified within national populations even if the status of the whole national Saker Falcon population is data deficient. The sustainable use of viable Saker Falcon population management units can be ensured

through annual monitoring of population parameters, individual marking, identification of the geographical origin of trapped falcons, and an adaptive management/quota system.

- A Saker Falcon Quota Management System (QMS) must be set within an Adaptive Management Framework (AMF). The Quota Management System would decide the overall number (global number) of birds taken from the wild based on the annual reports of the Range States involved and on derived monitoring data for five years. The Quota Management System may create financial incentives to sustainably manage wild Saker Falcon breeding populations in the Range States with limited research, monitoring, and conservation funding. It may bring together governments, regulators, conservation organisations and market players instead of separating them.
- Several pre-defined legal, ecological and social safeguards would ensure the sustainability of legal use. Any taking would not be allowed if these safeguards are not met. A number of these sustainability safeguards require the legal possibility of use.
- Without the possibility of legal use and limited only to Mongolia, a global AMF is ineffective. This suggests that there may be a reinforcing legal and policy loop under CMS that ”freezes” the existing state. If the *status quo* remains, applying an Adaptive Management Framework (AMF) for the sustainable use of the Saker Falcon is unfeasible.

1. BACKGROUND

The Saker Falcon

The Saker Falcon *Falco cherrug* is a large, powerful falcon. It adapted to relatively arid, open landscapes and feeds on small and mid-sized birds and mammals. The range of the Saker Falcon spans over 80 countries, spanning over 7,000 km from Central Europe to Western China and 3,000 north to south. It breeds in the Palearctic region from Central Europe to East Asia and annually migrates south to wintering areas in Africa, Southern and Eastern Asia. The key breeding states in Europe are Hungary and Ukraine; in Asia, the main strongholds are China, Kazakhstan, Mongolia and the Asian part of Russia. The four critical Asian breeding states hold over 90% of the global breeding population.

The species is of considerable conservation and cultural significance in many parts of its range.

The global conservation status of the Saker Falcon

The global conservation status of wild Saker populations and data on legal and illegal use are critical factors in prioritising Range States *(**Annex 1**, **Annex 2**)* and conservation actions and whether any taking from the wild is sustainable.

The IUCN Red List category of the Saker Falcon is Globally Endangered (facing a very high risk of extinction in the wild). A population trend analysis indicates that the Saker Falcon may be undergoing a very rapid decline. This negative trend results from various anthropogenic factors, including electrocution on power lines, unsustainable capture for the falconry trade, habitat degradation, and the impacts of agrochemicals. The rate of decline appears to be particularly severe in the central Asian breeding grounds. This highly uncertain classification may be revised when new information becomes available.

Global population size: 12,200 -29,800

Global population trend: Decreasing

The global population trend during the 19 years of 2002-2021 equates to a 44.6% decline (based on median estimates), with a minimum-maximum decline of 12-71%. With a 44.6% population size reduction, the Saker Falcon's global status would fall under Globally Vulnerable (facing a high risk of extinction in the wild). However, given the substantial degree of uncertainty over the estimates used, the population trend is best placed *precautionarily* in the band for a 50-79% decline over three generations (*BirdLife International, 2023*).

In Central Europe, Saker Falcon population sizes have changed in some Range States, or better estimates have been available since 2014. The Central European Saker Falcon population has increased over three generations (19.2 years).

In Asia, revised estimates have been available for priority breeding Range States such as China, Kazakhstan, and Mongolia.

The Saker population of Kazakhstan is presumably significantly smaller than the data presented in the SakerGAP.

Recent changes in the global range

No extensive field research has taken place since the publication of the SakerGAP, which significantly changed the species' global range.

The 2014 SakerGAP and the 2024 BirdLife International global range maps of the Saker Falcon are almost identical *(**Annex 3**)*. There are only minor changes in the global range, e.g. in wintering sites in Italy and Niger.

National distributions have changed in some Range States due to (mainly positive) changes in national population sizes.

Dispersal and migration patterns

In Central Europe, juvenile Saker Falcons establish 1-3 temporary settlement areas (TSAs) before moving to winter areas (*Prommer & Bagyura, 2021*). They regularly make longer exploratory flights from their TSAs, sometimes covering considerable distances and then returning to the TSAs. The direction and distance of post-fledging dispersal varied greatly. Most tagged juvenile sakers remained in the Pannonian Basin. Some dispersed as far as Spain, the Baltic states or Kazakhstan. Juvenile Saker Falcons are partial migrants (*Prommer et al., 2012*). The autumn migration occurs from mid-September to November, and the spring migration from mid-February to April. About half of the Sakers satellite-tagged in Hungary were residents of short-distance migrants. One-third of the tagged Sakers were true (mid- to long-distance) migrants. Most migratory individuals in the first-year cohort satellite-tagged in Central Europe showed parallel migration (at 190-200°), uniformly moving to the southwest, regardless of their starting position. Adults are less likely to make long-distance migratory movements than juveniles *(**Annexes 9-11**)*.

In Central Asia, Saker Falcons are 'partial migrants' *(Dixon, 2016; Shobrak, 2015; Prommer et al., 2012)*. The autumn migration occurs from mid-September to November, and the spring migration from mid-February to April. The proportion of birds making migratory movements differs across regions and age classes. Birds are more sedentary in the south, and adults are less likely to make long-distance migratory movements than juveniles. Migratory Saker Falcons typically move to more southerly wintering areas within the species' breeding distribution range or to the Middle East and the Indian subcontinent *(**Annex 12**)*.

As soon as Saker Falcons leave their natal area, their origin is not identifiable without individual marking or lab analyses. Sakers from distinct populations may occur in the same temporary settlement area simultaneously.

Without the exact knowledge of the origin of a trapped Saker Falcons, both legal and illegal trapping may impact small and decreasing populations, accelerating their depletion. Therefore, the individual marking of Sakers is critical for an AMF until other reliable identification methods are unavailable.

Connectivity between Range States - Flyways

The Saker Falcon occurs in five overlapping major flyways within its global range *(**Annexes 5-6**)*. The dispersal areas and migration routes of different Saker Falcon populations can also overlap considerably.

From a conservation perspective, the dispersal and migration of Saker Falcons connect breeding and non-breeding (winter and passage) Range States, making them equally responsible for the species' survival. An Adaptive Management Framework (AMF) for the sustainable use of wild Saker Falcons can be effective only if breeding, non-breeding and user Range States act concertedly along Saker Falcon flyways as members of the same management system.

Conservation priority ranking of Range States

Based on the methodology developed for the SakerGAP, Annex 1 presents updated global and regional conservation priority rankings of Range States. Spatial prioritisation is required to direct limited resources to where actions are most urgently needed and most likely to produce effective global conservation outcomes.

The conservation rankings of Range States in Asia and the Middle East have not changed significantly since 2014, mainly due to the lack of more precise population estimates. The revised Saker Falcon population estimates for China, Kazakhstan and Mongolia do not change the top priority ranking of these Range States.

However, remarkable improvements in national Saker Falcon populations have occurred in Central European breeding Range States such as Austria, Romania and the Republic of Serbia.

Note: The estimated breeding population median of the Saker Falcon is equal to or exceeds 100 breeding pairs only in the following seven Range States: China, Mongolia, Russian Federation, Kazakhstan, Ukraine, Hungary and Turkmenistan. According to Essential Safeguard 2 (Table 5 of the SakerGAP), these breeding Range States can potentially be considered for applying the AMF for sustainable use.

Current legal use under CMS and CITES

CMS status: The Saker Falcon is listed in Appendix I, excluding the population in Mongolia (which is listed in Appendix II). Appendix I includes endangered migratory species categorised as being at risk of extinction throughout all or a significant proportion of their range. Parties strive towards strictly protecting such *species, which are excluded from taking, apart from under recognised exceptional circumstances* (Article III.5 of CMS lists a limited number of exceptions).

CITES status: The Saker Falcon is included in Appendix II. Appendix II lists species that are not necessarily now threatened with extinction, but that may become so unless trade is closely controlled. *Granting an export permit or re-export certificate may authorise international trade in specimens of Appendix-II species.* These should only be issued if the relevant authorities are satisfied that the specimens were legally obtained and that trade will not be detrimental to the species' survival in the wild (subject to a Non-Detriment Findings assessment).

However, primary scientific data for making NDFs is often missing or insufficient in Range States. These data include the population size, distribution/range, population trends, management plans and protection of the populations from over-harvest, monitoring of the harvest levels and trade patterns, monitoring of population data, and establishment of the feedback loops necessary for adaptive management.

Moreover, with reliable knowledge of the exact geographical origin of the falcons and international, flyway-level coordination of trade, the use of declining, endangered populations is also possible, despite positive CITES' Non-Detriment Findings assessments.

CITES generally does not recommend "split-listing" based on differences in the conservation status of national or regional populations.

Note: While CMS does not allow taking the Saker Falcon outside Mongolia, CITES conditionally allows it. CITES currently recommends a zero quota for the international trade of wild Saker Falcons, but moderate legal international trade is ongoing.

The distribution of the Saker Falcon in CMS and CITES Parties and in non-CMS and non-CITES Range States

Over 45% of the estimated global breeding population of the Saker Falcon is distributed in non-CMS priority breeding Range States *(**Annex 4**)*, such as China (1,000-5,000 bps; *SakerGAP, 2014*) and the Russian Federation (1,553-2,089 bps; *SakerGAP, 2014*).

Priority, non-CMS user Range States include Kuwait and Qatar.

Priority, non-CITES breeding Range States include Turkmenistan (100-150 bps; *SakerGAP, 2014*).

Note: In non-CMS and non-CITES Range States, national legislation must ensure that trapping and trade are sustainable to meet, among others, Targets 4, 5, 9, and 20 of the Kunming-Montreal Global Biodiversity Framework on the sustainable use of species.

Unsustainable use of wild Saker Falcons

"Sustainable use" means using components of biological diversity in a way and at a rate that does not lead to its long-term decline, thereby maintaining its potential to meet the needs and aspirations of present and future generations *(CBD, 1992)*.

The SakerGAP identifies 'unsustainable trapping/harvest on the breeding grounds and along the migration routes' as the second leading cause of the decline of the Saker Falcon following the electrocution of Sakers on medium-voltage power lines as the most significant threat.

Based on the available reports of MEAs, national governments and conservation NGOs, the illegal, unsustainable trade of unregistered wild Saker Falcons is ongoing in several Range States on the breeding grounds, migration routes and wintering sites.

Alternative solutions for reducing the illegal taking of wild Saker Falcons

The SakerGAP does not encourage using wild Saker Falcons while the species is globally endangered. It promotes, however, that harvest sustainability should be ensured where and when MEAs (CMS and CITES) and national legislation allow the taking of the Saker Falcon. The SakerGAP considers sustainable use a potential conservation tool in mitigating uncontrolled, illegal trapping and trade.

There are two main alternatives to reducing illegal and uncontrolled taking:

- A ban on trade (status quo for most Range States or no-action alternative): The current efforts will continue at the same level. No "white market" is created, and wild Saker Falcons have no legal economic value. There is no legal utilisation of wild-origin Saker Falcons, and stakeholders deal with the lack of resources to fight illegal harvest and trade and conserve and improve the species in most of its range.
- The application of a sustainable use model as a part of an Adaptive Management Framework in those parts of the range where the population is at a level that could sustain a limited amount of taking. Sustainable use may generate income through legal and controlled trade to cover the cost of its adaptive conservation management and help people who live with it.

Note: The applicable conservation management tools may considerably differ in Range States based on available preconditions for sustainable use.

Due to the nature of illegal activities, direct data on the level of illegal harvest and trapping are inaccessible, so the ban's impact on taking cannot be monitored and assessed correctly. The demand for wild-origin Saker Falcons has likely not diminished significantly since 2011, when CMS Parties decided to ban taking (except for the Mongolian population). The highly sought-after Saker Falcon sub-species has continued to decline, and illegal trade with Sakers still happens.

Under the SakerGAP concept, illegal trapping and trade can potentially be converted into controlled and sustainable use and contribute to improving the species' conservation status. However, this will require the establishment of an Adaptive Management Framework (AMF).

Legal possibilities for developing and implementing an AMF under CMS

The legal analysis (CMS Secretariat, April 2022) on the consistency of the development and implementation of an adaptive management framework for the Saker Falcon with the provisions of the CMS concluded that:

"*23. The development of an adaptive management and monitoring framework for the Saker Falcon would not, by itself, contravene any provision of the Convention. However, any implementation of an AMF that includes harvesting or taking of the Saker Falcon beyond the Mongolian population would contravene Article III.5 unless it is limited to populations, or the entire species, previously delisted from Appendix I.*"

The Saker Falcon is currently listed by the IUCN as globally endangered. Due to significant knowledge gaps and the sharp decline of the species in some regions, it is unlikely that the entire species' Red List category will be downlisted soon.

The legal taking under the AMF can be implemented only once the populations are downlisted from CMS Appendix I. Several sustainability safeguards require the legal possibility of use, which CMS currently does not allow outside Mongolia. Without the possibility of legal use and currently limited only to Mongolia, the effectiveness of a global AMF is likely reduced.

by the effectiveness of individual marking as a critical monitoring tool for the AMF Quota Management System *(**Figure 1, Figure 6**)*. Even if individual Sakers are marked on the breeding grounds and along flyways, if legal taking is allowed only in Mongolia, illegally trapped marked falcons will not be reported, and individual marking will be ineffective.

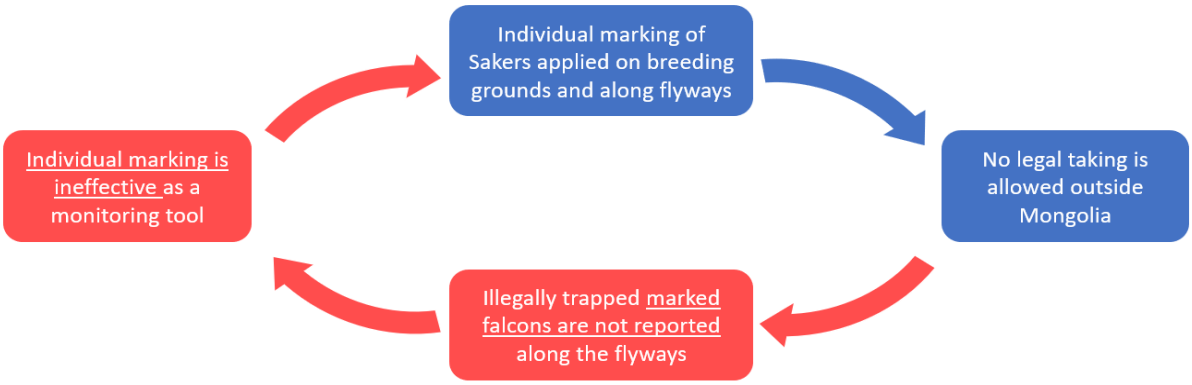


Figure 1 *The effectiveness of individual marking when no legal taking is allowed outside Mongolia*

Existing significant knowledge gaps and their consequences for the AMF

Significant gaps in knowledge regarding the use of the global Saker Falcon population persisted.

Insufficient recent information is available about the following:

- population parameters in most Range States, especially in Asia and Africa, such as distribution, abundance, population sizes and trends, breeding success, survival, genetic variation, wintering and dispersal, and;
- by its unreported nature, the current extent and effects of illegal trapping and trade and specifically:
  - the harvest levels from different Saker populations *(Collar et al., 2013)*
  - the proportion of trapped age classes in wintering areas;
  - the scale and extent of trapping of wild Saker Falcons in states not holding breeding populations; and
  - the long-term effect of trapping on the dispersal behaviour and breeding performance.

Significant resources are required to fill these crucial knowledge gaps globally. Therefore, research and monitoring supporting the implementation of the AMF should first focus on specific breeding populations or population units and their related flyways.

2. THE ADAPTIVE MANAGEMENT FRAMEWORK FOR THE SUSTAINABLE USE OF THE SAKER FALCON

The overall goal and specific objective of the Adaptive Management Framework (AMF) for the sustainable use of the Saker Falcon

The Saker Falcon AMF is a systematic approach for mitigating/eliminating all main causes of the decline of the Saker Falcon under substantial uncertainties. It integrates principles such as 'learning by doing', evidence-based decision-making, and stakeholder cooperation and engagement. It can be applied throughout the range of the species and includes a description of the six key steps in the cycle: plan, design, act, monitor, evaluate and learn, and adjust management.

The Addis Ababa Principles and Guidelines, developed by the Convention on Biological Diversity (CBD), make it clear that adaptive management, based on monitoring, assessment and re-adjustment of management practices, is an essential prerequisite for the sustainable use of wildlife resources.

The overall goal of the AMF is to re-establish a healthy and self-sustaining wild Saker Falcon population throughout its range and ensure that any use is sustainable (SakerGAP, 2014).

Its specific objective is to ensure that where trapping and other forms of taking Saker Falcons from the wild are legal, they are controlled and sustainable, thereby encouraging population growth and eventual stabilisation (Objective 2 of the SakerGAP).

If applied, the AMF would be a non-legally binding framework.

The aim is to shift the existing unregulated, illegal harvest towards a regulated, legal one and set out how a controlled, sustainable harvest of wild Saker Falcons could be undertaken in agreed parts of its range while simultaneously decreasing the overall level of harvest globally *(Figure 2)*.

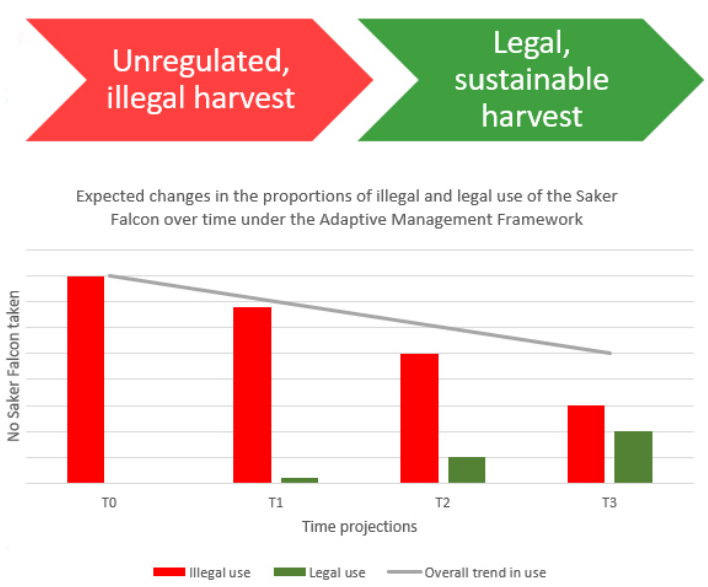


Figure 2 *Expected changes in the proportion of illegal and legal use of the Saker Falcon under the Adaptive Management Framework (theoretical)*

The AMF also aims to provide an evidence-based decision-making tool for international and national authorities to decide whether or not to harvest/use a Saker Falcon population even when the relevant multilateral environmental agreements (CMS and CITES particularly) and scientific data would allow it.

Applying the AMF is voluntary. Range States or political and economic unions (e.g. the European Union) have the sovereign right to decide not to join the AMF if they consider it unreasonable or an inappropriate tool in the fight against illegal trapping and trade.

The modular AMF approach

The aims of the modular AMF approach are the following:

1. Complete an inventory of all necessary components for implementing the AMF for the sustainable use of the Saker Falcon. AMF is designed to be a support mechanism/tool to assist stakeholders, especially international and Rage State authorities.
2. Mitigate the Saker Falcon AMF governance complexity globally and within the Range States.
3. Subdivide the Saker Falcon AMF into smaller, complementary parts called modules for easier design/conceptualisation by the Saker Falcon Task Force and more effective implementation by the Range States. Modules can be adapted according to the users' needs, creating various management systems with the same objective. Modules are purpose-specific and built up from components.
4. Provide detailed guidance on how each module should be applied to support the implementation of the AMF. Target stakeholders range from international organisations through the Range States to individual users.

The AMF has the following nine modules *(Figure 3)*:

Module 1: Governance and Management
Module 2: Policy and Law-making
Module 3: Law Enforcement
Module 4: Awareness Raising
Module 5: Monitoring & Research
Module 6: Ex-situ Conservation Management
Module 7: In situ Conservation Management
Module 8: Stakeholder Cooperation & Networking
Module 9: Saker Falcon Stewardship

Figure 3 The nine modules of the AMF

The geographical scope of the AMF

The AMF potentially covers all Saker Falcon Range States *(**Annex 2**).* Specific AMF components can be applied in participating Range States according to country-specific features and conditions.

3. AMF Module 1: Governance and Management

The purpose of Module 1 is to conceptualise a framework for the overall coordination and management of other AMF modules and to advise decision-makers on the legal, controlled, and sustainable use (harvest/capture/trade/keeping) of the Saker Falcon in parts of its range. At the same time, it aims to decrease the overall level of harvest globally and exert minimal adverse impact on decreasing non-target populations.

The module consists of seven components as follows:

1. Sustainable use coordination and management component
2. Saker Data Management System component
3. Global and national sustainable quota management system component
4. Evaluation component
5. Reporting component
6. Socio-economic and fund-raising components
7. Saker Falcon Task Force component

Sustainable use coordination and management component

Conceptual base

The success of the AMF in the sustainable use of the Saker Falcon and the survival of decreasing Saker populations depends on the firm collaboration and concerted actions of stakeholders, breeding and non-breeding Range States, and Multilateral Environmental Agreements at the flyway level. This requires continuous trust-building in partnership, engaging the most interested and powerful stakeholder group, the end-users, in the AMF, and changing the end-users' commitment and attitude to use legal, controlled, and sustainable ways to obtain wild Saker Falcons while contributing to conservation efforts targeting their populations.

Proposed guiding principles

Sustainability	Meeting the needs of the present without compromising the ability of future generations to meet their own needs.
Participation	Active and informed involvement of all affected or interested stakeholders in a decision-making process, whether directly or through representatives, and facilitated through formal and informal procedures such as consultations, hearings, surveys, and meetings.
Transparency	Information on matters of public concern, including decision-making and implementation processes, is disclosed and made accessible to the public or affected stakeholders in appropriate formats, sometimes subject to a right or guarantee of access to information.
Accountability	Accountability implies answerability or responsibility for an action or outcome. Accountable parties, such as government institutions or officials, are answerable for the consequences of their decisions,

	whether politically or within the organisational hierarchy they form part of.
Rule of Law	The Rule of Law requires that the government act within the limits of its powers as prescribed by law, through the impartial exercise of legislative, executive and judicial authority, respectful of individual and collective rights, within the boundaries of clear, determinate, and stable laws and a rule-based process.
Effectiveness and Efficiency	Institutions, processes, and actors involved in governance have the capacity to meet society's needs while making the best use of the resources at their disposal, ensuring the timely delivery of public services through a professionalised bureaucracy, and avoiding unnecessary administrative costs.
Equity and Fairness	Equity and fairness require that distributional impacts, especially on the most vulnerable, be considered during governance. This ensures that everyone has a stake in the outcome and that no one feels alienated.

Table 1 Guiding principles for coordination and management (based on World Bank, 2022)

Proposed decision-making processes for the Range States on the sustainable use of wild Saker Falcons

Figures 4 and 5 below introduce proposed decision-making processes in breeding and non-breeding Range States if the application of the AMF is planned.

When a Range State intends to use the Saker Falcon legally and sustainably, it must meet a series of pre-defined safeguards and international and national legal requirements. The AMF suggests that the Range States consider proposing the downlisting of a specific Saker Falcon population only if all those safeguards are met.

Note: The set of safeguards differs in breeding and non-breeding Range States.

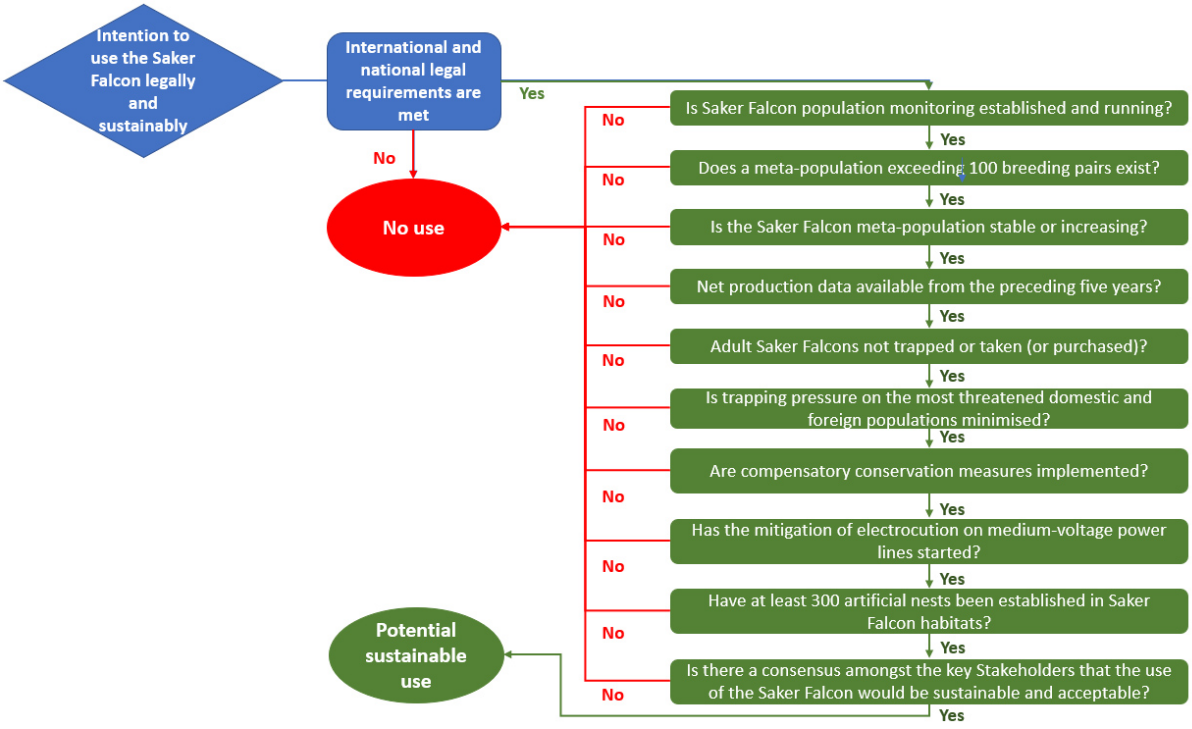


Figure 4 A proposed decision-making process for breeding Range States

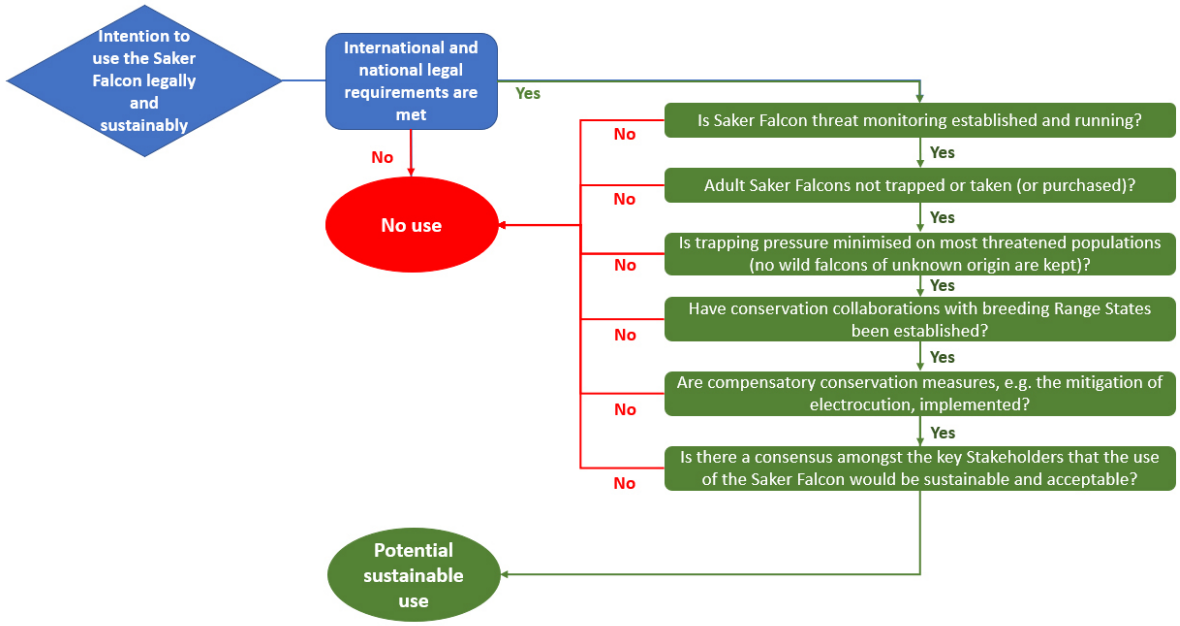


Figure 5 *A proposed decision-making process for non-breeding (passage and winter) Range States*

Saker Data Management System component

A proposed Saker Falcon Global Data Management System

The Saker Data Management System is planned to be a specially developed computer database to capture, organise and analyse all types of data collected during the implementation of the SakerGAP (monitoring data, geospatial data, SakerID, data from the online information portal, etc.).

Figure 6 presents a visual summary of the proposed Global Data Management System, which includes three levels with data collectors and providers. Data is collected from the bottom up, starting at Level 3 (local level), through Level 2 (national level), and finally, Level 1 (international level).

Local people (Level 3) may be involved in collecting raw field data under the supervision of a national Monitoring and Research Hub (Level 2) and within a Saker Falcon Stewardship programme (Module 9 of the AMF). The Monitoring and Research Hub would then process and validate data and provide only derived/ non-sensitive data to the National Information Hubs (Level 2).

At the top/international level (Level 3), a Global Information Centre would

- Collect and analyse derived data provided by National Information Hubs and
- Feed Global Quota Management System with processed data

The bottom line is that sensitive data, such as the exact locations of natural nest sites, would not be shared with National Information Hubs or the Global Information Centre, as protecting natural nest site data is of the utmost importance in the fight against illegal trapping and trade.

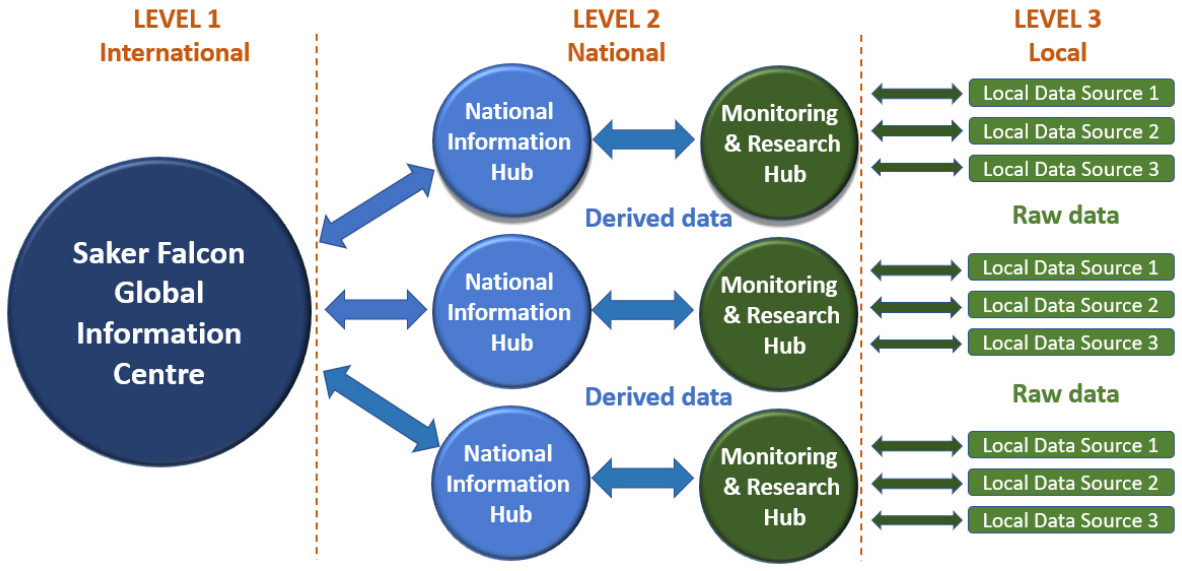


Figure 6 A proposed Saker Falcon Global Data Management System

Table 2 below shows key actors' proposed data collection and management functions at different levels with examples. Note that the colours correspond to the levels shown in *Figure 6*.

LEVEL	ACTOR	FUNCTION	EXAMPLE(S)
LEVEL 1	Saker Falcon Global Information Centre	• **Collect and analyse derived data** provided by National Information Hubs • Feed Global Quota Management System with **processed data**	Multilateral Environmental Agreements (CMS, CITES)
LEVEL 2	National Information Hubs	• **Collect derived data** from Monitoring & Research Hubs • Provide legal, accounting and other advisory services	National Ministries for the Environment
	Monitoring & Research Hubs	• Collect, validate and analyse **raw field data** • Provides technical advice on field monitoring • **Convert raw data to a derived data set** and provide National Information Hubs with **it**	Universities, research groups, think tanks, environmental NGOs
LEVEL 3	Local Data Sources	• **Collect raw field data** • Provide falcon market intelligence, such as price and transaction data	Members of the local community, species specialists

Table 2 Key actors' proposed data collection and management functions

Global and national sustainable quota management system component

- **For range states where the Saker Falcon population is at a level where sustainable use may be possible and acceptable**

Note: A coordinated Saker Falcon Quota Management System (QMS) does not yet have a legal framework. Responsibility for species management lies nationally for both CMS and CITES. Establishing a coordinated QMS is a long-term plan that will start looking at national quotas.

Concept purpose

The sustainable Saker Falcon Quota Management System (QMS) aims to tackle unsustainable trapping/harvest and trade of wild Saker Falcons, which are considered among the leading causes of species decline.

To ensure sustainability, the Saker Falcon Quota Management System must be set within an Adaptive Management Framework based on monitoring, assessment and re-adjustment of management practices.

Potential role models for a Saker Falcon Quota Management System (QMS)

International concepts

- Biodiversity Credits *(The Biodiversity Consultancy, 2022)*
- EU Emission Trading System *(EU ETS Directive, 2003)*
- Total Allowable Catch (TAC) and their traditional share *(European Commission, 2016)*

Species-specific schemes

- The Mongolian Saker Falcon conservation programme *(**Annex 13**)*
- Harvest of wild Peregrine Falcons in the USA *(Alen & Milsap, 2006)*
- Turtle Dove Adaptive Harvest Management Programme *(European Commission, 2019)*
- Adaptive Harvest Management Program for Taiga Bean Geese *(AEWA, European Goose Management Platform, 2016)*

How would the Saker Falcon Quota Management System operate?

Correctly applying the 'cap-and-trade'* principle can establish a controlled and sustainable wild Saker Falcon market in Range States where the population is at a level that could sustain a limited amount of taking.

Applying pre-defined sustainability safeguards, MEAs and Governments set a global cap or quota on the total number of wild Saker Falcons officially allowed to be harvested yearly in stable or increasing populations *(**Figure 7**)*.

The global quota is split into voluntary credits (or individual permits) and given to responsible breeding Range States that can sell credits to 'Users' and 'Extractors' to cover remedial conservation costs, at least 50% of which are in concrete conservation actions.

The cap is modified based on the most up-to-date quantitative monitoring data (-> Adaptive Management Framework).

* The 'cap-and-trade' system caps the overall level of use allowed based on a Maximum Sustainable Harvest Rate. Within that limit, participants can buy and sell or exchange credits in a controlled way.

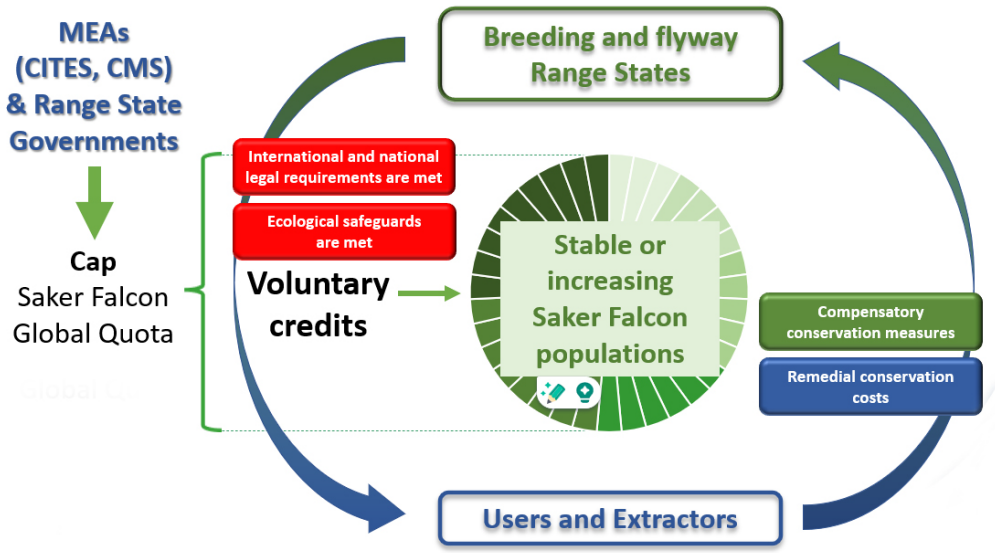


Figure 7 *A proposed Saker Falcon Quota Management System*

Viable population management units and national quotas

Global conservation improvement and the re-listing of the Saker Falcon as an entire species are unlikely in the medium term due to significant knowledge gaps, the lack of resources for surveys and conservation, and the justified application of the precautionary principle.

Nevertheless, viable population management units (stable or increasing and exceeding 100 breeding pairs) can be identified within national populations even if the status of the whole national Saker Falcon population is data deficient.

Simultaneously with introducing the nine AMF modules, the sustainable use of viable Saker Falcon population management units can be ensured through annual monitoring of population parameters, individual marking, identification of the geographical origin of trapped falcons, and an adaptive management/quota system.

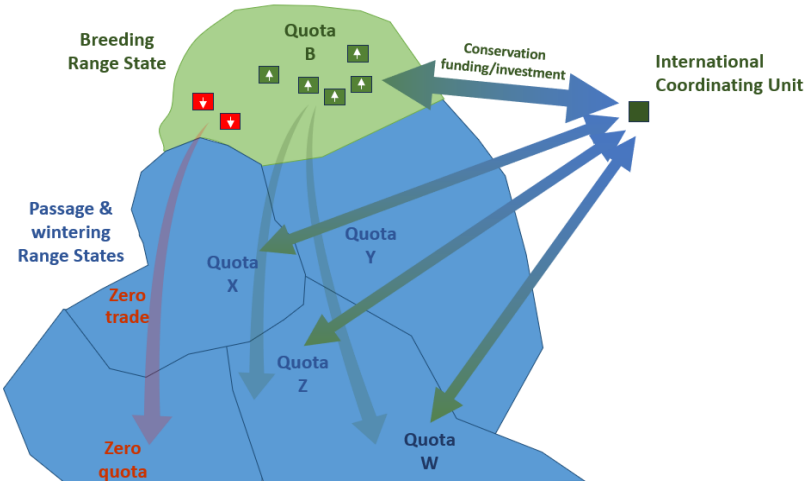


Figure 8 *A potentially effective AMF through a collaboration of breeding and non-breeding (passage and winter Range States)*

Within the international Quota Management System, the total flyway-level quota would be added up from the breeding, passage and wintering Range State quotas *(Figure 8)*:

$$Flyway - level\ Quota = \sum_{i=1}^{n} Quota_i$$

Where:

- n is the number of different types of quotas (in this case, breeding B, passage X, passage Y, passage Z, and wintering).
- $Quota_i$ represents each type of quota (breeding, passage X, Y, Z, or wintering W).

Quotas can be set only if taking and trade are legal and the sustainability safeguards are met in breeding and non-breeding Range States. Zero quotas would be set for falcons from depleted or decreasing populations.

Note: If taking and trade are legal only in the breeding Range State, then the AMF is ineffective because, in the non-breeding Range States, illegal trapping and trade will continue.

An international Quota Management System must guarantee that the viable population units are improved and not overexploited or lose their source population potential.

A proposed global Quota Management System

Figure 9 proposes closely linked international and national governance structures.

At the *International level*, the coordinating unit is proposed to be split into a Management Authority and a Scientific Authority, where

- an International/Central Management Authority ensures the management integrity of the Global Quota Management System while
- an International/Central Scientific Authority ensures that the Quota Management System is independent, science- and monitoring-based, and sustainable.

At the *National level*, governance is also split into a Management Authority and a Scientific Authority, where

- a national Management Authority (Governmental Organisation - GO)
  - validates national quota based on annual monitoring-derived data,
  - issues credits in consultation with the international management authority.
- a national Scientific/Conservation Authority ensures that the quota system is based on annual monitoring data and is sustainable (GO or NGO or their task force), sets conservation projects and feeds the Saker Falcon Adaptive Management Framework with data (GO or NGO or their task force).

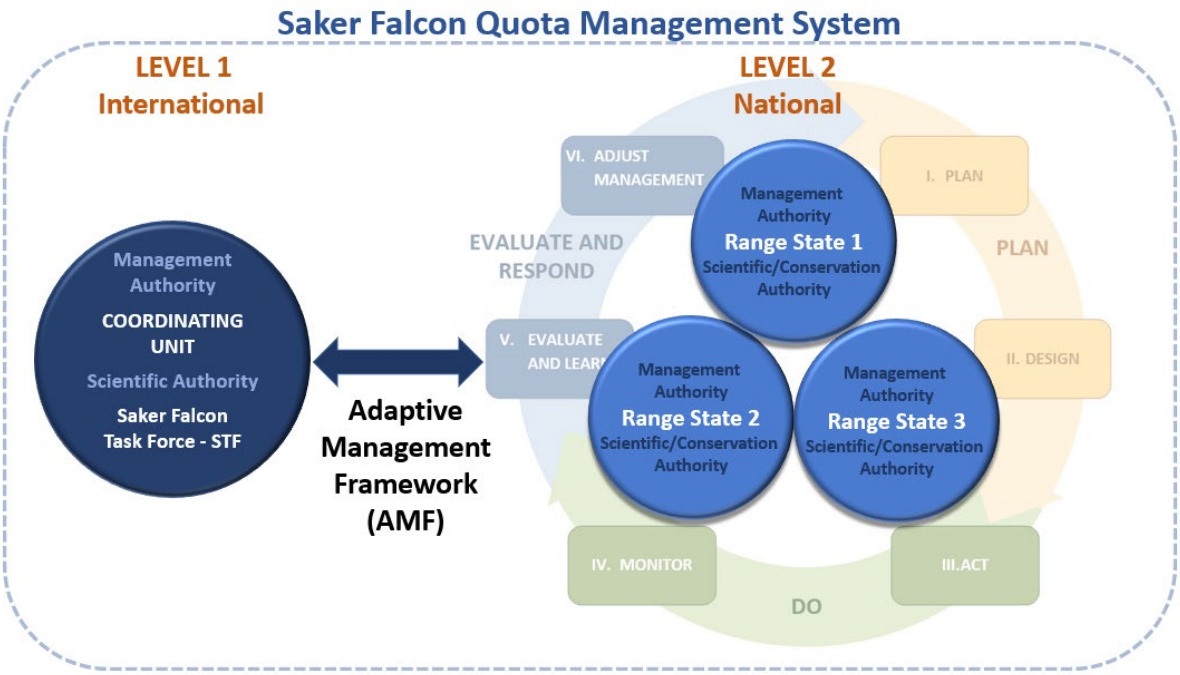


Figure 9 A Proposed Global Quota Management System

Potential governance functions in the Saker Falcon Quota Management System

Phase	**Governance context**	**Governance function**
ESTABLISHMENT	Political and Legal Process	Stakeholder Engagement and Consensus Building
		Creating a Robust Legal Basis
		Regulatory Impact Assessment
	Institutional and Regulatory Framework	Defining Institutional Functions and Responsibilities
		Deciding the Level of Formality and Centralization
		Embedding in the Broader Legal Framework
	Technical and Administrative Capacity	Capacity Needs of Public Authorities
		Capacity Needs of Regulated Entities and Other Stakeholders
OPERATION	Implementation Oversight	Oversight of the implementation of the SakerGAP

	Compliance Oversight	Oversight of the Adaptive Management Framework (MRV* and Enforcement)
	Trade Oversight	Oversight of Market Actors and Activities
	Transparency	Disclosure of SF Use and Trade Data, Information on Revenue Use
	Conflict Resolution	Resolution of Judicial Disputes or Mediation
REVIEW	Performance Review	Assessing the Performance of the AMF and the Need for Modification
	System Change	Managing Modifications to the AMF, including Linking and Termination

Table 3 Potential governance functions in the Saker Falcon Quota Management System (based on World Bank, 2022)

Potential PUBLIC actors in SF QMS Governance

Actor	**Function**	**Example(s)**
Multilateral Environmental Agreements and Networks	International coordination includes applying an Adaptive Management Framework, technical assistance to the National Administrator, cooperation, and thought leadership.	Multilateral Environmental Agreements (e.g. CITES, CMS Raptors MoU, Saker Falcon Task Force)
SF QMS National Administrator	Overall national management of the SF QMS	National ministries for the environment
Lead Executive Agency (where different from SF QMS Administrator)	Political oversight and coordination, executive rulemaking	National ministries for the environment
Other Executive Agencies	Offer guidance, support and scientific input on select issues	National environmental agencies
Legislature	Adopt formal SF QMS legislation	National Parliaments
Judiciary	Resolve conflicts and decide judicial disputes	National High Courts
Delegated Support Entity	Support on delegated tasks	Regional environmental initiative

Table 4 Potential PUBLIC actors in SF QMS Governance (based on World Bank, 2022)

Potential PPP actors in SF QMS Governance*

Actor	Function	Example(s)
Accredited Verifiers	Audit and verify falcon utilisation reports	Accredited accounting, auditing and certification firms
Standardisation Bodies	Develop and administer standards and guidance (e.g. for MRV**, credits)	Credit standard administrators
Compliance Entities	Subject to compliance obligations	Utilities, industrial facilities
Exchanges	Offer platform for trading of Saker Falcon credits, sometimes also clearing and auctioning services	International exchange platforms
Dealers/mediators	Facilitating transactions in Saker Falcon credits; aggregating transactions.	Trading firms, specialised dealers

** PPP = Public-Private Partnership ** MRV = Monitoring, Reporting & Verification*

Table 5 Potential PPP actors in SF QMS Governance (based on World Bank, 2022)

Potential PRIVATE actors in SF QMS Governance

Actor	Function	Example(s)
Project Developers	Originate and develop crediting projects.	Conservation project owners, consultancies, specialist service providers
Professional Services	Provide legal, accounting and other advisory services	Consultancies, law firms, accounting firms
Analysts	Provide falcon market intelligence, such as price and transaction data	Financial analysts, strategic research providers, market data aggregators
Interest Groups	Aggregate and articulate member interests	Trade associations, environmental NGOs
Research and Academia	Participate in foundational research and education	Universities, research groups, think tanks
Media	Report on policy and trade developments	Print media, broadcast news, trade publications

Table 6 Potential PRIVATE actors in SF QMS Governance

Provisional timeline for the potential introduction of a national QMS

Figure 10 shows a proposed timeline for introducing a national QMS.

It has four phases:

Phase 1 is a one-year preparatory phase (PLAN). It establishes and legitimises a coordinating and decision-making structure, develops the network of stakeholders, and designs the Range State-specific implementation.

Phase 2 is a five-year investment phase (ACT) when monitoring the Saker Falcon population should occur, and the pre-defined safeguards should be met through conservation investments/actions.

Phase 3 is a one-year evaluation phase (EVALUATE) during which the preparatory phase's results are evaluated. If the safeguards are met, delisting a specific population from CMS Appendix I can be proposed.

Phase 4 is the conditional sustainable use phase (ADJUST MANAGEMENT), provided the specific Saker Falcon population is downlisted, and the safeguards are still in place.

Without previous monitoring and bird protection interventions, the first three phases (Phase I-III) optimally can span seven years. However, if monitoring and conservation measures have already started, the legal and conditional sustainable use can be applied from the sixth year of the project's start.

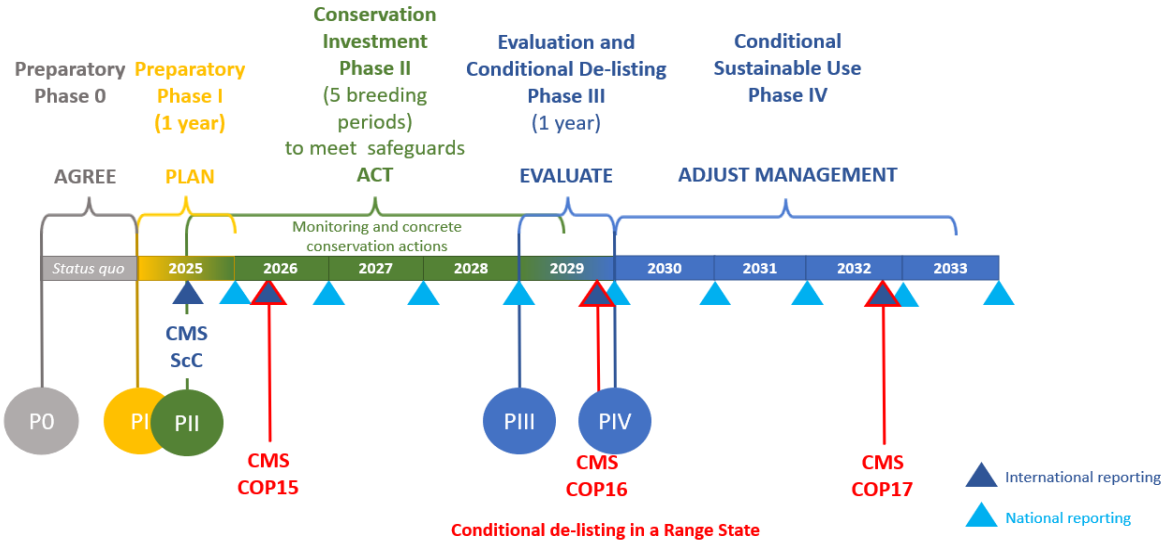


Figure 10 A provisional timeline for introducing a national QMS if the implementation starts in 2025 (please see the description of phases in the next section).

Case study 1 *A summary of the results of the Mongolian artificial nest system*

- In 2010, Mongolia legally exported 237 Saker Falcon at US$11,760 per permit, generating an income of US$2.79 million for Mongolia *(Dixon, 2011)*.
- 2010: A grid of 5,000 artificial nests, 250 nests each at 1.5 km intervals, was established in 20 Mongolian districts.
- 2010-2014: The Saker Falcon breeding pairs increased, averaging 3.2 (± 0.3) fledglings per nesting attempt *(Rahman et al., 2014)*.

- The provision of 5,000 artificial nests created an average annual saker population of 602 (SE ± 59) breeding pairs, producing an estimated 1,735 (SE ± 272) fledglings per annum over the period 2013–2015 (Zhang *et al.*, 2024).
- 2014: 2,500 fledglings were produced in the artificial nest system *(Rahman et al., 2014)*.
- With a 5% sustainable harvest, 125 Saker Falcon fledglings could have been harvested in 2014, theoretically generating US$1.47 million.

Description of the phases of introducing the QMS

Phase 0 - CONSENSUS PROCESS - Agree on implementing the concept

- Before everything starts: Reach Stakeholders' consensus on the process of AMF implementation
- Prioritise and negotiate with a volunteer Range State about testing the concept
- Fundraising

Phase I - PLAN - Project preparation (1 year)

A) Establish and legitimise a coordination and decision-making structure and develop the network of Stakeholders

Establish a transparent system of coordination related to the overall management of the AMF. Nominate a core team for coordination. Renew the remit of the Saker Falcon Task Force to oversee the implementation of the AMF and recruit a Coordinator as soon as funding is available. Establish a Saker Falcon Network.

B) Plan the Range-State-specific AMF

- Make an inventory, define/refine the problem and threats and analyse the situation.
- Establish Range-State-specific goals and objectives, including targets and indicators, and set priorities.

C) Design the Range-State-specific implementation

- Design actions (answer the *what/where/when/how, and who?* Questions) for all AMF modules and their components based on priorities. Establish a Saker Data Management System (SDMS). Develop a Work Plan, timeline and budget for implementing all AMF modules.

Phase II - ACT - Conservation Investment

A) Take actions to improve the conservation status of the Saker Falcon in a priority breeding Range State

- Implement the components of the AMF modules, document progress, and note deviations from the plan.

  a. Make legal, policy, law enforcement, Stakeholder cooperation, awareness-raising and engagement and Saker Falcon stewardship steps to create a supportive environment for implementing conservation management actions.

b. Replicate previous good practices and implement priority *ex-situ* and *in-situ* conservation management actions towards the favourable conservation status of Saker Falcon populations:

   i. Reduce the impact of electrocution on medium-voltage electric poles by applying bird-safe designs;

   ii. Increase suitable available nest sites by establishing an artificial nest box system;

   iii. Increase productivity by improving habitats for prey and reducing environmental hazards, such as poisoning;

   iv. Reduce the impact of infrastructure developments (collision with man-made structures and habitat fragmentation);

   v. Prepare good practice guidance on keeping, captive breeding, health care, and controlled release/reintroduction of wild-origin Saker Falcons;

   vi. Network with falconry hospitals and breeding/rehabilitation centres and propose a Code of Conduct for the sustainable use of the Saker Falcon.

B) Monitor to fill critical knowledge gaps and to track the progress of implementation

- Implement a monitoring plan to assess effectiveness, document progress, and note deviations from the plan (applied options depend mainly on the monitoring area's parameters and the monitoring organisations' capacities).

  a. Monitor the progress and effectiveness of implementation (= action monitoring).

  b. Monitor the environmental parameters. Measure environmental conditions (e.g. habitat availability/quality/composition; prey availability/dynamics; effects of climate change/extreme weather).

  c. Monitor population parameters. Conduct and repeat population surveys in sample areas (e.g. on distribution, abundance, population size, population trend, breeding success, survival, causes of death, age structure, genetic variation, migration, wintering and dispersal) or structured observations without quantitative design or intention (e.g. nest cameras). Collect biological materials: egg remains, feathers, falcon carcasses, food, and pellet remains.

  d. Monitor the impact of threats:

     i. Monitor the impact of electrocution (surveys along medium-voltage electric lines),

     ii. Monitor capture, trade and use.

     iii. Monitor the impact of other mortality factors than electrocution and illegal use, such as poisoning and collision with man-made objects and infrastructure.

     iv. Monitor the degradation of key habitat types.

A) Prepare, analyse, synthesise and evaluate data collected through monitoring. Apply data in integrated landscape management, forecasting trends, predicting changes in space and time, risk assessment and decision-making—analyse data with the Saker Falcon-specific GIS within a Saker Data Management System (SDMS).

B) Share knowledge, communicate current understanding with stakeholders and learn lessons (document and share learning through networking)

C) Prepare a summary evaluation for decision-making.

D) Propose the re/listing of the species if all sustainability safeguards are met.

Phase IV – ADJUST MANAGEMENT – Conditional Sustainable Use

A) Adapt strategic plan.

B) Adjust management and start sustainable harvest based on the Quota Management System if all safeguards are in place.

Safeguards to ensure a sustainable harvest through a Quota Management System

The SakerGAP identifies six essential and four desirable safeguards to ensure sustainable harvest through quotas calculated using up-to-date ecological data. Six additional safeguards were formulated during the elaboration of the AMF.

Essential safeguards

1 Quota calculations should be based on the *observed or accurately estimated* number of breeding pairs. They should also consider the level of taking of the Saker Falcon along entire flyways, i.e. on breeding grounds, migration and in wintering areas.

2 Only *populations or meta-populations exceeding 100 observed or accurately estimated breeding pairs* should be considered potential harvesting sources. Estimations should be based on reliable quantitative or representative data through sampling (e.g. mark-recapture) or interpolation for a given period and area.

3 Only *stable or increasing* populations should be considered for harvesting. This requires the monitoring of populations through repeated population surveys. Five per cent is recommended as the *maximum* harvest rate of fledged juveniles, and this level should not be seen as a target to reach but rather as a limit on the total numbers that could be taken. Only the harvesting of 1st year (up to nine months old post-fledging individual) Saker Falcons should be considered for falconry purposes. If the figure is based on the observed number of fledged juveniles, then 5% is considered conservative and follows the precautionary principle. Based on productivity data from European and Central Asian Saker Falcon meta-populations (Kenward et al., 2013), this means a theoretical maximum of 10 harvested juveniles/160 territorial pairs in Europe and 10 harvested juveniles/120 territorial pairs in Asia. When assessing the conservation status of the populations targeted by harvest, a combined assessment of range, population, suitable habitat, and future prospects should be made.

4 *Net production* (fledged juveniles) is calculated annually based on known breeding pairs' rolling mean annual net production in the preceding five years. This approach would smooth out any fluctuations in the annual number of fledged juveniles and, at the same time, enable the application of the principle of adaptive management.

5 *No adult Saker Falcons* will be trapped or taken (or purchased). The cumulative loss of adults, whether trapping, electrocution, or other factors, severely threatens Saker Falcon populations. In effect, it draws on the 'capital' rather than the 'interest' of the population (Kenward *et al.*, 2007).

6 *Trapping pressure should be minimised on the most threatened, non-target populations* on breeding grounds and along their entire flyways.

Desirable safeguards

7 The legal harvest and trade within non-breeding (passage and winter) States should be allowed only if these States fund remedial conservation programmes (e.g. large-scale modification of medium-voltage electric lines or support an artificial nest programme) in their territory or a breeding Range State within the same flyway. This safeguard is to prevent harvesting Saker Falcons without compensatory conservation measures taking place.

8 Mitigation of electrocution on medium-voltage power lines has started in Saker Falcon habitats.

9 At least 300 artificial nests within pilot projects have been established in Saker Falcon habitats to check whether the lack of suitable nest sites is a limiting factor.

10 The above factors would need to be put in place, and there would, in effect, need to be a consensus amongst the key Stakeholders that the series of actions, working in combination, would be acceptable.

Additional safeguards

11 Range States, CMS, and CITES endorse AMF-based sustainable use schemes for the Saker Falcon. Governments establish national stakeholder platforms.

12 Legal protection of the Saker Falcon is in place in all Range States and effectively enforced. National laws ensure sustainable use through an AMF.

13 Any taking of wild Saker Falcons must be traceable. The source population of trapped falcons must be identifiable through individual marking and/or genetic ID.

14 Wild falcons can be taken only through a clearly defined licensing process, including the licensing of breeding and rehabilitation centres.

15 National governments implement habitat conservation and management activities per the SakerGAP.

16 Local communities are involved in implementing the Adaptive Management Framework for the conservation and sustainable use of the Saker Falcon.

Quota calculation

Quota Calculation Units

- Observed or accurately estimated 100+ breeding pairs
- In natural and/or artificial nest sites/breeding boxes
- Only 1st-year birds (up to nine months old), no adult Saker Falcons are trapped or taken

Maximum Sustainable Harvest Rate *(to be revised if new, Range State-specific data/models are available)*

- A maximum of 5% of the observed number of fledged juveniles
- E.g. in Asia: 8.33 harvested juveniles/100 breeding pairs (10 juv./120 bps)

How could the Saker Falcon Quota Management System ensure international and stakeholder collaboration?

With proper governance, the controlled global trade may require cooperation between Breeding and User Range States.

Under the controlled Quota Management System, breeding Range States can trade Saker Falcon quota credits with user Range States within the sustainable quota. Breeding and non-breeding Range States can sell their wild Saker Falcon credits to user Range States within and between flyways *(**Annexes 5-8**).*

The quota system may create financial incentives to manage wild Saker Falcon breeding populations sustainably.

The Breeding Range States can increase the number of wild Saker Falcon credits within a sustainable quota by increasing the number of breeding pairs or by mitigating key mortality factors, such as electrocution on medium-voltage electric poles.

Users may buy credits through critical conservation investments, such as the artificial nest system in areas where nest sites are scarce or by funding electrocution mitigation projects in breeding and passage/winter Range States where the regular presence of the Saker Falcon is confirmed.

Range States may exchange credits through a transparent system. They are responsible for ensuring that the national quotas are not exceeded.

The Saker Falcon Global Quota Management System may bring together governments, regulators, conservation organisations and market players instead of separating them.

Risk undermining sustainable use

While designing the AMF, the Saker Falcon Task Force seeks to find a careful balance between the benefits of an internationally coordinated sustainable use framework and the inherent risks of taking Saker Falcons from the wild in large numbers.

The Adaptive Management Framework for the sustainable use of the saker Falcon may fail if

- key stakeholders are not engaged successfully or oppose any use based on precautionary principles,
- a mutual no-win situation develops between the main stakeholders instead of cooperation,
- legal regulations make the AMF unfunctional,
- knowledge gaps and uncertainties continue to exist in the population status of the Saker Falcon and the level of actual use,
- low-quality population ecological baseline data does not allow sustainability assessment or allow erroneous quota calculations,

- law enforcement mechanisms and deterrents of illegal use are ineffective,
- there is falcon leakage due to corruption, and in the Range States, where regulations and law enforcement are more relaxed,
- 'Cheaters' and legal loopholes exist, and wild-origin falcons are laundered through the legal trade,
- The AMF is not in line with socio-economic processes.

Key challenges at the flyway level

Scaling up a Saker Falcon Quota Management System to an international or flyway level may raise specific questions as follows:

1. How can the effective monitoring of wild Saker Falcon populations and their trade (legal/illegal) be ensured?
2. How do we fill the significant ecological and market/economy knowledge gaps at the level of flyways?
3. How can cumulative trapping and trade along the flyways be built into the Quota Management System?
4. How can we ensure that sought-after severely depleted sub-populations are not overharvested?
5. How can we build trust and consensus among key stakeholders regarding the sustainable use of wild Saker Falcons?

Can the Saker Falcon legal trade work sustainably?

From an economic perspective, the legal global trade in wild Saker Falcons will likely efficiently reduce illegal harvest, trapping and trade only if it costs end users as much or less than the illegal market.

The success of the fight against illegal falcon trapping and trade depends on the net costs and benefits of supporting conservation rather than illegal trapping and trade.

The legal global trade of wild Saker Falcons must show a high level of harmonisation regarding the legal trading system and prices. Range State governments and MEAs must set harmonised rules to control legal trade, adjust law enforcement, and introduce stricter deterrents.

Range States that are not MEA parties may join the initiative through their national legislation. End-users must be aware of their responsibilities for sustainable falconry.

Evaluation component

The Adaptive Management Framework relies on monitoring, conservation actions and evaluation.

Management should be adjusted based on the results of the performance reviews/evaluations. This must include terminating harvest if it is unsustainable.

Performance review - Evaluation of the AMF

(based on World Bank, 2022)

Regular, annual performance reviews are needed to assess the performance of the AMF and the Quota Management System according to the following:

- Function: Assessing the performance of the Saker Falcon Adaptive Management Framework and the global Quota Management system
- Actors: MEAs, Saker Falcon Task Force, National Authorities, policymakers, scientific and law enforcement bodies
- Tools: Surveys & Modelling
- Criteria: Defined based on sustainability safeguards
- Processes: Evaluation process, Stakeholder engagement

System change - Adjust management

(based on World Bank, 2022)

The AMF should be adjusted based on the performance reviews/evaluations. This must include terminating harvest if it is unsustainable.

- Function: Managing modifications to the AMF and QMS, including termination if unsustainable
- Actors: MEAs, Saker Falcon Task Force, National Authorities, policymakers, scientific and law enforcement bodies
- Tools: Legislation & Policymaking, management guidelines
- Processes: Legislative & policymaking procedures & consultations

Reporting component

Reporting cycles

Table 7 shows a proposal for the reporting process. From the bottom up, the three reporting levels are local, national, and international.

The table also shows the potential actors who prepare the reports and those who receive, validate and collate them for the next level.

The reporting intervals may be annual at the local and national levels, and the whole system should be reported to the CMS Conference of Parties every three years.

LEVEL	ACTOR	REPORTS TO WHOM?	REPORTING INTERVALS
LEVEL 1	Coordinating Unit	• Multilateral Environmental Agreements (CITES, CMS) • Range States	Every three years Annual Reports

LEVEL 2	National Management & Scientific Authorities	• Coordinating Unit	Annual Reports
LEVEL 3	Local Data Sources, Conservation Organisations, Users & Extractors	• National Authorities	Annual Reports

Table 7 Proposed reporting cycles

Socio-economic and fund-raising components

Social requirements of the Saker Falcon AMF and QMS

(based on The Biodiversity Consultancy)

- Co-designed with local stakeholders through a rights-based approach to conservation,
- Produce locally meaningful benefits that address and respect diverse local uses of nature,
- Promote the equitable distribution of benefits.

Economic requirements of the Saker Falcon AMF and QMS

(based on The Biodiversity Consultancy)

- Enable the sustained funding of credited conservation actions,
- Ensure transparent reporting of project impacts to manage the risk to credit buyers.

Imbalanced availability of conservation funding

In recent decades, an unbalanced level of funding could have been observed in the conservation of the Saker Falcon in Europe and Asia.

Case study 2 *An example of imbalanced availability of conservation funding in Europe and Central Asia*

Europe (no sustainable use proposed)
c. 7% of the Saker Falcon global population

Hungary

- 175 SF bps in 2022 *(Bagyura pers.comm.)*
- Six LIFE Nature projects dedicated to the conservation of the Saker Falcon between 2006 and 2021
- With EU financial support of over 10 million EUR

Asia (previously, there was some limited legal use of the species, but sustained illegal taking)
c. 93% of the Saker Falcon global population

Mongolia

- 2,000-5,000 SF bps in 2013 *(Galtbalt in litt., 2013; Dixon, 2009)*
- Artificial nest programme 2010-2015 Total financial support: unknown
- MBZRCF support of 1 million USD for making 35,000 mv electric poles bird-safe in 2019-2022

- + c. 2.98 million USD for making 5,218 mv electric poles bird-safe in 2015

Saker Falcon Task Force component

The Saker Falcon Global Action Plan (SakerGAP) was adopted by CMS Parties in 2014, and a Saker Falcon Task Force (STF) was established to oversee implementation. One of the key aims of the STF is to develop an Adaptive Management Framework (AMF) that moves the current illegal and presumably unsustainable trapping activity into a legal, controlled, and sustainable system. Such a system must be carefully developed, implemented, monitored, and conform to CMS and CITES requirements. To develop such a framework, the STF established an Adaptive Management Framework Discussion Group (AMF DG) to conceptualise a modular AMF to assist stakeholders' decision-making, especially international partners and national authorities, on the sustainable use of the Saker Falcon.

Mandate

UNEP/CMS/Resolution 10.28 (repealed in full by COP12) paragraph 4 included the following text "Decides that those improvements in the conservation status of the Saker Falcon in any Range State may allow sustainable taking from the wild in that Range State under a management system. In such cases, a Party or Parties may request an exclusion from Appendix I listing to apply in that Range State."

The Saker Falcon Task Force was established by UNEP/CMS COP10 Resolution 10.28 (2011, Rev. COP12).

In *UNEP/CMS/Resolution 11.18 (Rev. COP12), CMS* adopted the ten-year Saker Falcon Global Action Plan (SakerGAP) "as the basis for action on the conservation and management of the Saker Falcon in the coming triennium and beyond, with the overall goal 'to re-establish a healthy and self-sustaining wild Saker Falcon population throughout its range and to ensure that any use is sustainable".

As per the Resolution, the Conference of Parties

"4. Further decides to continue the Saker Falcon Task Force under the auspices of the Coordinating Unit of the CMS Raptors MoU, and instructs the Task Force to:

a) Actively promote the implementation of the SakerGAP, including by continuing to facilitate engagement, communication, cooperation and collaboration between the stakeholders;
b) Further develop, refine and implement an adaptive management and monitoring framework to improve the present conservation status of the Saker Falcon through, among other things, regulated and sustainable use and
c) Keep under review the option to down-list the species."

Current and potential future roles of the Saker Falcon Task Force (STF)

UNEP/CMS/CMS Resolution 11.18 (Rev. COP14) adopts the Saker Global Action Plan (SakerGAP) and

"4. *Further decides* to continue the Saker Falcon Task Force, and instructs the Task Force, subject to the availability of resources, to:

a) Actively promote the implementation of the SakerGAP including by continuing to facilitate engagement, communication, cooperation and collaboration between the stakeholders; and coordinate its review;

b) Further develop, refine, and implement, where legally possible, and following best practice, an adaptive management and monitoring framework to improve the present conservation status of the Saker Falcon through, inter alia, regulated, and sustainable use;

c) Promote monitoring and research across the range of Saker Falcon, inter alia to fill information gaps on population size and trend, improve knowledge of the genetic structure of Saker Falcon populations, fill knowledge gaps regarding other critical parameters needed for population modelling and contribute new information to any future IUCN global Red List reassessment for the species;

d) Work collaboratively with the CMS Energy Task Force (ETF) to ensure synergies and identify priority areas within the range of the Saker Falcon and promote mitigation measures that could reduce the impact of electrocution from power lines and related energy infrastructure on populations of the Saker Falcon;

e) In collaboration with the CMS ETF and other expert groups, continue to raise awareness of the serious issue of electrocution of Saker Falcon with energy companies and national governments; and

f) Ensure synergies with any relevant work proposed under the CMS Central Asian Flyway Initiative to minimise impacts of energy infrastructure on birds."

A potential future role may include overseeing the implementation of the SakerGAP, the Saker Falcon Adaptive Management Framework, and the global Quota Management System.

With the AMF concept, the STF may provide a non-country-specific decision tool on the potential sustainable taking of the Saker Falcon where and when CMS resolutions allow it. STF may achieve the broadest consensus amongst the key Stakeholders on the criteria and method of controlled sustainable use of the Saker Falcon. The STF may also assist Range States in setting up a tailor-made Saker Falcon AMF.

4. ANNEXES

Annex 1 *Global and regional conservation priority rankings 1 - 4 in Range States (updated in May 2024)*

GLOBAL

List of Saker Falcon Range States	Priority Ranking
China	1
Russian Federation (Asian part)	1
Kazakhstan	1
Mongolia	1
Uzbekistan	2
Hungary	2
Iran	2
Russian Federation (European part)	2
Afghanistan	2
Ukraine	2
Turkmenistan	2
Moldova	3
Romania	3
Iraq	3
Tajikistan	3
Turkey	3
Austria	3
Czech Republic	3
Republic of Serbia	3
Slovakia	3
Saudi Arabia	4
Bulgaria	4
Croatia	4
Georgia	4
India	4
Kyrgyzstan	4
Macedonia	4
Pakistan	4
Bahrain	4
Kuwait	4
Qatar	4
Syrian Arab Republic	4
United Arab Emirates	4

Notes:

Spatial prioritisation is required to direct limited resources to where actions are most urgently needed and most likely to produce effective global conservation outcomes.
The conservation priority ranking of Range States is based on the reversed order of the sum score of the following six parameters:

Status
3 - Breeding Range State
2 - Winter Range State
1 - Passage Range State

Breeding Population Size
4 - the min-max median is <1000 pairs
3 - the min-max median is <100 pairs
2 - the min-max median is <10 pairs
1 - the min-max median is <10 pairs

Population Trend
3 - Large decrease
2 - Moderate decrease
1 - Unknown (50% difference between the min and max estimates)
0 - Stable, Moderate increase, Large increase

'Source population' in terms of natal dispersal
1 - Yes
2 - No

'Source' State of wild Saker Falcons
1 - Yes
2 - No

'Consumer' State of wild Saker Falcons
1 - Yes
2 - No

ASIA

List of Saker Falcon Range States	Priority Ranking
China	1
Russian Federation (Asian part)	1
Kazakhstan	1
Mongolia	1
Uzbekistan	2
Afghanistan	2
Turkmenistan	2
Tajikistan	3
India	4
Kyrgyzstan	4
Pakistan	4

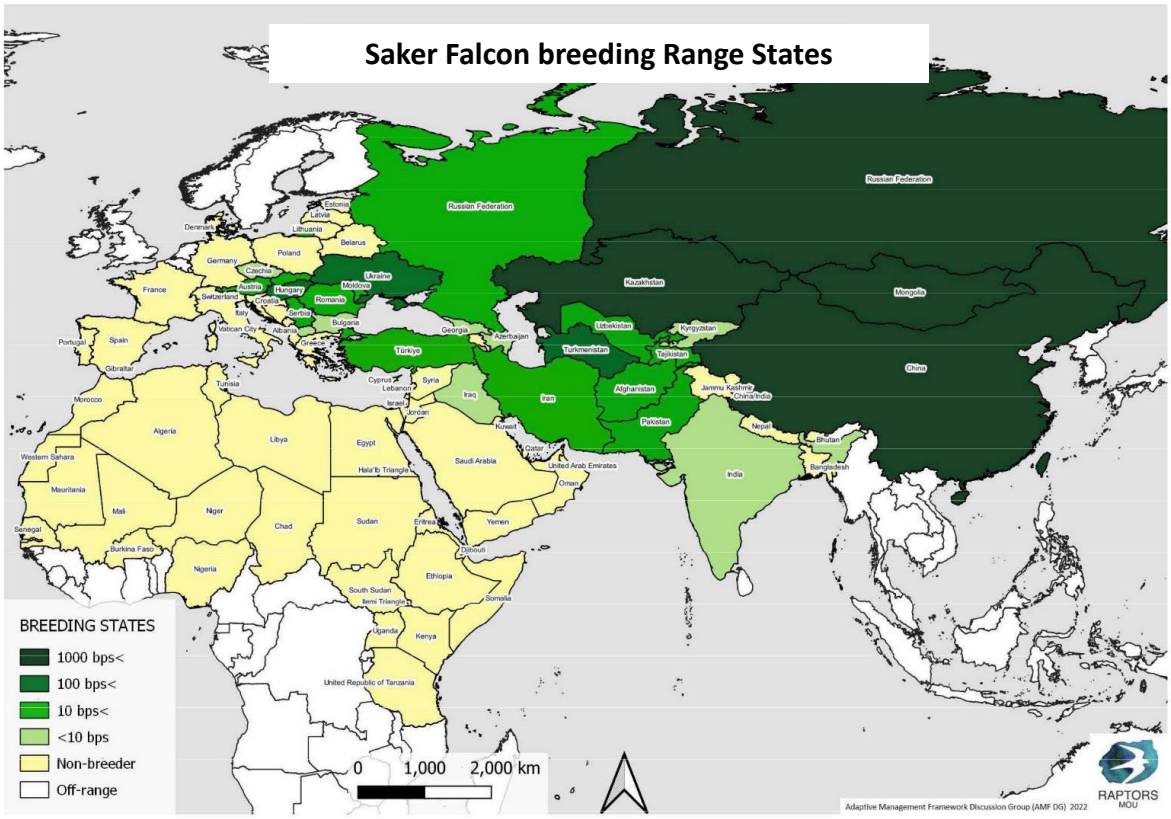
EUROPE

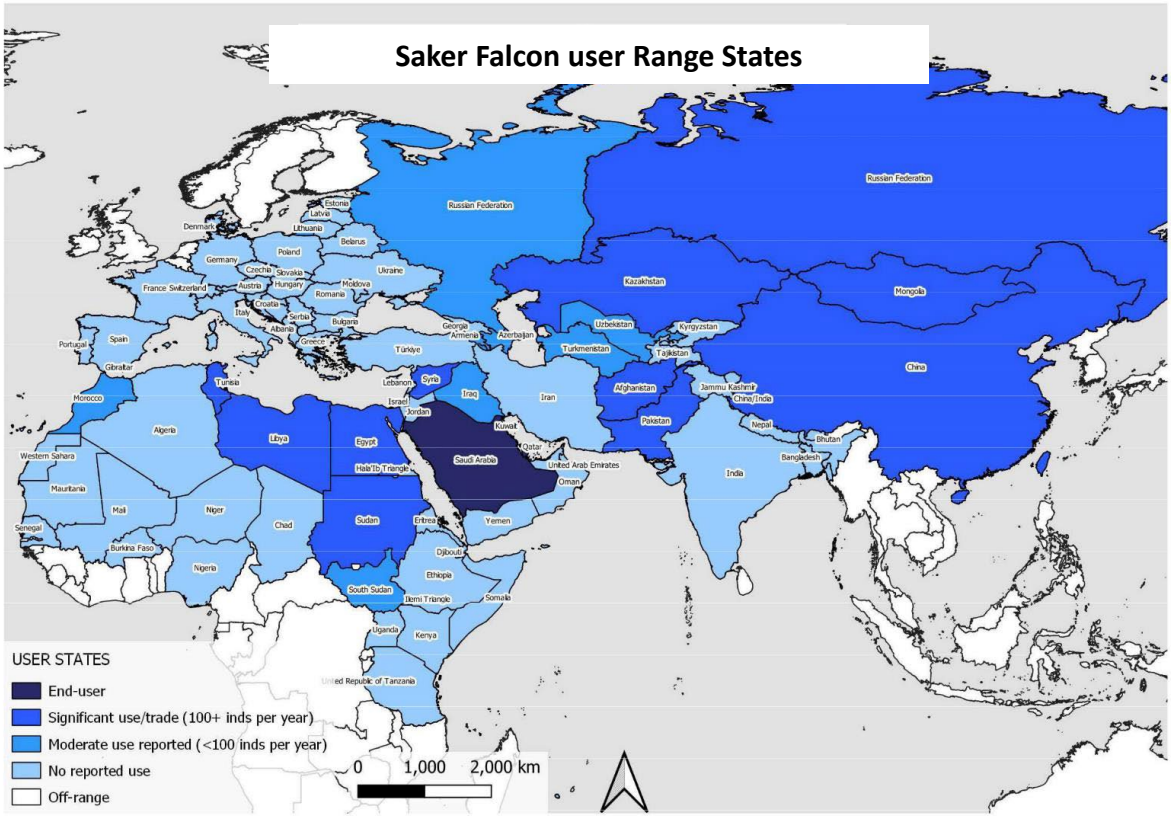
List of Saker Falcon Range States	Priority Ranking
Hungary	2
Russian Federation (European part)	2
Ukraine	2
Moldova	3
Romania	3
Austria	3
Czech Republic	3
Republic of Serbia	3
Slovakia	3
Bulgaria	4
Croatia	4
Georgia	4
Macedonia	4

MIDDLE EAST

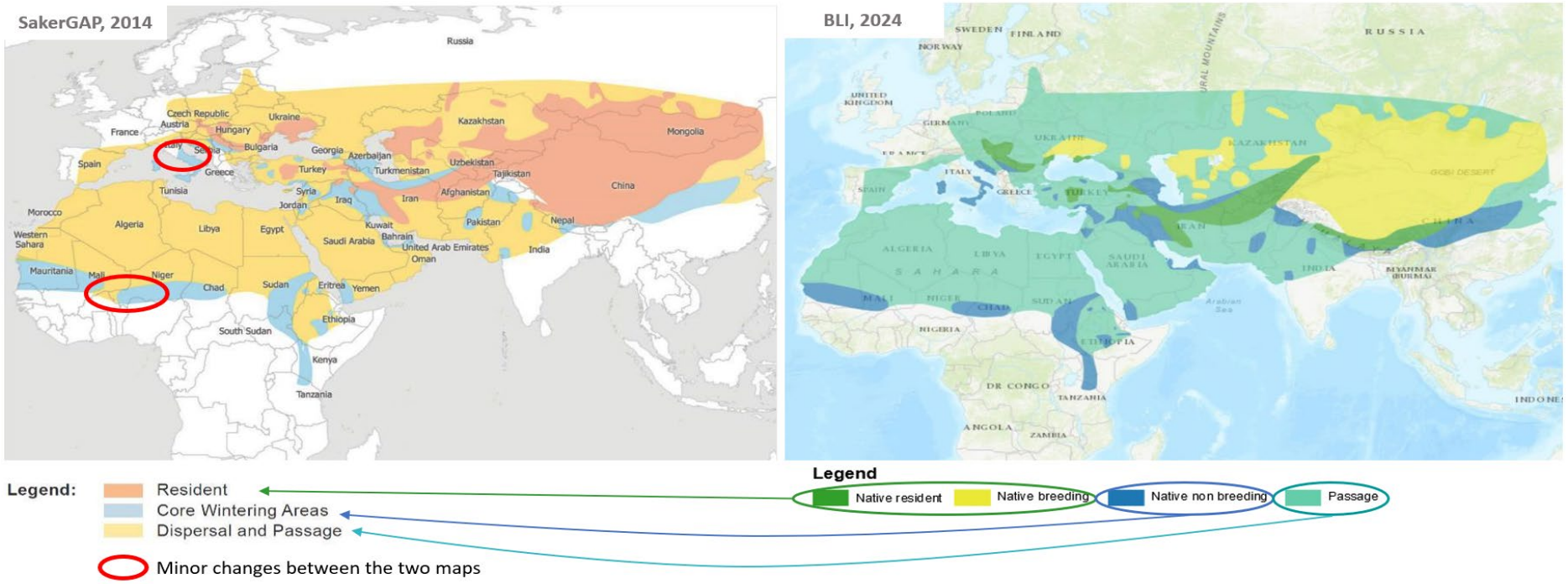
List of Saker Falcon Range States	Priority Ranking
Iran	2
Iraq	3
Turkey	3
Bahrain	4
Kuwait	4
Qatar	4
Saudi Arabia	4
Syrian Arab Republic	4
United Arab Emirates	4

Annex 2 *Priority breeding and user Range States*

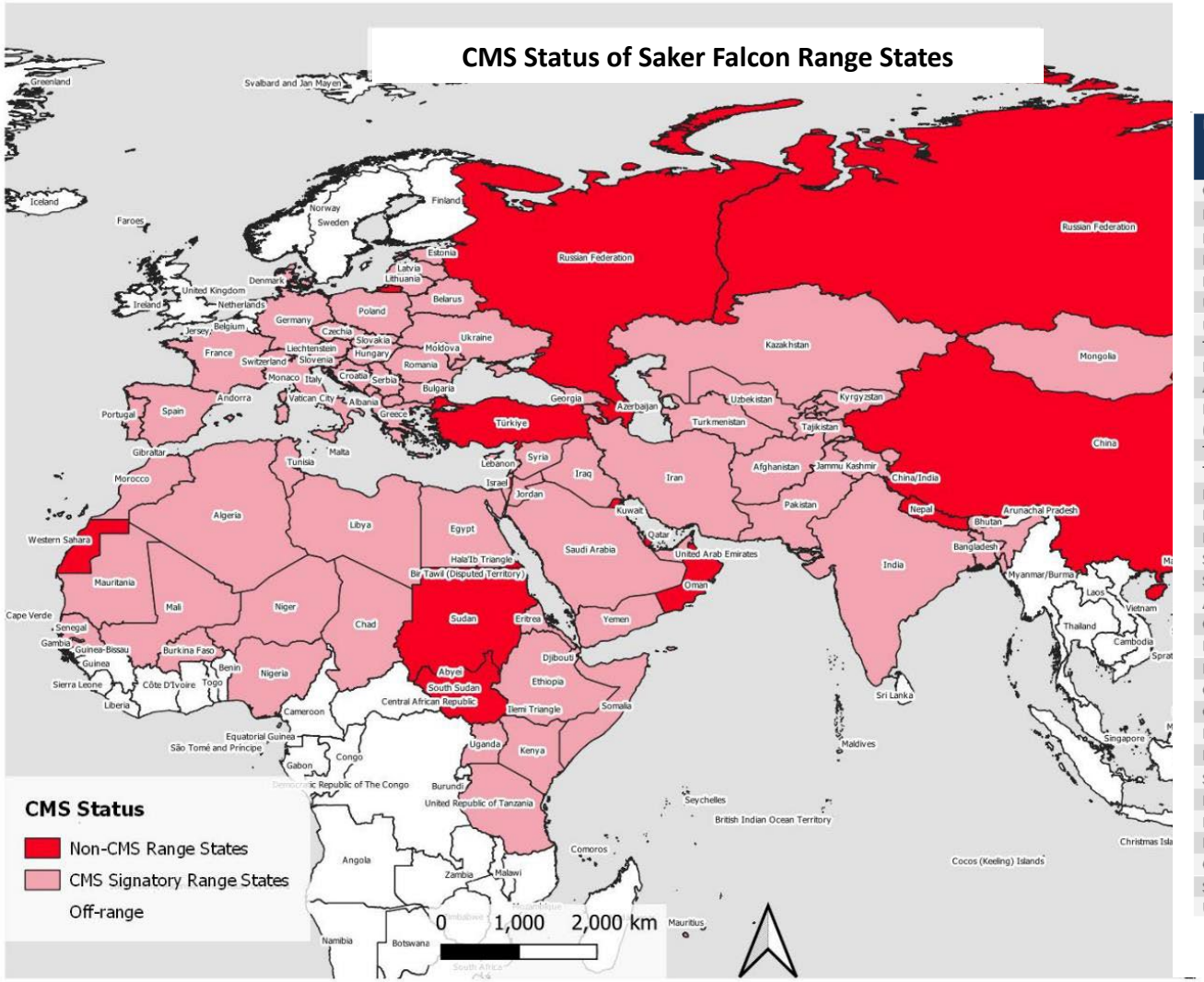




Annex 3 *A comparison of SakerGAP's (2014) and Birdlife International's (2024) global range maps of the Saker Falcon*



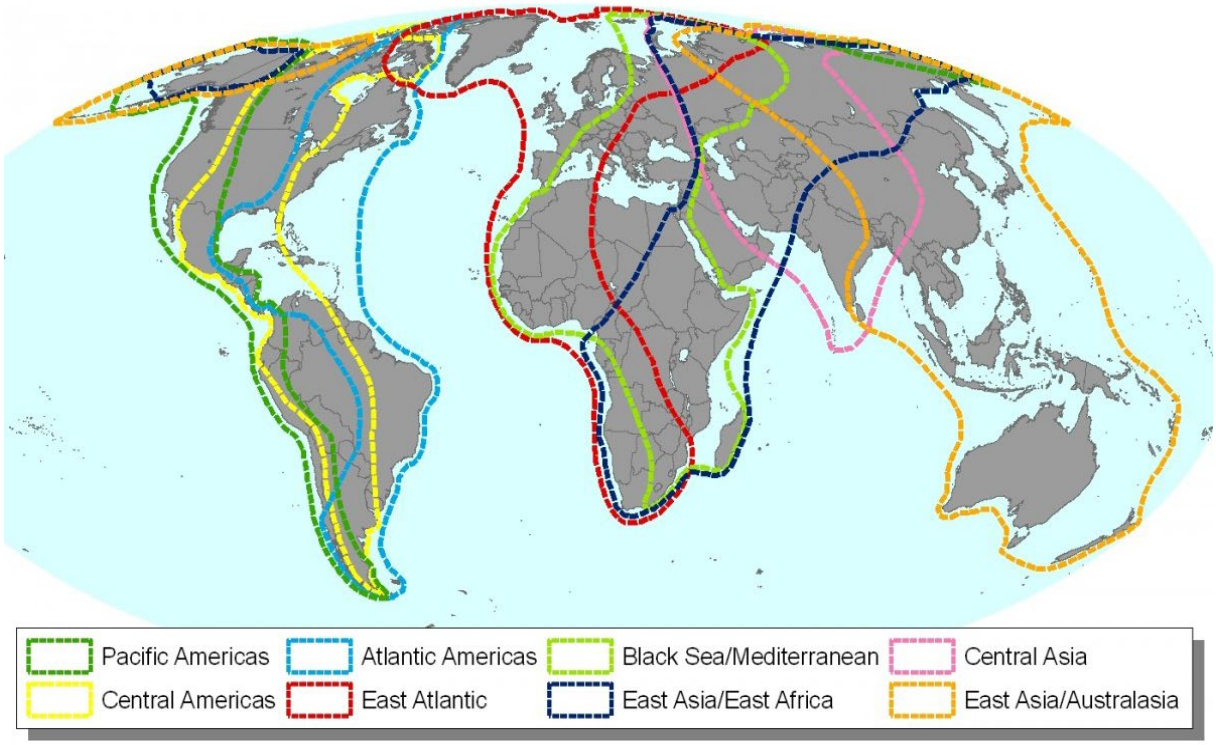
Annex 4 *The CMS, CITES and CMS Raptors MoU status of Saker Falcon Range States (May 2024)*



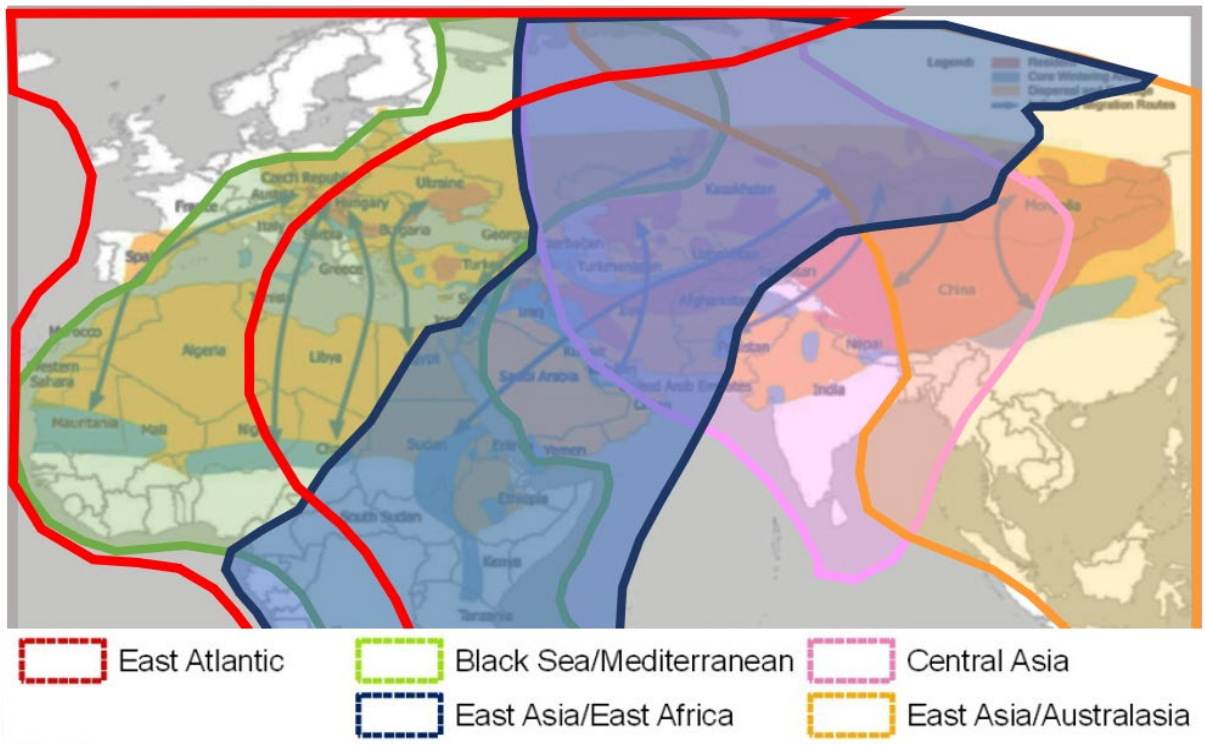
CMS, CITES and Raptors MoU status of Priority 1-4 Range States

List of Saker Falcon Range States	Priority Ranking	CMS	CITES	Raptors MoU
China	1		✓	
Russian Federation (Asian part)	1		✓	
Mongolia	1	✓	✓	✓
Kazakhstan	1	✓	✓	
Hungary	2	✓	✓	✓
Uzbekistan	2	✓	✓	
Ukraine	2	✓	✓	
Turkmenistan	2	✓		
Iran	2	✓	✓	✓
Afghanistan	2	✓	✓	
Russian Federation (European part)	2		✓	
Tajikistan	3	✓	✓	
Turkey	3		✓	
Iraq	3	✓	✓	
Moldova	3	✓	✓	
Romania	3	✓	✓	✓
Slovakia	3	✓	✓	✓
Serbia	3	✓	✓	
Austria	3	✓	✓	✓
Czech Republic	3	✓	✓	✓
Bulgaria	4	✓	✓	✓
India	4	✓	✓	✓
Croatia	4	✓	✓	✓
Georgia	4	✓	✓	✓
Kyrgyzstan	4	✓	✓	
Macedonia	4	✓	✓	✓
Saudi Arabia	4	✓	✓	✓
Pakistan	4	✓	✓	✓
Bahrain	4	✓	✓	
Kuwait	4		✓	
Qatar	4		✓	
Syrian Arab Republic	4	✓	✓	✓
United Arab Emirates	4	✓	✓	✓

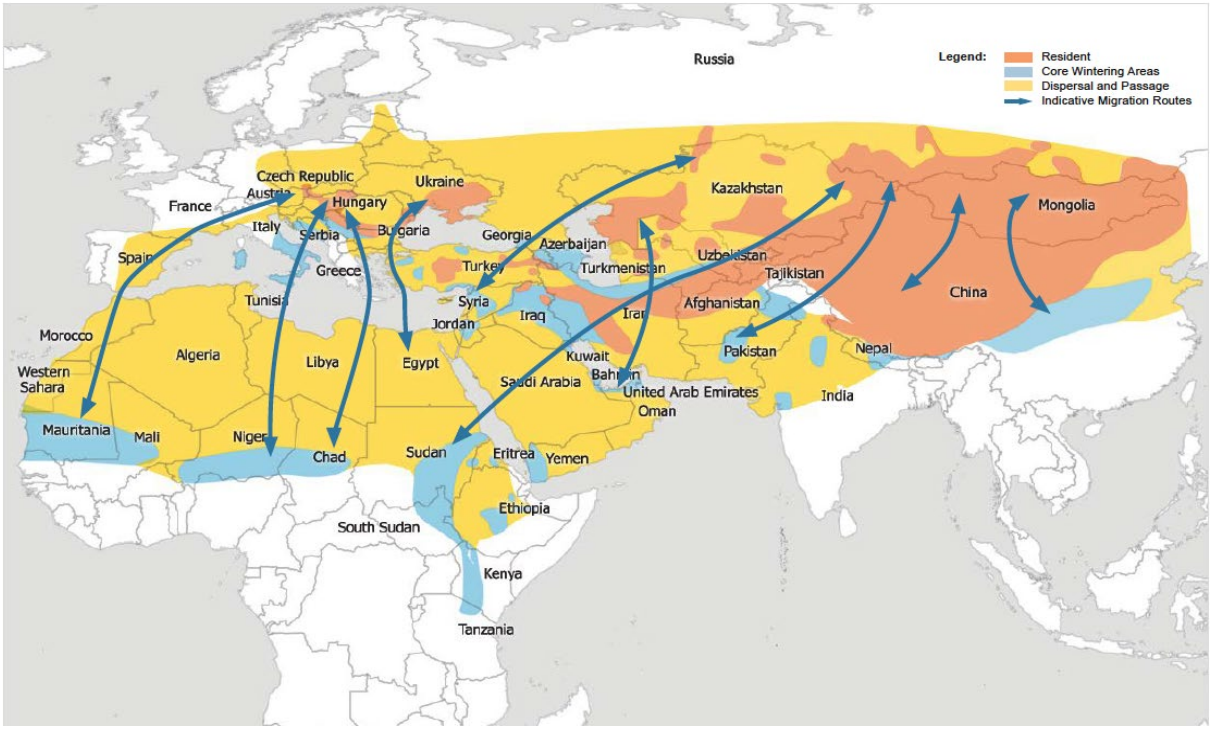
Annex 5 *Major global flyways (AEWA, 2024)*



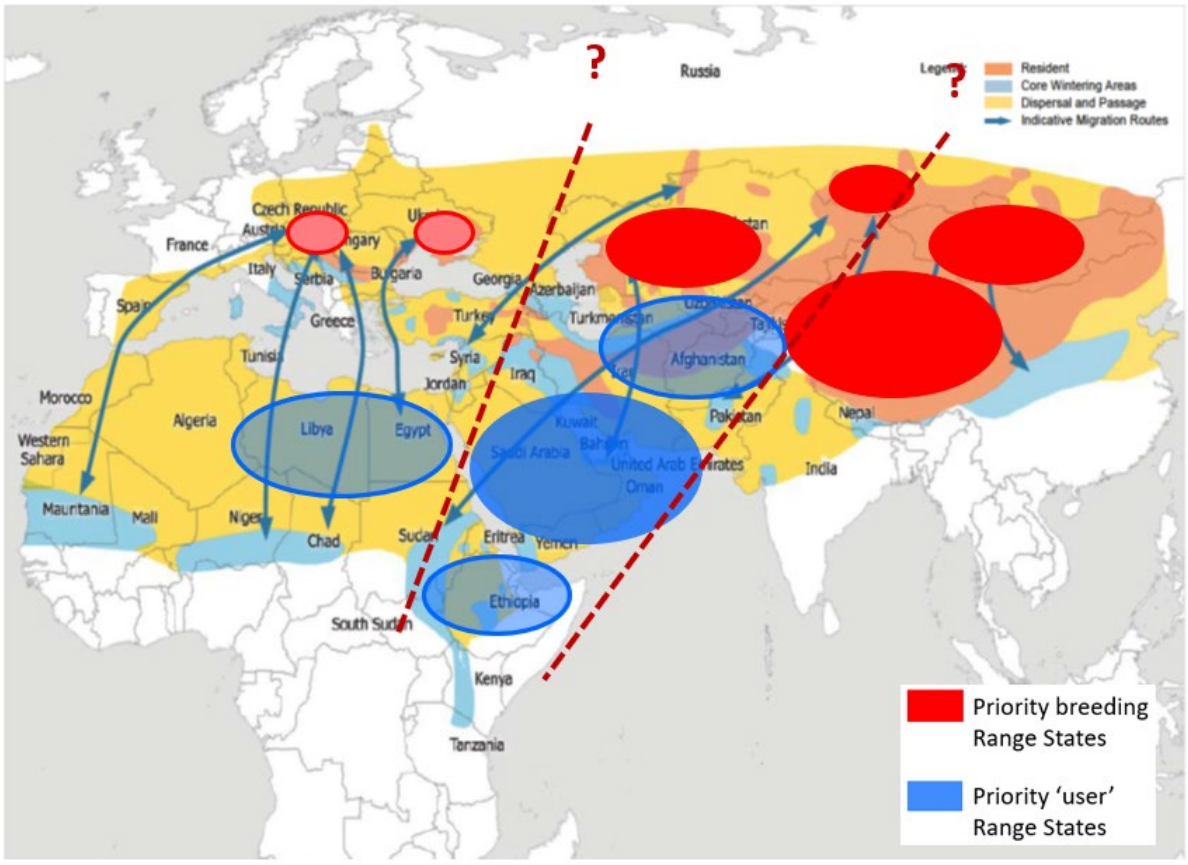
Annex 6 *Major flyways within the global range of the Saker Falcon (based on AEWA, 2024)*



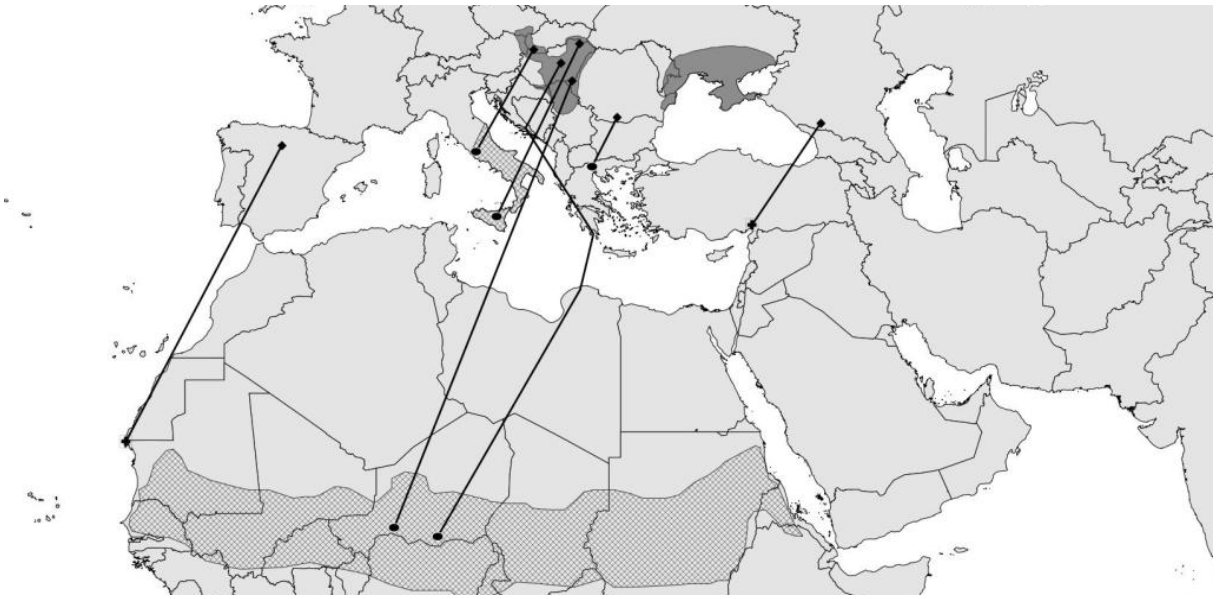
Annex 7 *Indicative Saker Falcon migration routes (SakerGAP, 2014)*



Annex 8 *Hypothetical geographical connectivity of 'breeding' and 'user' Range States*

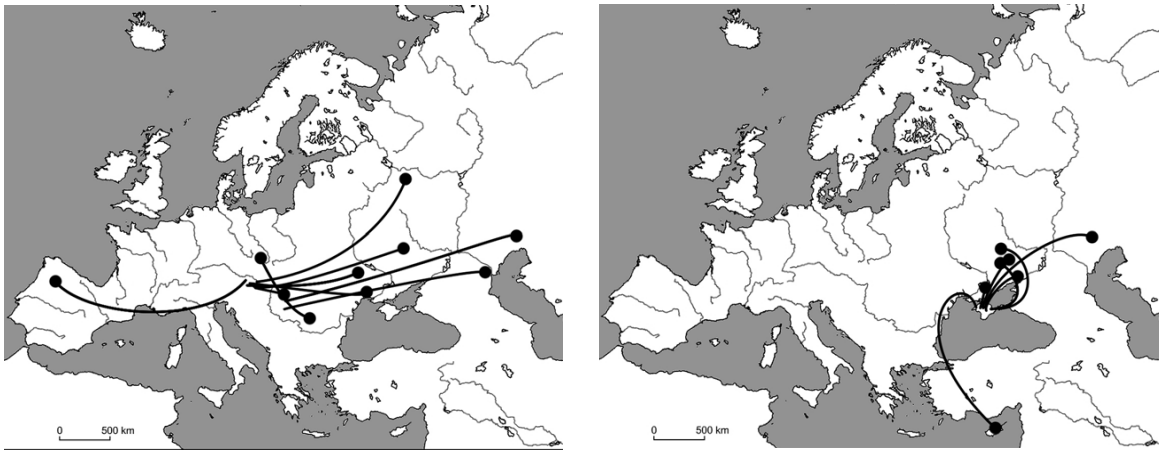


Annex 9 Main directions of migration routes of satellite-tracked first-year Saker Falcons (Prommer et al., 2012)

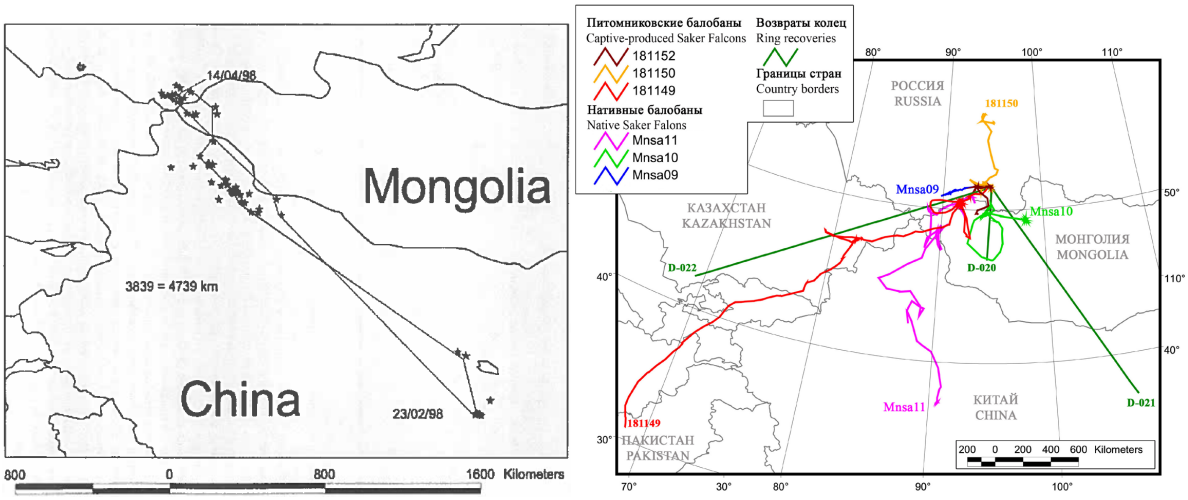


Annex 10 *Geographical connectivity of 'breeding' and 'user' Range States (Franks, S., Fiedler, W., Arizaga, J., Jiguet, F., Nikolov, B., van der Jeugd, H., Ambrosini, R., Aizpurua, O., Bairlein, F., Clark, J., Fattorini, N., Hammond, M., Higgins, D., Levering, H., Skellorn, W., Spina, F., Thorup, K., Walker, J., Woodward, I. and Baillie, S.R.[1]. (2022). Online Atlas of the movements of Eurasian-African bird populations - Saker Falcon. EURING/CMS.)*

Annex 11 *Main directions of long-range post-fledging dispersal of Hungarian and Ukrainian satellite-tracked 1cy and 2cy Saker Falcons (Prommer et al., 2012b)*



Annex 12 *A. Movements of two adult female Sakers satellite tagged in the Russian Altai (Eastham et al., 2000), B. Migration routes of Sakers Falcons tagged with transmitters in the Tuva Republic of Russia and data from ring recoveries (Shnayder et al., 2018)*



Annex 13 A chronology of significant events for the case study of the conservation management of the Saker falcon in Mongolia

Year	Event
2004	The IUCN revised the Saker Falcon's Red List status from Least Concern to Endangered (globally threatened).
2005 (-2009)	Environmental Agency Abu Dhabi (EAD) started a pilot study in Mongolia to examine the potential of using artificial nests to create readily monitored breeding 'populations' in nest-site-limited habitats.
2006, November	CITES notifies that the 9 Range States have suspended Saker Falcon export permits. However, Mongolia continued to trade in Saker Falcons.
2008, December	Resolution 9.20 on the Saker Falcon was adopted by CMS COP9 (Rome, Italy) after a Croatian proposal to up-list the Saker Falcon on Appendix I of the CMS was rejected.
2009	A National Saker Falcon Conservation Plan was developed in 2009.
2009, February	CITES Standing Committee recommends that countries suspend trade in Saker Falcons with Mongolia.
2009, April	Mongolia provides the CITES Animals Committee with a document outlining a conservation programme based on artificial nests linked to the development of a system of sustainable use of the Saker Falcon.
2009, July	The CITES Standing Committee withdrew its recommendation to suspend trade in wild Saker Falcons from Mongolia. An annual export quota of 300 wild, live birds was agreed upon for 2009 and 2010.
2010 (2009-)	The establishment of 5,000 artificial nests was completed in Mongolia.
2010, March	BirdLife International's review on the status of the Saker Falcon.
2010, May	IUCN revised the Saker Falcon's Red List status from Endangered (EN) to Vulnerable (VU).
2010, June	Annex 1 to the A-205 Ministerial Order of Nature, Environment and Tourism, Mongolia, defined detailed Rules to follow in actions to harvest, transport, care and export of Saker Falcon in Mongolia.
2011	The monitoring of population parameters in the Mongolian artificial nests project started.
2011, January	BirdLife International's review on Saker Falcon conservation status and research requirements.
2011, July	The CITES Animals Committee reviewed Significant Trade in the Saker Falcon in Mongolia. It endorsed the favourable management regime for the Saker Falcon established by Mongolia, agreeing to an export quota of 300 live wild birds.
2011, November	Following a proposal submitted by the European Union, the Saker Falcon is listed in Appendix I of the CMS at COP10 (Bergen, Norway) (excluding the Mongolian population, which is included in CMS Appendix II).
2012, February	BirdLife International's consultation on revising the Saker Falcon from IUCN Vulnerable to Endangered.
2012, March	The Red List status of the Saker Falcon was revised from Vulnerable (VU) to Endangered (EN) by IUCN using the precautionary principle.
2012, October	The Saker Falcon was officially designated as the national bird of Mongolia.
2012	The Mongolian government announced implementing a 5-year moratorium on the commercial trade in the Saker Falcon.
2014	The Mongolian artificial nest project produced 2,500 fledglings by 2014.

2014, August	The CMS Raptors MoU and the Saker Falcon Task Force published the Saker Falcon Global Action Plan (SakerGAP).
2015 (2013-)	The provision of 5,000 artificial nests created an average annual saker population of 602 (SE ± 59) breeding pairs, producing an estimated 1,735 (SE ± 272) fledglings per annum from 2013–2015.
2016	Mongolia ratified the SakerGAP.
2016, June	The Saker Falcon artificial nest project was discontinued.
2017	The monitoring program of the Mongolian Saker Falcon artificial nest project ended.
2018	Mongolia developed a national powerline standard (NPLS), which included the design of medium-voltage utility poles.
2018	A pilot project started to mitigate the electrocution of the Saker Falcon on medium-voltage utility poles in Mongolia (International Association for Falconry - IAF, Mohamed Bin Zayed Raptor Conservation Fund - MBZRF, energy distribution companies, service providers).
2019 - 2022	Mongolian Saker Falcon Electrocution Remediation Project. This large-scale project to mitigate raptor electrocution started with a budget of 1 million USD, funded by MBZRF and supported by the Mongolian Government. 35,000 MV poles were remediated.
2023 (2015-)	CITES' Trade Database shows controversial data on Saker Falcons of wild origin exported from Mongolia.
2024	The effects of environmental factors (climate, vegetation cover, prey frequency in the Saker's diet) on the reproduction of the managed Saker Falcon population were analysed.

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