

SUGGESTED METHODOLOGY AND GUIDANCE FOR CONDUCTING SOCIO-ECONOMIC RESEARCH INTO THE MOTIVATIONS BEHIND ILLEGAL KILLING, TAKING AND TRADE OF BIRDS

(Based on a document prepared by BirdLife International and reviewed by the CMS Secretariat)

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Summary:

This document is designed to support MIKT members and Bern Convention SFPs in conceiving and implementing their national surveys / assessments of the motivations, drivers and modus operandi behind the illegal killing, taking and trade of wild birds (IKB), facilitating their delivery of Objective 1.2b of the *Rome Strategic Plan on Eradicating Illegal Killing, Taking and Trade in Wild Birds in Europe and the Mediterranean region 2020-2030* (RSP). The document comprises guidance on the use of social science to understand the motivations behind IKB (including relevant case studies), a step-by-step guide for conducting a social study on IKB and a suggested format for reporting on a national survey/assessment.

A first draft of this document was presented in *UNEP/CMS/MIKT5/Doc.7.2/Rev.1 Draft / [T-PVS/Inf\(2022\)20rev](#): Methodology, Guidance and Common Format for Conducting Socio-economic Research into the Motivations behind IKB*. The first draft was discussed at the Joint Meeting of the Bern Convention SFPs and CMS MIKT on Illegal Killing, Taking and Trade of Wild Birds – Valencia, Spain and Online Meeting (MIKT5) and presented to the Bern Convention 42nd Standing Committee meeting. Following two rounds of consultation and the integration of received comments, the present document was prepared.

MIKT members have endorsed the document. As per decision of the Bern Convention Standing Committee at its 42nd meeting, the final version of the document will be presented for possible endorsement during its 43rd meeting.

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Acronyms

CMS	Convention on the Conservation of Migratory Species of Wild Animals.
IKB	Illegal Killing, Taking and Trade of Wild Birds.
FPIC	Free, Prior and Informed Consent.
MIKT	Intergovernmental Task Force on Illegal Killing, Taking and Trade of Migratory Birds in the Mediterranean.
NAP	National Action Plan.
NGO	Non-Governmental Organization.
RSP	Rome Strategic Plan 2020-2030: Eradicating Illegal Killing, Taking and Trade in Wild Birds in Europe and the Mediterranean Region.
SFP	Special Focal Points.
UN	United Nations.

EXECUTIVE SUMMARY

Tackling the multi-faceted challenge that is the Illegal Killing, Taking and Trade of Wild Birds (IKB) requires a comprehensive understanding of the social, political, cultural, and economic factors that lead to perpetrators carrying out illegal actions related to IKB, as well as an understanding of other stakeholders' roles in supporting, condoning, overlooking or otherwise enabling such crimes. Any effective strategy against IKB must be built upon an understanding of the human individuals involved and their motivations. Socio-economic research into the motivations and drivers behind IKB can contribute to effective and targeted National Action Plans and can help inform, identify, and prioritize targeted strategies and actions nationally. This guidance document provides an overview of how social science approaches can help shed light on the phenomenon of IKB and suggests ways in which research can be conducted so that policy decisions and conservation interventions are targeted to the specific social and cultural contexts in which they operate.

This document aims to assist countries to achieve the RSP's vision and to help governments design effective strategies to combat the social and behavioural aspects of IKB. This document provides an introduction to social science research in the context of IKB, and can support the application of social science research in conservation more generally.

The document provides (1) an introduction to using social science concepts to understand motivations behind IKB, (2) a step-by-step guide on suggested methodology for conducting a social science research study on aspects of IKB in a given country, and (3) a suggested template for a socio-economic assessment report on national surveys or assessments. This template can help governments undertake their national studies into the motivations, drivers and modus operandi behind IKB envisaged under Objective 1.2b of the *Rome Strategic Plan 2020-2030: Eradicating Illegal Killing, Taking and Trade in Wild Birds in Europe and the Mediterranean Region (RSP)*. Furthermore, the document provides general resources and several case studies to showcase examples where social science approaches were used to research IKB-related issues, from which governments might choose.

Recognising that each country has a specific IKB context in terms of the scale and types of IKB, and the legislation, policies, and initiatives in place, this document is not intended to foster a 'one size fits all' approach but to provide general guidance that will assist governments in conceiving and conducting national surveys adapted to the national circumstances whatever the national IKB context.

1. INTRODUCTION

1.1 Rome Strategic Plan

The [Rome Strategic Plan 2020-2030 on Eradicating Illegal Killing, Taking and Trade in Wild Birds in Europe and the Mediterranean Region](#) (RSP) is the common strategic framework of the [Intergovernmental Task Force on Illegal Killing, Taking and Trade of Migratory Birds in the Mediterranean](#) (MIKT) of the Convention on the Conservation of Migratory Species (CMS), and the Bern Convention Network of Special Focal Points (SFPs) on Eradication of Illegal Killing, Trapping and Trade in Wild Birds.

The RSP calls for maintaining and strengthening the zero-tolerance approach to Illegal Killing, Taking and Trade in Wild Birds (IKB), with an overarching long-term goal focused on the eradication of IKB within the geographic extent of the Bern Convention and the CMS MIKT. The Vision of the RSP is translated into one process-oriented objective and five results-oriented or strategic objectives. The strategic objectives are the following:

- Objective 1: To understand the scope, scale of and motivations behind IKB
- Objective 2: To ensure that the illegal killing of birds is addressed effectively and efficiently in national legislation.
- Objective 3: To ensure that effective and efficient enforcement of relevant legislation is undertaken.
- Objective 4: To ensure effective and efficient justice for IKB-related offences.
- Objective 5: To establish an active prevention of the illegal killing, taking and trade of birds

1.2 Purpose and use of this guidance

The mandate for the development of this document comes from the [RSP, Objective 1, Target 1.2, actions a\) and b\)](#) which called for national surveys of motivations behind IKB to be completed based on agreed methodology and guidance and best available evidence.

This document is meant to be used by the government institutions and stakeholders involved in designing and undertaking social science research to better understand the IKB phenomenon in their national context and, based on this understanding, to design and deliver targeted actions that have a long-term impact on tackling IKB.

This guidance is indicative, meaning that the use of this document is not mandatory or a requirement under CMS or the Bern Convention. It is recommended that government institutions draw inspiration and knowledge from this guidance, adapting it to national context, language, and cultural norms, accordingly, in order to conduct effective surveys on IKB motivations.

1.3 Main sources considered

During the preparation of this document, several sources including grey literature and published papers were considered. A resources section at the end of the document contains the list of material consulted in the preparation of this document.

2. BACKGROUND

2.1 Illegal killing of birds in the Mediterranean

IKB is defined as any form of deliberate action prohibited under national legislation that results in the death or removal from the wild of an individual bird (regardless of whether it was the target of this action or not). IKB is widespread in many countries in the Mediterranean and

Eurasia. Birds are killed or taken illegally for a variety of purposes, including for food, trade, sport or use as caged pets or decoys to attract more birds for hunting. Often these motivations overlap, e.g., a bird that is killed as part of recreational hunting, may be traded and/or eaten. The methods of these illegal activities also vary; the most common forms are shooting, trapping, poisoning, and nest robbing.

2.2 IKB as a ‘social’ issue and not just a ‘conservation’ issue

IKB is primarily a problem driven by humans, so understanding it as a social problem can provide more effective tools to tackle it. There is no single definition of social science, but a helpful and short description is the study of people - as individuals, communities, and societies - and the interactions between them, with the structures they have built, and with nature. Behind biodiversity loss lies a variety of social, economic, political, and cultural drivers that motivate individuals' behaviours and decision making regarding the use of natural resources and biodiversity. These drivers can operate at different scales, interact at the same time, and provide incentives for activities that put pressure on the natural world and/or form barriers for the adoption of more sustainable behaviours. These drivers are rooted in complex human interactions. Therefore, addressing IKB as a social phenomenon opens the door to new ways of defining, describing and exploring their multiple and changing dynamics; the effects they have on individual motivations; and the actors, scales, and times at which they operate. The social and cultural context surrounding an individual has an influence on their behaviour and understanding this context is therefore key to designing effective strategies to change illegal practices. A variety of social, economic, political, and cultural drivers can influence behaviours about using natural resources at the local level. These forces often create incentives for activities that put pressure on the natural world and promote unsustainable behaviours.

Sometimes, a socio-economic survey brings to light drivers or enabling conditions that were not previously known. Drivers may also change over time; for example, an activity like trapping might have had cultural drivers in the past, but over time, the activity might have become profit-motivated, and the socio-economic background of the actors involved might have changed. Therefore, even if stakeholders feel they have a good understanding of the drivers of IKB, it is useful to test the assumptions underlying this subjective understanding and seek more objective information as a basis for prioritisation and action on IKB. Analysing individual motivations and social drivers offers opportunities to understand not only the global and local drivers shaping people's behaviours, but also their willingness to adopt new practices and cooperate with conservation initiatives, along with the barriers preventing them from changing unsustainable behaviours.

Social science studies, such as a socio-economic study or a multi-variable driver analysis, attempt to understand aspects of the social or human side of the phenomenon of IKB. This approach is distinct from biological science studies that might seek to understand the scale, trend, geographic distribution, species affected or ecological impact of IKB. Social science studies can investigate all aspects of human behaviour, as well as the enabling conditions and drivers, so there is no one single approach to designing and undertaking a social science study. A better understanding of the motivations and drivers behind IKB nationally can help design targeted and effective measures for reducing IKB.

2.3 Use of the terms ‘motivations’, ‘drivers’, and ‘social context’ in this document

Often, the cumulative impact of the behaviour of many individuals causes environmental degradation and biodiversity loss. Individual and collective actions may be driven by internal factors (motivations, see section 2.3.1) and external factors (drivers, see section 2.3.2). Understanding how personal motives and external drivers interact to influence individual behaviour is key to designing strategies to address this problem more effectively.

2.3.1 Motivations

In general, motivations are defined as psychological targets and needs inherent in an individual that influence individual decision-making. Motivations stem from an internal process within the individual. In some cases, this process can be the result of conscious thoughts (rational thinking and knowledge) and in others, it can be driven by unconscious thoughts (e.g., habit, emotion, social influence, and personal bias)¹.

Motivations refer to the internal motives (e.g., economic gains, political advantages, respect from peers) that individuals utilise to justify the decisions they make. People's motivations tend to relate to the potential and/or perceived benefits or goals they can obtain or achieve for themselves or for their families/peer group. These benefits can be material or economic; symbolic or aesthetic; medicinal or therapeutic, among others.

Understanding people's motivations is a way to get an initial picture of an individual's needs and expectations, and how they are connected with the opportunities offered in their cultural and social context.

2.3.2 (Social) Drivers

Drivers are the natural and human forces directly or indirectly influencing behaviours and practices and causing them to occur, develop or change. These forces are external to, and independent from, the individual, and at the same time, they set the conditions and rules in which the individual can act. This document uses the term '*social drivers*' as an umbrella term to refer to economic, political, and cultural forces influencing a particular social phenomenon, in this case IKB. The importance of these drivers lies in their influence as incentives or barriers to facilitating or halting a particular behaviour. For example, an individual's decision to participate in IKB might be motivated by an economic incentive and limited by the deterrent effect of potential criminal prosecution or fines).

Examples of these drivers include:

- **Political drivers:** refers to the governmental arrangements facilitating or regulating a particular practice (e.g., laws, policies and regulations).
- **Economic drivers:** social practices motivated by obtaining or increasing economic benefits (e.g., market demand for the commercialization of a particular commodity, such as wild animals and/or their body parts; insufficient economic opportunities; etc.).
- **Cultural drivers:** 'rules' governing social interactions and related to traditional practices led by symbolic and/or aesthetic qualities. Notable examples of cultural drivers are the use of vultures in belief-based medicine or the consumption of Ambelopoulia² as a traditional, though illegal, delicacy. Cultural drivers tend to be the most influential drivers of people's actions.

2.3.3 Social and Cultural Context

Social context refers to immediate physical settings and social structures in which a particular society, i.e., a social group sharing the same territory, lives and interacts. The content of these interactions is shaped by culture, which refers to the patterns of thinking and acting passed through imitation and learning. As such, culture acts as a regulator of social interactions, influencing individuals' actions, choices, and future behaviours.

¹ <https://www.traffic.org/site/assets/files/3385/powers-of-persuasion.pdf>

² 'Ambelopoulia' is a traditional Cyprus delicacy made from songbirds illegally captured using non-selective methods, killed, and sold for profit or consumed by individuals.

The relationship between drivers, social context, and motivations is based on the barriers, incentives, and social acceptability that they exercise to influence people's behaviour. For instance, the possibility to obtain economic or symbolic gains can drive certain behaviours, but the cultural patterns in a community act as a filter that regulates how people respond to these incentives. In other words, the acceptability of certain behaviours within a social context is influenced by prevailing cultural values and beliefs.

For instance, imagine an outsider offers money to local people for capturing and selling endemic birds that are intended for international markets. If the community values protecting the birds, it would be difficult to convince local people to participate in such behaviour due to the risk of social exclusion or disapproval. In such cases, more resources and even illegal practices may be necessary to motivate people to act differently. This is because people are motivated to avoid negative social consequences and maintain social approval, making it challenging to carry out certain actions within a community.

On the other hand, if the community has a weaker cultural attachment to the bird trapping and selling the animals would be easier even with enforcement in place.

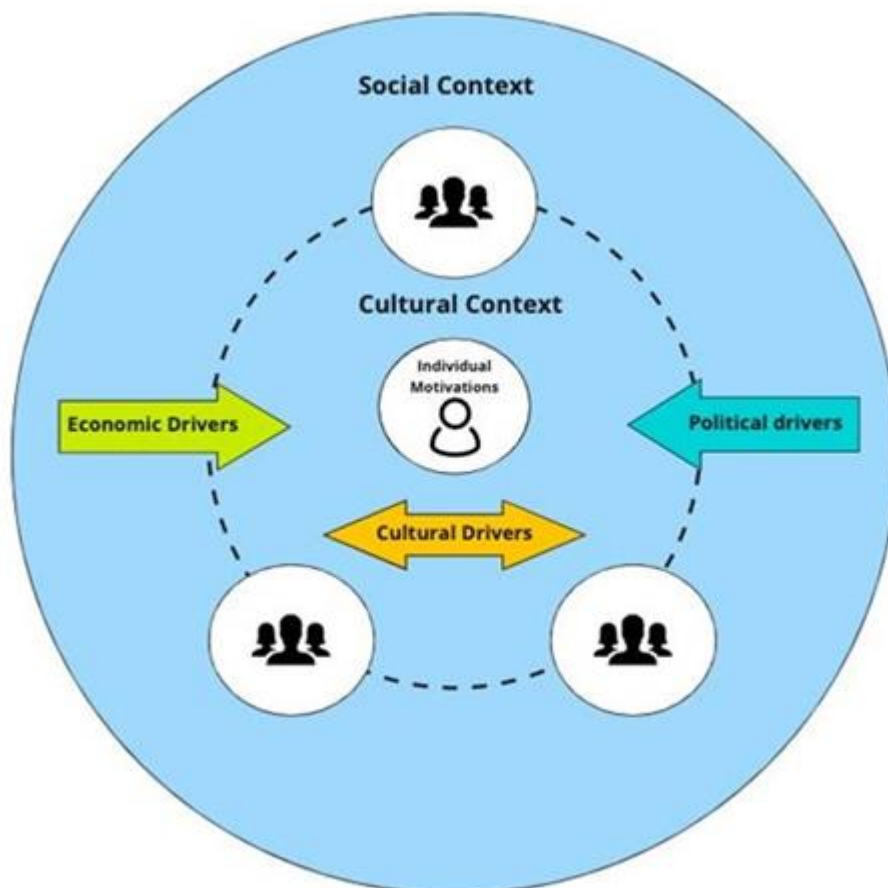


Figure 1.1 Diagram representing the self-reinforcing effect of social drivers (economic, cultural, and political) and individual motivations at community and individual level.

This graphic demonstrates how social drivers impact individual and community motivations in a particular social context. The arrows depicted on the upper section of the graphic show how political and economic drivers can influence individual motivations within and outside their

social context. However, for these drivers to be effective, they must be adapted or aligned with the local cultural context.

The graphic also emphasizes that cultural drivers are frequently rooted in the local social context, as illustrated by the arrows pointing in both directions. This is because cultural drivers are typically internal forces that significantly influence the shaping of social norms and values. These values and norms, in turn, play a vital role in shaping people's motivation and behaviours.

2.4 Use of the term 'socio-economic study' in this document

Within the scope of this document, the term "socio-economic study" refers to an analysis of the social and economic factors that shape a specific phenomenon, namely, in this case the illegal capture and trade of birds. The social category encompasses factors stemming from political, social and cultural forces, while the economic refers to drivers motivated by financial gain or benefit. By conducting a thorough socio-economic study, it is possible to untangle and comprehend the complex human forces driving IKB., This can aid in evaluating their relative influence on individual and community motivations, decision making and behaviours, as well as determining the dominant force at play in a given location. Achieving a comprehensive understanding of this phenomenon is crucial in developing evidence-based interventions that effectively address the issue.

2.5 Using socio-economic studies to inform National Action Plans on IKB

In developing an IKB National Action Plan (NAP), stakeholders should identify the key IKB issues in the country and decide upon key actions to reduce those issues.

Effective actions seeking to address the specific forms of IKB should be formulated appropriately and targeted towards those groups of people (actors) that can have the greatest impact on reducing IKB. Therefore, between identifying IKB issues and identifying key actions, there is an important step in understanding the composition and motivations of the set of actors involved, and the cultural and socio-economic drivers behind each key IKB issue.

A thorough understanding of actors, drivers and motivations can also help anticipate any unintended consequences of policy decisions and conservation interventions. Therefore, a socio-economic analysis is a foundational step in developing a National Action plan for tackling IKB.

PART I: GUIDANCE DOCUMENT

3. INTRODUCTION TO USING SOCIAL SCIENCE CONCEPTS TO UNDERSTAND MOTIVATIONS BEHIND IKB

This section introduces social science approaches and outlines examples of evidence generated through social science research to understand the human dimensions behind IKB.

3.1 Applications of social science

Knowledge about the social drivers and motivations behind IKB can contribute to finding effective solutions to tackling IKB. It can also support project and policy design for better social and environmental outcomes.

3.2 Expertise required to undertake social science research to assess IKB

Although a socio-economic study can be initiated by a variety of stakeholders, it should be designed and conducted with the input of a trained social scientist. This work can be commissioned by government or environment bodies or authorities operating nationally or locally. Local non-governmental organisations, universities and consulting firms can provide relevant experience and assistance in undertaking socio-economic analyses.

It is strongly recommended that a multi-stakeholder approach is taken and that stakeholders (both experts in the field and non-experts or locals that may be directly affected by the study) are consulted and involved in the process as much as possible. It is important that the researchers are aware of sensitivities within the local context. Additionally, ideally, researchers should be familiar with the topic of IKB or have experience of working on projects collecting and analysing data on sensitive or illegal activities. The socio-economic study team members can be recruited from the stakeholder groups in the study area.

3.3 Data that can be collected to understand motivations and drivers behind IKB

This section presents examples of the types of data that can be collected to describe, understand, and explain the actors, social drivers and motivations behind IKB, as well as the impact of the social context in enabling or deterring IKB-related behaviours and the dynamics between actors. Depending on the goals, questions, scope, depth, and size of each study, the data collected can shed light on different dimensions and variables behind IKB.

3.3.1 Demographic tendencies and actor profiling

Demographic data offer quantitative and qualitative information for differentiating and segmenting a population based on variables such as age, gender, income, level of education, socio-economic background, and other attributes, and help uncover trends and patterns within a target population. As such, these data can be used to establish the socio-economic profiles of the actors involved in IKB – from the perpetrators and traders to the users and buyers of illegally killed birds – as well as to understand profiles of acceptance of IKB in a given human population more widely.

3.3.2. Social norms act as guidelines for evaluating and coordinating actions within a society.

Social norms are the unwritten rules and expectations that govern behaviour in social groups or societies. They are shared expectations, beliefs, and attitudes that guide individuals' behaviours and interactions with others. Social norms can vary across cultures, groups, and contexts. They can range from informal customs and habits to formal laws and regulations. Examples of social norms include manners, etiquette, dress codes, gender roles, and taboos.

Levels of acceptability refer to the degree to which a behaviour is deemed acceptable or unacceptable within a particular social context. The acceptability of a behaviour is often determined by social norms and can vary across cultures, groups, and situations. For example, in some societies, it may be acceptable to eat certain types of birds, while in others, it may be considered unsanitary or illegal.

Understanding social norms and levels of acceptability can be useful in identifying patterns of behaviour and predicting how individuals will behave in certain situations. It can also help in developing interventions to change behaviour or promote more positive social norms.

The study of values, beliefs, attitudes, and perceptions is essential as they provide a framework for evaluating and unpacking social norms and levels of acceptability that frame a particular behaviour in a social context and the motivation of actor in participate in this activity. For example, if a community highly values wild birds, it may be more challenging for individuals to engage in activities that harm or endanger these animals, even if the demand to supply markets exists.

To unpack social norms and levels of acceptability, it is necessary to delve into people's thought processes. Below are a few examples of how to approach this:

Values: collective principles of what is considered good, desirable, and proper in a culture. In general, people's attitudes, perceptions, and behaviours tend to be rooted and influenced by the values they hold, affecting many aspects of their life including their relationship with wildlife and the natural world.

Beliefs: define an idea or principle which one judges to be true. They are informed by our values. Beliefs develop from information that is learned; therefore, they can be based on fact, but also on misconceptions, incomplete truths, or common-sense thinking. Belief-based use of wild animals is common in much of the world.

Attitudes: refer to people's predisposition to certain ideas, experiences, values, and other individuals. They can be composed of several beliefs about a subject. A useful example of this predisposition is the individual's level of like or dislike for an authority figure, political party, or standpoint in relation to illegal activities.

Perceptions: beliefs and opinions based on how people regard, understand, and interpret reality. Perceptions have a strong positive correlation with individual actions; thus, they can be used to predict behaviours of a societal group or stakeholders. If, for example, enforcement officers perceive environmental crime to be a less serious offence than other types of crime (such as murders, robbery, fraud, violent crimes, among others), they may be less likely to enforce national environmental legislation.

3.3.3 Social networks

Social networks refer to the ways in which actions are coordinated, and patterns are formed within a social system. Mapping these dynamics can provide valuable insights into complex social issues, such as the illegal killing and trading of wildlife. For instance, mapping social networks can be used to identify the various actors involved in different stages of the problem, including trappers, enforcers, middlemen, facilitators, and consumers. By refining this map over time, it becomes possible to gain a more comprehensive understanding of the entire system of actors involved and their behaviour patterns.

Exploring social networks helps to build a clearer picture of the social dynamics and the role each actor plays in different parts of, for example, the illegal trade chain (from the point of take

to sale to consumption). As such, analysing supply or value chains involved in commercializing wildlife can shed light on how these actors operate to move commodities - including birds - within a country (national level) and/or around the world. For example, this information can be used to understand how producers and hunters in the Global South are connected to markets in China, the US, or Europe through these networks. Overall, understanding social networks can provide critical insights for developing effective interventions to address complex social issues such as the illegal wildlife trade.

4. RESEARCH APPROACHES

Two main research approaches exist in social science for collecting and analysing data: qualitative and quantitative, the application which largely depend on the types of data needed to respond to the research question at hand.

4.1 Quantitative approaches

Quantitative research involves collecting and analysing numerical data to describe, explain and predict a phenomenon. Quantitative approaches tend to involve measuring variables and analysing them using statistical techniques.

Quantitative research can provide a useful starting point to study a social phenomenon, such as IKB. It can help describe the causes behind a social phenomenon and the relationships between them. For example, quantitative data on socio-economic categories such as age, gender, socio-economic status, monthly income, household sizes, etc. can be collected to establish a clearer picture of the types of individuals involved in aspects of IKB. However, quantitative research will not provide information on individual motivations driving their behaviour.

Quantitative data also help in identifying causes originating in intermediate or distant locations, for example, how changes in prices in the national and international markets affect local use of natural resources and biodiversity.

Various methods (surveys, questionnaires, interviews, observations, measurements, etc.) can help collect information that can be translated into numerical data.

4.2 Qualitative Approaches

Qualitative research involves collecting and evaluating non-numerical data to understand individual motivations as well as the external drivers influencing them. Qualitative analysis is more useful for finding the root causes and solutions to complex problems than quantitative modelling, because it can provide more depth and details than quantitative data.

Qualitative data can be collected from documents, photographs, audio and/or video recordings, observations, case studies, among others. For this purpose, different methods can be used such as questionnaires, interviews, community workshops, participatory observation, oral history, visual methods, and others (see the following sections for more details).

Researchers should also be aware of the limitations associated with qualitative methods including:

Reliability, which is a measure of consistency of the collected data over time and sample. For example, a question that produces one type of response on one occasion but a different response on another is considered unreliable. To enhance reliability in qualitative research, researchers should formulate questions in a way that produces

consistent answers that outline the reasons for the research and the major question they want to address-

Validity, which is concerned with errors that may occur during the research process. largely depends on the skill and competence of the researcher and their attention to detail. Threats to validity can be minimised by decreasing the number of incorrect interpretations by summarising to the interviewees what has been said and asking whether it was correct.

4.3 Combining quantitative and qualitative approaches (Mixed Methods)

When analysing quantitative data, the emphasis is on understanding a phenomenon rather than predicting or explaining it. For example, quantitative data can describe how many birds of species X, Y and Z have been killed in the past week, or the number of people in the local community who killed birds in the past week, as well as their socio-economic background, but cannot tell why this is happening.

Qualitative information can contribute greatly to finding the root causes and solutions to complex problems. For example, interviews might reveal that a source of employment in the local area had closed and local people seeking replacement income resorted to catching birds to sell at markets.

A strong analysis combining quantitative and qualitative data can provide a more complete and detailed understanding of a social phenomenon.

4.4 Key considerations in designing social science research

4.4.1 Ethical considerations

Privacy, confidentiality, safety, security, data protection, well-being, autonomy, diversity, values, and dignity of individuals, groups, and communities participating in the IKB social study should be respected in all stages of the study. All work should adhere to ethical norms including free, prior and informed consent (FPIC) in research and must be carried out ethically and using the best techniques available for the project at hand. This is particularly important as research into IKB, by definition, involves recording data on aspects of criminal or illegal behaviour. Researchers should consult best practice on the ethical considerations around criminal behaviour. In addition, the ethical need for compensating study participants should be considered.

4.4.2 Selection and skillset of field team

While there are numerous strategies for collecting socio-economic information on stakeholders, the quality and reliability of data collected depend on the team's abilities, adaptability, and creativity as well as the connections they make with the stakeholder groups.

The field team should:

- Be familiar with IKB issues and stakeholders' perspectives;
- Not be associated with authorities or groups that might reduce willingness of communities to share information;
- Have a set of skills appropriate for the particular study including comprehension of ethics, norms and standards involved in conducting social science research;
- Be able to communicate in the same language to convey information effectively;
- Be active listeners giving full attention and understanding what's being communicated;
- Be able to employ critical thinking, logic, and reasoning to read between the lines and analyse information accordingly;

- Have good writing skills and be competent in recording information clearly and accurately in the field.

4.4.3 Sample size

Any empirical study with the aim of drawing conclusions about a population from a sample must consider the sample size as a crucial component. The process of deciding how many observations or replicates to include in a statistical sample is known as *sample size determination*. To reach the required statistical significance of a valid and trustworthy output, a normal sample size determination involves: defining population size or number of people to be targeted in the study, designating a margin of error, determining confidence level, predicting expected variance, and finalizing sample size.

In general, costs and time available will determine the upper limit of the sample, but the larger the sample size, the better the representativity of the population and the chance of detecting patterns statistically. Therefore, for example, to understand attitudes to IKB across a region, it might be preferable to conduct 100 shorter focused interviews with randomly selected individuals across the entire geographic area rather than long interviews with only ten randomly selected participants.

4.4.4 Sampling strategy

Various approaches can help ensure that the sample used in the study accurately represents the population from which it is drawn, including random, purposive, systematic, convenience, cluster, and stratified sampling. Careful consideration should be given to the selection of appropriate sampling strategies during the design phase of the socio-economic assessment for IKB.

4.4.5 Randomness and representativeness

A *representative sample* is a selection made from a larger statistical population, or instance that sufficiently replicates the broader group in terms of the quality or characteristic being studied. A representative sample parallels important factors and characteristics of the larger population that is being studied. The larger the size of the sample, the more likely it is to precisely represent the target population and the less likely it is to contain sampling errors.

A *random sample* is a group of participants that has been selected arbitrarily/ by chance from a larger population, so that each person in the larger group has an equal chance of being selected.

Stratified random sampling can be an important part of the process of achieving a representative sample. For example, in taking a random sample of participants from a community for a study, by chance, there might be no participants in the sample over the age of 50, but the researcher may have reason to believe that age could be an important factor affecting attitude to IKB. The researcher might decide that sampling would be more representative of the community if they stratified the community by age, and then randomly selected participants from each age group for interview to ensure all age groups are represented. The process of selection is still random within the strata. In deciding the number of random samples (individuals to be interviewed) to be taken within each of the age groups, the researcher might try to reflect the age profile of the community as a whole (e.g., if 50% of the community are aged 20-30 and 1% of the community are aged 70-80, 50% of the interviewees would be randomly selected from the 20-30 age group and 1% of interviewees from the 70-80 age group).

Strata can be decided using other characteristics such as gender, income level, marital status, educational level, etc. While the process of selecting samples might take slightly longer and involve an extra step compared to random sampling, the results might be more representative of the population being studied.

Alternatively, a *non-random method* (such as snowball sampling) can be used. In this recruitment technique, research participants are asked to assist researchers in identifying other potential participants that will also identify other potential participants and so on until a larger group of participants are recruited and the researchers reach their target sample size. This technique can be helpful when participants cannot be identified easily within the population by an outsider, but one person engaging in an activity of interest is likely to know others who are also engaging in it.

4.4.6 Bias

Bias occurs when one outcome or response is deliberately chosen or encouraged over others in testing or sampling, which could distort the results. Information bias, selection bias, and confounding bias can appear during any stage of the social research process, including designing and formulating of the study questions. For example, the study questions could be selected so that their answers would reflect the researcher's own perspective on the studied phenomenon. A researcher choosing samples (for example choosing easily accessible villages along a road) rather than randomly selecting the villages to be surveyed could result in a biased sample, and selecting for particular characteristics in participants (for example only interviewing men) could be a source of bias.

Another source of bias can arise when addressing questions related to illegal activities, due to the sensitivity of the topic. Individuals may be hesitant or unwilling to disclose their involvement in such activities, leading to incomplete or inaccurate data. To overcome this limitation, it is essential to ensure confidentiality and anonymity of the interviewees. Additionally, using indirect or non-threatening language in questions can reduce the social desirability bias that may arise when addressing sensitive topics. Another effective approach is to use techniques such as randomized response or unmatched count technique, which allow individuals to disclose sensitive information without directly admitting to their involvement. Finally, it is crucial to acknowledge the limitations of self-reported data and supplement it with other sources of information, such as official records or third-party reports, whenever possible. By implementing these strategies, researchers can mitigate the biases that may arise when addressing sensitive topics and obtain more accurate and reliable data.

Bias can be prevented in a study by using some common techniques such as cooperation in designing the study, reviewing findings with a peer, having respondents validate the results, or using more than one approach and comparing results.

4.4.7 Reflexivity and Positionality

Reflexivity refers to the researcher's awareness and acknowledgment of their own biases, assumptions, and perspectives that can affect the research process and findings. It is an essential component of qualitative research and critical social science as it helps to understand how the researcher's subjectivity influences the research. By being reflexive, the researcher can mitigate their biases and subjectivity to some extent.

Example of reflexivity in social science research: A researcher studying the experiences of marginalized communities should acknowledge their positionality and privilege as a researcher and how it can affect their interpretation of data. They can reflect on how their own background and experiences shape their understanding of the community's experiences and challenge their own assumptions.

Positionality, on the other hand, refers to the researcher's social location, including their gender, race, ethnicity, class, sexual orientation, and other identities that influence their experiences and perspectives. It recognizes that the researcher's position in society can affect

the research process, including the questions asked, data collection, analysis, and interpretation.

Example of positionality in social science research: A male researcher studying the experiences of women in leadership positions should acknowledge their position as a male researcher and how it can affect their understanding of the experiences of women. They can reflect on how their positionality can influence their interpretation of data and the questions they ask during interviews.

Best practice advises that researchers engage in reflexivity and positionality as a process from the beginning to the end of the research.

5. MAIN DATA COLLECTION METHODS

This section outlines some of the main research methods and techniques that can be employed in a social science study. These methods provide instruments and techniques to untangle the complexity of the social causes of IKB, which can be used by themselves or in conjunction with other methods as part of a socio-economic study.

For some techniques included in this section, a case study is provided as an illustration of the method in practice.

5.1 Surveys

This research method uses standardized questionnaires or interviews to collect and measure unobservable information such as people's perceptions, motivations, beliefs, and behaviours, in a systematic manner. This method is best suited for studies with individual people as the unit of analysis. However, groups and organizations can be used as units too. Surveys are completed directly by respondents, while interviews are completed by the interviewer based on verbal responses provided by respondents.

5.1.1 Telephone surveys

Telephone surveys are usually used to assess people's attitudes, opinions, and perceptions about a topic via phone calls. In general, interviewers use standardized and structured questionnaires to collect information from a particular sample. The questionnaires are designed to represent the perceptions of a population. This method is ideally suited for remotely collecting data about a population that is too large to observe directly. Traditionally, this type of survey has been used for collecting opinions about a certain topic, such as voter intention (to approve new laws or reform existing laws, or elect political candidates) and opinions as well as attitudes (for example, to ascertain the attitude of a population towards the consumption of illegally killed songbirds).

5.1.2 Online surveys

Online surveys are conducted via the internet using interactive questionnaires, usually sent directly to people via e-mail. Online surveys are especially powerful for gathering qualitative and quantitative data and can be applied to small or large audiences, as needed. The online format allows participants to explain and contextualize their responses in the privacy of their own homes without having to interact with a telephone pollster or interviewer. Furthermore, these surveys are inexpensive to administer, results are instantly recorded in an online database, and the survey can be easily modified if needed. However, sampling bias may be a significant issue since the survey cannot reach people without internet access (or who do not use the internet) and depends on the interest, available time and honesty of the person filling in the survey. For these reasons, using mixed methods and performing validity checks is advised.

Case Study: Changing social awareness of the illegal killing of migratory birds in the Ionian Islands, western Greece:

<https://www.tandfonline.com/doi/full/10.1080/00219266.2018.1554597>

A questionnaire-based survey aimed at monitoring, measuring, and evaluating the 'Safe havens for wild birds' campaign, was implemented within the framework of the LIFE programme, in Greece and more specifically in the Ionian Islands. The study was conducted in two phases, just before the launch (2013) and after the completion of the campaign (2015), to enable a comparison of answers and data. The study detects attitude changes that occurred in three target groups (pupils, local hunters, and residents) on three islands where the phenomenon of illegal spring killing is more intense.

5.2 Interviews

Interviews are a more personalized form of data collection method than surveys. They are conducted by trained interviewers using the same research protocol as questionnaire surveys (i.e., employing a standardized set of questions). Instructions may only be available to the interviewer and may include space for the interviewer to record personal observations and comments. Furthermore, the interviewer can clarify any issues raised by the respondent or ask probing or follow-up questions. While interviews allow for more detailed information about the unit of analysis, they are time-consuming and resource-intensive.

Depending on the response formats, interviews may be structured or unstructured. Structured questions provide a set of answers for the respondents to choose from, while unstructured questions allow interviewees to express their thoughts and opinions freely. Both techniques can be used interchangeably when designing an interview questionnaire. Below, some examples of interviews are explored:

5.2.1 Face-to-face interview

The most typical form of interview is a personal or face-to-face interview, where the interviewer works directly with the respondent to ask (structured, semi-structured, or non-structured) questions and notes the interviewers' responses and comments, as needed. Personal interviews are used to expand information about a certain topic or for collecting specialized knowledge from key participants. They can be conducted at a place where the respondent feels comfortable or in a neutral space. Using this method, both qualitative and quantitative data can be collected.

Case study: What motivates hunters to target exotic or endemic species on the island of São Tomé, Gulf of Guinea? Carvahlo et al. 2014 Fauna & Flora International, Oryx, 1–9: <https://www.cambridge.org/core/journals/oryx/article/what-motivates-hunters-to-target-exotic-or-endemic-species-on-the-island-of-sao-tome-gulf-of-guinea/E1728FC9D03047BB8684D42B417E6E8A>

Semi-structured interviews with 119 hunters to assess the relative importance of native and introduced prey species, gathering information on personal profiles, preference and practice, and hunters' perceptions of trends in prey populations

Case study: Socio-economic study of Bird Hunting Along the Mediterranean Coast of Egypt

https://www.cms.int/sites/default/files/uploads/meetings/MIKT1/NCE_BirdLife_Bird-Hunting-Along-the-Mediterranean-Coast-of-Egypt.pdf

The primary data source for the study was a field survey including quantitative and qualitative data, preceded by a review of relevant literature. Seventy-three bird hunters and traders from 25 local communities, towns, and cities along the coast were interviewed following a comprehensive set of questions designed and tested prior to the survey. Group discussions were also held in communities where hunters agreed to participate.

Case study: Socio-economic analysis of perception and causes of illegal killing of birds in the Neretva delta.

<https://www.biom.hr/en/socio-economic-analysis-of-the-causes-and-perceptions-of-illegal-killing-of-birds-in-the-neretva-delta/>

The research was conducted using mixed methods, more precisely a combination of secondary data analysis, survey questionnaire and interviews with key stakeholders. The central data collection method is a sampling survey consisting of random subsamples and targeted subsamples of different stakeholder groups from the Neretva delta area. 104 and face-to-face questionnaires were conducted with police officers, hospitality establishments, food market representatives, nature protection rangers, hunters, farmers, tourism sector.

5.2.2 Qualitative interviews

In some cases, non-structured interviews are also called qualitative interviews. This type of method is more personal and is conducted as a conversation in which the interviewer, while still leading the process, gives enough freedom and space to the interviewee to express their mind. The strength of qualitative interviews is in providing background information and context and providing in-depth information on each participant's mental construction and motivations.

5.2.3 Focus group interviews

In this technique, a small group of respondents, the focus group, are interviewed in a shared location. The interviewer is a facilitator, leading the discussion and ensuring that every person has an opportunity to respond. Focus groups can allow deeper examination of complex issues than other forms of survey research because talking with other people can trigger responses or ideas that the individuals had not considered before. However, focus group discussion has important weaknesses: one person may dominate the conversation, and some individuals may be reluctant to express their opinions in front of their peers, their superiors, or those with greater power or status in the community especially while dealing with a sensitive issue. Because of their small sample size, focus groups are usually used for exploring a topic in more detail.

Case Study: Demand under the Ban – China Ivory Consumption Research.

https://changewildlifeconsumers.org/site/assets/files/1036/demand_under_the_ban_-_china_ivory_consumption_research_2017_final_2.pdf

This research sought to discover the nature of ivory use in 15 surveyed cities in China, to understand consumers' perception towards the ivory ban enforced from mid-2018, and to assess effective messaging and mechanisms for demand reduction. The report is a synthesis of a three-phased research approach: a. a desk research of relevant studies conducted earlier on this topic; b. a qualitative phase, which included eight in-depth interviews with Chinese consumers in Beijing, Shanghai, Guangzhou and Chengdu; and eight focus group discussions with Chinese consumers in the same cities; c. a quantitative survey including structured online interviews of Chinese consumers in 15 major cities in China in 2017; followed by a post-ban quantitative survey mid-2018.

As mentioned before, surveys and interviews can be used to collect people's opinions, attitudes, perceptions, and demographic information. However, the key differences between these methods are based on the sample size and the costs of the research. Online and telephone surveys might be more helpful in collecting data on a set of predefined variables from a large number of people (typically used in more extensive studies) or distant key actors as they are cheaper than most other research techniques and are able to reach a wide population. In comparison, interviews, which are conditioned by the interviewer's skills, are more costly and time-consuming, but also allow deeper examination of a social problem.

5.3 Participant observation

Participant observation is an unstructured and interactive method whose purpose is to describe how and why people act the way they do. The researcher accompanies people in their daily lives to observe their actions and participate, to varying degrees, in the activities under study. This method is helpful in collecting information on how people live, their thoughts and actions, how they describe and explain themselves and their motivations. In this scenario, the role of the researcher is to interpret such actions and ideas, which is only possible if the researcher has a good understanding of the local context. For this reason, extended periods are needed to conduct participant observation.

Participant observations and quantitative interviews are among the main methods used by ethnographic research approaches, which look at people in their own cultural and social context. These types of analyses are key for understanding the deep causes behind an environmental problem and how people explain and create meaning out of them.

Case Study: Tool Kit: Using ethnographic research for social engagement: A toolkit for orangutan (and other) conservationists.

<https://globallivesoftheorangutan.org/wp-content/uploads/2022/02/OrangutanReport-WEB-1.pdf>

This toolkit aims to equip conservation practitioners with a better understanding of the principles of ethnographic research, a selection of its key methods, some advice and considerations for carrying out such research, and guidance for analysing and reporting. Where possible, it is strongly recommended to collaborate with trained social scientists who are familiar with such methods in designing conservation projects from the very beginning. However, in situations where this is not possible or feasible, this toolkit can be of practical use to both people working in orangutan conservation and conservation practitioners more generally.

5.4 Community workshops

Community workshops are large, interactive meetings involving plenary sessions and small group discussions with community members. Community workshops can be helpful to explore the perspectives, experiences, and beliefs of community members on a particular topic. In general, these methods are related to consultation processes. For example, it can also be used to gather local knowledge about a particular issue, or it can be used to validate data with community members about the motivations and drivers of IKB.

5.5 Other methods

5.5.1 Visual methods

Visual tools, such as images, photos, and pictures, can be used as a stimulus to trigger responses or to display people's way of thinking. They can be used by coding or counting responses or behaviours towards a particular image or exploring how participants make meaning out of the visual material. Visual tools can go beyond words by helping participants express themselves in a deeper or new way; they can change the interview process by highlighting meaningful issues and experiences; and they can also create new spaces for participants to reflect on the issue explored. Visual methods can be used alone or in combination with verbal and numerical data.³

5.5.2 Oral history

Oral history is a method that records and explores the biographical accounts people give of their own lives and those of the generations before them. This method aims to study the history of a particular social context through the people who have personally experienced it. One of the main strengths of this method is that it can offer a unique opportunity for a 'normal person's' voice to be heard in these historical accounts.⁴

5.6 Specific techniques to ensure anonymity when collecting data on illegal activities

In psychology and social research, several methods exist to ensure anonymity while eliciting responses from subjects on sensitive or criminal information, to ensure their anonymity. Several of the methods outlined above, may allow identification of individuals which may be off-putting especially for offenders. For that reason, it's worth noting several techniques which social scientists use that can ensure anonymity, for example, randomised response technique, unmatched count, or item count are techniques used to improve, through anonymity, the number of true answers to potentially embarrassing or self-incriminating questions.

5.7 Data Analysis

Selecting and correctly using an appropriate method to analyse collected data is important to be able to maximise the understanding gleaned from the data collection effort expended. Support from specialised institutions, such as universities and research institutes, can be used to help analyse the data. Despite having applied a robust sampling and analysis technique, sometimes the patterns and trends identified are not representative of the whole population. No sampling technique will guarantee perfect representation, but probability techniques improve the odds.

³ <https://www.oups.org.uk/methods-articles/a-change-of-view-using-visual-methods-to-explore-experience-in-qualitative-research>

⁴ <https://ukdataservice.ac.uk/app/uploads/thematicguideoralhistory.pdf>

The analysis of qualitative data requires a process called coding, whereby data are interpreted, organized, analysed, and structured into particular codes to assess common themes and patterns. In addition to training in these methods, a creative and investigative mindset is needed for qualitative analysis, as well as personal knowledge of the social context. Ethical considerations include confidentiality and the role of the researcher as a data collector instrument.

PART 2: A STEP-BY-STEP GUIDE

6. SUGGESTED METHODOLOGY FOR CONDUCTING A SOCIAL SCIENCE RESEARCH STUDY ON ASPECTS OF IKB IN A GIVEN COUNTRY

This section provides a suggested step-by-step guide based on best practice that can help guide researchers in developing their own tailored research study. It has been designed to be used in conjunction with the Suggested Methodology template (see Part 3, Section 7). Note that there is no one-size-fits-all protocol for studying the motivations and profiles of those undertaking IKB or for those enabling or accepting it. The techniques that work best depend on the questions being asked and the characteristics of the social context and stakeholders under investigation.

STEP 1: Agree the scope and set aims and objectives

Gather all relevant existing information

- Consider existing knowledge on IKB in the country of interest (understanding the types of IKB that are present and their extent is a prerequisite to undertaking a sociological analysis of motivations behind IKB)
- Consider existing knowledge on drivers of this IKB (e.g., from published and unpublished reports, expert knowledge, etc.)
- Decide the highest priority knowledge gaps to fill in order to best tackle the IKB issue. Identifying knowledge gaps is a crucial starting point in a socio-economic study. Information and data from all relevant sources should be reviewed, including technical reports and studies, academic publications, legislation, policies, and regulations. This step will provide a clear picture of the current state of knowledge and allow for the identification of information gaps.

Consult stakeholders to decide on the scope of the study

- A National Action Plan committee or similar group might be suitable for these discussions; consider if other entities have suitable expertise to collaborate (e.g., Universities/NGOs/research institutes/hunters associations) and should be involved
- Consider the stakeholders' most important knowledge gaps to fill in relation to understanding motivations / socio-economic drivers to be able to better direct effective action to address IKB

Agree the aims and objectives of the study

- Will the study contribute to understanding the drivers behind all forms of IKB in the country or focus on some priority aspects?
- Aim: What will the study achieve?
- Objectives: How will this aim be achieved?
- Formulate overarching research question and sub-questions
- Articulate related questions that will not be addressed by this study, but should be pursued in future
- Is this study linked to a particular intervention (e.g., does it form a baseline against which impact can be measured, is it possible to note the impact of IKB on specific species)?

Decide on timeframe & geographic scope for study

- Decide on the spatial scale at which the study will be carried out (e.g., national, regional or local scale)
- Decide on the timing of the study:
 - Consider any known seasonality or temporal variation in the pattern of the relevant form of IKB and time appropriately

- Will the study be carried out for a continuous period or at intervals?
- Is the study a one-off or will it be repeated?
- Is the aim of the study to establish a baseline against which to measure progress after a particular intervention?
- Is it possible to include a pilot study, evaluate results and adjust methods before wider roll-out?

STEP 2: Decide on methodology

Identify appropriate methodological approaches

- Decide which method(s) might suit different types of research questions and what kind of data would result from using these methods
- Decide which methodological approach to use to answer different aspects of the research question(s) / sub-questions
- Decide how research assistants will collect the data (paper forms, digital forms, apps etc.) bearing in mind length of engagement for interviewee and ease of collation for analysis
- If respondents record the information themselves, consider literacy, language / translation etc. when devising data collection tools
- Consider the research assistants you may be able to recruit and the ease with which they can be trained to use different candidate methods effectively
- Consider what data analysis approaches will be appropriate for the selected methods
- Consider ethical implications of methodology, consider anonymity or effect of identifiable answers, and any legal requirements (data protection etc.)

Decide sampling strategy for each methodological approach used

- How will the participants be selected/sampled?
- Decide on the sampling unit used: individuals, stakeholder groups (e.g., bird hunters, traders, officials, etc.)
- Consider sample size and any issues of reliability and representation/inclusion

STEP 3: Plan, prepare, pilot and review progress

Plan and prepare for the research

- Develop a research workplan and timeline (specific tasks and actions, costing, timeframe, deliverables etc.)
- Obtain ethics approval and research permits, as required
- Obtain permissions from relevant authorities, community leaders etc.
- Hire and train research assistants
- Consider hiring people from the relevant geographic area, ideally able to be accepted by the study community, but not necessarily from the community itself (giving a balance between local understanding and objectivity)

Pilot the methodology

- If possible, conduct a pilot study and schedule in time to evaluate results and adjust methods accordingly before rolling out to a wider area/cohort
- A pilot study can be a useful training exercise for newly recruited / trained research assistants; can help calibrate data; avoid mistakes; highlight issues that were unexpected / outcomes that were unintended; and can prevent wasting resources on collecting data in an unusable way or quality

Plan to review progress periodically

- Even if the pilot study is successful, review progress periodically throughout the main study period

- Build in moments to pause and reflect, which can help identify, resolve or mitigate any issues early on and at any point during the study

STEP 4: Collate and analyse data and check results

Collate and store data

- Ensure data are sent from the field regularly / backed up safely and securely
- Collate data in a form that facilitates data analysis
- Screen data for clear errors and gaps and discard any unusable data

Analyse data

- Apply suitable methods for analysis of different data types
- Ensure that the analysis is tailored to the assessment / study objectives.

Carry out validity checks on results

- Ensure that results from different research assistants working in the same community are comparable
- Assess whether answers from participants are congruent with direct observations. Compare results with available knowledge or previous reports.
- Ensure key participant information about seasonality, community history, and attitudes is congruent with other available information

STEP 5: Write up and disseminate your findings

- Use the Suggested Format in Part 3 as a basic reporting template for the study
- Consider publishing findings in peer-reviewed publications or making them publicly accessible in other forms
- Provide authorship or appropriate acknowledgement for local collaborators and participants
- Provide a report or feedback results and recommendations to the community, respondents and/or participants as appropriate
- Ensure raw data are made available to local collaborators, with appropriate modifications to ensure confidentiality for respondents
- Ensure any key results, recommendations and next steps are discussed in relevant fora such as any NAP committee and fed into planning of initiatives to tackle IKB

PART 3: SAMPLE SOCIO-ECONOMIC STUDY REPORT FORMAT

7. SUGGESTED FORMAT FOR REPORTING ON A SOCIAL RESEARCH STUDY ON ASPECTS OF IKB

This section outlines the basic sections a socio-economic assessment report could contain. This general framework can be adapted and elaborated according to the topic under investigation.

1 Introduction

1.1 Overview of background information on IKB context in-country (see Part 2, Step 1)

Including:

- Key IKB types/methods
- Species affected
- Scale and intensity of IKB
- Geographic distribution of IKB
- Types of actors involved in IKB
- Known motivations/drivers of actor types
- Key knowledge gaps

1.2 Relevant legislative frameworks, guiding documents and IKB national fora (see Part 2, Step 1)

Including:

- Structures and processes in place: National Action Plan, local Action Plans, government declarations or policy objectives.
- Other state-led initiatives in place
- Civil society or non-state actors that may be actively tackling the issue (hunters associations, NGOs, universities, etc.)
- Existing international treaties/conventions
- Summary of or link to relevant legislation
- National or Local action plans, Memoranda of Understanding (MOUs), or declarations relating to IKB
- Relevant national committees (e.g., IKB NAP committees, anti-poisoning working groups, illegal wildlife trade taskforces, etc.)

2 Aims and objectives of study (see Part 2, Step 2)

- Aim: The overall result the study aims to achieve
- Objectives: How these will be achieved

3 Study methods and approach (see Part 2, Step 3)

3.1 Actor Identification

3.2 Geographical scope of study / assessment

3.3 Timeframe of study / assessment

3.4 Data collection methods used, and an explanation of why the methods were chosen

3.5 Sampling approach, and an explanation of why the approach was chosen

4 Data analysis (see Part 2, Step 5)

4.1 *Data collation / synthesis*

4.2 *Analytical methods*

5 Results (see Part 2, Step 5)

Including:

- Description of results regarding actor types in this IKB issue (consider all aspects of the issue, from the person removing the bird from the wild to any middleperson, seller, or end consumer, as well as decision-makers, enforcement officials, the general public, school children, etc.),
- Description of results regarding the role each of these actors plays in perpetrating, enabling, or accepting the IKB issue(s) in the focus of the study
- Description of the motivations of these different types of actors
- Description of any enabling conditions affecting their motivation (e.g., economic situation, perception of impunity, social pressure to engage in the activity, cultural / societal traditions which normalise the activity, etc.)
- Other key findings
- Visualisation of findings using figures, tables, maps, photographs, etc.

6 Discussion (see Part 2, Step 5)

Including:

- Insights from results in relation to aims and objectives
- Representativity of results regarding the wider population of actors, and limitations of the study
- Validity checks: Are results congruent with other sources/ direct observations? Is key informant information about seasonality, community history, and attitudes congruent with other available information?
- Key actions identified from results that could help reduce IKB either by changing the motivation of actors and / or by changing the enabling conditions around their activities
- Information on whether results indicate actors in the chain whose motivation might be easier to change than others

7 Conclusions and Recommendations (see Part 2, Step 5)

Including:

- What the study has helped achieve
- Recommendations and suggested actions for discussion and / or implementation in multi-stakeholder national action plan committees or other relevant fora
- Which members of the multistakeholder IKB forum or other relevant entities could help enact the recommended interventions and what the next steps should be in engaging them
- How the impact of such actions will be monitored to see whether they are effective (e.g., through a baseline survey that can be repeated post-intervention)
- How strategies will be adapted on the basis of that monitoring
- Knowledge gaps that remain to be filled, how will they be filled, and which collaborators could help to fill these knowledge gaps.

8. RESOURCES

8.1 General Resources

More information about methods in the social sciences as applied to conservation can be found in the following links below (listed by publication date):

Conducting Research in Conservation: Social Science Methods and Practice.

Newing, H., Eagle, C., Puri, R. K., & Watson, C. W. (2010). Routledge.

Social Science Research: Principles, Methods, and Practices

Bhattacharjee, A, University of South Florida (2012)

<https://www.mendeley.com/reference-manager/reader/7c20e888-ba52-37a1-9517-8b1fc906635c/0d64485d-7502-0659-277f-81b43226c7c6>

A guide to understanding social science research for natural scientists

Moon, K., & Blackman, D. 2014.

<https://pubmed.ncbi.nlm.nih.gov/24962114/>

Conservation social science: Understanding and integrating human dimensions to improve conservation

Bennett, N. et al., 2017.

<https://www.sciencedirect-com.ezp.lib.cam.ac.uk/science/article/pii/S0006320716305328>

Understanding local resource users' behaviour, perspectives and priorities to underpin conservation practice.

Milner-Gulland, E. J., Ibbett, H., Wilfred, P., Ngoteya, H. C., & Lestari, P. (2020). In W. J. Sutherland, P. N. M. Brotherton, Z. G. Davies, N. Ockendon, N. Pettorelli, & J. A. Vickery (Eds.), *Conservation Research, Policy and Practice* (1st ed., pp. 63–81). Cambridge University Press.

Visual Methodologies in Qualitative Research: Autophotography and Photo Elicitation Applied to Mental Health Research

Glaw, X., Kerry Inder, K., Kable, A., & Hazelton, M. (2017)

<https://journals.sagepub.com/doi/pdf/10.1177/1609406917748215>

Understanding wildlife crime in China: Socio-demographic profiling and motivation of offenders

Shao M-L., Newman, C., Buesching, C. D, Macdonald, D. W., & Zhou, Z-M. (2021)

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0246081>

Thematic guide: oral history (using qualitative data), Importance of individual stories to be understood

University of Essex (2021)

<https://ukdataservice.ac.uk/app/uploads/thematicguideoralhistory.pdf>

8.2 Case Studies

Method: Interdisciplinary or mixed-method approach

Case study: Socio-economic study of Bird Hunting Along the Mediterranean Coast of Egypt

https://www.cms.int/sites/default/files/uploads/meetings/MIKT1/NCE_BirdLife_Bird-Hunting-Along-the-Mediterranean-Coast-of-Egypt.pdf

The primary data source for the study was a field survey including quantitative and qualitative data, preceded by a review of relevant literature (see reference list). 73 bird hunters and traders from 25 local communities, towns and cities along the coast were interviewed following a comprehensive set of questions designed and tested prior to the survey. Group discussions were also held in communities where hunters agreed to participate.

Case study: Study on the origin and of motivation of environmental crime.

<https://guardianes.seo.org/download/study-on-the-origin-and-motivation-of-environmental-crime/>

The objective of this research was to analyse the motivations behind environmental crimes in Spain and Portugal, although some of the chapters carry out a universal analysis of the motivation of environmental crime. What motivates criminal actions against the environment and especially against wildlife? What characterizes the people who commit them? This report reviewed the scientific literature, surveyed the general public, analysed criminal sentencing data and interviewed the different professionals involved in their investigation. It concludes by proposing future lines of action: both further research and options for intervention.

Case Study: Using government data and hunters' perceptions to establish the efficacy of enforcement action. Ferns, B, Campbell, B & Veríssimo, D. 2022. Emerging contradictions in the enforcement of bird hunting regulations in Malta. *Conservation Science and Practice*, e12655. <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/csp2.12655>

To better understand the complexity of wildlife crime and enforcement in Malta, a mixed-method approach was utilized and triangulation techniques employed to build reliable narratives. Governmental data were supplemented and corroborated using the key informant technique (Marshall, 1996), whereby key interlocutors (n = 6) were identified based on their knowledge and role in the hunting arena. Interviewees included an ornithologist, a police inspector, a politician heavily involved on the anti-hunting side of the 2015 referendum, two Wild Bird Regulations Unit (WRBU) officials, and the President of a hunting association. All interviews were semi-structured.

Case Study: Curbing Ivory Consumption: Messaging Research. The Nature Conservancy, 2015. https://changewildlifeconsumers.org/site/assets/files/1319/ivory-messaging-in-china_tnc-research-findings-full-deck-presentation.pdf

To provide an overview of the opinion landscape on the issue of ivory in China and explore the current perceptions and attitudes towards ivory to uncover any gaps in knowledge, qualitative research – 11 in depth interviews and quantitative research - Computer-assisted web interviews with adults age 18+ in Beijing, Shanghai, and Guangzhou; random sample obtained from an online panel was conducted.

Method: Questionnaires/written surveys/polls (online surveys, email surveys etc.)

Case Study: Changing social awareness of the illegal killing of migratory birds in the Ionian Islands, western Greece.

<https://www.tandfonline.com/doi/full/10.1080/00219266.2018.1554597>

A questionnaire-based survey aimed at monitoring, measuring, and evaluating the 'Safe havens for wild birds' campaign, implemented within the framework of the LIFE programme, in Greece and more specifically in the Ionian Islands. The study was conducted in two phases, just before the launch (2013) and after the completion of the campaign (2015), to enable a comparison of answers and data. The study reveals attitude changes that occurred in three target groups (pupils, local hunters, and residents) on three islands where the phenomenon of illegal spring killing is more intense than in other coastal parts of the countries.

Case study: Trends in legal and illegal trade of wild birds: a global assessment based on expert knowledge, Biodiversity and Conservation, 2019.

<https://link.springer.com/article/10.1007/s10531-019-01825-5>

Focusing on consumer demand in each country, the study conducted a global survey among 105 international experts on bird conservation to identify expected trends, drivers, and market characteristics of legally and illegally wild-caught pet bird trade.

Case Study: Survey on the Relation of hunting to livelihood of People Pre- and Post-Project, Zeina Badran (2012).

National study to determine the prevailing attitudes of people towards bird hunting conducted on citizens of different regions in Lebanon. A total of 2000 respondents were sampled randomly. The study covered respondents of different educational levels, and self-administered questionnaires were answered by respondents from different ages and backgrounds, to cover the various attitudes and views.

Case Study: What's Driving the Wildlife Trade? A Review of Expert Opinion on Economic and Social Drivers of the Wildlife Trade and Trade Control Efforts in Cambodia, Indonesia, Lao PDR and Vietnam. TRAFFIC. 2008. East Asia and Pacific Region Sustainable Development Discussion Papers. East Asia and Pacific Region Sustainable Development Department, World Bank, Washington, DC.

<https://www.traffic.org/site/assets/files/5435/whats-driving-wildlife-trade.pdf>

South-east Asia is both a centre for the consumption of wildlife products and a key supplier of wildlife products to the world. Cambodia, Indonesia, Lao PDR and Vietnam are among the south-east Asian countries that act as major sources of wildlife in trade. This study tries to better understand the economic and social drivers of the wildlife trade in these four countries, and to assess the effectiveness of interventions that have been employed to halt illegal and unsustainable trade in their native flora and fauna. The primary data sources for the study were a survey of expert opinion and a review of relevant literature.

Case Study: Social taboos: 'invisible' systems of local resource management and biological conservation. Colding, J. & Folke, C. (2001). Ecological Applications, 11, 584–600.

Social taboos exist in most cultures, both Western and non-Western. They are good examples of informal institutions, where norms, rather than governmental juridical laws and rules, determine human behaviour. In many traditional societies throughout the world, taboos frequently guide human conduct toward the natural environment. Based on a survey of recent literature, we synthesize information on such taboos.

Method: Socio-demographic data

Case Study: Understanding wildlife crime in China: Socio-demographic profiling and motivation of offenders. Shao M-L, Newman C, Buesching CD, Macdonald DW, Zhou Z-M (2021) PLoS ONE 16(1): e0246081. <https://doi.org/10.1371/journal.pone.0246081>
Using data from China Judgements Online (2014–2018), this study documented 4,735 cases, involving 7,244 offenders who smuggled, hunted, transported, sold and/or purchased protected species in contravention of China’s Criminal Law. Socio-economic profiles related to crime seriousness, the type of illegal activity, motivation and taxon involved. These generalizations reveal scope to tailor specific intervention and mitigation approaches to offender profiles, through public information campaigns, proactive incentives opposed by punitive disincentives, and provision of alternative incomes.

Method: Ethnographic research approaches

Case Study: Using Ethnographic research for social engagement: A toolkit for orangutan (and other) conservationists. Chua L., Schreer V., Hasan Thung P. <https://globallivesoftheorangutan.org/wp-content/uploads/2022/02/OrangutanReport-WEB-1.pdf>
This toolkit aims to equip conservation practitioners with a better understanding of the principles of ethnographic research, a selection of its key methods, some advice and considerations for carrying out such research, and guidance for analysing and reporting. Where possible, we strongly recommend collaborating with trained social scientists who are familiar with such methods in designing conservation projects from the very beginning. However, in situations where this is not possible or feasible, this toolkit can be of practical use to both people working in orangutan conservation and conservation practitioners more generally.

Method: Case study (Qualitative data)

Case Study: Socio-economic Root Causes of Biodiversity Loss: An Analytical Approach Paper for Case Studies. 1997. Stedman-Edwards. WWF-MPO. Washington <https://awsassets.panda.org/downloads/analytic.pdf>

This paper is an analytical approach for a series of case studies that will explore the socio-economic root causes of biodiversity loss. These case studies were carried out in many different locations, with a variety of environmental and socio-economic conditions. In each location, biodiversity is threatened by human activity. Socio-economic factors—including social, economic, political, and cultural factors—are at the root of these activities that are destroying habitats and species. The case studies will expand our understanding of these root causes of biodiversity loss as a crucial first step in developing effective strategies for

Method: Structured / Semi-structured and in-depth interviews (face-to-face)

Case study: What motivates hunters to target exotic or endemic species on the island of São Tomé, Gulf of Guinea? Carvahlo et al. 2014 *Fauna & Flora International, Oryx*, 1–9
<https://www.cambridge.org/core/journals/oryx/article/what-motivates-hunters-to-target-exotic-or-endemic-species-on-the-island-of-sao-tome-gulf-of-guinea/E1728FC9D03047BB8684D42B417E6E8A>

Semi-structured interviews with 119 hunters to assess the relative importance of native and introduced prey species, gathering information on personal profiles, preference and practice, and hunters' perceptions of trends in prey populations

Case Study: Structured interviews with enforcement officers on barriers to IKB enforcement in Croatia. (Šarić Kapelj, I. (2020): „Illegal killing of birds in Croatia: An overview of attitudes and needs of police officers“. in D.Novak (ed.) *Proceedings of the 6. Police College Research Days, Zagreb, 2019.*)

https://www.researchgate.net/publication/334194223_Illegal_killing_of_birds_in_Croatia
An overview of attitudes and needs of police officers

Structured surveys were conducted with 394 police officers from 19 Croatian counties. The survey questionnaire determined the frequency of police officers' encounters with illegal hunting, their motivation for tackling illegal hunting as well as main problems and challenges they encountered, alongside their proposals for possible solutions. Analysis of the survey questionnaire found that most of the surveyed police officers did not frequently encounter illegal hunting of birds on their job.

Case Study: A conflict management tool for conservation agencies. Juliette Claire Young, Des B. A. Thompson, Peter Moore, Alastair MacGugan, Allan Watt, Stephen Mark Redpath. 2016. *Journal of Applied Ecology*. <https://doi.org/10.1111/1365-2664.12612>

To develop a tool for decision-makers to use when dealing with conflicts related with natural resource use, a 'in-conflict assessment' was done to provide a snapshot of the state, drivers and impact of each situation, based on stakeholder perceptions. To analyse the existing evidence base for each situation, official public documents, scientific literature, grey literature was analysed and gathered qualitative data from two workshops with a total of 43 participants and 18 semi-structured interviews.

Case Study: Demand under the Ban – China Ivory Consumption Research. Meijer, W.; Scheer, S.; Whan, E.; Wu, D.; Yang, C. and Kritski, E. (2017). *Demand under the Ban – China Ivory Consumption Research*. TRAFFIC and WWF, Beijing, China.

https://changewildlifeconsumers.org/site/assets/files/1036/demand_under_the_ban_-_china_ivory_consumption_research_2017_final_2.pdf

This research sought to discover the nature of ivory use in 15 surveyed cities in China, to understand consumers' perception towards the ivory ban enforced from mid-2018, and to assess effective messaging and mechanisms for demand reduction. The report is a synthesis of a three-phased research approach: a. a desk research of relevant studies conducted earlier on this topic; b. a qualitative phase, which included eight in-depth interviews with Chinese consumers in Beijing, Shanghai, Guangzhou and Chengdu; and eight focus group discussions with Chinese consumers in the same cities; c. a quantitative survey including structured online interviews of Chinese consumers in 15 major cities in China in 2017; followed by a post-ban quantitative survey mid-2018.