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**SWM SUSTAINABLE
WILDLIFE
MANAGEMENT
PROGRAMME**

Methodological guide for a sociological and qualitative study of wild meat consumption

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SUSTAINABLE WILDLIFE MANAGEMENT (SWM) PROGRAMME

Millions of people depend on wild meat for food and income. Wild meat is an important source of protein, fat and micronutrients, particularly for indigenous peoples and rural communities in tropical and subtropical regions of Latin America, Africa and Asia. The demand for wild meat is growing, especially in urban areas. If hunting for wild meat is not managed at sustainable levels, then wildlife populations will decline and rural communities will suffer increased food insecurity. Recent studies have shown that overhunting for food is now threatening hundreds of wildlife species with extinction.

Between 2018 and 2024, the Sustainable Wildlife Management (SWM) Programme will improve the conservation and sustainable use of wildlife in forest, savannah and wetland environments. Field projects are being implemented in 13 countries and aim to:

- improve how wildlife hunting is regulated
- increase the supply of sustainably produced meat products and farmed fish
- strengthen the management capacities of indigenous and rural communities
- and reduce demand for wild meat, particularly in towns and cities

The SWM Programme is an African, Caribbean and Pacific Group of States (ACP) initiative, which is being funded by the European Union with co-funding from the French Global Environment Facility.

For further information: www.swm-programme.info

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ABSTRACT

This document provides a methodological guide for the study of wild meat consumption in the framework of the SWM Programme (<https://www.swm-programme.info/>). Based on a socio-anthropological approach, the aim of this guide is to produce an in-depth understanding of the food consumption patterns in the zones included in the programme, the share of domestic and wild meats in this pattern, the determining factors behind this consumption, its meanings for people and the current and potential substitution of wild meat at household level. The intended audience of this guide is master students and researchers who already have a good understanding of qualitative work and need to address the specific topic of food consumption.

To describe the food consumption patterns, this guide recommends focusing on the following topics: WHAT are the products consumed? WHO consumes them? HOW are they consumed? WHEN are they consumed? WHY are they consumed?

These studies are needed in order to understand the numerous functions and drivers of wild meat consumption (nutrition, economic, hedonic, social, and cultural factors) and, as a result, identify whether substitution with alternative sources of food is possible, taking into account the diversity of the households and the dynamic of the food systems.

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1. Introduction

The Sustainable Wildlife Management programme (SWM)¹ is a development project focused on improving the management of the relationship between humans and wildlife in several sites around the world. It aims to identify levers for and barriers to the protection of wildlife and biodiversity and to build intervention tools to promote better management of wildlife. Interventions include the reduction of wild meat consumption, while enhancing food security by promoting the substitution of wild meats with domestic meats or other sources of proteins when necessary.

There are many different motivations for hunting wildlife, such as income generation, people and livestock protection from predators, pest management, leisure, and food consumption. The consumption of wild meat is also driven by different motivations: nutrition (protein supply), economic, hedonic, social, and cultural factors.

Socio-anthropological studies have been conducted on hunting, but less socio-anthropological research has been done on wild meat consumption. These studies are needed in order to understand the numerous functions of wild meat consumption and, as a result, identify when or whether substitution with alternative sources of food is possible.

The purpose of this guide is to support the SWM project: "Qualitative survey on household consumption in rural and urban areas and outside of the home" (R4.1.A2) in the different sites. The aim is to produce an in-depth understanding of the food consumption patterns in the zones included in the project, the share of meat and wild meat in this pattern, the determining factors behind this consumption, its meanings for people and the current and potential substitution of wild meat at household level.

We define here wild meat (or bushmeat) as all types of products (flesh foods, eggs...) that come from non-domesticated animals (mammals, marine fish, fresh water fish, mollusks, amphibians, insects, reptiles, birds and eggs...), that are collected, fished or hunted and serve, at least in part, the purpose of human food consumption.

We suggest that, depending on the SWM site, the qualitative study may be conducted with different focuses (table 1): A (focusing on wild meat), B (focusing on domestic and wild meat), and C (focusing on wild food products: meats, fruits, tubers, roots and vegetables, fungi...) and D (including all foods, domestic and wild). The choice will depend on the site specificities and the resources available. Consequently, in this guide the words "food" or "products" need to be understood differently according to the level of investigation adopted for the study.

Table 1. The different focuses of investigation for the study of food consumption

Focus of the investigations	A Wild meat	B Meat	C Wild food	D All food
"Wild meat" (mammals, fish, birds and eggs, mollusks, amphibians, insects, reptiles)	x	x	x	x
"Domestic meat" (mammals, fish, birds), eggs, milk...		x		x
Wild fruit, tubers, roots and vegetables, fungi...			x	x

¹ www.swm-programme.info

2. Preliminary considerations

a) Qualitative survey: general principles

In this guide, we describe the methodology for a qualitative study based mainly on interviews, collective discussions (or focus groups) and observation. This approach is characterized by:

- **An in-depth analysis.** A qualitative study relies on in-depth interviews of a limited sample of respondents based on a thematic interview guide with open-ended questions, rather than a multiple-choice questionnaire, while a quantitative survey is short and addresses a wide sample of respondents. The respondents are key informants (experts or laymen) who bring complementary views. Qualitative analysis can help answer complex questions such as: what is the place of wild meat in the local culture or what are the drivers of wild meat consumption? The main purpose of qualitative studies is to understand the diversity of practices and points of view among respondents.
- **An adaptive tool.** A quantitative survey needs to be narrow-focused. The expert generally has a strong, while not necessarily explicit, hypothesis that they intend to test. Inversely, a qualitative study follows a more inductive approach. It is open to new issues or new hypotheses that emerge during data collection (for example, if a respondent explains that household consumption habits have been modified by a new regulation the expert was not aware of, this could raise unforeseen questions). This adaptability is necessary since the drivers of human behavior are numerous and complex and very context dependent. Key to this adaptability is the comprehensive and empathetic skills of the researcher, who must employ a non-judgmental approach.
- **A complementary approach to a quantitative survey.** A qualitative study can be complementary to a quantitative study. It can be exploratory and support the preparation of a quantitative survey, contributing to the identification of the main hypothesis that will be tested in a quantitative survey or how to phrase relevant questions for the respondents by, for example, collecting the measure units they use in daily life. When conducted after a quantitative survey, a qualitative study can support the interpretation of data previously collected. The qualitative study could help provide meaning to correlations identified in the quantitative study, by discussing the hypothesis of causalities based on the points of view of people involved. For example, a repeated quantitative survey may record a drop in the consumption of meat and correlate it statistically with a drop in household income. A qualitative survey could go deeper, by talking with the affected people to help understand their perception of this drop. A qualitative study can also collect information on the path this drop has followed and the choices made under economic constraints.

b) Socio-anthropology of food, meat and wild meat: basic considerations

As an object of consumption, food has specificities emphasized by numerous food sociologists since it entails a physical incorporation of the consumed object. This incorporation is physical as it brings nutrients that constitute the human body. It also brings with it specific fears of contamination (poisonous food). This fear of contamination may also be based on the idea that "we are what we eat" (what socio-anthropologists name "magic thinking"). For example, many cultures associate the consumption of wild meat or red meat with fighting and the consumption of vegetables with more peaceful behavior.

As food, meat has a particular status. Animal products raise more safety issues than vegetal products and are more likely to generate food anxiety (as shown by the large-scale sanitary crises regularly associated with meat). Consuming meat implies killing and is thus framed by numerous social norms. This may explain why most taboos are related to animal or meat products rather than vegetal products. As meat, wild meat also holds a particular status: hunting and consuming wild meat contributes to dangerously

blurring the frontiers between culture (associated to humans) and nature (associated to wildlife) and is object to numerous social norms.

All these dimensions help explain why wild meats are not just sources of protein and instead require a socio-anthropological approach to understand what drives their consumption.

3. Data collection

Qualitative studies are generally associated with interviews, but there are many other ways to collect qualitative information.

a) Primary and secondary data

The first step, as in all research, is to collect **secondary data** meaning already-existing information gathered from other studies. This will avoid repeating existing studies, save time and money and prevent "survey fatigue" whereby respondents become tired of being surveyed. It will also help scope out the context before beginning the study.

This data can be quantitative (national statistics on food consumption) or qualitative (see for example: *Consumption of wild meats in Zambia and Zimbabwe: A review of the literature for the SWM project*, (Lepiller and Dutilly 2018)).

In a second stage, **primary data** can be collected by the researcher directly from first-hand sources. In quantitative studies, primary data is collected mainly through surveys or experiments. In qualitative studies, data is collected through interviews, group discussions or observations.

b) Interviews and observations

In the context of the SWM project, the largely exploratory and inductive qualitative study targets different populations:

- Rural households (including people in charge of supplying and cooking food and those who are not)
- "Rural town" households (idem)
- Wild meat final vendors (formal, informal trade)
- "Restaurant" owners and cooks (from formal restaurants, including those in nearby tourist areas, to street vendors)
- Local authority representatives
- Experts on the "local" culture: anthropologists, ethnobotanists...

Since this guide is mainly focused on consumption in rural households, the tools described here would need to be adapted to urban contexts and touristic consumption.

In addition to the interviews, and in order to understand the context of food consumption, the study will consider the material environment of wild meat consumption, or more broadly food consumption, by taking observational notes and pictures of the places (consumption, selling and cooking places), the technical food equipment (from cooking tools to food markets and communication tools used to sell or supply wild meats), and the public messages on wild meats/food consumption (press, media, public health, wildlife management policies...).

c) Topics to be addressed

To describe the food consumption patterns in the study area, this guide recommends focusing on the following topics²:

- a. WHAT are the products consumed?
- b. WHO consumes them?
- c. HOW are they consumed?
- d. WHEN are they consumed?
- e. WHY are they consumed?

Each of these topics refers to a dimension of the food social space, as defined by Poulain (2017). For each topic, we indicate the expected outputs generally in the form of a table or figure. These outputs will structure the reporting of the study.

² This presentation is common in sociological studies on food.

4. WHAT? Edible space, food culture and patterns

a) Comestible foods and the edible space

The first objective is to identify the foodstuffs consumed in the study area. This list of products is specific to a socio-ecological system since it depends on the biophysical environment as well as the cultural, technical, social, economic, and legal context. Not all available comestible products are necessarily consumed, and this depends on social norms, taboos, culinary habits, knowledge, and legislation. This list of consumed products constitutes what socio-anthropologists call the "edible space" (Poulain, 2017: 205). The first task of the qualitative survey is to provide a comprehensive inventory of locally edible foods. This list should include information about the parts of the animal (or plants) that are consumed and culinary preparations (that make them edible), see table 2.

Within the context of the SWM project, this list may cover at least wild meat/fish/insects/eggs (focus A) or more (focuses B, C, and D). The objective is to be as exhaustive as possible (products are listed independently of their quantitative or qualitative importance in diets). This list shows the share of wild products in the food culture. It also provides the basis of a list of items to include in a quantitative survey. Depending on the focus, this inventory should also include drinks, snacks, foodstuffs consumed outside of the home, etc.

Table 2. Example of presentation of an inventory of the edible space.

English common name	Latin name	Local name	Mode of collection	Season of consumption	Edible parts	Preparation and use	Comments
Bullfrog	<i>Pyxicephalus edulis</i>		Caught by children	Rainy season	All except offal	Stew	Considered unsuitable for pregnant women
Bream	<i>Oerochromis spp.</i>		Fishing	All	All	Fresh, sun dried or smoked	
Moringa	<i>Moringa oleifera</i>		Gathered by women	May	Leaves	Raw or cooked	Used as vegetable
"	"		"	June	Seeds	Cooked	Also used as detergent
Etc.							

b) Disgusts, preferences and symbolic quality of food

Some comestible products are a source of disgust (for example frogs provoke disgust in certain cultures) or their consumption is restricted by religious or other collective beliefs. These disgusts and taboos may be specific to a part of the animal (e.g. the heart), a period of the year (e.g. the waning moon) or be group-specific (the totem of an ethnic group).

Most taboos are related to animal, not vegetal, products. The consumption of one product may also be a taboo for one demographic (e.g. pregnant women), but be highly valued for another (e.g. young men) depending on the symbolic quality of the food. These preferences and taboos can be related to social or religious norms that in practice are little enforced.

Data can be presented in the following table (table 3).

Table 3. Examples of collective food avoidance

	Children	Pregnant women	Male	Female	Elderly	Etc.
(+)	Chicken feet (+)		Buffalo meat (+)			
(-)		Squirrel (+)				

(-) means that, according to local norms and shared knowledge, consumption of this food should be avoided; (+) means it is recommended.

c) Dishes/ food culture

Interviewed people do not just consume meat and other foodstuffs; they consume dishes that follow recipes based on local know-how and food culture. The choice of dishes is also driven by material constraints such as access to ingredients or a wood fire. Some of these dishes are consumed daily, while others are made for special occasions like weddings or funerals.

Recipes can vary according to income, personal taste, season, and food availability. For nutritionists, foodstuffs are characterized by their nutrients (proteins, lipids, carbohydrates, micronutrients). In this perspective, meat can be easily replaced by beans for example. However, some dishes belong to the cultural culinary patrimony and the recipe cannot be changed (as for example the fish in fish and chips or roasted turkey prepared for thanksgiving).

Variations need to be identified in order to understand substitution of a food by its functional equivalent in terms of price, practicability, taste, or social status. One of the core questions of the SWM programme is related to the substitutability of wild meats: is it possible to substitute one wild meat with another or with domestic meats or non-flesh foods? What substitutions can we observe in the consumers' daily practices and what drives them? What substitutions would be easiest to implement (substitutability)? What substitutions could be encouraged by programs that aim to improve both food security and wildlife protection for more sustainable food systems?

The results of this task can be presented as a list of usual dishes mentioning the potential substitutions (see table 4).

Table 4 .Main dishes, composition and substitution

	Usual composition	Variants/possible substitution	Comments (social status of the dish, drivers of substitution...)
Dish 1: XX	Rice + peas + chicken	Chicken can be replaced by turkey.	Turkey meat is more valued than chicken and is used instead of chicken when there is a special guest.
Dish 2:			

d) Proportion of food consumed

It is possible to assess the relative importance, in terms of food intake, of the different food consumed by a mixed quantitative-qualitative method of proportional piling. The method is described in detail in annex 1 (International Federation of Red Cross and Red Crescent Societies 2006). It can be used for food consumption (cereals, wild meat, domestic meat...), for ways of obtaining food (fishing, hunting, bartering, gifts...), or expenditures (food, firewood, taxes...). The approach can be used for a household or group of households considered as having similar profiles of food consumption (see box 1). It can be used to compare:

- seasonal consumption (by doing the same exercise in different seasons);
- household profiles (by doing the same exercise for different types of households with low, medium, high income);
- norms and practices (by asking the interviewees to compare the ideal dietary balance with their actual dietary intakes).

Box 1. Using proportional piling for food consumption

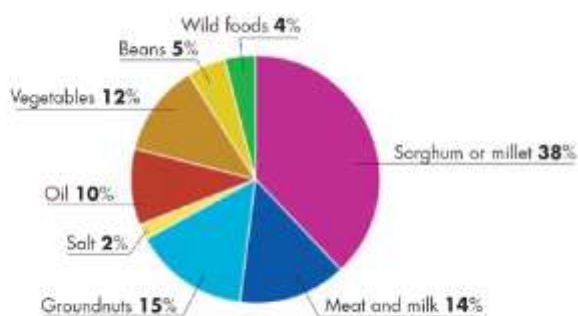
Example: proportional piling for food consumption

- Explain to the people that you would like to know what they normally eat in an average year.
- List the main food products and ask them to place the beans in proportion to the quantity of food for each category. It can help you if you ask the people to bring a little bit of the food, for example a handful of grain, or a handful of vegetables, so they can pile up the beans behind each group. However, it is easier for you to take along some of those products in a small plastic bag, each symbolizing the main food groups; a few beans, grains, tubers, dried meat, salt, groundnuts, a paper label of oil. It makes the whole exercise easier and experience shows that people are very interested and see it as a kind of game.
- Do the same exercise for their current food consumption and compare both.

Source: International Federation of Red Cross and Red Crescent Societies, 2006. *How to conduct a food security assessment. A step-by-step guide for national societies in Africa*. Switzerland, Geneva: International Federation of Red Cross and Red Crescent Societies.

The results can be presented in a pie chart (see figure 1)

Figure 1 Composition of diet



Source: International Federation of Red Cross and Red Crescent Societies, 2006. *How to conduct a food security assessment. A step-by-step guide for national societies in Africa*. Switzerland, Geneva: International Federation of Red Cross and Red Crescent Societies.

Within the framework of the SWM project, we recommend using this pie chart to describe current food consumption patterns and by detailing the categories of wild food to include wild meat/fish/insects/eggs/others (focus A) as well as wild fruit and vegetables (focus B).

5. WHO? The social differentiation space

This question refers to the fact that eating is a social practice that marks boundaries between groups belonging to different food cultures, income levels and social classes. The question is two-fold: who eats what and who eats with whom?

a) Who eats what?

This section aims to answer questions such as:

- Are there some wild flesh products (focus A), wild food (focus B) or wild and domestic flesh products (focus C) not consumed by some categories of people i.e. children, women, pregnant women, men, the elderly...?
- How does this difference contribute to defining social groups? (Female/male, young/old, poor/rich households, local people/migrants, ethnic group 1/ethnic group 2...)

This section addresses **collective norms** and can then be addressed through focus group discussions and through questions such as: are there some "foods" that are not consumed by poor households? Which foods are mostly consumed by hunting families?

b) Who eats with whom?

This section of the study aims to identify practices related to commensality and food sharing. For example, nuclear families (parents and children) may share meals or women may eat separately from the men or married women may eat separately from their parents-in-law. Hunters may eat together when hunting, preparing the hunted carcasses on site. Ideally, this information would be described via direct observation.

As mentioned above, these sharing practices relate to social norms that may, in practice, be transgressed. As a result, it is interesting to compare norms with practices. This transgression may be related to material constraints (lack of space, lack of time...) or generational changes (new generation with new habits) that need to be understood since it tells us about the dynamic of food patterns and habits.

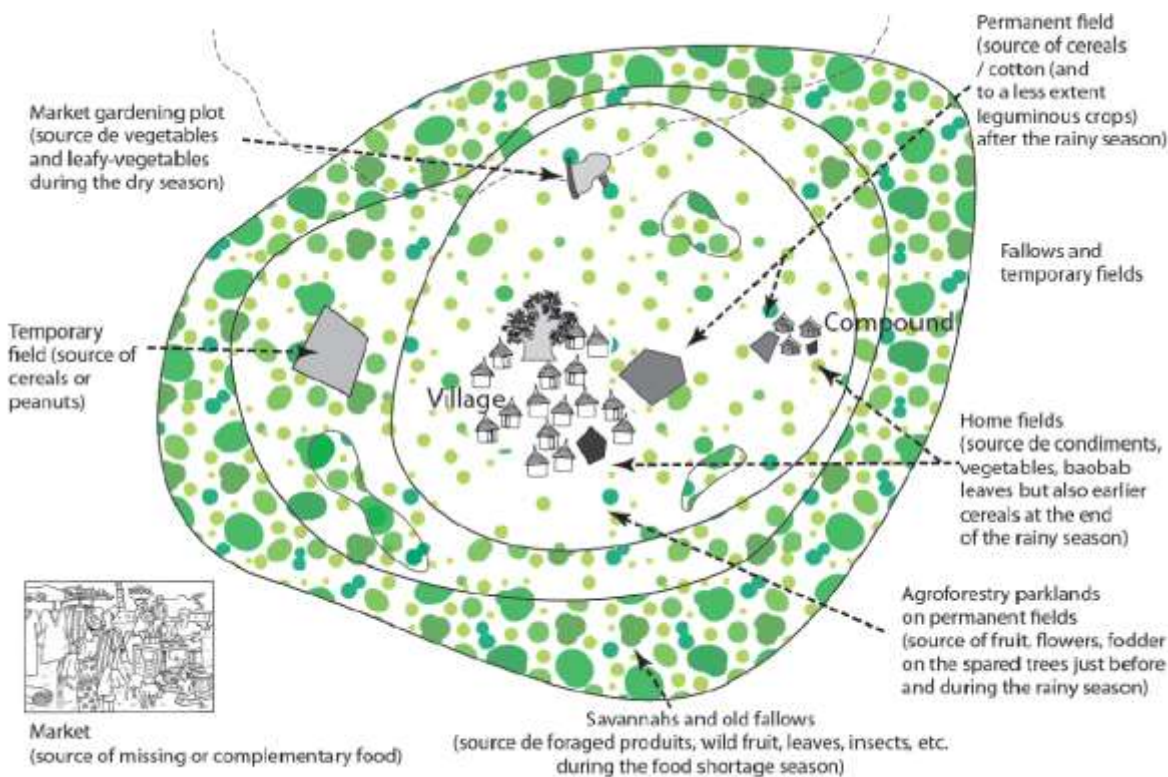
6. HOW? The food system

Food is not just eaten. Food follows a path from supplying to transporting, from storing to preparing/cooking and sharing/waste management. This refers to an organization that can be described spatially and/or socially.

a) Spatial organization of the food system

Spatial organization can be described at different levels of analysis: the concession, the village, the district... (See example figure 2). The description of the spatial organization indicates the different places where food is produced, stored, transformed, and consumed and the contextual logic of this organization. It offers information about how food dependent a household (or a group of households) is on the surroundings territory (hunting area, market, field, forest...).

Figure 2 Spatiotemporal scheme of food diversity on a village scale, source: Relax project. <https://relax.cirad.fr/>

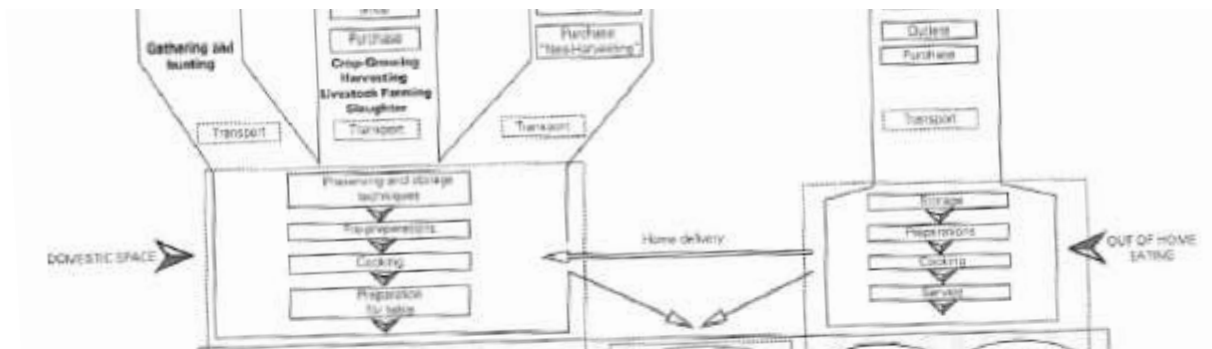


b) Social organization of the food system

Before reaching the "eater", food does not only move into geographic spaces (from production sites to consumption sites), but also into different social spaces. Each space is characterized by a set of techniques, practices, norms and rules implemented by different interacting stakeholders. For example, wild meat can arrive in the domestic space via different channels (household hunting, purchased directly from poachers or legal hunting, etc.) that are regulated by different rules involving different stakeholders. Within households, different people may be in charge of purchasing and preparing food and each stage involves decision-making. This needs to be identified in order to understand the decision-making processes that bring wild meat to the plate.

This social organization can be described using the figure 3.

Figure 3.The food system (Source: Poulain 2017, p 208)



7. WHEN? Eating and timing

This question refers to variations in food consumption within a day (e.g. breakfast or lunch), a year (e.g. harvest or lean season), or a life cycle (e.g. childhood or old age).

a) Seasonality in food consumption

A food calendar can help understand how food consumption varies in the year and, for example, when wild meat is more important for household food security, when seasonal substitutes might be available or when a food survey should be repeated in order to catch the annual variations of food patterns.

Particularly in rural areas, this calendar depends on many events that must be identified such as food availability (e.g. crop calendars, hunting seasons) and income (e.g. seasonal paid work). Collected information can be more or less detailed as shown in the figures 4, 5 and 6.

Figure 4. Annual food calendar. Example 1 (International Federation of Red Cross and Red Crescent Societies 2006)

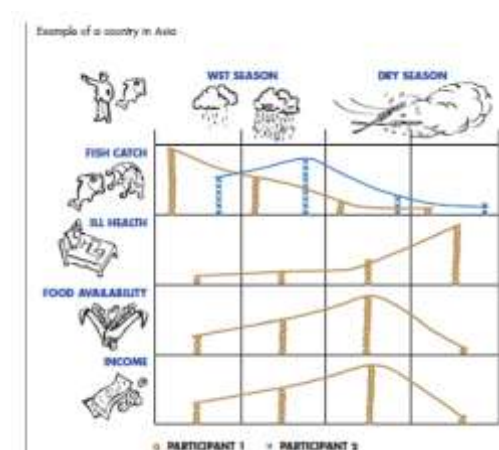


Figure 5. Annual food calendar. Example 2

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Cereals												
Vegetables			...									
Wild meats												
• Rodents												
• Frogs												
• Insects												
• Antelope												
• ...												
Domestic meat												
Wild meat												
Fruit												
Wild vegetables												
Wild fruit												
Food aid												
Other...												

The different categories should be more or less detailed according to the focus of the study (focus A, B, C, D).

It is necessary not only to identify this periodicity but also to understand the logic of it. For example, birds are consumed more often during the harvest season because this is the period when people hunt them in order to protect crops.

Figure 6. Annual food calendar. Example 3. (Source: Project Relax, <https://relax.cirad.fr/>)



b) Food days

"Food days" refers to the different food intakes on an ordinary day (meaning with no specific social event such as a wedding, funeral or Christmas): the different meals (breakfast, lunch), their composition, and the time of day need to be identified (see table 6). Description of the food days should also include drinks, snacks between meals and consumption outside of the home (in the work place, in the field, at the hunting site, at school, in restaurants, etc.). It is useful to describe how this rhythm varies according to seasonal food shortages and activities (field work, school year, etc.).

Table 5: Organization of a food day. Example 1

Season 1 (....)	Name	Time	Place	Composition
Meal 1	Breakfast	6am	Home	Porridge, vegetables
Meal 2	Lunch	11am	Field	Porridge vegetables, meat
Meal 3	Dinner	6pm	Home	Porridge...

Season 2 (....)	Name	Time	Place	Composition
Meal 1				
Meal 2	Lunch	10am	Home	Porridge, vegetables
Meal 3				

Table 6: Food day of a fruit street retailer in Hanoi. Example 2 (Lepiller 2005)

Morning meal	Midday meal	Evening meal
A bowl of liquid tofu for 500 dongs (0,025 euros)	A meal in a sidewalk cheap restaurant: rice, sauteed vegetables, tofu for 4 000 dongs (0,20 euros)	A meal at the flat: rice, boiled water morning glory leaves, sauteed pork throat (2 500 dongs or 0,125 euros)

Lepiller, O. 2005. Les mutations de la société urbaine de Hanoi (Viêt Nam). Illustration par des portraits de mangeurs. Université de Toulouse II-Le Mirail, Toulouse.

8. WHY? Food decisions, justifications and strategies

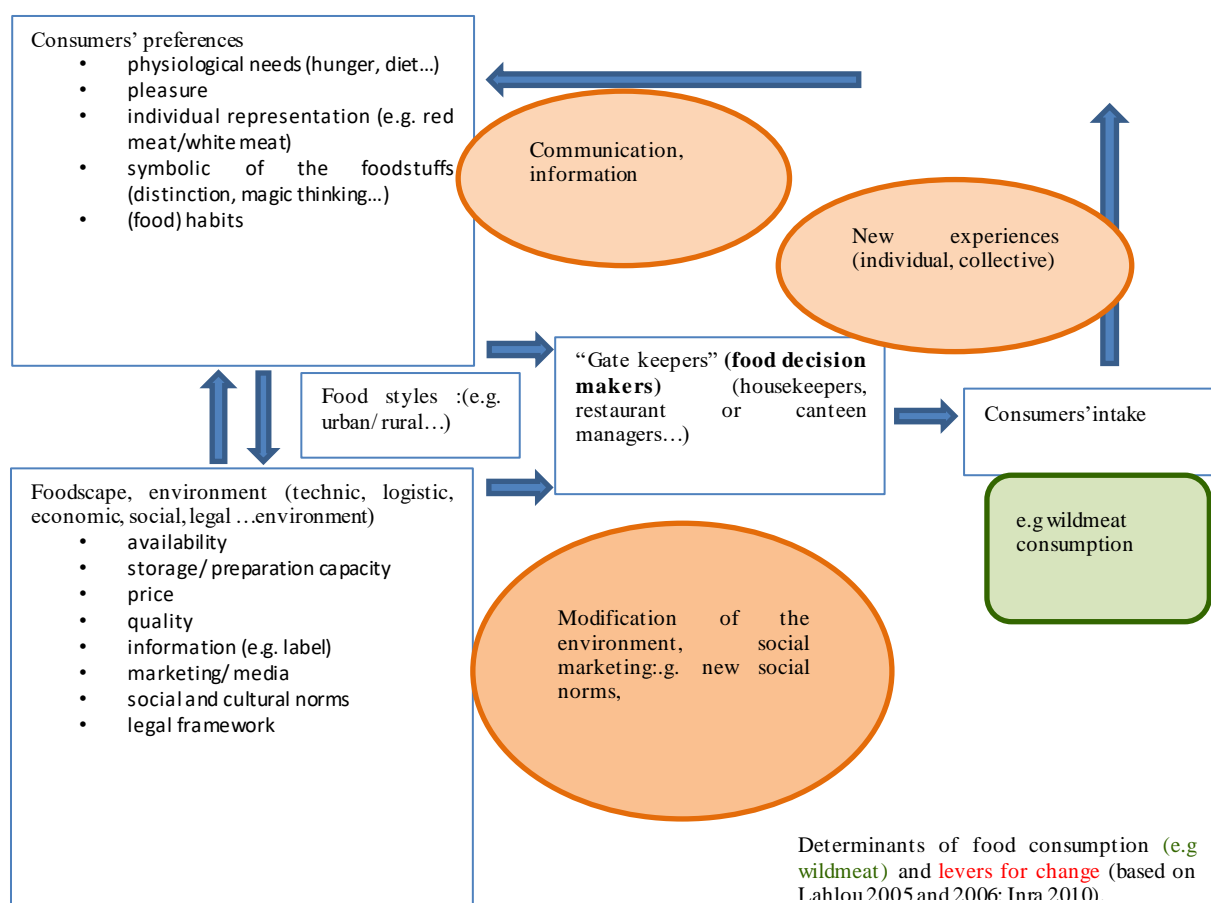
a) Choice and behavior

Why do people eat the way they eat? This section is the most complex and there are many ways to address this question. The question refers to the drivers behind food consumption. These drivers are numerous (see figure 7) and include consumer preferences, foodscape environment (food availability, price), local norms, and culture. Depending on the major drivers, the possibility of substituting wild meat with domestic meat may differ.

The answer to the WHY question may focus on food behavior or food choices. "Food behavior" emphasizes habits, routines, and barriers to change. In contrast, "food choices" refer to decision-making processes, individual rationality, strategies and adaptability. In this last case, many people may be involved in the decision-making process. Some of them are determinant and qualify as "gate keepers". Identifying them is important if the decision-making process is to be curbed. For example, in some families, the daughter-in-law may be in charge of preparing meals, but the composition of the meal may be decided by her mother-in-law and the money allocated for the meal may be provided by her husband.

Figure 7. Determinants of individual food consumption and levers for changes. Based on

Representations (Food functions: e.g. social-cultural dimension, food quality, food security)



To answer the question WHY, it is possible to adopt an etic (or explanatory) or an emic approach. In general, in a quantitative survey, the expert identifies correlation based on statistical analysis. For example, correlation between consumption data and socio-demographics characteristics, such as sex, age or income. Based on this correlation, the expert infers causalities, based on their own point of view. Most qualitative surveys adopt a different perspective. The aim is to understand the reasons for food consumption behavior from the point of view of the consumers/eaters themselves, based on their own understanding and assessment of motivations, meanings, values, constraints and opportunities that they associate with this consumption. The importance attributed to the points of view of respondents is what the social sciences refer to as an emic approach (as opposed to an etic or explanatory approach). In a qualitative perspective, the WHY question is answered in an emic, not etic way. This means that qualitative research seeks to understand why people eat the way they eat from their own point of view.

Moreover, food has many functions. These functions are:

- Biological: the food is eaten because "it feeds", is satiating and nutritious.
- Psychological: the eater may eat a given food because it brings psychological benefits such as pleasure.
- Social: the consumption of a given food serves to affirm the social status of the eater, in particular when it is shared with guests at social events.
- Cultural/identity: the choice of eating wild meat is driven by cultural norms.
- Economic: food choice is driven by the availability, practicality and/or the price.

The drivers behind food consumption refer to these different functions and it is necessary, in order to answer the WHY question, to combine biological, psychological, ecological and economical perspectives. People eat the way they eat because of biological needs, desires and pleasures rooted in their brain and in the evolution of the human species, because of the agricultural capacity of their environment or because of accessibility of products on the market. These ways of answering are explanatory.

The practice of eating³ is obviously rooted in the biological and psychological dimension of the human being and is framed by environmental and economical contexts. Furthermore, it is always shaped and driven by the sociocultural dimensions of material cultures, normative meanings, goals, and related emotions. These features are the object of the qualitative approach that aims to find out why people eat the way they eat (or the way they do not eat, a question that is also very instructive).

While interviewing people and observing their practices, it is possible to accurately reflect the meanings people assign to their food and eating practices. People are able to explain and provide justification for their practices. They are able to account for what they do. For example, an old Zambian man explains that he no longer eats tortoises, contrary to when he was a young man. When asked to explain why he stopped, the old man explained that people would mock him if he ate tortoises now, since eating tortoise is not considered in the current social norms as old-age appropriate. The researcher can therefore understand that there are meanings associated with tortoises that do not match with old age.

³ The practice of eating includes material activities, gestures and objects (sharing a meal, using spoons, knives and forks, a hand or chopsticks...), norms, knowledge and codified know-how (good table manners are taught to the children and followed by the adults, dietary knowledge, norms of cleanliness...), ends, meanings and emotions associated to these ends (satisfaction of the guests' hunger and pleasure, satisfaction of feeling one is providing pleasure and a convivial meal...).

In this case, how social meanings are associated with and shape eating practices is apparent, and the only way to highlight this is to use a comprehensive approach. Indeed, from a quantitative explanatory approach, the researcher would only observe a lack of tortoise consumption among the elderly, but they could not understand the real causalities at stake in people's lived reality.

In short, the qualitative study of "why people eat the way they eat" enables us to garner the justifications and strategies for eating (or not eating) this or that food; to highlight links of causality by interpreting the meanings, norms and related emotions between social status, age, life events, gender and food decisions; to design a good quantitative survey by shaping the questions effectively and formulating relevant hypotheses.

For example, only a qualitative approach can help us understand the variety of reasons people say they prefer meat from wild animals: because wild meat is chemical-free, because they feel it tastes better, because one can eat it with peace of mind (because it does not require killing a domestic animal that may serve as a kind of savings account).

b) Typology of consumers

The output of this task (WHY) can be a typology of household profiles, combining information collected in the previous tasks. The discriminant factors of this typology will be related to the place of wild meat in the food pattern, food security and the possibility for substitution (see box 2).

Box 2. Typology of households in relation to wild meat consumption (based on the example of Binga, Zimbabwe)

Type 1. Rural poor households suffering chronic food insecurity. These households are mostly headed by women (the men having migrated to town) and are poorly integrated into the market (no cash crops, no cash income). Food consumption mainly relies on home production (maize, beans) and food aid. Domestic meat is consumed during special events (weddings, funerals). Home-raised chickens are rarely consumed but rather exchanged with cereals during the lean season. Wild resources contribute to the diversity of the diet (wild fruits and meat). Wild meats are mainly rodents, birds, frogs, and insects collected by women and children during the rainy season. This activity is highly time consuming and is associated with pest management (crop protection). In "good years" (good rain), cereal production is relatively abundant, home-raised chicken are consumed at home and replace wild meat consumption. Securing access to water (through irrigation) will give access to home gardening as a source of food diversity and income and could decrease pressure on wild resources.

Type 2. Rural households with access to cash crops and irrigation. These households are integrated into the market for food access, regularly buy chicken, fish or wild meat for home consumption at their local market. They have a diversified diet (thanks to home gardening) and food insecurity is only conjectural (years of severe drought). Children in charge of herding or protecting crops from birds, hunt birds and rodents and consume them as snacks. Wild meats (antelopes) are purchased from local hunters for special events and can be substituted with other red meat such as beef meat depending on relative prices (cross-price elasticity). Improving market access for cheaper red meat could decrease the demand for wild meat from this type of household.

Type 3... etc.

9. Organization of work

a) The different steps

As indicated above, the study should begin with the collection of secondary data, including data collected in the context of the SWM project. For example, R1 provides information on the regulation in relation to wild meat consumption and facilitates the understanding of the rules that frame wild meat consumption; R2 provides an inventory of the wild species available locally, which helps to precisely identify the species within the edible space; R3 provides a description of the food market chains, contributing to the understanding of the foodscape etc.

For the interviews, we propose an interview guide. This guide is given as an indication and must of course be adapted to the public studied. In the introduction of the interview, the interviewer should insist on anonymity and distance themselves from any kind of wild meat regulation authorities, explaining that regulating is not their job. They will explain that the study has a comprehensive purpose in that it aims to understand the importance of any wild meat consumption, including small animals such as rodents or insects, in the food habits of people living in the area. An agreement form has to be signed by the respondent, see in annex 2.

All the topics cannot be addressed with one same household, as the interview will be too long. It is recommended to apply section 1 to all respondents and then to have a set of interviews focusing on section 2 (week 1 for example), another set on section 3 (week 2) another set on section 4 (week 3).

b) Interview guide

The guide is divided into four main sections:

1. Sociocultural characteristics of the studied person/people
 - Gender
 - Age
 - Occupation
 - Level of education
 - Composition of the household
 - Consumption unit (for example in case of polygamous or multigenerational household, there is a need to define clearly on which unit of consumption will focus the interview)
 - Ethnicity
 - Place of residence (and as a consequence distance to road, to market...)
2. Description of the consumption forms (Food social space: Poulain, 2017)
 - Meanings of “wild meat”, “game meat”, “bushmeat”
 - More or less valued and considered as “edible” wild meats, disgusting wild meats
 - Channels of supply, access
 - Main dishes, importance for the interviewee
 - Contexts, places, people sharing the meal, times of wild meat consumption (especially during festivals, daily times, lean periods)
 - Possibility of substitution with other types of meat
 - Association of wild meats with social status (wild meats for the poor or rich?)
 - Risks associated with wild meat consumption
3. Changes in wild meat consumption (WMC) practices and patterns
 - Links between transformation of WMC and biographical events (age, disease, death/disease of a relative/friend, pregnancy, parenting, change in the family composition, move, migration, encounter, change in occupation...)

- Links between transformation of WMC and wider events (economic crisis, agricultural shortage, political crisis, climate crisis, health crisis...)
 - Links between transformation of WMC and the evolution of wildlife as a resource for living
 - Desirable, possible, wished transformations of WMC, according to the interviewee
4. Social roles possibly related to WMC practices
- Importance of personal involvement in WMC, production, hunting
 - For example, teenager and small hunting, father and providing meat (or resources from wild meat) to the family even in scarce times, female caring roles and wild meat cooking, gender identity and male/female wild meats...

c) Organization of the report

The report will include the following sections:

1. Introduction. Brief presentation of the context and methodology of the study (including who conducted it, when, what time of year, how many people were interviewed...).
2. Context. Synthesis on the bibliographic review on food consumption (at national or regional level), based on quantitative and qualitative secondary data.
3. Presentation of the studied area. This presentation will highlight the diversity in the socio-economic status of households in the area and their access to food and resources in general. This presentation will avoid providing general averages, since averages hide diversity and potential complementarity and interdependency between households and areas.
4. Results of the qualitative study.

The presentation of the results will follow the different points addressed in this guide

(what/who/how/when/why), based on the different outputs (tables, figures, etc.) that require comment.

5. The conclusion will focus on:
 - **The contribution of wild meats to households' food security.** Food insecurity can be assessed based on the number of daily meals, the diversity of food consumed and the duration of the lean period. Contribution of wild meat can be assessed based on the importance of wild meat in the edible space (section WHAT) in particular for food insecure households or vulnerable people (section WHO), during the lean period (WHEN), and when its main function is nutritional (WHY).
 - **The options for substitution** will be presented according to the different household profiles. Specific attention will be paid to households where wild meat is important for food security, remembering that the aim of the project is to ensure that the protection of wildlife does not impact household food security. Relevant options for substitution will be presented as well as their conditions of access (access to production assets, market integration, food preferences). Taking into account the diversity of households will enable the proposition of adapted and complementary solutions that acknowledge the idea that "one size does not fit all".

10. References

- International Federation of Red Cross and Red Crescent Societies. 2006. How to conduct a food security assessment. A step-by-step guide for national Societies in Africa. International Federation of Red Cross and Red Crescent Societies, Switzerland, Geneva.
- Lepiller, O., and M. Dutilly. 2018. Consumption of wild meats in Zambia and Zimbabwe: A review of the literature for the Sustainable Wildlife Management project. CIRAD, Montpellier.
- Poulain, J.-P. 2017. The Sociology of Food. Eating and the Place of Food in Society. Bloomsbury Publishing, London.

ANNEX 1. Proportional piling

SOURCE: International Federation of Red Cross and Red Crescent Societies, 2006. *How to conduct a food security assessment. A step-by-step guide for national societies in Africa*. Switzerland, Geneva: International Federation of Red Cross and Red Crescent Societies.

How to do proportional piling

Proportional piling helps you to estimate *quantities and proportions*, especially when you work with people who are not used to quantifying certain information. Proportional piling is often used to find out about the *relative importance* of different things. For example, you want to know the proportion of income that a family receives from several different sources, or what the family's main expenditure is: their food consumption or ways of obtaining their food.

In addition to helping us to quantify issues, proportional piling is a good facilitation tool. In a group, giving people an activity of this kind can break down barriers. It can also act as a focus for discussion. Typically there is a lot of debate about the relative size of the piles and this encourages participation and enhances accuracy.

It can be very useful to do such an exercise twice during the food security assessment, once referring to the *normal* situation, the situation before a crisis, and once referring to the *current* situation. In this way you can detect how a crisis has changed the situation.

It is important to note that you should not always do proportional piling for all of the subject areas of income, expenditure, food consumption, and how they obtain food. It will take a lot of time and people will lose interest. You can vary and choose the ones you do through proportional piling, as long as you do the same frequently throughout the assessment. In this way you can compare different groups and areas and differences over time for each group or area. However, it is certainly crucial to ask about food consumption patterns; make sure you always include this (especially during focus groups discussions with women).

To undertake a proportional piling, you will need about **100 dried beans** or stones, beads or anything similar of the same size. Make sure you have some in reserve since you are most likely to lose some during your travel. It is important to always start this technique with approximately 100.

Example: proportional piling for source of income

Explain the objective of the exercise to the people. That is, you would like to know what income sources they had in a *normal or average* year. Ask them to name their main sources of income.

List these and then ask them to divide up the beans according to the relative importance of each income source. They may have received income from selling milk and producing wheat, with wheat providing twice as much as milk. In this case, the wheat pile would contain about 70 beans, while the milk pile would contain about 30.

Then you could ask them to repeat this process with regard to their *current* income sources. For example, a bad harvest due to a drought might have reversed the situation: their income from milk is now twice as much while the wheat now only generates a small income.

Examples of sources of income:

- Crop sales
- Milk and other dairy sales
- Livestock sales
- Labour and employment for wages
- Sale of wild foods
- Trade (transport, resale of goods)
- Craft making (mats, baskets, pots)
- Sale of firewood, charcoal
- Gifts, allowance, *zakat*

Example: proportional piling for sources of obtaining food

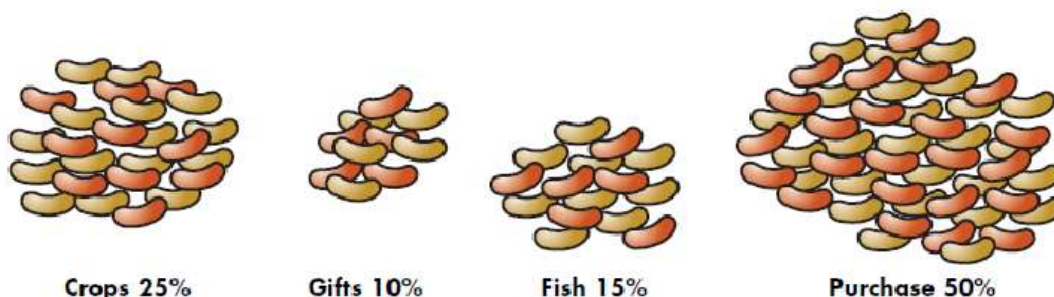
During a focus group discussion the people tell you that in *normal year* on average they obtain food in the following way:

- own crop production – they put 60 beans on that pile (meaning 60 per cent);
- purchase – they put 15 beans on that pile (meaning 15 per cent);
- fishing – they put 10 beans on that pile (meaning 10 per cent); and
- barter or exchange – they put 15 beans on that pile (meaning 15 per cent).

Examples of sources of obtaining food:

- Own crop production
- Own livestock products (milk, meat)
- Purchase or exchange in terms of labour (food for work)
- Wild food
- Fishing, hunting
- Gifts of food
- Barter
- Loans
- Stocks
- Relief food
- Food at work

The focus group does the same exercise for the *current* situation, this is the result:



Source: Reference 7

This means that the situation has changed: Their crops are not sufficient anymore to feed them and they need to purchase much more food nowadays. Originally they were purchasing 15 per cent of their food, now that figure has risen to 50 per cent. This may mean that people are using their assets to purchase food. Now you have to look more in-depth with the group to see to what extent this is a damaging coping mechanism in the long-term.

Example: proportional piling for source of expenditure

- Explain to the people that you would like to know the main expenditures in an average year.
- List the main ones. For example they may mention food, household items, drugs, school and health care. Ask them to place the highest number of beans for the highest expenses, and the lowest number of beans for the lowest expenses.
- Do the same exercise for their current expenses.

Examples of sources of expenditure:

- Food
- Household items (soap, clothes)
- Water
- Inputs: livestock drugs, water for livestock, rent for land, seeds, fertiliser, tools)
- Firewood, charcoal, fuel
- Gifts, zakat
- School (fees, material, uniform)
- Taxes
- Milling
- Medicine and consultations

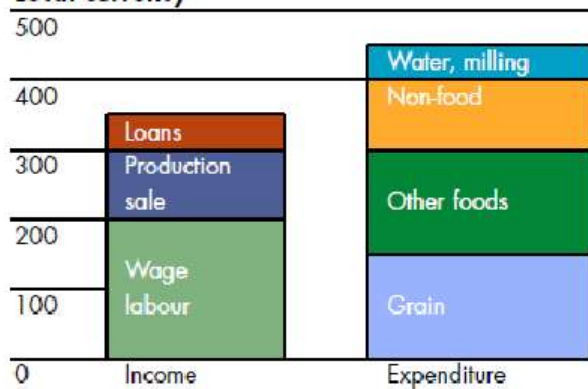
During the discussion people give you the following information:

Expenses in a normal year	Beans	Current expenses	Beans
Food	50	Food	74
Education	15	Education	8
Non-food items	13	Non-food items	5
Taxes	11	Taxes	9
Charity	5	Charity	1
Health	6	Health	3

Clearly this community has shifted its expenses towards food; from 50 per cent in a normal year to 74 per cent in the current situation.

Note: If you have both *income and expenditure patterns* in similarly-expressed values, you can make useful comparisons. For example, the community tells you that on average their **income** is 350 of the local currency, of which sale of production brings them in 100, wage labour 200, and they take loans for 50. Assuming they give you similar information for their **expenditure** (they spend 300 on food including grain, 50 on water and milling and 100 on non-food items), you can then make a comparison and see to what extent they are earning more than they spend, or vice versa.

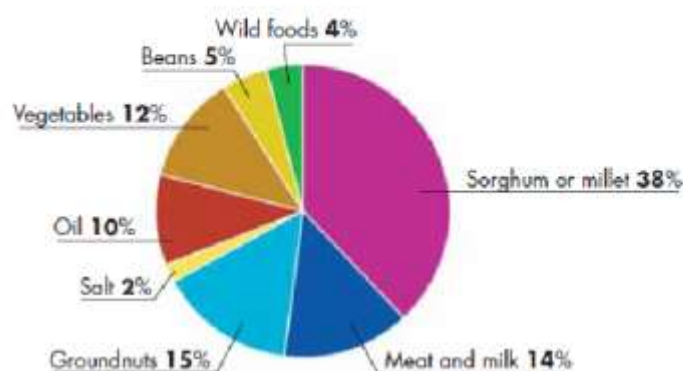
Local currency



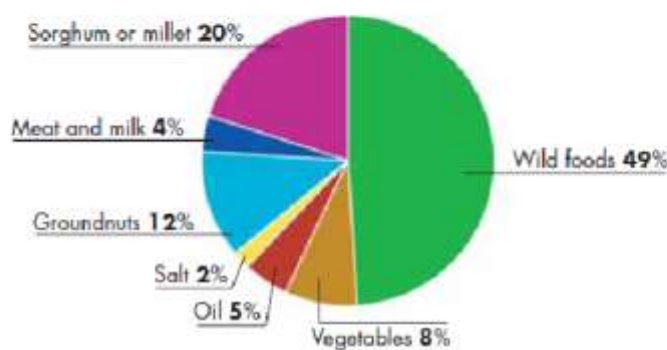
Example: proportional piling for food consumption

- Explain to the people that you would like to know what they normally eat in an average year.
- List the main food products and ask them to place the beans in proportion to the quantity of food for each category. It can help you if you ask the people to bring a little bit of the food, for example a handful of grain, or a handful of vegetables, so they can pile up the beans behind each group. However, it is easier for you to take along some of those products in a small plastic bag, each symbolizing the main food groups; a few beans, grains, tubers, dried meat, salt, groundnuts, a paper label of oil. It makes the whole exercise easier and experience shows that people are very interested and see it as a kind of game.
- Do the same exercise for their current food consumption and compare both.

Composition of diet in an average year



Composition current diet



The results show that the community put four beans (4 per cent) for wild foods in a diet in a normal year but 49 beans (49 per cent) for wild foods in the current diet. This clearly illustrates that their food consumption patterns has changed, and that they might have severe problems with obtaining enough food for their families.

It is important to verify whether there are differences in consumption patterns between men and women, either by asking directly or by doing this proportional piling in a group with men and a group with women.

ANNEX 2. Attendance and agreement form

Participants to the study need to sign an agreement form. Here is the example of the agreement form used for the Kaza site.

Note also that, for each site of the study, the study needs to be reviewed and approved by an institutional review board (IRB).



Site :

ATTENDANCE LIST

SWM

DATE : ____/____/____

We understand that the purpose of the Interview/ focus group discussion/ workshop is to discuss food consumption habits in the area of the Swim project
We agreed with these 4 points :

1. Voluntary participation
2. Pictures taken during the workshop could be used for the project documentation;
3. Collected information will only be used for the purpose of the project;
4. The attendance list will be used as a record of participation through out the project

	First name	Last name	Organization	Position	Gender	Telephone	Email	Signature
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