Section 5.7 Qualitative Research: Focus Groups, Ethnographic Interviews, and Data Analysis Guide

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Objectives: To provide principles and general guidelines for the conduct of targeted qualitative research to understand the context and potential risk practices and behaviors of individuals at high risk of zoonotic disease spillover.

This document was made possible by the generous support of the American people through the United States Agency for International Development (USAID) Emerging Pandemic Threats PREDICT program. It was drafted to support activities conducted under PREDICT and is intended for an audience of qualified professionals trained in standard, associated best practices. This guide is not intended for use by untrained individuals.

The contents of this document are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government. USAID, PREDICT, and the authors of this guide bear no responsibility for the actions of non-PREDICT-affiliated individuals implementing the material herein.

The authors assert that human surveillance activities should always occur in compliance with all applicable laws and regulations and should only be undertaken after securing all necessary permits and approvals, including ethical approvals.

For more information about the contents of this guide, please contact predict@ucdavis.edu.

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Note: Focus groups and ethnographic interviews require institutional review board (IRB) or other in-country ethical committee approvals before they may be conducted. In addition, all staff conducting ethnographic interviews or focus groups or participating in data analysis must complete human research ethics training (e.g., Collaborative Institutional Training Initiative [CITI] training; National Institutes of Health Protecting Human Research Participants training) before working with research subjects or their identifying information.

Section 5.7.1. Focus Groups

Purpose: To assess the distribution and overlap of animals in the community setting; and to discuss 1) animal contact and context, 2) illness in animals and humans, and 3) rules and restrictions surrounding both wildlife and livestock.

Section 5.7.1a. Targeted Focus Group Overview

Table 1: Focus group key points

<table>
<thead>
<tr>
<th>What Is It?</th>
<th>Research Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Guided group discussion focused on limited topics</td>
<td>• Identify how groups of people think or feel about behaviors and practices that may be linked to disease transmission</td>
</tr>
<tr>
<td>• A group of 6-10 people not from the same household/family</td>
<td>• Explore reasons why certain opinions are held</td>
</tr>
<tr>
<td>• Group members share relevant characteristics</td>
<td>• Examine social, cultural and economic factors</td>
</tr>
<tr>
<td>• Conducted over a short time period (all within 4-8 weeks)</td>
<td></td>
</tr>
</tbody>
</table>

Section 5.7.1b. Who is Involved in Focus Group Research

The people who conduct a focus group are the Moderator and the Recorder/Observer.

Moderator: the person who leads the focus group discussion. A moderator should have a charismatic, friendly personality and should not be timid, authoritarian, or judgmental. The moderator introduces each question or activity and encourages all focus group participants to contribute to the discussion. The moderator asks follow up questions, a process also called probing, until a topic is exhausted or no new information is being learned. It is the responsibility of the moderator to make sure that all voices are heard, and that the participants share and discuss a full range of information.

Recorder/Observer: the person who supports the moderator and records the focus group. The support is provided by observing the behaviors and responses of the focus group participants, as
well as documenting highlights of the topics discussed, particularly for any new or unique information. In addition, the recorder/observer may become aware of additional follow up questions that the moderator may wish to probe. It is the responsibility of the recorder/observer to discretely share this information with the moderator and suggest probing questions. The highlight notes that the recorder/observer writes are part of the data that will be analyzed.

Section 5.7.1c. Focus Group Methods

A targeted focus group is conducted by two people, one who leads the discussion (the moderator) and the recorder/observer who supports the moderator. Focus groups are generally conducted with a group of 6 to 10 people from the target population who share a relevant characteristic (e.g., wildlife farmers or workers). A focus group generally lasts between 60 and 90 minutes. The setting where the focus groups take place should be selected and prepared ahead of time. It should be a private area where the group will be undisturbed for the length of the Focus Group. Focus groups will be tape recorded, so that they may be transcribed, coded and analyzed.

The discussion is semi-structured and guided. That means that the topics of discussion for the group are well defined before the focus group begins. The questions that are used to guide the discussion are called the Focus Group Guide. The questions and activities included in the Focus Group Guide are meant to engage all members of the focus group and to stimulate the discussion.

The Focus Group Guide for this project includes a ‘community mapping’ component. Community mapping is an activity that immediately engages all group members as they provide information about the location of various animals in the community. Examples of animal maps are included in Section 5.7.4. Appendix I. Focus Group Animal Mapping Exercise Examples. This introductory step also allows the moderator to identify participants who may try to dominate the discussion, as well as those who may be shy. It is important for the moderator to make sure that everyone has a turn to speak. After the community mapping activity, the group focuses on animal contact and context, illness in animals and humans, and rules and restrictions surrounding both wildlife and livestock. The map may be used for reference during the discussion.
Section 5.7.2. Ethnographic Interviews

**Purpose:** To understand the personal context and potential risk practices and behaviors of individuals at high risk of zoonotic disease spillover.

Section 5.7.2a. Targeted Ethnographic Interview Overview

<table>
<thead>
<tr>
<th>What Is It?</th>
<th>Research Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-on-one semi-structured interviews</td>
<td>Identify behaviors and practices that may be linked to zoonotic spillover</td>
</tr>
<tr>
<td>Focused on limited topics (core themes)</td>
<td>Explore reasons underlying behaviors/practices</td>
</tr>
<tr>
<td>Conducted over a short time period (all within a total of 4-8 weeks)</td>
<td>Examine social, cultural and economic factors</td>
</tr>
</tbody>
</table>

Section 5.7.2b. Ethnographic Interview Methods

A **targeted ethnographic interview** consists of the **Interviewer**, the person who conducts the interview, and a **Respondent**, an individual from the target population. Targeted ethnographic interviews are semi-structured and guided discussions. The topics of discussion are well defined before the interview begins and are based on the **core themes** of interest, described in detail on below.

The **core themes** guide the ethnographic interview discussion. The themes are topics for which limited information is known, but which are strongly suspected to play a role in the transmission of diseases from animals to humans. The **Interview Guide** is a list of core themes that also includes subthemes and suggested questions that may be asked during an ethnographic interview. Not all questions listed will be asked in any one interview. In fact, if the respondent is providing detailed information that is unique (e.g., the person is describing burial methods in a culture where no one is comfortable talking about death), the interviewer should spend time asking additional questions in order to get more detailed information.

One of the biggest challenges to using the Interview Guide is figuring out which of the many questions should be asked during one interview. One way to address this challenge is to imagine different kinds of respondents and think about the kind of information those people could provide. For example, a 13-year-old girl who lives next to a forest with bats may not know the family income, but she could provide insight as to where the bats live during the day, the kinds of bats she sees, how frequently and where she bathes, whether her parents travel for work and how far, what she learns about animals at school, her responsibilities with the family chickens, how they differ from her brother’s responsibilities and from what hers will be when she gets...
older. Thinking through the kinds of information that a particular respondent could provide helps in selecting appropriate questions from the Interview Guide. The key to a successful ethnographic interview is being as prepared as possible before the interview begins, and being flexible during the interview.

Interviews generally last between 60 and 90 minutes, and should not last longer than 120 minutes. The setting where the interviews take place should be selected and prepared ahead of time. Individual interviews are conducted in private, ensuring that others cannot hear the interviews. A barrier should be created so that no other individuals can view the respondents while they are being interviewed. Depending on the location, this could be a private room, behind a building or fence, or behind a line of trees, obstructing view so that confidentiality may be maintained. Interviews will be audio recorded with permission, so that they may be transcribed, coded and analyzed.

The Interview Checklist is a document that lists the core themes and subthemes that are included in the interview guide (see Section 5.7.6, Appendix III, PREDICT Sample Interview Checklist). Because it is not expected that all core themes and subthemes will be discussed in every interview, the Interview Checklist allows the interviewer to check off only the themes that were discussed during the interview. This document is important for the coding and analysis of ethnographic interview data. Qualitative data coding and analysis can be time consuming. A completed Interview Checklist ensures that time is not wasted looking for data on a theme that was not discussed in the ethnographic interview. The Interview Checklist should be filled out immediately following the completion of the interview.
Section 5.7.3. Analysis

**Purpose:** The primary goals of the qualitative data analysis are to 1) systematically review and prepare the data for analysis, 2) uncover new information that was shared by individuals during the interviews and focus groups, 3) review information from the observational research that may help contextualize research findings.

**Section 5.7.3a. Data Analysis Process**

There are two steps involved in the analysis of qualitative data: 1) coding and 2) preliminary data analysis in the form of summary notes.

**Section 5.7.3b. Coding**

Data coding is the way that data are defined in qualitative research. Codes can be thought of as “tags” that are applied to discrete sections of narrative text. Codes allow researchers to assemble information into meaningful analytic groupings. Each coded piece of information represents a data point that can then be analyzed or considered in relation to other data points.

Data coding for preliminary data analysis will be focused exclusively on the five core themes and subthemes that guide the PREDICT qualitative research. Coding data requires a close reading of the transcribed document. Reading the document closely for the first time provides an opportunity for the researcher to objectively review the range and type of information that was collected during the interview, as well as to take good notes on the major themes discussed preparatory to coding.

The coding process uses a suggested coding keywords document (see Section 5.7.8, Appendix V, PREDICT Sample Suggested Coding Key Words) to code the transcribed focus group and ethnographic interview documents. **Coding keywords** are words that are associated with the core themes and subthemes. Coding keywords help the coder search through a document to identify the information to be coded. The list of keywords is meant to be an aide in the coding process. The list of coding keywords will be provided to all research staff who will code the data.

In countries where internet is stable and the resources are available, it is ideal to use qualitative software package for data analysis (Dedoose, NVivo, Atlas.ti, etc.), as any of these platforms allow for the data analyst to query data to look for patterns across interviews. In countries without stable internet, data can be coded using the COMMENT function. Examples of coded transcripts are found in Section 5.7.9, Appendix VI, Examples of Coded Text.
Section 5.7.3c. Quote Selection (for Ethnographic Interviews and Focus Groups)

From the transcript of each interview and focus group, the researcher will select a few quotes that are good examples of specific core themes. The close reading that the researcher does in preparation for coding also provides a good opportunity to identify quotes that ‘stand out’ because they clearly express one of the core themes in an interesting way or they provide new information. These ‘stand out’ quotes should be highlighted in the transcribed document and copied to the final summary document, with the transcript page number noted. In addition to selecting the quotes, each researcher will identify which core themes or subthemes the quotes represent, as well as provide an opinion as to why these quotes were selected as good examples.

Section 5.7.3d. Brief Summary Notes (for Ethnographic Interviews and Focus Groups)

The researcher codes the document by each core theme, one at a time. For example, for the core theme of socioeconomic, throughout the interview a market cleaner may talk about the unpredictability of the schedule, the certainty of blame when inspectors come, unreliability of payment for services and sometimes stealing food from the butcher table when the butcher is not looking. When this same interview is coded for human movement, the market cleaner may reveal not having a home and sleeping with animals in the market to stay warm at night, having moved to the area from the countryside for work and finding limited options, and of wanting to return home but the situation is worse there.

The analytic object is to briefly summarize the situations and experiences of the individual as they relate to the core themes. For each of the five core themes, there will be summary notes describing the major ideas or issues discussed by the individual. New information should be emphasized and transcript page numbers for new information should be included in the summary notes. If a core theme was not discussed in the interview, please note that fact in the summary document.

Section 5.7.3e. Summary Documents

A summary document will be required for each ethnographic interview and focus group. The summary document will consist of quotes that are good examples of specific core themes, as well as the explanation and transcript page numbers for quote selections. The summary document will also contain brief summary notes by each of the five core themes.
Section 5.7.3f. Training

Preliminary data coding and analysis may be conducted by local research staff; however, preliminary analysis of qualitative data is not mandatory. For countries interested in conducting preliminary analyses for the PREDICT project, training will be provided on request.
Section 5.7.4. Appendix I. Focus Group Animal Mapping Exercise Examples

Figure 1: Example Community Map
Figure 2: Example Community Map
Section 5.7.5. Appendix II. Example Focus Group Excerpt

Q: and what do you do? When you see that dead animal?
A5: when we see an animal in that state, if the animal is already decomposed, we cannot
A1, A4, A7: yes... it is spoiled...
A7: if it’s still in the good state, if it’s still in the good state we can consume the animal.
A6: good meat.
A7: and there are times you can go to the bush, somebody sets a trap
A6: yeah.
A7: you meet an animal there. That is maybe already dead. If you...From judging you can discover
that the animal... maybe it is still...
A4: fresh
A7: fresh....
A5: yes
A7: not in the decomposed state. You can eat that
A5: why won’t you eat?
A7: but when you look around and flies are already visiting. Heuh...you have maggots around
A5: yes
A7: you cannot eat
All: (laughing and noise)
A9: somebody like me I will
A7: when it is expose
A6: when we meet...(laughing) or that the animals fell into you must ask yourself questions before
euh... thinking of eating such an animal.
Q: tell me, when you see a dead animal. How can you know that the animal is already... that you can
cook it or you cannot cook it?
All: it is... (noise)
A6: they gave you the reason
Q: you can know that the animal is.....
A3: from the smell
A5: the smell
Q: the smell?
A8: yes the scent.
A5: they talk of the smell, the scent, flies,
A7: flies appears
A5: flies on the decomposing euh... euh... euh....
A3: situation
A5: situation. You can easily detect whether you can eat or not. We need the fowl that is already...
smelling
Q: yes.
A5: and flies are already all over the whole place.
Q: hum euh.
A5: I am not sure a normal human being will eventually eat such an animal
### Section 5.7.6. Appendix III. PREDICT Sample Interview Checklist

Participant ID: ____________________________  
Interviewer: ______________________________

#### INTERVIEW CHECKLIST

<table>
<thead>
<tr>
<th>PREDICT-2 Spillover Pathways</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Land conversion for commercialization</td>
<td>☐ Intensification of animal production systems</td>
</tr>
<tr>
<td>☐ Animal value chains</td>
<td></td>
</tr>
</tbody>
</table>

#### CORE THEMES

<table>
<thead>
<tr>
<th>Human movement</th>
<th>Illness, medical care/treatment and death</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Home</td>
<td>☐ Household illness</td>
</tr>
<tr>
<td>☐ Work</td>
<td>☐ Illness from animals</td>
</tr>
<tr>
<td>☐ Travel</td>
<td>☐ Medical care/treatment</td>
</tr>
<tr>
<td>☐ Observed environment</td>
<td>☐ Death</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socioeconomics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Daily routine</td>
<td>☐ Indirect contact</td>
</tr>
<tr>
<td>☐ Animal responsibilities</td>
<td>☐ Direct contact</td>
</tr>
<tr>
<td>☐ Education</td>
<td>☐ Animal products/rituals</td>
</tr>
<tr>
<td>☐ Economics</td>
<td>☐ Animal health</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biosecurity in human environments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Water and food</td>
<td>☐ Perceptionsknowledge</td>
</tr>
<tr>
<td>☐ Sanitation</td>
<td></td>
</tr>
</tbody>
</table>
Section 5.7.7. Appendix IV. Ethnographic Interview Excerpts

Two Examples of Good Ethnographic Interviews

1) WOMAN AGED 52

INT: What are the kinds of jobs that children have with animals. You were just talking about your first cow.

NYCQ01: I loved the cow. I told my mom I want this cow for myself and she said ok she was going to sell it and I said no. I said I want the cow. She gave it to me. She says your responsibility. When the cow first dropped, she gave me the little calf. I started...I didn’t know how to milk and I started to shoot the milk into my mouth. It was funny but I enjoy it. I continue selling milk take the money put it away then I bought the other cow. Same thing I do and I started multiplying cows. Then my mom she decided to give me some money. If you want another cow you could buy. It was so cheap. Then I bought it. When I bought the cow I enjoyed doing the things I do. I had one little sheep that my uncle gave to me. I raised the sheep and sheep is not getting big and I started to plead with the sheep "get big." I got another sheep and I took the money from the milk and bought another one and started to raise them. So after I started to do that I ended up with about 15 cows and about 12 sheep no goat sheep. I started to selling because I am selling tomatoes, spinach, mangoes. I am selling all kinds of things and making the money. So I finally don’t want to go back to school.

2) MAN AGED???

INT: Do you know who got an infectious disease from an animal?

CHY26: I don't know, I also have no education, I haven't heard of that kind of things.

INT: Do you know animals can spread diseases?

CHY26: No, I used to hear from veterinarian, but I don't know

Later in the interview...

INT: How do you kill cows, introduce the entire process to me.

CHY26: Tie the rope and with one stroke of the hammer the cow will fall down. Then take out the blood, and then from the chest kill like a pig kill. It will be similar to killing a pig.

INT: What do you do once the cow is dead?

CHY26: Some people want to take skin, use hot boiling water directly. Some don’t, then put the skins, put out in the garbage. In addition there is ox hair, cow excrement, other things that can be used. Nothing will be wasted.

INT: How do you treat the skin of the cows?

CHY26: They buy them to make leather. Cowhide can sell for three to four hundred yuan.

INT: How long does it take to kill a cow?
CHY26: Depends on the size of the cow, if you need to peel the skin off. Small one maybe two hours, if bigger, it will take more than three hours.

INT: How many people do you need to kill a cow?

CHY26: At least three people, one person is not enough. We have to pay attention to health, keep the meat clean.

**Example of Bad Ethnographic Interview**

INT: How often do you kill a cattle?

CHY24: About ten days, thirty-one a year.

INT: Do you usually buy it in local market?

CHY24: We prefer to buy cattle in local farm, because they are large-scale farms, Well, we trust it. In contrast, the beef in the market may have problems.

*Interviewer should have asked: WHAT KIND OF PROBLEMS? WHY ARE LARGE SCALE FARMS BETTER/ ARE THERE TIMES WHEN LARGE SCALE FARMS COULD BE BAD?*

INT: How do you treat the polluted water after slaughter?

CHY24: There are some special place to treat them.

*Interviewer should have asked: WHAT SPECIAL PLACES? WHAT EXACTLY IS DONE?*

INT: Burn it?

*Interviewer should recognize: STILL NOT ANSWERED. THE INTERVIEWER SHOULD CONTINUE ASKING ANYTHING ELSE?*

CHY24: Ah, offal could be the beast manure.

*Interviewer should have asked: IS IT USED WITH ANY SPECIAL CROP? WHAT OTHER THINGS ARE USED AS MANURE?*

INT: You have opened restaurant for so many years, have you contacted with any other animals?

CHY24: Well we are Muslims, so cattle, sheep, chickens, fish, geese and ducks are rare for us.

*Interviewer should have asked: WHY ARE THESE FOODS RARE?*

INT: Sheep?

CHY24: We don’t buy it.

*Interviewer should have asked: WHAT ANIMALS DO YOU HAVE AT THE RESTAURANT? ARE THEY LIVE ANIMALS? DO YOU KILL THEM AT THE RESTAURANT? WHERE? KILLED IN SPECIAL WAY BECAUSE YOU ARE MUSLIM? THERE ARE TONS OF QUESTIONS TO BE ASKED. INSTEAD, THE INTERVIEWER ASKS ABOUT TRAVEL...*
INT: Do you travel every year?

CHY24: Child is too young, only three or four, he-he, so we did not go out anymore, only the local neighborhood around it, there is no time.

INT: Do you have holiday?

CHY24: Annual Eid Well, just the same as your Spring Festival.

INT: Any rituals?

CHY24: If I told you, you will also not understand it.

EVERY TIME SOMEONE SAYS 'YOU WILL NOT UNDERSTAND' IT IS THE INTERVIEWER'S RESPONSIBILITY TO ASK MORE QUESTIONS. FOR EXAMPLE ANY OF THESE SENTENCES COULD WORK: I AM VERY CURIOUS, I WOULD LIKE TO LEARN MORE ABOUT THIS. I WOULD LIKE TO UNDERSTAND.
### Section 5.7.8. Appendix V. PREDICT Sample Suggested Coding Key Words

<table>
<thead>
<tr>
<th>Human Movement</th>
<th>Socioeconomics</th>
<th>Biosecurity in Human Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home</strong></td>
<td><strong>Daily routine</strong></td>
<td><strong>Water and food</strong></td>
</tr>
<tr>
<td>Dwelling, living quarters, sleeping quarters</td>
<td>Meal preparation</td>
<td>Water source (where does it come from?)</td>
</tr>
<tr>
<td>Children, family</td>
<td>Shopping</td>
<td>Water taste/quality/purification</td>
</tr>
<tr>
<td>Daily movement/travel</td>
<td>Childcare</td>
<td>Rain/rainwater/water taps/well</td>
</tr>
<tr>
<td>Flood</td>
<td>Market trips</td>
<td>Storing food/storing water</td>
</tr>
<tr>
<td>Drought</td>
<td>Groceries</td>
<td>Pests/rats/pesticides/cockroaches/insects</td>
</tr>
<tr>
<td>Conflict</td>
<td>Purchases</td>
<td>Kitchen</td>
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<tr>
<td>Protection from predators/animals</td>
<td>Errands</td>
<td>Cleaning</td>
</tr>
<tr>
<td>Safety</td>
<td>Animal duties/responsibilities</td>
<td>Pesticide usage</td>
</tr>
<tr>
<td>Religion</td>
<td>Feeding/grazing</td>
<td>Sanitation</td>
</tr>
<tr>
<td><strong>Work</strong></td>
<td>Tasks/roles by age or gender</td>
<td>Waste management/garbage</td>
</tr>
<tr>
<td>Work activities</td>
<td>Sick animals</td>
<td>Toilets/latrines/bathroom</td>
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<tr>
<td>Agriculture areas</td>
<td>Slaughtering/flitchering</td>
<td>Cleaning bathroom/kitchen</td>
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<tr>
<td>Grazing areas</td>
<td><strong>Education</strong></td>
<td>Feces</td>
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<tr>
<td>Hunting territories</td>
<td>School/education/graduation</td>
<td>Urine</td>
</tr>
<tr>
<td>Boundaries</td>
<td>Reading/understanding numbers</td>
<td>Pesticides</td>
</tr>
<tr>
<td>Livestock areas</td>
<td>Dropping out</td>
<td><strong>Hygiene</strong></td>
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<tr>
<td>Markets</td>
<td><strong>Economics</strong></td>
<td>Washing hands</td>
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<tr>
<td>Crops</td>
<td>Livelihood</td>
<td>Showering/bathing</td>
</tr>
<tr>
<td>Business</td>
<td>Earning/earning changes throughout year</td>
<td>Soap</td>
</tr>
<tr>
<td><strong>Travel</strong></td>
<td>Income</td>
<td><strong>Hygiene</strong></td>
</tr>
<tr>
<td>Traveling to Shop/buy/sell/trade</td>
<td>Purchases for event/holiday</td>
<td>Washing hands</td>
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<tr>
<td>Hunting trips</td>
<td>Social standing (compared to</td>
<td>Showering/bathing</td>
</tr>
<tr>
<td>Transporting animals</td>
<td>Neighbors/others)</td>
<td>Soap</td>
</tr>
<tr>
<td>Transportation: Walking, biking, cart, truck,</td>
<td>Expenses</td>
<td><strong>Hygiene</strong></td>
</tr>
<tr>
<td>plane, boat, trains</td>
<td>Number of jobs/activities</td>
<td>Leave shoes/footwear outside</td>
</tr>
<tr>
<td>Overnight trips</td>
<td></td>
<td></td>
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<tr>
<td>Reasons for travel</td>
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<tr>
<td>Travel destinations</td>
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<td>Border crossings</td>
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<tr>
<td>Travel obstacles/issues</td>
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<tr>
<td>Transportation of resources/moving</td>
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<tr>
<td><strong>Observed Environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town roads/ports/trains</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New buildings/roads/construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route changes</td>
<td></td>
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<tr>
<td>Abandoned land</td>
<td></td>
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</tr>
</tbody>
</table>
Illness, Medical Care/ Treatment and Death

**Household Illness/Wellness**
- Sick relatives
- Caretaking of sick
- Types of sickness
- Unusual illness
- Symptoms of illness (fever, bleeding, difficulty breathing, etc...)
- Ebola
- SARS
- MERS
  - (Other endemic zoonotic diseases)
- Dispensaries/medication
- Births

**Illness from animals**
- Illness from animals

**Medical Care and Treatment**
- Doctor/clinic visit
- Medicine/Treatment
- Cost of medicine/doctor/treatment
- Professionals (doctor, nurse, religious leader, healthcare worker etc...)
- Traditional medicine
- Ethno botany
- Healthcare protocols

**Death**
- Reporting death
- Burial/ burial rites
- Funeral tradition/rites
- Dead body/corpse
- Body preparation

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Human Animal Contact

**Indirect Contact/Food:**
- Meat/animal consumption
- Acquisition of meat
- Preparing meat
- Meat/animal storage
- Butchering
- Animal bodies
- Infected animals
- Wildlife consumption
- Purchasing meat or wildlife
- Cleaning up after animals
- Meat/dead animal markets
- Animals around dwelling/pests
- Signs of animals (hear, smell)
- Feces
- Animal tracks
- Garbage disturbance
- Observed animals
- Hunting

**Direct Contact**
- Ownership of animals
- Live animals
- Pets
- Playing with animals (wild or domestic, alive or dead)
- Animal caretaking
- Feeding animals
- Grazing animals
- Working with animals
- Live animal markets/wet markets
- Ranching
- Animal husbandry
- Buying/selling/trading live animals

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**Animal products/rites**
- Animal byproducts (milk, leather, magic, medical)
- Magic involving animals
- Fertilizer

**Animal health**
- Animals eating/sleeping/grazing
- Sick animals
- Animal caretaking activities/roles
- Animal waste
- Cleaning animal areas
- Veterinary care
- Vaccinations
- Outbreak
- Die off

**Perceptions and knowledge**
- Exotic or expensive animals
- Wildlife consumption
- Regulations/laws regarding animals (e.g., Hunting, eating, poaching regulations)
- Danger from animals
- Conservation
- Taboos
- Special occasions/holidays
- Feasts/ holy days
Section 5.7.9. Appendix VI. Examples of Coded Text

Example 1:

INT: Do you live in local? How old are you? And how many people in your family?

CHY22: Yes, I am 45 years old. There are four people in my family, two girls, my wife and I. The older girl is selling water filter in Chuxiong, Yunnan Province, and the young girl is in grade 3 in middle school, and she is the top one in her class.

INT: That’s great, at what age does she start school? And how about her tuition?

CHY22: Seven years old, and we paid for her tuition several years ago, school sponsored her these years.

INT: Should you child to school? And how?

CHY22: When she was in primary school, she got to school and back by herself, and we sent her to school when she got to middle school by motor.

INT: How long do you live in here? When was this house built? And where is the material from?

CHY22: For all of my life. The house was built 3 years ago. We save the material each year, and it take a whole year to complete, get help to build the house, dig the foundation, the structure is armored concrete, all of it take about 85,000 yuan.

INT: That’s not a decimal, what’s your work in detail? And do you have farmland?

CHY22: Part-time job, such as carrying bricks, constructing and so on, I have 2.8 mu farmland at home.

Example 2:

INT: What kind of wild animals have you ever contact with in your work, and what kind of wild animals have you grabbed?

CHY30: Rodents are mainly to be guessed rats including house ones and wild ones Main species are yellow brown rats, brown rats, Geo Shanjil mouse, the mouse, the older kyi mouse, younger kyi mouse and so on, other special kinds are such as squirrel and weasel and some other climbing kinds. We have caught wild animals all over the Yunnan province.

INT: Where did you catch the bats?

CHY30: So many, we have been to the caves of Anning, Jinping, Baochan and Mejang to grab the bats. We also have been to Xishuangbanna. We grab the bat with a mist net. The bat like living in damp cave and like the poly group life. I have been to several times, among the bats. Hipposidero dae and Rousettus leschenau are the most. Rousettus leschenau were caught in in Ruili. After catching bat, we need not only sample, but also cut the vessel of wings to sample the blood bats can not fly after sampling, and died. Some people also use torches to burn when grasping, or with a bamboo pole set off firecrackers to scare the bats. There are no bats in the place where we have ever grabbed the bats. They also take the bat's brain, feces and urine.

INT: Have you ever seen someone live in the cave or near the cave where the bats live in?

CHY30: No, but there are mine workers getting in and out of a cave in a small town of Honghe. They work inside the cave during the day, but they don’t live there at night, they probably contact with the bats. But I don’t know whether they fall ill.
Example 3:

INT: Which animal raised in your family?
CHY22: Ten hen and cocks raised by my wife.
INT: Injected in vaccine?
CHY22: Yes.
INT: Raised for chicken?
CHY22: Yes.
INT: And when do you have chicken?
CHY22: The time when relatives visited and the Spring Festival.
INT: How long can the cocks been eat?
CHY22: About eight months.
INT: Where to get the young chicken?
CHY22: Bought on the market.
INT: Do you raise other animals?
CHY22: A dog, it was three years old.
Section 5.7.10. Appendix VII. Ethnographic Interview Summary Document

Examples

INTERVIEW ID: CHY26
MAN AGED ??

Summary

Human Movement p 2
The interviewee takes the cattle to town in a lorry for slaughter. He usually takes about 5-6 large ones and 8-10 smaller ones. The cattle market is about 1 kilometer away.

Socioeconomics pp 1-2
He finished one grade, while his wife graduated from primary school. He considers himself to be of a middle economic level as compared to others in his village. His income varies throughout the year with the rise and fall in prices of meat. He considers wild animals to be too expensive to eat.

Biosecurity in Human Environments pp1-2
They drink from a local spring and use the tap water to cook. Depending on the amount of people in the house, they will collect garbage anywhere from 1-3x a week. He carries a water tank with him in order to wash his hands. Very hot water is used during the slaughtering of animals.

Illness, medical care/treatment and death p 7
His hand was seriously injured. He sawed off 4 fingers. He was treated at the best orthopedic hospital in the province. He has heard of animal infectious diseases from his veterinarian, but does not really know what they are. He will go to the hospital and take medication if necessary. He briefly explains the burial practices surrounding his father’s death. His body remained in the house for 5 days.

Human Animal Contact pp 2, 8, 10-11
He raises about 20-30 cattle and chickens. They will kill cows for special occasions (e.g. weddings). They only consume “regular” animals (especially pork), not wildlife. He feels wildlife is too expensive. They slaughter their own chickens and cattle. It usually takes 3 people to slaughter a cow because of the necessary health precautions that need to be taken. He has previously been hurt during the slaughter process. He has also been bitten by a dog on the leg a long time ago. He will not purchase cattle that have not been vaccinated. He refers to the governmental regulations that exist on vaccinating animals.

SPECIFIC QUOTES

Page 2: Human animal contact: Indirect contact/food: acquisition of meat, purchasing meat or wildlife; Socioeconomics: daily routine: purchases; Human animal contact: direct contact: buying/selling/trading live animals; Socioeconomics: daily routine: purchases

CHY26: Both, mostly I buy the killed ones. Some are not suited to eat, for example-calf, then I would make a change-buying some sheep. If the big cattle are not fat, we would buy them back to raise for some days.
Page 7: **Illness, Medical Care, Treatment and Death:** *Illness from animals: Illness from animals*

**INT:** Do you know someone got animal infectious disease?
**CHY26:** I don't know, I also have no culture, I haven't heard of that kind of things.

**INT:** Do you know animals can spread diseases?
**CHY26:** No, I used to hear from veterinarian, but I don't know

Page 10: **Human animal contact:** *direct contact: killing live animals/slaughtering; Biosecurity in human environments: water and food: cleaning*

**INT:** How many people do you need to kill a cow?
**CHY26:** At least three people, one person is not enough, we have to pay attention to health, keep the meat clean.

Page 8: **Human animal contact:** *indirect contact: meat/animal consumption, wildlife consumption; Human animal contact: perceptions and knowledge: exotic or expensive animals; Socioeconomics: economics*

**INT:** Eat wild animals' meat?
**CHY26:** Do not eat, expensive!

**Page 12:** **Human animal contact:** *indirect contact/food: meat/animal consumption*

**INT:** What meat your family don’t eat?
**CHY26:** No, eat any kind of meat!

Page 10: **Human animal contact:** *direct contact: animal handling, killing live animals/slaughtering Human animal contact: direct contact: bite*

**INT:** Have you been hurt in the process of killing cattle?
**CHY26:** Yes, we do cattle business, some cattle temperament is bad

**INT:** Have you been hurt by other animals?
**CHY26:** Bitten by a dog

Page 11: **Human animal contact:** *animal health: vaccinations; Human animal contact: perceptions and knowledge: regulations/laws regarding animals*

**INT:** Usually play the vaccine?
**CHY26:** Yes, when we go to the farmers to buy we will ask whether the cattle ever been play with a vaccine, if the cattle haven’t been treat with any vaccine, we don’t buy, afraid of an accident, if the government pursue, we will be in big trouble