

Manual to support the implementation of fisheries interview surveys to elicit Local Ecological Knowledge of the Atlantic humpback dolphin (*Sousa teuszii*)



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What (and who) is this guide for?

This is a step-by-step guide to a specific and standardised survey protocol based on an oral questionnaire (Appendix D). The main objective of this study is to produce data to contribute to the conservation of cetaceans on the Atlantic coast of Africa, in particular the Critically Endangered Atlantic humpback dolphin "*Sousa teuszii*" which is found only in nearshore coastal areas in the range defined by Angola in the South and Western Sahara in the North (for more information see sousateuszii.org). The use of interview data for this purpose is undoubtedly both problematic and difficult. However, if one follows clear protocols for collection and recording of data (not just information) it is possible to produce results from such surveys which are worthy of publication in international journals. That is our aim here. If they are collected in the correct way, these data allow us to ask questions about which species have declined most severely in an area as well as about their current status and distribution.

In order to conduct interviews, you need some basic understanding of the issues, and at least some elementary experience. However, while conducting good interviews does take skill, our aim here is to produce a protocol which can be applied by teams of students after some basic training. Reading, and referring to this guide is essential to applying this protocol correctly; however it is not enough on its own.

The General Guidance to Interview Surveys, produced in the same series as this guide, offers some help there. Community mapping is also essential to this method, and we have produced a guide to that as well (see above). Finally, it is essential to have a basic understanding of the species and, particularly, on how best to separate the species based on descriptions. Appendix E gives some guidance here.

This protocol has been adapted by Biotope Guinea and other members of the Consortium for the Conservation for the Atlantic Humpback Dolphin ([CCAHD](#)) for the Atlantic Humpback Dolphin project. We are particularly interested in the Atlantic humpback dolphin and other cetaceans, but we can obtain much more reliable and interesting data on these species if we ask about the entire cetacean community (see pages 12-16). While it is hoped that this project will reveal important information about the species' distribution and threats, we must also recognise the potential limitations, due to the difficulty of accurately identifying dolphins to species level from the interview narratives (see page 15 and Appendix J).

While it may be appropriate to modify the standard questionnaire developed by all of the project partners for particular surveys (e.g. to include other non-cetacean species), if you modify it too much it will not be comparable to other data collected using this method and will therefore be of much more limited value.

Therefore, if you wish to conduct a survey with a modified questionnaire, we suggest that you contact the CCAHD interview project management team through Gianna.minton@gmail.com.

Preparing for the Survey

Data sheets

Data sheets are at the heart of the protocol. There is the digital form to be filled in on the Kobo Collect app on a tablet or phone to be used in the field (Appendix D) and a [Microsoft Excel spreadsheet™](#) to enter the data into the computer. A map of the study area, that highlights recognisable landmarks and is overlaid with a grid should be made to record the on the geographic location of fishers' activities and observations. Writing data on a data sheet or recording it via a tablet using Kobo collect is different from recording information in a notebook and there are five main rules for their use:

1. **The forms should be filled in while you are at the fish landing site** and (mostly) while you are in the interview NOT when you get home. You should not need to bring a notebook to the interview at all.
2. **Leave nothing blank.** Something must be written in response to (almost) every question/option. You can write "not asked", "not answered", "don't know", "don't remember" etc. if appropriate but you must write *something* unless it is obvious why not.
3. **One person → 1 datasheet.** No group interviews are allowed; you need to do your best to make sure the data are *independent* (see General Interview Guidance).
4. **A datasheet contains only information from, or about, that interviewee.** The datasheet is not for recording your knowledge or opinion, or the knowledge or opinion of anyone else in the village. It's for recording the interviewee's knowledge and opinions and his alone. The only knowledge and opinion of the researcher which can go on the datasheet is the researcher's knowledge and opinion *about the interviewee*. You have to be careful about information and opinion given by other villagers *even if the interviewee says that he/she agrees with them*. (see page 16)
5. **Watch out for sources of error and make notes.** Everyone knows interview data aren't perfect so perfect data are suspicious. All sorts of factors can affect interview surveys (see the General Interview Guidance and Appendix B) and the datasheet gives you space to make notes on these. Use that space.

Stages of the survey

The survey is divided into 14 steps in three stages, as follows:

Preparation

- Step 1: Community mapping survey: Understand which areas you want to be represented in your survey, and use whatever resources you can to understand which villages and fish landing sites are likely to give you a good representation of

fishing activities that may be relevant to *S. teuszii*.

- Step 2: Planning the interview survey : Decide which villages and ports to visit and prepare your materials (p8)
- Step 3: Organise the interviews: Decide how you will find the people to interview (p8).
- Step 4: Informed consent. Check that this person agrees to be interviewed.

During the interview

Part A; General Questions

Step 5: Information about the interview and the fisher. Write down the basic information about the interviewee and the interview.

Part B: Questions about fisheries

Step 6: fishing and fishing techniques

Part C : Questions regarding dolphins.

Step 7: General knowledge. Find out, as best you can, what species the respondent knows and what they call them (this is often the most difficult part).

Step 8: Ask for information about the observations

Step 9: Date the observations

Step 10: Location of observations.

Step 11: Additional information on observations

After the survey

Step 12: After the interview

Step 13: Data entry on the computer.

Step 14: Analysis: This guide does not cover the techniques for analysing this data, as we are still developing them, although an analysis plan is available in French.

Step 1: Community Mapping Survey

As a general rule, we recommend that you **start with community mapping**. In other words, you should carry out a community mapping survey around your area of interest (e.g. a marine protected area) and then carry out the interviews in a separate, later survey. The reason for this is that, until you have carried out the community mapping survey, it is difficult to know which villages you want to visit in your main survey. **The exceptions are as follows:**

1. Where villages or fish landing sites are few and far between and travel costs are high.
2. When you already know the area well and already know which areas each village uses. However, make sure that you really know and are not just making assumptions based on distance to the forest and administrative boundaries (see the community mapping manual).

- 1) Prepare a base map in advance from GIS data or published maps. It should include:

- a) The aquatic network (ocean, seas, estuaries, rivers, streams...)
- b) a grid, preferably in the UTM WGS84 coordinate system. **The grid will be important to more precisely locate the areas where fishers conduct their activities and observe dolphins.**

It should not contain administrative boundaries (commune, district, province, country) unless they correspond to major natural features such as high mountain ridges or large rivers. Do not include the boundaries of any protected areas.

You should indicate the location of the village but, as villages move, it is often best to take a GPS reading once you are there and mark it on the map. This is particularly necessary in Laos, but recent village movements can also cause problems in Vietnam.

Include a large area on your base map. It is unusual for people to use only the coastline of their community, or near their village. Their main fishing area may be in another district, another province or even another country. **NEVER include a single community on your base map.** Also, never produce maps where the rivers stop at the boundaries of a protected area or province; it is confusing (see Figure 1). If you only have data within your province or protected area, it is best to use a base map. You need to find the data from outside.

- 2) You have to make the community map in a group interview. You can do this at village level, landing level, commune level or group of villages.
- 3) Ask people to write the names of rivers and other landscape features on the map. Make sure you can read it. Remember that there may not be a standard spelling for local names.
- 4) **Ask participants to place beans or stones on the map to show you where people from their village go when they go to sea.** More beans in the areas where they go most often. You can also ask them to indicate the areas that other neighbouring villages use.
- 5) Take pictures of the beans on the map, and make sure you know which picture is the right one.
- 6) Try to get an idea of the whole area you are interested in and find out which villages use which part of the area, which villages use which landing stage. Are there any gaps? For example, any sea areas where none of the villages you have visited so far go? If so, ask directly who goes there.
- 7) Use this information to draw up a rough map of the areas used by the different villages and the sea areas used by the different landing stages (see figure 1).

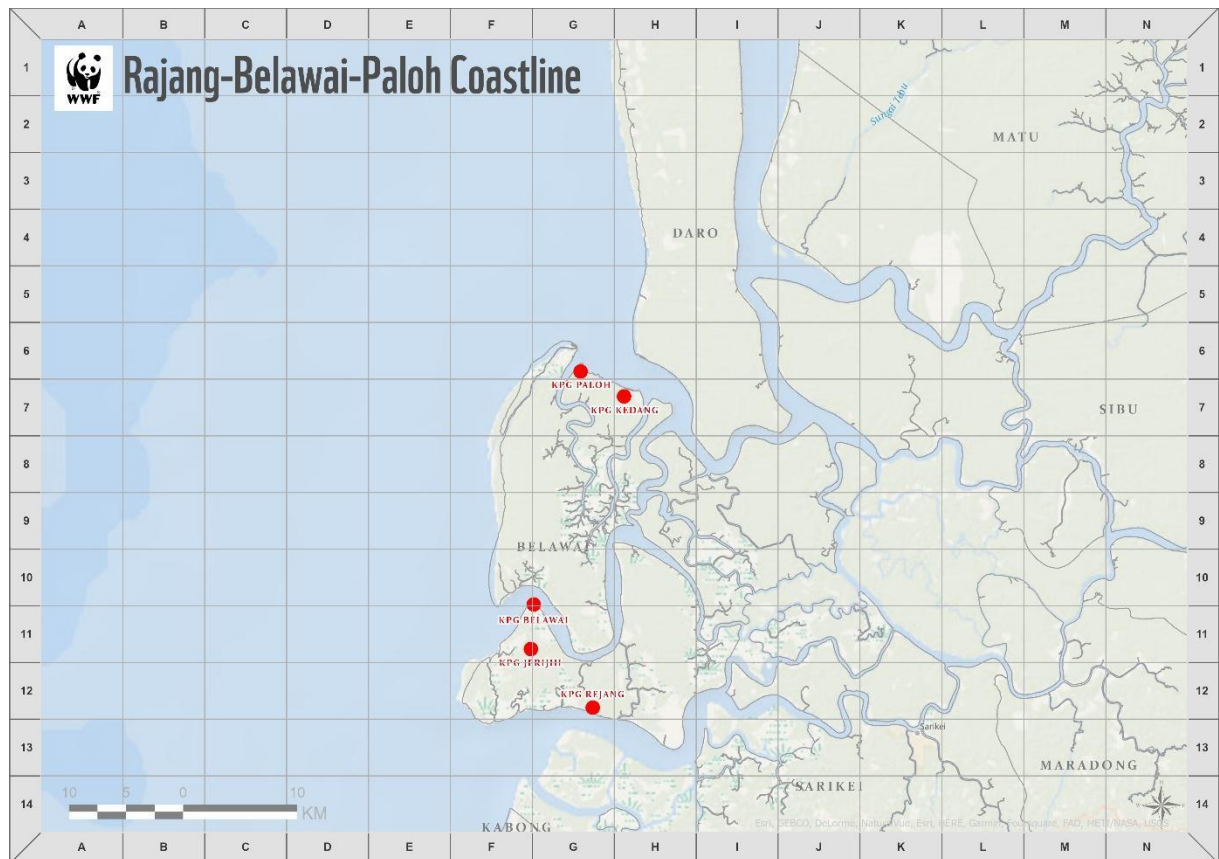


Figure 1: Example of a map that can be used to support fisheries interviews. Note that villages are labelled in red. A scalebar provides perspective on distances, and the grid facilitates a more precise allocation of fishing effort and/or dolphin observations.

- 8) When you have finished, make a revised version of the map for your interview surveys. It should contain all the names of villages, landing sites, beaches, bays, lagoons, rivers and mangrove channels that **you are sure of**. Make sure they are clearly legible. Also make sure you have copies of this map; your data will be useless without it.
- 9) We recommend that you create a GIS layer (e.g. a shapefile) of place names (see the Community Mapping Manual and the DBA Records Database Manual). This data is useful for future research, but it can easily get lost.

Step 2: Planning the interview survey

First you need to plan which fishing camps (landings) to visit. The **most important thing is to make sure that you can cover the whole area of interest**. This is the purpose of the map you made in step 8) above. See also 'Three guidelines for designing interview surveys' in the General guidelines for interviews.

Ideally you should aim to conduct hundreds of interviews, but this may be limited by budget and time. The reliability of survey data relies on obtaining a large number of data points. However, don't give up if you can't do that many interviews; any data is better than none, and it may be possible to expand your survey in the future. If you have conducted a pilot survey in a village, you will be in a much better position to judge how many interviews you can do with

the time and resources available. Note that you cannot interview people in groups; interviews must be conducted individually.

To be taken to the field:

- Tablets or phones with the Kobo Collect application and downloaded [survey data sheets](#).
- Identification sheets:
 - Simple 5- [5-species guide](#)
 - The [Regional marine mammal species ID guide](#)
 - A [Sousa teuszii species-specific factsheet](#)
 - An adapted template to classify types of [fishing gear](#) and boats)
- Pencils and clipboards (even if using Kobo Collect, these are good to have as a back-up).
- Revised Community map (see point 10) above)
- GPS device (if you have one)
- A copy of this manual, including relevant annexes

Step 3: Organise the interviews.

Once you arrive at the landing stage, it is often difficult to find people to interview. You have to make certain decisions, for example:

- At what time of day is it possible to interview people?
- Will you invite people to come to you, or will you seek them out?
- Are you going to ask someone, like the village chief or harbourmaster, to find people to interview for you, or are you going to find them yourself?
- Will you offer to pay, compensate people for their time in an interview, or rely on their interest in talking to you.

You will have to make all these decisions for your particular area, but you should be aware that there are advantages and disadvantages to each. The simplest method is not always the most appropriate. For more information, see the General Guidelines for Interviews and the section on "Sampling" in Annex A. **It is very important to write a report of your survey explaining how you found the people you interviewed.**

The most important consideration for this particular survey is **data independence**. See "General guidelines for interviews": 3 types of data level problem. **You must interview people separately.** To do this:

1. Visiting people in their homes or
2. If you invite a group of people to a place, you should divide into groups and ask different team members to interview them separately in different parts of the room.

Difficult situations:

1) If you are in a group interview situation :

It is often difficult to control what happens in the village, and you may find yourself interviewing a group of people. In this case, the important thing to do is to **write it down**. In the "**Notes**" *section of each data sheet*, write "Group interview with..." and write down the codes of the other interviewees.

For the questions on pages 1 and 2 of the datasheet (animal sightings), you should always get separate data sheets from each person in the group. Data on "the last time any of these 10 people saw a dolphin" is not necessary.

For the questions on page 3 of the data sheet, you need to complete one data sheet for the whole group. And, again, you should write notes to explain what you have done.

If you ask a question to the group as a whole, you cannot write the answer to that question on the data sheet of a particular person but on the group's data sheet.

2) Other persons present at the time of the interview.

Even if you are conducting individual interviews, it is normal for other people to be present. For example, you may visit a family home and interview the father first, then the son. Again, make sure you are aware of this and take notes. Are the father and son talking about the same observations? On page 3, does the son give his own opinion or is he just repeating what his father said? Also, if you are interviewing members of the same crew, this should be noted to avoid double counting the same information such as an incidental dolphin catch.

Step 4: Prior Informed Consent.

Opening statement (to be read to all prospective interviewees):

We are local scientists from XXXXX. We are conducting a study on the marine life along this region of the coast, and we would like to ask you some questions for our studies, because you know a lot more about the environment here than we do. We have a questionnaire that takes about 30-40 minutes to complete. We will not write down your name or any information that will identify you, and we will not disclose any of your confidential personal details to anyone else – so we will minimize risk to you if you participate. We would be very grateful if you could stay and answer all of the questions if you can – but you can stop the interview at any time if you want, and can choose not to answer any question without having to give an explanation. We just want to try to learn more about the local environment from you. All the information you provide will only be used for research and analysis. If you do not know an answer, please say 'I don't know' – it is fine if you do not know the answer. There are lots of questions but each one is very important, so please be as accurate as you can.

[Then ask the following questions in the same order in all interviews. Do not show the questionnaire to the person you are talking to.]

Are you prepared to participate in this survey and answer the following questions? **Y/N**
[If the respondent answers no – discontinue the questionnaire]

Extract 1 . Introductory statement to obtain informed consent from the respondent

Prior informed consent is a basic ethical principle for research. Many organisations that fund or publish research will ask you to demonstrate this. It also allows you to avoid uncomfortable situations in the field. If the person you are talking to has agreed in advance to answer the questions, you are less likely to worry about boring them. There are three elements:

- **Consent:** They must agree to be interviewed.
- **Informed:** They need to understand what they are agreeing to, i.e. they need to know what they are going to do, what you are going to ask of them.
- **Prior:** They have to do it *before* you start asking them questions.

This is why the data sheet starts with a description of the work as in the extract above.

Please ask this question, in more or less these words, before the interview.

PART A - GENERAL QUESTIONS

Step 5: Information on maintenance and the fisher



Questionnaire to support the CCAHD project on harvesting Local Ecological Knowledge from Fishers in the range of the Critically Endangered Atlantic humpback dolphin (*Sousa teuszii*)

Interview number:
Interview date (Year/month/day):
Village/port:
Municipality/commune:
District:
State/province:
Interviewer name (family name, given name):
Interviewee name (family name, given name)

Extract 2 . General information about the interview

It is easy to forget to fill in this information, but it is crucial for the interpretation of the data, so make sure you do not forget it. Before leaving the interview, check that this information is filled in. Also check that the basic information: village, landing, date, respondent code, is filled in on page 3 and page 2 (if you have printed page 2 on a separate sheet of paper from page 1). It is **very common for the pages of a data sheet to be separated, in which case the data on them is lost.**

It is not appropriate to ask for the respondent's name, as it may be important to show the respondent that you are not writing their name on the form (see **Step 4: Prior informed consent.** above). You should therefore assign a code to each respondent. You can invent your own code system (for example - the first 3 letters of the village name and the number of the interview order. Possibly add the initials of the interviewer, but make sure that **no two respondents in the same village have the same code.**

In particular, do not forget to ask the **age of** the respondent. If you forget to ask the age, or if the respondent does not answer, guess. **Put square brackets around your estimate, for example [60], to show that it is an estimate. Be aware that in Guinea this question may be taboo.**

The answers to these questions are crucial to the interpretation of the data. If the situation is complicated and it is difficult to choose one of the boxes, tick the most appropriate box but write something in the **notes** to explain.

Do not omit information about the researchers (interviewers) either. You must give the names of **all the** researchers who were actually present at the interview. Do not give the names of members of the research team who were present at the landing stage. Local officials who joined the research team (rangers, police, etc.) should also be mentioned here.

The "Date" field must be filled in dd/mm/yyyy, not in the American format (month/day/year).

PART B: QUESTIONS ABOUT FISHERIES

Stage 6: fishing and fishing techniques

Use the identification sheets that you have prepared to be able to classify different types of fishing boats and fishing gear in order to ensure that the local terms have been correctly interpreted, and responses can be compared to ensure correspondence of terms used in different areas when data are analysed at a later date.

Use a map with a grid to more precisely locate the fishing areas. The path, direction and time of travel by canoe are important in calculating and specifying the position.

This section also aims to characterise possible degradation of fishing areas by answering the questions: where, when and why?

PART C: QUESTIONS ABOUT DOLPHINS

Step 7: Discuss the species.

To ask these questions, you need to know the main identifying features of the different cetacean species). You need to know what these important characteristics are for each species. Please refer to the [regional marine mammal identification guide](#) and data sheets on [Atlantic humpback dolphins](#) and [bottlenose dolphins](#) available on the CCAHD website for species identification help. We suggest printing the two datasheets on A4 paper, placing them back-to-back and laminating them so that they are robust and can be used during multiple interviews.

The information in these questions does not have to refer to specific records (times when the respondent saw the species) but only to their general knowledge. The purpose of this section is to confirm the **identity of** the species. Inexperienced researchers may think that people living near the ocean surely know a lot about the animals and therefore there is no need to test their knowledge. Inexperienced

researchers are likely to make one of two mistakes:

- **The first mistake is to** rely solely on the names of the species (in the national language).
- **Mistake 2:** Relying on photographs.

If you rely on either of these techniques, you will not collect usable data.

The choice of interviewing by questionnaire implies asking the questions in order.

Questions for the interview :

A typical set of questions to ask about species:

- "What are dolphins like?". And then use leading questions to get the respondent to describe the important feature of the. You need to know what these important characteristics are for each species. Please refer to the [regional marine mammal identification guide](#) and data sheets on [Atlantic humpback dolphins](#) and [bottlenose dolphins](#) available on the CCAHD website for species identification help. We suggest printing the two datasheets on A4 paper, placing them back-to-back and laminating them so that they are robust and can be used during multiple interviews.
- "What do people here call dolphins in general? What do they call humpback dolphins? In the local language." Record the local name - even if you have heard the same name before.

Other ways to start talking about species :

1. You can start with local names, if you already know them from previous interviews.
2. You can start by asking "what animals are in the sea? Then, when the interviewee describes a type of animal, you try to find out what it is. If you think it is a cetacean/dolphin, continue by asking more questions about it. This method is slow, but it can be useful for your first interviews in a particular area or with members of a particular ethnic group.

Species

The species known to be present in the area are already available on our [regional marine mammal identification guide](#), but this does not mean that you should not think. The hardest part is to make **sure that you and the interviewee are talking about the same species**. This is much more difficult than it sounds. A very common problem in interview surveys, and a very serious one, is that the interviewer thinks he/she is asking about one species, while the interviewee is answering about another. This can very easily become a persistent interviewer effect (see general interview guidelines and Appendix A) that affects your entire data set. If half of your *Sousa teuszii* data is actually about bottlenose dolphins, and you can't tell which half, then all your data on both species is useless.

There are 6 reasons why you and the interviewee might not be talking about the same species:

- 1) **Ethnotaxonomy (high level):** local people do not classify species in the same way as you do. For example, the humpback dolphin may be considered a kind of bottlenose dolphin in one locality.
- 2) **Ethnotaxonomy (low level):** Local names for 'species' may not correspond to scientific divisions between species. For example, local populations may have a distinct name for large male humpback dolphins with pronounced humps may be given a different name than the females with less pronounced humps.
- 3) **Inappropriate use of national language names:** For example, the local names for different species of dolphins may vary from one region to the next.
- 4) **Inconsistent local names:** Different people in the local community (or the same person at different times) may use different names for the same species.
- 5) **Individual knowledge:** Some people in communities living near the ocean do not know much about animals. They may not know the difference between a dolphin and a shark, even if their culture does.
- 6) **Incomplete scientific knowledge:** There may actually be species that local people know about that scientists do not know about or do not know enough to distinguish from known species.

For a fuller explanation of these 6 reasons, please see Annex B. Please note that **none of these problems are rare**. A typical interview survey around a protected area is likely to encounter them all.

How many species are there?

This is a particular case of **incomplete scientific knowledge** (see point 6 above). The regional marine mammal ID guide (<https://www.sousateuszii.org/wp-content/uploads/2020/12/MM-chart-West-Central-Africa-V3.pdf>) lists all cetaceans present on the West African coast . In some cases, it is not clear how many species exist. Furthermore, known dolphin species are sometimes very similar to each other and local people do not necessarily recognise the same number of species as science. This is why dolphins and other cetaceans are simply listed as "dolphins 1, 2 and 3" and "other cetaceans 1,2". **You have to find out for yourself how many species of dolphins and other cetaceans the locals recognise**. You do not need to try to match them to known species, but you can try to do so if you wish.

Local name

It is crucial to find the local name of each species. You should **check the local name with each respondent** and record it in the interview form . If the respondent does not give a

local name, write "No question" or "No answer". If the respondent says that the local name is the same as the name in the national language, write this name in the local name box. **Do not leave this box empty.**

The local name is an important check on the true identity of the species. It also gives important clues to local taxonomy. If local people have a distinct, unique and consistent name for an animal, they are less likely to confuse it with another species.

Of course, local names are usually the same for people of the same ethnic group in the same village (but not always). This does not mean that you only record them once for each village; **you have to record them again for each respondent.**

Species descriptions

You should get the interviewee to describe two or (preferably) three characteristics of the species that allow you to distinguish it from other species. You should use both your knowledge of the species and your interviewing skills. Appendix A provides a list of visual guides and illustrations that you can use to ensure that you are equipped to answer these questions.

As people's knowledge of animals is very different, **it is necessary to ask each respondent to describe each species.** Ask them to mention at least 3 points about each species. Make sure that these are points that really distinguish that species from others. If you are not yet familiar with the cetacean species in Guinea, read Appendix E carefully. It describes some of the key characteristics that distinguish dolphin species from other species .

Some examples of typical questions to obtain a description of a species.

- Is it bigger than your boat, or smaller than your boat?
- Does it have a fin on its back? (if there is no fin, it may be a manatee they are talking about).
- Can you draw the shape of the fin on its back? (you will then look to see if it is a simple triangle, or if it has rounded hump underneath).
- What colour is it? Does it have several colours?
- Is its belly colour different from its back colour?
- Does it have a long nose/snout, or a blunt/round head without a 'beak'?

Obtaining descriptions of 'species : what NOT to do 'to do.

1) Do not just write down the description given by the interviewee and then move on. If the interviewee describes the dolphin as "grey ", this is of no use to anyone ; all sorts of things are grey and most of them 're not dolphins. **You need to ask more questions to get descriptive characters that are actually useful.** And you need to know what those traits are, so you know what questions to ask.

2) Do not give absolute measurements without context. Do not 'write that the 'animal is "1.5 metres ". What is 1.5 metres ? The length of its back, the height of its

shoulder, the thickness of its body, the distance between its eyes ?

3) Don't take colour names at face value. Different cultures can have very different interpretations of colour, even if you ignore language differences. It is quite common for 'an animal to be described as "white " or "black " when 'it would probably look brown to you. To clarify the colours, you can compare them with an object visible at the time of the 'interview ("black like that car tyre ?") or with another well-known species ("the same colour as 'an elephant ? ").

Important : Like everything else, the descriptions of the animals must be *independent*. If you are interviewing a man, and his brother is also in the room and provides some details, do not write both sets of information down. **We don't want to know if his brother knows the 'species, we want to know if 'he knows it himself.** You can try to discourage the brother from talking by always addressing your questions to the person you are talking to. However, it is impossible to 'be a perfectionist about these matters. Sometimes you simply cannot get an independent description of the interviewee. In this case you **should** write "another person contributed to the description " or "another person gave a description ".

Difficult situations :

The 'interviewee does not give enough detail for you to identify the 'animal: for example, if 'he describes *Sousa teuszii* as "big ", this is not enough ; many kinds of animals are big. Ask if it is bigger or smaller than a cow, bigger or smaller than a goat, etc. until you have a description that clearly refers to a particular species, or until the respondent is unwilling or unable to give further explanations.

Interviewee describes the wrong species : What if you ask the interviewee what *Sousa teuszii* is and they tell you that they know the species but when you ask them to describe it, they describe something that is clearly bottlenose dolphin ? You may have already started writing in the "DBA " section of the data sheet. In any case, you don't want the respondent to see you writing in the section "Bottlenose dolphin ", they might think that 'is an insult to their knowledge.

In this case, write in the *Sousa teuszii* section but later cross out " *Sousa teuszii* " and write "*Tursiops truncatus* " instead.

The interviewee gives a description that does not clearly correspond to any species : It 's relatively easy if you recognise the 'species the interviewee is trying to describe (even if it is not the one you 've been asking about). But what if you ask him about the *Sousa teuszii* and he describes something that doesn't really look like *Sousa teuszii*, but doesn't look like anything else either ? This situation is very common.

First, do your best to make sure you understand the interviewee. Ask questions about other characteristics of the animal that have not yet been mentioned.

However, if you still don't get a response, check the box "**no** " under "***does the respondent really know about 'species*** " and write a note in "***notes on 'species*** " at the end. If 'there is too much to write here, put an asterisk (*) and continue on the back of the sheet.

The respondent is certainly aware of this species ?

This question uses **your judgement as an interviewer**. If the respondent says that 'they don't know the species', then of course you circle '**not**'. But if the interviewee says that 'they know the species' but the description sounds like something else then again you circle '**not**'.

There are only two answers here : "**yes** " and "**no** ". **There is no answer "don't know "** because the question contains the word "definitely ". If you do not know whether the respondent knows the species, this means that they do not *definitely* know the species and you should circle "**not**".

Additional information to identify the species

In addition to the responses to questions that you receive, there two other pieces of evidence you can sometimes use:

1. skulls of animals (present in the respondent's house, or those you have brought with you)
2. Photographs.

Skulls are very useful, provided you know how to identify them yourself! Some unusual skulls can easily surprise you if you are not very familiar with them. Pay particular attention to young and incompletely developed dolphins.

Photographs are not very useful, which surprises many people. You can use photographs, but only as a supplement to local descriptions and names, not as a replacement.

Step 8 : Requesting information on observations

Seen it? (in the flesh, at sea)

It is very common for respondents to report the following:

- 1) Cases where they did not see the animal itself, but only its remains (e.g. skeletal remains?)
- 2) Cases where they have seen the animal back in the village when someone else has caught it. In this case, they can also find out where and when that other person caught it.

If you ask the interviewee when they saw the animal, and they describe a sighting of a sign, or a sighting of a hunted animal in the village, then simply ask again "but have you ever seen the real animal?". Or "have you ever seen it at sea?"

You *are* allowed to count animals seen dead at sea, including those caught in nets, whether or not the respondent set the nets. However, you must note in the next question that the animal was dead.

Step 9 : (When was it?) Time of observations

Typical questions :

"When was the last time you saw this type of dolphin ?"

Do not ask:

"In what year did you last see a DBA?"

"The last time you saw a DBA - was it long ago?" These are **leading questions** .

Data recording

You should directly record the words that the respondent uses to answer your question.

If he/she says "last year", write it down, if he/she says "in 2001", write "2001". Do not try to calculate the year number from the description. So if it is 2012 and he says "last year", do not write "2011", write "last year".

The calculation of the year number can be done later, when the data is entered into the computer. There is no point in doing this now, as it could result in incorrect data being entered later.

And if they refer to an event, for example "A new school has been built", do the following:

The interviewee says: "It was when the new school was built. So it was in 2001. *You write:* "New school built, = 2001".

OR :

The interviewee says: "It was when the new school was built. And you already know that it was in 2001. *You write:* "New school built [=2001]".

If you have a village calendar, or a personal calendar, and you use this calendar at the *interview* to determine the date, you can write (for example)

"2001 [of the village chronology]". Only do this if you actually use the timeline in the interview, to help the interviewee remember when something happened.

And if they say something very vague, for example: "Oh, a long time ago."

Try to ask questions to narrow the focus. For example: " Was this before the war, or after?"

(It is good for the interviewers to have thought about some landmark events in recent and past history that can be used to home in on time frames. Was the village already here, or was it before the village moved here?", "Was it more than 5 years ago, or less?". The last is the worst of the three - it is better to use events in this case, but sometimes you don't know enough relevant events to use.

Similarly, they might say something like "Oh, you see them every time you go to sea. Try asking: "So when was the last time you went to sea? Did you see one then?". Or, less good but possible, "Have you seen one this year / since January / since Tabaski (end of Ramadan festival) ?"

Step 10 : O Where was it? Location of observations.

At this stage you need the community map. Typical questions:

- Where did you see the dolphin?
- Where did you last see it?
- Are there other places where you have seen it?
Try to get the localities / names of specific places.
- Generally, how far from the landing stage do you observe them?
- In which area of the port?"
- "Where is it?"
- "Is it close to the harbour [area A on the map]? Or further offshore [area B on the map]?"
- If he names a large area, "In what part of this area? "
- "Can you show me on the map?"
- If YES: How many times a year do you see it?

Name of the place.

Write the name of the place as best you can. There may not be a standard spelling for local place names, but make sure that the spelling matches that on your community map. Also make sure that no two places in the area have the same name.

Do not write the name of a place without trying to find out where it is, unless you already know where it is.

Don't always rely on the first thing the interviewee says.

And if: he/she says something vague like: "near the village" or "off the coast" or just "far away", as for the weather, try to ask other questions to clarify the place, use the map if necessary. And if it is too difficult to get the map out (inconvenience, wet map, etc.), you can consider making small versions of the map.

What happens if you are told about a place but the interviewee cannot tell you where it is? See if you can get another person in the village to explain - especially if the place has been the site of a rare species sighting.

Co-coordinates and radius

A place name, in itself, is useless without its coordinates and radius. You don't always need to calculate them in the interview itself, but you should make sure that you get enough information in the interview to calculate them later. **These fields are not optional!**

The coordinates and radius are used to illustrate on the map where the observation took place (see Figure 3). You will need the map grid to determine the coordinates. You need to know the size of the grid squares (usually between 1 and 5 km) in order to estimate the radius.

The coordinates should preferably be in decimal degrees, and in a WGS84 projection. Whichever format is used, they should include both an Easting and a Northing. Make sure you write them clearly and correctly.

The radius must be a number in km. Note that if it is possible to give coordinates, it is possible to give a radius. If the description of the place is very imprecise, the radius will have to be large, but you can always give a radius. **Never give only the coordinates, you must also give a radius.**

In general, the coordinates and radius refer to a place name; for example, the respondent says "I saw it in Mangrove Channel X" and you use the coordinates and radius to express where it is. Often, however, the respondent will give you other information, for example:

- He/she may say: "It was in the mouth of river X" - you will have to use your judgement about which parts of river X can be considered "the mouth".
- He/she may only give a more vague explanation: for example, "it was near the Sierra Leone border, east of the village". You may have to use a large radius to cover the whole area covered by this description, but you can do it.
- He can indicate or draw the location himself directly on the map. In this case, you can draw on the map yourself (see below).

What to record when :

You don't want to waste the interviewee's time by sitting down during the interview and working out the details. On the other hand, you don't want to try to store details in your head and forget them later.

If the interviewee refers only to clear and known place names, you can fill in the coordinates and radius later from the community map. If they mention place names that are new to you, you should add them to the map during the interview. However, if it uses other information (see above), you can draw in pencil on the map. Write a point and give it a code, say S1, then write 'S1' on the data sheet in the co-ordinate space. However, **you will need to write the real coordinates later!**

Step 11 : Additional information on observations

These fields are for information that you can obtain during the interview, but about which you do not have to ask specific questions.

≡ was caught? We recommend that you do **not ask whether or not the animal has been captured**. However, sometimes the respondent may volunteer this information, in which case it should be noted.

You should always check one of the options in this field, but you can often select "don't know". The reason you should not ask if the animal has been deliberately captured is that in some places this is a very sensitive issue. In some areas, most people will give this information seemingly without concern, but it is important to standardise the method between different areas. If researchers in one area ask the question, but those in another do not, you risk creating a **systematic bias**; see the General Interview Guide.

Notes on this file

If you have any other information about **this sighting**, e.g. a description of the animal (young, male/female, etc.) or how it was seen or caught, whether a group of animals was seen, etc., please write in the questions on the form and note the additional information in your notebook .

This is NOT the question to write additional information about the species. So if you write "in a group" under these DBA sightings questions, it means: "the last time the respondent saw DBAs, they saw a group of them". If you want to say "According to the interviewee, DBAs usually travel in groups". You should write it down at the time of the questions on identification marks.

If you want to write about **previous sightings of the same species**, this also goes under **Questions about dolphins** .

The last part of the form contains a number of questions that serve as a backdrop to the other data. They are written , more or less as you might ask them, but do not make the mistake of reading them word for word ; you will look like a robot and sound too official. These questions should be fairly self-explanatory, so here are some notes on them.

Questions: Which species are rare/declining and why.

You only need to ask the questions for each species that the interviewee has given . You do not just have to list the cetacean species. Please list them in the order they were mentioned .

The **ONLY** acceptable answers to questions 36, 37 and 38.3 are: Yes/No/Don't know. For the remaining questions , simply summarise the reasons given by the respondent. You may write more than one reason. If the respondent thinks that different species have declined for different reasons, clearly state which species have declined for which reasons.

Question: Did the dolphin species listed decrease / increase / remain the same?

These questions are relatively simple, except that you need to make sure you are talking about the right type of dolphin (see page 15). If the respondent knows only one species of

cetacean, it is easy: just say "dolphin". It is not necessary to say "bottlenose dolphin" or "humpback dolphin". However, if the interviewee recognises more than one type of either, you should refer to local names or species descriptions. You are usually interested in the most common species, but not always.

So you could ask, for example: "The common type of dolphin you mentioned, the one that has a hump and is found near the village - has it decreased, increased or stayed the same?"

Question : Animal bones

We would just like you to record this for the general interest. In particular, if the interviewee recognises two species of dolphin, we would be interested in finding bones of the rarer dolphin. We are not sure that this second species that some people report is really a separate species (see page 15).

Step 11 : After the interview

This information is important to help us understand the weight to be given to each interview record. We are planning to develop an interview scoring system and this information will be valuable to us.

Compared to field data, interview data is never very reliable, but some interviewees are more reliable than others.

Question: Notes on accuracy

It is important to realise that lack of knowledge is not the only reason why the interviewee may give you bad information.

Step 13 : Data entry on the computer.

This section provides detailed instructions for transferring data from forms completed in on the KOBO application to the standard Excel spreadsheet. The Excel Spreadsheet template can be found [here](#).

The Excel spreadsheet is designed to follow the form of the scanned questionnaire as closely as possible

There are 4 worksheets in the workbook for data entry: Raw Data, Cleaned Data, Analysis Sheet and Calculation Sheet.

The first sheet; Raw Data.

This sheet contains the raw data directly as extracted from the KOBO software. The data is untouched. Any modifications or cleaning actions take place in the second sheet of the file. **One row of the Excel worksheet should be completed for each paper data sheet.**

The second sheet: Tidied data

Tidying rules to be applied:

- Remove the final identification columns added by Kobo, the title columns and other unnecessary columns
- Rename questions without spaces, capital letters or accents
- Remove empty data columns
- Replace all blanks in the boxes with "N/A".
- Simplify and harmonise answers to qualitative questions, correct spelling and separate occurrences with ";"
- Remove the binary response columns added by Kobo
- Harmonise answers questions related to time with the country/locality calendar. For example, if you conduct the interview in 2012 and the respondent says he/she saw the animal "last year", you should write "2011".
- Harmonisation of answers to location questions. It may happen that the respondent does not give a place name, but indicates a place on the map; in this case, write "place indicated on the map". Sometimes the respondent indicates a specific part of a river catchment where the observation took place.

APPENDIX A: Identification guides and illustrations that can be used to support interviews

- Simple ID guide with 5 marine mammal species to determine whether respondents recognise differences between species :
<https://docs.google.com/presentation/d/18K4H2rHkS7ExqKgTEZB6pDhnhP8DZHLk/edit?usp=sharing&oid=105042165914401135832&rtpof=true&sd=true>
- Regional identification for marine mammals on the Atlantic Coast of Africa :
<https://www.sousateuszii.org/wp-content/uploads/2020/12/MM-chart-West-Central-Africa-V3.pdf>
- Sousa teuszii fact sheet : https://www.sousateuszii.org/wp-content/uploads/2020/12/Sousa-teuszii-Species-fact-sheet-Draft-2_FRENCH.pdf
- Tursiops truncatus factsheet : https://www.sousateuszii.org/wp-content/uploads/2020/12/Tursiops-truncatus-Species-fact-sheet_FR.pdf
- Other resources and documents available from the CCAHD website :
<https://www.sousateuszii.org/fr/ressources/>

Appendix B: Six reasons why it is harder than you think to ask local people about animal species :

Why can't you just go to a village with a list of animal names and ask people to tell you about each one?
of species?

1. Local people do not classify species in the same way as scientists (ethnotaxonomy).

For example: Laotians and Thais in Vietnam classify the mousedeer as a kind of muntjac; the word for muntjac is Phaen and they refer to the mousedeer as Phaen Cây. If they tell you the number of species of muntjac in their area, one of them will probably be the mousedeer. However, in the Vietnamese language (and in scientific classification), muntjacs and mousedeer are not closely related.

This is a problem of *higher* classification - Thais and Kinhs still recognise the mosquito as a single species. However, ordinary people may also divide the species differently from scientists.

2. A species may include several locally recognised "species".

For example, the Katu people of Quang Nam have two typical words for wild pigs: Xoong katiec and Hê Lê. Hê Lê are the large solitary males while Xoong katiec are the females and young males that move in groups. Biologically speaking, there is only one species. This is a case where local people recognise more people than scientists. But they may also recognise fewer species. For example, many people, who live in its range, do not seem to recognise the large baleen muntjac as a separate species from the common muntjac.

Sometimes it is not possible to determine which local names refer to which scientific names. Science recognises two species of bear in the Annamites which, in Vietnamese, are called dog bear (*Helarctos malayanus*) and horse bear (*Ursus thibetanus*). However, the Nghe An Thais recognise three species which they call (in Vietnamese) dog bear, pig bear and horse bear. Are pig bears big dog bears? Or are they small horse bears? Are some of them big cubs and others small cubs? Add to this the possibility of undiscovered species (see point 5) and the situation becomes even more confusing.

3. In general, people know the "official" common names in the national language, BUT they do not always have the same meaning as you do for these names.

In my experience (NW), if you go to a village in Vietnam, no matter how remote, and talk about a large mammal using the Vietnamese name, people won't ask you "what's that?". In Lao it's sometimes different, especially for rare animals like the saola, but even in Lao, I think most people know the Lao language names of most large mammals.

BUT: they may be mistaken about the real meaning of these names. For example, in Quang Tri, Thua Thien Hue and Quang Nam provinces, people refer to an animal by the Vietnamese name "Chon ml,Jc". In a textbook, this name refers to *Arctitis binturong* of the carnivore order. However, these people use it to refer to a large black squirrel, *Ratufa bicolor*. This is not because they do not know the difference between the two animals (and they are very different), it is just that they use the wrong name when speaking Vietnamese.

This means that, while using Vietnamese (or Lao) names is a good starting point for talking about animals, you need to go further than just names. You need local names and descriptions.

4. The names are not consistent.

Even people from the same ethnic group in the same village may use different names for the same species of animal. In fact, the same person may even use different names on different occasions. Sometimes the names are simply synonyms and usually the person using one name knows the others. Sometimes there are religious or superstitious reasons why different people use different names at different times.

However, there is another, more problematic type of inconsistent naming. This occurs when there are several similar species, but there are no fixed names for the different species, only descriptions. For example, everyone in the village may recognise that there is a species of muntjac that is small, dark coloured and lives in the deep forest, but some people may call it "small muntjac", others "dark muntjac" and still others "deep forest muntjac". In this case, if the names are in a local language, you can ask them to translate the adjectives.

5. Individual knowledge

Similarly, the level of knowledge about animals varies from person to person. It is a big mistake to assume that if a person lives near the forest and goes hunting, or if he or she belongs to an ethnic minority, he or she must know a lot about animals.

Some people know a lot, others surprisingly little. In particular, you cannot expect them to know about species that are not found in their area, or that are rare or extinct there.

6. Scientific knowledge is not complete either

Nowhere on earth is it more obvious that science has not necessarily described every species that exists. The discovery of the saola in Vu Quang in 1992 dramatically showed biologists around the world that surprises can remain hidden in deep forests. It is possible that when a local person describes an animal that does not look like any known animal, it is because they are describing an unknown animal.

It is important to remember that this is **usually not the case!** Usually the animal described is a form (age class, sex, morphology, variety or mutant) of a known species (point 1 above), or its apparent oddity is due to a misunderstanding between the researcher and the interviewee (points 2 and 3 and see also under "**2"3 Identification**")

marks1 in the main text), or because the interviewee simply got it wrong (point 4). Another possibility is that it is not a biological entity at all but some kind of spirit. Finally, it is always possible that it is an undescribed species.

The undescribed species can be considered as belonging to two types: obviously new species and cryptic species. The saola is an obviously new species; it does not really resemble any other species present in the region. Prior to 1992, a biologist who heard a good description of a saola from a local would have been unable to attribute it with certainty to a sambar, serow or other. On the other hand, in the case of the large-plumed muntjac, a biologist hearing a good description before the species was described would probably have assumed that these were unusual individuals of common muntjac. In this situation it is much more difficult.

It is often said that there are 3 species of muntjac in the Annamites: *Muntiacus muntjak*, *M. vuquangensis* and *M. truongsoneensis*, but in fact this is far from certain. It is very possible that the small and (usually) dark coloured muntjacs that refer to *M. truongsoneensis* actually belong to several species. A similar problem arises with pigs and muntjacs.