

July 2020

Why Eat Wild Meat?

Factors affecting the success of alternative
protein projects

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About the project

For more information about this report, or the Why Eat Wild Meat? project, visit www.iied.org/why-eat-wild-meat, or contact:

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1. Introduction

Hunting wildlife for meat is widely practiced across countries of sub-Saharan Africa (SSA). In many SSA countries the scale of wild meat use is widely understood to be unsustainable and wild meat hunting is viewed as an important conservation issue. Significantly, wild meat is a key source of macronutrients (eg protein and fat) and micronutrients (eg iron and zinc) for millions of people. As such, the impact on biodiversity from unsustainable hunting pressure also represents a significant food security issue – especially for those living in rural areas in SSA who have limited access to affordable alternatives to wild meat (Bennet 2002, Brown and Williams 2003, Fa et al. 2003, Milner-Gulland and Bennett 2003).

In response to conservation and food security concerns, many NGOs and government bodies have undertaken projects to reduce wild meat hunting and consumption. These have included providing wild meat ‘alternatives projects’ including *livelihood alternatives* for hunters (such as new crops or farming techniques) and *alternative protein* sources to rural and urban consumers (for example, through fish and livestock farming or captive-bred rearing of wild species). Focusing particularly on *alternative protein* projects, this short project report summarises results from an online survey and review of project documents to understand the factors that affect the success of alternative protein (meat, fish, insects etc) projects.

In practice, there are clear limitations to the logic – and particularly the assumptions – that underpin alternatives projects (Wright et al. 2016), and there is limited evidence of their effectiveness (Roe et al. 2016; Wicander and Coad 2018; van Velden et al. 2018). Regardless, the use of alternative livelihood and alternative protein projects remains prolific, especially as a tool to respond to conservation concerns of unsustainable exploitation of wildlife. They are also still widely seen as having potential, amongst a suite of responses such as devolved governance, robust law enforcement and so on (CBD 2017), to create incentives for communities to reduce hunting for wild meat. For example, the provision of small livestock (eg pigs, chickens, goats), fish farming services, or captive rearing of wild species (eg cane rats, giant rats, porcupines, and guinea pigs), at a sufficient scale and with market access, could create incentives for rural communities to steward their wildlife resources (Cawthorn and Hoffman 2015; Wilkie et al. 2016).

Our efforts are part of the Darwin Initiative Project [Why Eat Wild Meat?](#) which focuses on the Dja Faunal Reserve in southeast Cameroon – a rainforest UNESCO World Heritage Site notable for its diversity of primates. The significance of wild meat consumption in Cameroon is illustrated by the gross annual economic benefit of wild meat consumption to Cameroon being estimated at more than €142 million (Lescuyer and Nasi 2016). IIED, the University of Oxford and The Conservation Foundation are collaborating to understand why those living around the periphery of the Dja Faunal Reserve are choosing to eat wild meat, and what they want from initiatives to develop alternative protein projects (if they want them all). We will use our findings to support improvements to the way alternative protein projects are designed and implemented around the reserve and elsewhere in SSA.

This project report focuses on surveys of policy makers, practitioners and academics working in SSA and their views on why people eat wild meat and factors affecting the success of wild meat alternatives projects. Additionally, we share results from a review of wild meat alternatives projects being implemented across SSA and the factors reported as positively and negatively affecting success.

2. Methodology

We designed two online surveys using Survey Monkey and distributed these via regional WhatsApp Groups (for example, the Cameroon WhatsApp Group of the People and Conservation Learning Group which include experts working on conservation and development issues) Twitter and two electronic mailing lists (People and Conservation Learning Group and IUCN Sustainable Use and Livelihoods Specialist Group). The surveys were also shared at a project launch event in Yaoundé – where we made French and English version of the surveys available in paper format. The first survey explored the reasons why people consume wild meat, and the second survey asked questions related to the factors affecting the success of wild meat alternatives projects (ie alternative livelihoods and alternative protein projects). Survey 1 had 12 questions and Survey 2 had 14 questions. Respondents were free to skip a question where they did not have an answer. The first survey was targeted at policy makers, technical staff and researchers working in SSA, the second survey was targeted at practitioners, technical staff and researchers implementing wild meat alternatives projects in SSA. The surveys were designed by the Why Eat Wild Meat? project team including the authors of this project report (IIED) and colleagues from Oxford University and The Conservation Foundation.

In addition to the surveys we undertook a desk review of project reports and websites. Initially, we had intended to undertake a literature review to understand the key factors that affect the success of wild meat alternatives projects for achieving food security and biodiversity conservation outcomes. However, we found limited discussion in peer reviewed literature on the factors that affect the success of wild meat alternatives projects, and this has been noted elsewhere by other reviewers (eg Swamy and Pinedo-Vasquez 2014; Wicander and Coad 2015, 2018). We did not have the time to do an extensive search of grey literature, but we expect this also applies given our experience from a previous review (Roe et al. 2016).

After finding limited literature, we took the decision to build on Wicander and Coad's (2015, 2018) review of alternative wild meat projects in west and central Africa. We began by downloading Wicander and Coad's review (which is [available online in spreadsheet format](#)). Using existing references in the review and an online search engine, we looked for further information on these projects including factors positively and negatively affecting success and input all information into a spreadsheet. To find further alternative wild meat projects from all SSA and beyond Wicander and Coad's (2015, 2018) review, we also searched the websites of 25 donor agencies and conservation-focused organisations, as well as 24 development focused organisations (listed in Annex 3). The final copy of the project inventory that we compiled is available online – [Project Inventory: Wild Meat Alternatives in SSA](#).

3. Results from our online surveys

3.1 Survey 1 – Why eat wild meat?

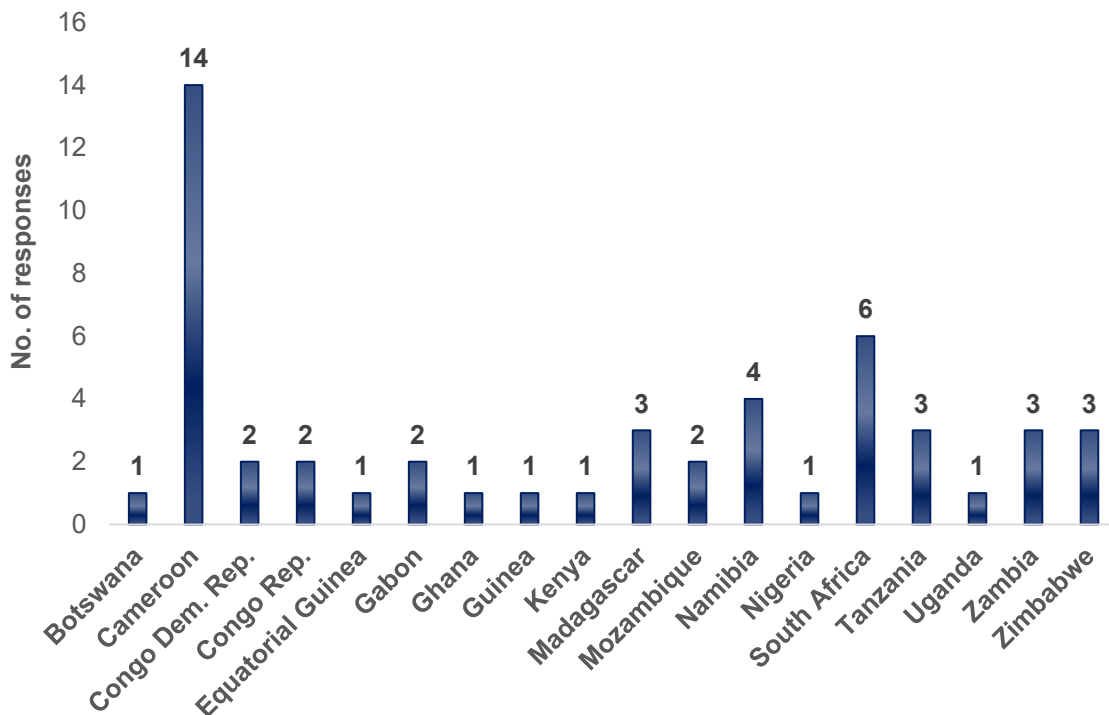
This survey was completed by 65 online respondents: 24 from international organisations and 41 from organisations based in SSA. Of these individuals, 25 were representatives of NGOs (eg Wildlife Conservation Society, Tropenbos), 18 were university or research institute employees (eg Kisangani University, Kenyatta University), eight were government staff (eg customs department, Ministry of Forests and Wildlife Cameroon, Cross River State Government) and there were 14 other respondents including members of Associations (eg Namibia Prof Hunting Association, South African Taxidermy & Tannery Association) and other individuals that chose not to share their affiliation. Respondents included senior managers, project managers, project coordinators, researchers, lecturers and technical specialists.

In this section we summarise the responses to key questions related to the drivers of wild meat consumption – the full questionnaire and responses are included in Annex 1.

Respondents answered questions selecting the countries where they had the most experience – with most respondents having experience in Cameroon (see Figure 1 below). This is not surprising given that the Why Eat Wild Meat? project fieldwork is based in Cameroon and so the project team were actively encouraging their network to complete the online surveys resulting in a higher response rate for this country.

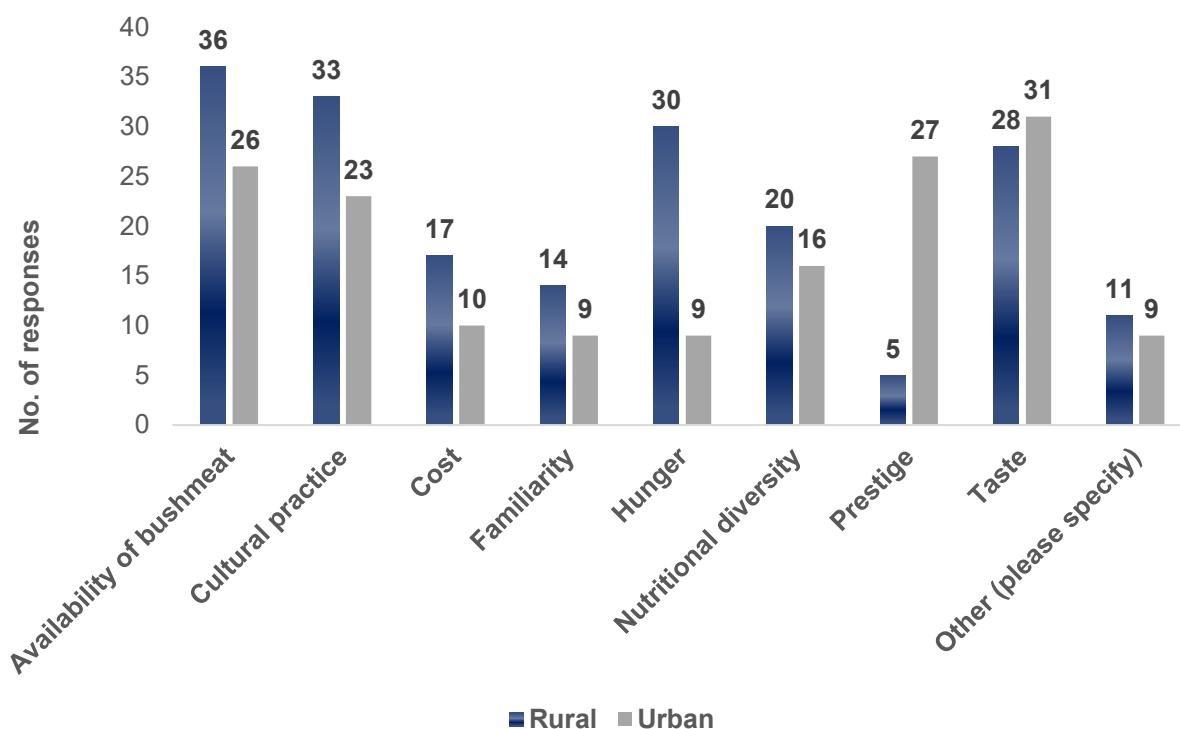
Note that not all respondents completed the full questionnaire. Respondents were given the option to complete questions 3 to 5 more than once to reflect experience from another country if applicable. For the purposes of reporting here, all responses have been grouped. Of the 39 people who answered questions 3 to 5 for one country, 12 respondents went on to answer the questions again to reflect experience from another SSA country. We indicate the number of responses captured for each of these questions alongside the figure.

Figure 1 – Country experience of the survey respondents, 51 responses



Respondents were asked what they see as the primary drivers of wild meat consumption in rural areas and urban areas of the country in SSA where they have the most experience. In rural and urban areas, key drivers included availability of wild meat, cultural practices, and taste. A key driver specific to rural areas included hunger, while in urban areas prestige was perceived by respondents as an important driver. For rural areas “other responses” submitted by respondents included logging and mining (an important emerging issue), poverty, health and weak regulations. For urban areas “other responses” included economic pressure, wildlife trafficking, social occasions and health.

Figure 2 – Perceptions of the primary drivers of wild meat consumption in rural and urban areas 51 responses



We asked respondents to elaborate on each of the primary drivers they selected. For the top four drivers in rural areas responses included:

Availability of wild meat

- “Certain communities understand the ecological niches of certain animals and their way of life, making it **easy for them to hunt**.”
- “It is generally the **only available source of protein** in most remote rural areas”
- “Game meat is **periodically available as the result of trophy hunting** and own use hunting in 45 conservancies and on innumerable game farms.”
- “It is very available and is often the **easiest protein source to find in the wet season**.”

Cultural practices

- “Commonly used for **gifts, ceremonies, personality cults**.”
- “Cultural practices apply in the forest areas for Baka and Bantou. Baka's consider bushmeat as a **culture inherited from ancestors**.”
- “It is seen culturally as a better alternative to beef and others and mostly used for **traditional delicacies during festivals or occasions**.”

- “Certain wild meats are consumed because there are **traditional beliefs** associated with them. For instance, hippo meat is said to be fed to pregnant women. There is also a strong link between hunting and cultural practices.”

Hunger

- “**Hunger is the main driver** in the rural areas. Populations are poor and there’s not much choice of meat.”

Taste

- “Many people claim to **prefer the taste** of bushmeat to other types of meat available.”

For the top four drivers in urban areas, responses included:

Availability of wild meat

- “**Bushmeat is still widely available** in the markets of many urban centres.”

Cultural practice

- “**Bushmeat is needed for specific ceremonies and dishes.**”

Prestige

- “**Bushmeat consumption is recognised as a delicacy and prestigious.**”
- “When bushmeat is expensive it **becomes more rarer**, generating even have more attraction. This also explains why it **feels prestigious** to be able to have bushmeat on the table
- “**Status symbol** and form of delicacy.”
- “**Mostly consumed by the rich and top officials**”

Taste

- “In the advent of rural-urban migration, it is not uncommon that people who grew up in rural areas and have an acquired taste for bush meat migrate in search of greener pastures. However, such migration does not necessarily mean they have lost their **gastronomic memory**. Given the chance and most importantly the funds, people would like **to satisfy this taste occasionally.**”
- “The principal driver of urban market demand is **taste**, but also linked to both **modern culture** (health, connection to nature) and **tradition.**”

Additionally, respondents were asked about the differing roles of women and men in feeding their family wild meat in rural and urban areas. Responses typically described men as undertaking the role of hunting as a tradition and obligation for providing for their families. There were differences in the way women’s roles were described. Some suggested women play a minor role restricted to cooking, others suggested that women play a key role in demanding wild meat needs for feeding their families.

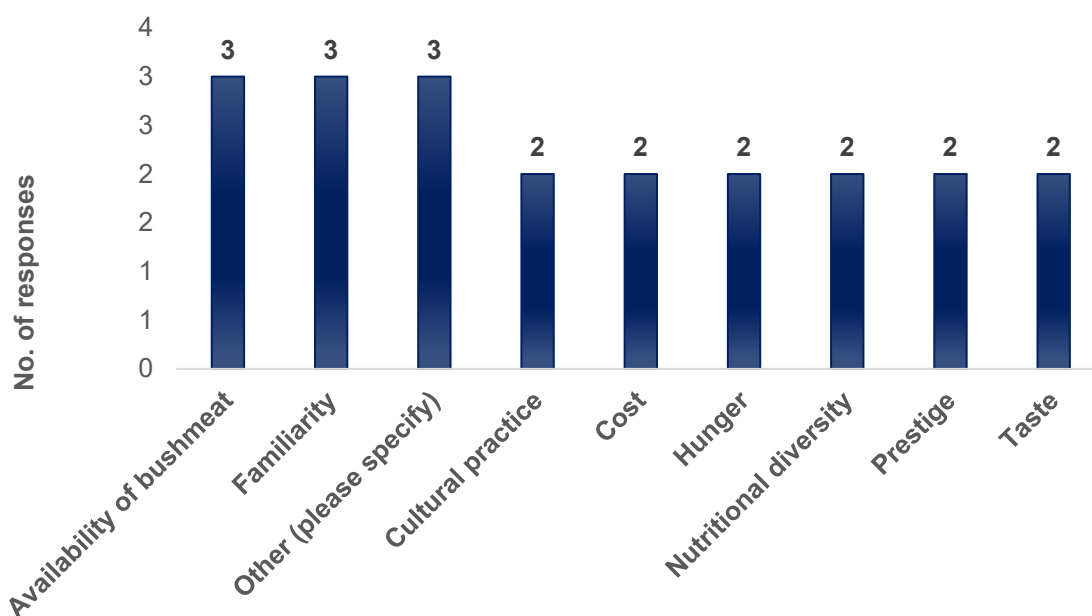
3.2 Survey 2 – Factors affecting the success of wild meat alternatives projects?

This survey was completed by 39 online respondents –15 from international organisations and 24 from organisations based in SSA. Of these individuals, 22 were representatives of NGOs (eg World Wildlife Fund, Fauna and Flora International), 10 were university employees (eg African Wildlife Economy Institute, Makerere University) and there were seven other individuals that chose not to share their affiliation. Respondents were typically project managers, project coordinators, researchers or other technical specialists.

In this section we summarise the responses to key questions related to the factors affecting the success of wild meat alternatives projects – the full questionnaire and responses are included in Annex 2.

Fourteen of the respondents were working on an active wild meat alternatives project (ie an alternative livelihood or alternative protein project) in countries across SSA – mostly to address conservation and livelihoods improvement, though seven of the projects had the primary aim of improving food security and three of the projects improving human health. Eleven of the respondents with active projects reported that they considered the drivers of food choice with eight of these respondents detailing the types of drivers they took into account, as illustrated in Figure 3 below. Note that the respondents could select multiple drivers and that ‘other’ referred to responses given by respondents including legality and regulation related to wild meat consumption and the intrinsic values of species.

Figure 3 – Drivers of wild meat consumption addressed in wild meat alternatives projects



Only eight of the 14 respondents with active projects were able to judge whether they were achieving their intended results – the others noted it was too early to tell. Of the eight respondents that could make a judgement, six respondents indicated that their project was partially achieving its intended results, one project was reported as fully achieving its intended results and one project was reported as not achieving its intended results. Lessons learned from respondents included that wild meat alternatives projects need time and patience as changing behaviour is difficult. Key factors that were perceived as important for designing effective alternatives protein projects included:

- **“Taking in account local people wills and reality.”**
- **“It should influence the underlying *social norms* of unsustainable wildlife use and needs to be implemented over *timescales long* enough to achieve this.”**
- **“Success also depends on effective and credible *local governance*.”**
- **“The *diversity of needs and livelihood barriers* for people in communities needs to be considered, for instance if there is a high proportion of transient immigrants, they are likely to respond best to different projects than those with higher social capital.”**
- **“Determining what the *drivers* of wild meat off-takes are and how they can best be managed.”**
- **“Focus on the needs and desires of the beneficiaries and work through a *shared leadership* to determine what is appropriate.”**

There was scepticism shared by a few survey respondents on the efficacy of alternative protein projects. A good illustration of this includes the following response:

“Bushmeat alternatives are generally a load of rubbish as they are not usually pro-conservation. Better to work with and incentivise more sustainable bushmeat markets.”

Survey respondents were then asked two further questions. First, respondents were asked how important do you think it is to consider food choice in the design and implementation of wild meat alternatives projects? This question was answered by nine respondents, with only two respondents believing it is ‘not so important’ (see Figure 4 – Respondents perceptions of whether food choice is an important factor to consider in the design and implementation of wild meat alternatives projects below). Finally, respondents were asked was how they felt about the effectiveness of wild meat alternatives projects for achieving food security, livelihoods improvements and biodiversity conservation. Again, there were nine responses to this question and notably only one person felt that wild meat alternatives projects were effective for biodiversity conservation.

Figure 4 – Respondents perceptions of whether food choice is an important factor to consider in the design and implementation of wild meat alternatives projects

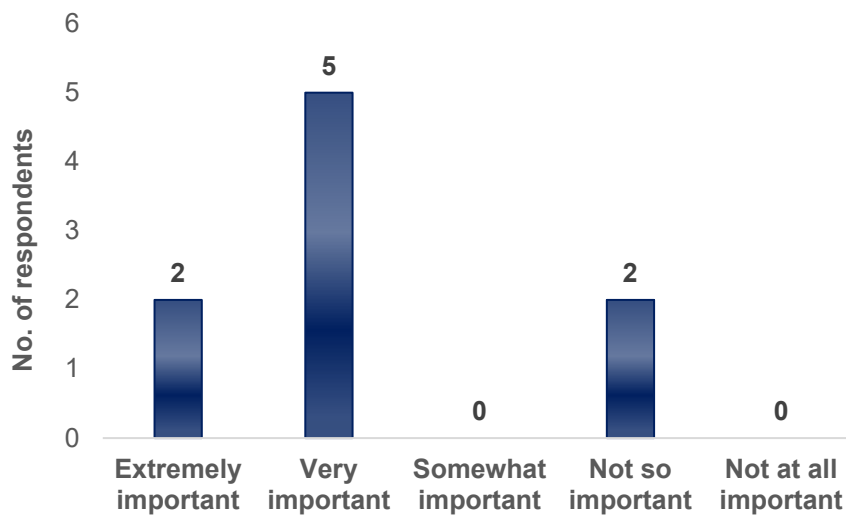
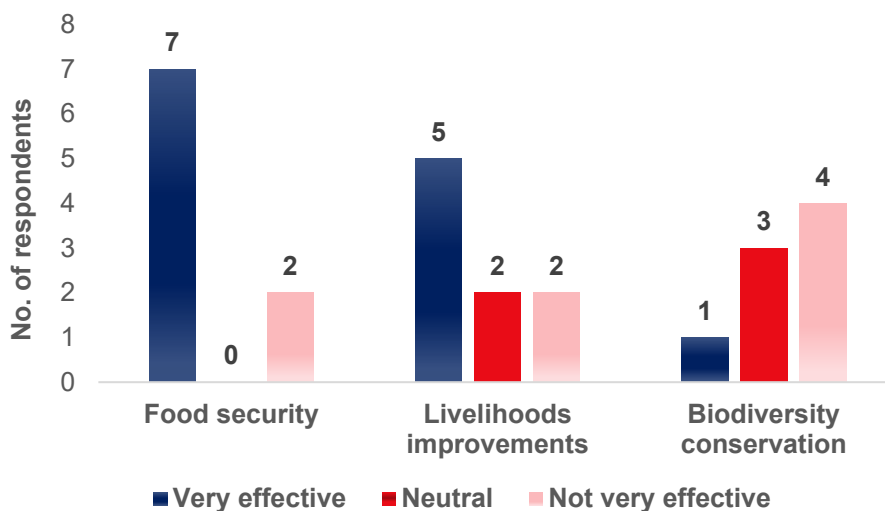


Figure 5 – Respondents feelings about whether wild meat alternatives projects are effective at achieving food security, livelihoods improvement or biodiversity conservation



4. Results from our review of project reports and websites

In total, our project document and website review identified 117 alternative protein projects – 84 from Wicander and Coad’s review (2015, 2018), and 33 from our review of project reports and websites. However, we found details on the factors affecting success – either positive or negative – for only 26 projects, and often, the detail was limited. Projects were all implemented in SSA and included experience from 25 countries, particularly from Cameroon, Democratic Republic of Congo, and Ghana. Common alternative protein projects included introducing goat, cane rat, fish, pig, poultry, and/or snail farming. The final copy of the project inventory that we compiled is available online – [Project Inventory: Wild Meat Alternatives Projects in SSA](#).

The following factors were identified as positively affecting the success of alternative protein projects.

Factors affecting success – positive

- **Understanding the context.** For example, one project concluded that cane rat farming shows better prospects of success in peri-urban than in rural areas where the animals are abundant and are captured to reduce damage to food crops. However, another project found that they had little success raising cane rats for an urban market as wild meat demand was based on luxury items and so sales of cane rats were low and the impacts on the market undetectable. **Building on existing expertise, project partnerships and coordination** with clear roles and responsibilities outlined from project inception.
- **Using participatory and rights-based approaches** to project development including meetings with local communities (and specific target groups) to discuss project activities and to seek interactive participation, joint analysis of the challenges/threats/problems and joint action planning.
- **Asking people about their preferred alternative species** and priorities.
- **Working with community institutions** (eg project implementation committees) to enable full community participation throughout the implementation of the project and feedback to project managers.
- **Creating reliable communications channels** so project participants can request help (eg WhatsApp).
- **Researching where to source founding stock.** For example, one project found success in building a breeding centre to provide founding stock to candidate farmers and training local technicians.
- **Providing veterinary care** and technical support for improving animal husbandry. This includes paying attention to housing, appropriate feed at various life stages, inoculations, monitoring and hygiene.
- **Providing high quality and affordable inputs** by offering training and guidance to local suppliers (ie not just project participants) to help them improve the quality of inputs for sale.
- **Providing technical training, workshops and demonstration projects** to allow project participants to develop the skills needed for long-term viability of the alternative protein. This should include helping farmers to monitor their own stocks so they can understand their productivity and the impact of their decisions on productivity.
- **Forming groups/cooperatives** to make it easier for partner organisations to provide follow up support.
- **Setting up a rigorous monitoring and evaluation strategy** with regular field monitoring visits and interactive meetings to boost interest, keep progress on track and identify important changes in beneficiaries and/or wild-farmed species so that issues can be quickly identified and addressed. One project found it valuable to recruited community monitors at each of their sites to assess beneficiaries monthly progress and offer regular assistance.

- **Creating links with the market.** For example, by facilitating meetings between producers, traders, and restaurateurs.
- **Providing training on identifying markets and up to date market information** to project participants.
- **Marketing alternative protein.** For example, one project supported guinea pig celebration days and cooking classes to promote and encourage the consumption and buying of guinea pigs.

The following factors were identified as negatively affecting the success of alternative protein projects.

Factors affecting success – negative

- **Difficulties identifying the project target group** (eg hunters, traders and consumers) due to people's fear of punishment. One project responded to this challenge by asking ex-hunters from a previous phase of the project to help with confidence in building meetings in the community to allow for a dialogue about the project with those that are hunting.
- **Challenges finding breeds of species** that are adapted to captivity, wild-captured animals can face high levels of mortality (eg cane rat).
- **Issues and delays with providing the equipment and inputs** necessary for *all* project participants.
- **Inadequate availability of finances for project participants** to acquire inputs, especially start-up costs.
- **Accessibility to fodder**, especially in the dry season.
- **Lack of project extension equipment** (motorbikes, vehicles) affecting in-community presence and support services for project participants.
- **Inadequate staffing** to provide on-hand support and project supervision.
- **Managing high mortality and disease** among captive species. One project noted that when farmed species die the project loses credibility and so every effort is needed to understand and address the root causes of mortality.
- Non-project participants **stealing animals** due to poor security features of enclosures.
- **Labour intensive and time-consuming practices** to captive rear species, especially in comparison to hunting.
- **Alternative protein products selling for negligible amounts** (eg snails), and/or important differences in income from alternative protein project versus hunting, with hunting being more profitable.
- **Inadequate understanding of the market.** For example, one project raised cane rats close to Libreville, but the market is mainly for luxury wild meat and immune to the availability of cheaper proteins. As a result, the sales of raised cane rats were low and impacts on markets was undetectable.
- **Marketing challenges** including competition with hunters depressing the price of the animal for sale.
- **Difficulties transporting** alternative meat to market including high transportation costs.
- Challenges with ensuring project participants manage finances appropriately, including any profits from sales due to project teams **overlooking the value of providing financial support/advice services.**
- **Ambitious project scale** targeting many communities over a large area with villages located far away from each other, and/or remote, so hard to access.
- **Difficulties in ensuring conditionality** or ensuring project participants gave up hunting.

- **Open resistance to bans on hunting** and farming certain species (eg cane rat) due to experiences with human wildlife conflict.

These factors – both positive and negative – provide useful hints for those designing alternative protein projects. There are clear learnings that stand out including making provisions for local community participation from design through to implementation, considering the merits of the alternative to hunting, clear communication channels and regular field visits to monitor progress and provide hands-on support, planning carefully to ensure timely access to high quality and affordable inputs, and providing expertise on marketing the alternative protein.

Finally, while we did not identify any peer reviewed literature that empirically explored the factors affecting the success of alternative protein projects – we did identify opinion pieces from experienced peers that suggested factors to account for when designing alternative protein projects. For example, Nathalie van Vliet has published extensively on hunting and wild meat consumption and has included clear insights on alternative protein projects in several papers including the following guidance.

Any alternative protein project needs to demonstrate a clear understanding not only of availability and affordability of the protein substitute, but also, crucially, consumer preferences in terms of habit, taste, cultural attachment, and symbolic value (van Vliet 2011). For instance, fish or caterpillars might be a more appropriate substitute than livestock or poultry in some contexts because of taste preferences and associations with village life (such as cultural attachments to ancestral roots) (van Vliet et al. 2010). Another important factor is the way in which protein alternatives are provided, this includes the location (eg market or door to door), the state (eg fresh, smoked or frozen) and the amounts that are sold (eg in small piles, per kilogram, or whole animal) (van Vliet 2011).

Added to this, it is important to underline that in rural contexts, the use of wildlife serves diverse purposes beyond generating income and providing a source of food. This includes as a strategy to reduce costs in crop production, a source of medicine, a means to reinforce social bonds, and to convey cultural identity (van Vliet 2018). Approaches to create alternatives will be inadequate, ineffective, and unacceptable to local people unless they are based on a mutualistic understanding of these diverse connections and values local people have with wildlife (van Vliet 2018).

A final emerging issue in the literature is the idea of seasonal 'meat hunger', a psychocultural form of hunger that could have negative psychological and physiological impacts. This concept has been introduced in discussion about African forest ethnic groups and underlines that wild meat is not just a source of protein but has more profound and less tangible values that cannot be fully replaced by meat substitutes (Dounias and Ichikawa 2017). This phenomenon is not widely researched or understood.

5. Next steps

The results from the online surveys and project website and document review provide useful insights for the project team. We will use these insights along with our field work research to explore alternative protein intervention preferences in communities around the Dja Faunal Reserve, Cameroon, to design a decision support tool for alternative protein projects in Cameroon and countries elsewhere in SSA and worldwide. This **decision support tool** will be for existing and new alternative protein projects and will guide project teams through the key drivers and barriers for designing and implementing successful alternative protein projects.

If you work on an alternative protein project or are designing an alternative protein project and would like to test run our decision support tool, please get in contact with IIED (francesca.booker@iied.org). We expect the first draft of the decision support tool to be available in July 2020.

We will also be conducting **follow-up online surveys** towards the end of this project in 2021. For these surveys we will take on board the feedback we received about the surveys outlined in this report. Some respondents noted that they would have preferred more opportunity to highlight the diversity of contextual issues that affect wild meat consumption – in particular, the distinction between legal, sustainable hunting, and illegal, unsustainable hunting. Respondents working in Namibia and South Africa underlined that hunting of wild meat is not illegal nor unsustainable and so for them does not share the same context as other countries in SSA. We will address these issues in our follow-up surveys.

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Annex 1. Survey 1 – Why Eat Wild Meat?

Total responses to the survey: 65 people

Q1 What institution/organisation do you currently work for?

Answered: 65

Cameroon	SSA	International
Government customs department (1 response)	Kisangani University (4 responses)	Bangor University (2 responses)
Living Earth Foundation (1 response)	Cross River State Government (1 response)	CIFOR (1 response)
Ministry of Forests and Wildlife (3 responses)	Frankfurt Zoological Society Zambia (1 response)	Cultivating New Frontiers in Agriculture (CNFA) (1 response)
Okani (1 response)	Kenyatta University (1 response)	FFI (2 responses)
Poverty and Conservation Learning Group – Cameroon (1 response)	Makerere University (1 response)	GIZ (1 response)
Solidarite Technologique (2 responses)	Namibia Professional Hunting Association (1 response)	Initiative for Leadership, Empowerment, and Development (I-LEAD) (1 response)
WWF Cameroon Country Programme Office (1 response)	Nature Conservation Board (advisory to Minister of Environment and Tourism of Namibia) (1 response)	Iowa State University (1 response)
	Organisation for the Conservation of African Wildlife (1 response)	Murray State University (1 response)
	South African Taxidermy & Tannery Association (SATTA) (1 response)	OceanCare (1 response)
	Tropenbos Ghana (1 response)	Rainforest Alliance (1 response)
	University of Cape Town (1 response)	The Last Great Ape Organisation (LAGA) (1 response)
	University of Dar es Salaam (1 response)	TRAFFIC (2 responses)
	WWF in East Africa (1 response)	UNEP-WCMC (1 response)
	WWF Kenya (1 response)	University of Oxford (4 responses)
	WWF Namibia (1 response)	Virginia Tech (1 response)
	WWF Tanzania (1 response)	Suez Canal University (1 response)
	Zambia CBNRM Forum (1 response)	Wildlife Conservation Society (1 response)
		ZSL (1 response)

Q2 What is your position within this institution/organisation?

Answered: 57, Skipped: 8

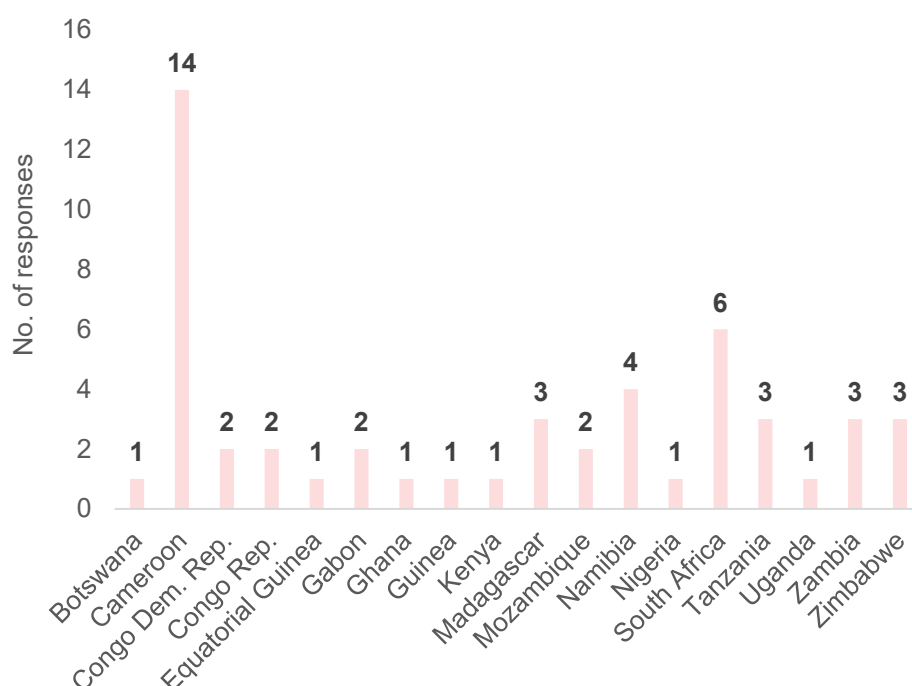
Answers included:

- Head of Airport Freight, Yaoundé (1 response)
- Scientists/Conservationists (4 responses)
- Professors and Lecturers (7 responses)
- Law Enforcement Officers (1 response)
- Researchers (8 responses)
- Technical Advisors and Specialists
- Students (4 responses)
- Directors and Senior Management (10 responses)
- Programme Officers and Coordinators (6 responses)
- Project Managers (3 responses)
- Consultants (2 responses)
- NGO staff (4 responses)

NOTE **Please note that the survey allowed respondents to answer the same set of questions on a second country if they desired. All these responses have been grouped below for the answers to questions 3 to 11. Of the 39 people who answered the first set, 12 went on to answer a second set, with 51 responses overall.

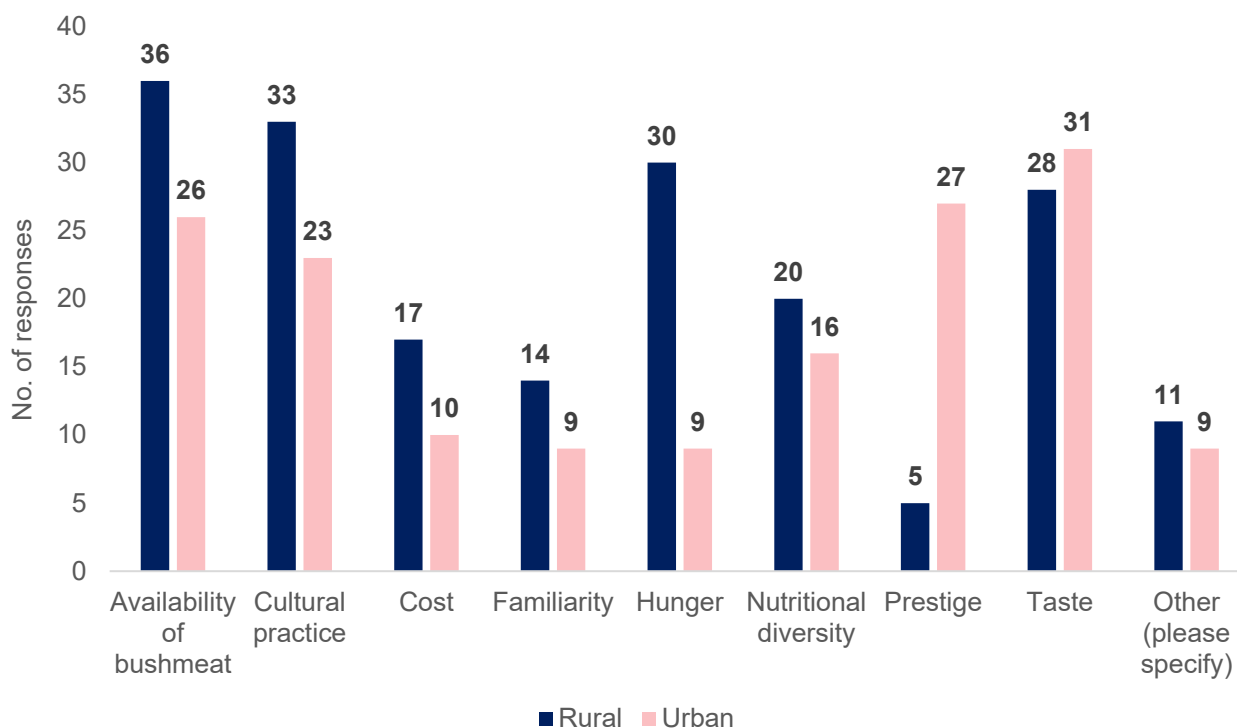
Q3: Select the country in SSA where you have the most experience

Total responses: 51



Q4: What do you think are the primary drivers of wild meat consumption in this country?

Total responses: 354. Please note multiple responses were allowed.



For **rural** areas other responses included logging and mining (an important emerging issue), pressure from urban areas, poverty, health, weak regulations.

For **urban** areas other includes economic pressure, wildlife trafficking, social occasions, health

Q5: Briefly elaborate on each of the selected drivers in rural areas**A selection of responses:**

Availability of bushmeat

- *Certain communities understand the ecological niches of certain animals and their way of life, making it **easy for them to hunt**.*
- *It is generally the **only available source of protein** in most remote rural areas.*
- *Game meat is **periodically available as the result of trophy hunting** and own use hunting in 45 conservancies and on innumerable game farms.*
- *It is very available and is often the **easiest protein source to find in the wet season** in Lac Tele. Also, when fish is abundant, meat is consumed less.*

Cultural practice

- *Commonly used for **gifts, ceremonies, personality cults**.*
- *Cultural practices apply in the forest areas for Baka and Bantou. Baka's consider bushmeat as a **culture inherited from ancestors**.*
- *During **weddings** you may be required to bring a particular species for meat.*
- *It is seen culturally as a better alternative to beef and others and mostly used for **traditional delicacies during festivals or occasions**.*

- *Certain wild meats are consumed because there are **traditional beliefs** associated with them. For instance, hippo meat is said to be fed to pregnant women. There is also a strong link between hunting and cultural practices.*
- *Deep-rooted cultural traditional and preference for all 13 major ethnic groups in Namibia, for **cultural festivals** but also other occasions.*

Cost

- *As there is no pastoralism in some of forest areas the population either hunts for their family or buys wild meat easily because it is **cheaper**.*
- *People who live in rural areas generally have access to bushmeat and the **cost is also low** because harvesting may not be as difficult as raising domestic poultry or other animals for food.*
- *A hunter has **only the cost of the cartridge** to take into consideration when providing meat for their family or for the market.*

Familiarity

- *Familiarity is bred by tradition and culture and this equally deals with the taste as you start eating bushmeat when quite young - so you **develop a liking or a particular taste** for it.*
- *Rural populations have been **familiar with bushmeat for generations**, so you cannot tell them spontaneously that they should not eat this particular food.*

Hunger

- ***Hunger is the main driver** in the rural areas. Populations are poor and there's not much choice of meat.*
- *Health and nutritional diversity*
- *People wish to eat things that are **nutritious, tasty and that provide nourishment**.*
- *Diets are dependent on rice and cassava and protein from animal sources is hard to come by. Although most of the forests in Madagascar are protected because of the high number of endemic and threatened species, it is an accepted practice among rural communities to use bushmeat to **supplement their diets and achieve better nutrition for their children**. This was exacerbated by the severe outbreaks of Newcastle Disease from 1990 to 2010 that decimated village poultry stocks and left villagers with little options for protein other than bushmeat.*
- *Game meat is considered much **healthier** than other red meats.*
- *People associate domestic meat "congelé" with not being clean or safe – **it's common to equate eating bushmeat with being "bio" or organic**.*

Prestige

- *Serving bushmeat **gives authority** to the donor*

Taste

- *Many people claim to **prefer the taste** of bushmeat to other types of meat available.*

Income

- *Bushmeat is the **primary and fastest source of cash income** for rural and forest dwellers who may depend on wildlife to alleviate periods of economic hardship (eg crop failures), or supplement their primary source of income, which is often agriculture.*
- *Poverty in rural area forces local populations to use bushmeat as a **complementary source of revenue**. The bushmeat is always sold in urban areas.*

Other

- *Wild meat in Namibia is desired by all population groups in Namibia. It's a legally available, cost effective source of protein. On freehold lands land owners are allowed to hunt, on **communal lands, communities are given own use quotas by government**, and in addition get wild meat from trophy hunting. Wild meat is used as both a basic source of protein as well as supplying the high end of the market in tourist restaurants and processed as biltong.*

Q6: Briefly elaborate on each of the selected drivers in urban areas

A selection of responses:

Availability

- *Bushmeat is **still widely available** in the markets of many urban centres.*

Cultural practice

- *Bushmeat is needed for specific **ceremonies and dishes**.*

Cost

- *In most cases **beef from cattle is becoming expensive** and so urban dwellers consider wild meat as an alternative.*

Familiarity

- *These are people who come from communities where wild meat is a staple in their diets. **It is what they have been eating all their lives**.*

Health & nutritional diversity

- *One of the most important reasons for bushmeat consumption in urban area is **nutritional diversity** because urban dwellers readily eat meat from other sources (poultry, cattle etc) but then have the means to buy bushmeat when it is available, even if it is expensive.*
- *It is perceived by consumers as a **healthy** food compared to industrial meats and consumer choices **ignore the risks associated with zoonotic diseases**.*

Prestige

- *Gifts*
- *Bushmeat consumption is recognised as a **delicacy and prestigious**.*
- *When bushmeat is expensive it **becomes more rarer**, generating even have more attraction. This also explains why it **feels prestigious** to be able to have bushmeat on the table*
- ***Status symbol** and form of delicacy.*
- *Mostly consumed by the **rich and top officials***

Taste

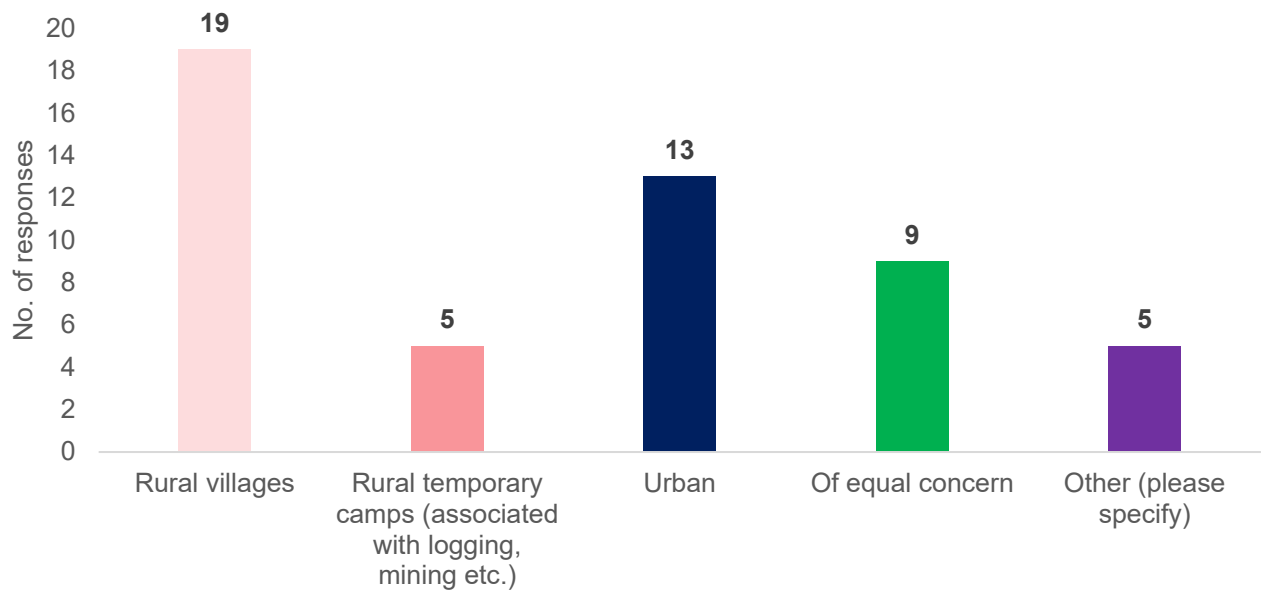
- *In the advent of rural-urban migration, it is not uncommon that people who grew up in rural areas and have an acquired taste for bush meat migrate in search of greener pastures. However, such migration does not necessarily mean they have lost their **gastronomic memory**. Given the chance and most importantly the funds, people would like **to satisfy this taste occasionally**.*
- *The principal driver of urban market demand is **taste**, but also linked to both **modern culture** (health, connection to nature) and **tradition**.*

Other

- ***Curiosity** comes in due to contact with other cultures. So often, I have heard people describe with much enthusiasm what a specific bushmeat eg antelope tastes like. With this new association and the desire to not be left out, people gain new ideas and bushmeat consumption is no exception.*

Q7: Which of these areas do you think is the greatest concern for driving wild meat consumption?

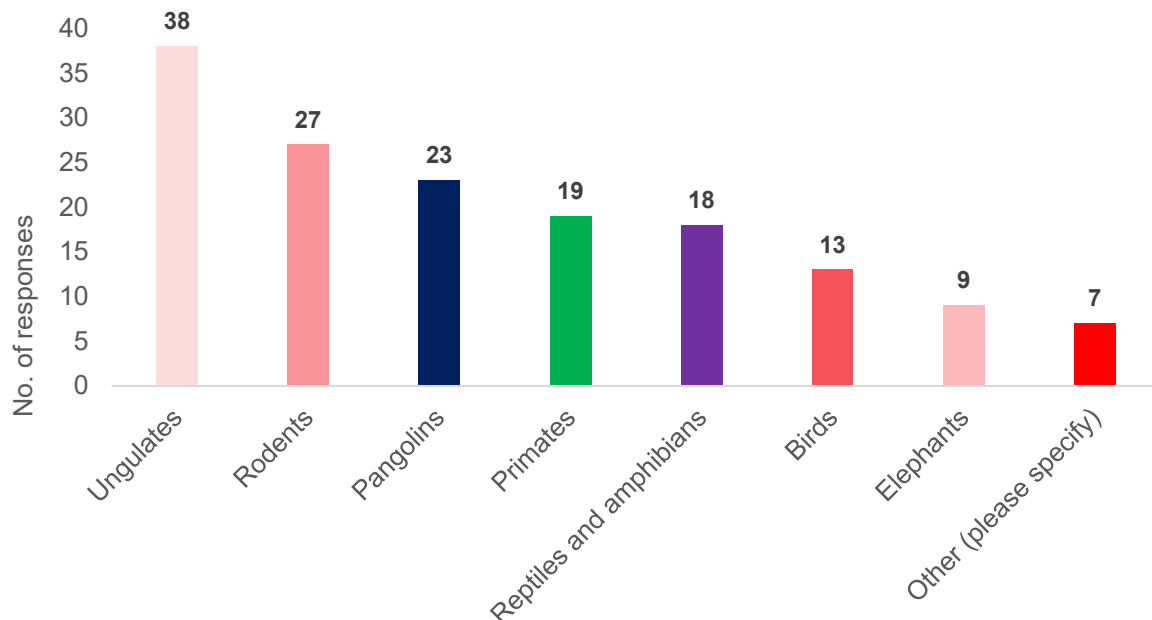
Total responses: 51



The other responses primarily pointed out that wild meat consumption isn't a concern in Namibia or South Africa, where it is legal and sustainable.

Q8: What are the primary species consumed as wild meat in this country?

Total responses: 154. Please note multiple responses were allowed.



Other includes mammals, warthogs, porcupines, crocodiles, buffalos and other marine species.

Q9: What are the differing roles of women and men in feeding their family wild meat?

Men

- *Men are hunters and by tradition have the obligation to provide for their families.*
- *Generally, men are the primary providers of bushmeat for their family and even if women need to cook bushmeat they look up to their husband to either give them the money to buy bushmeat or to bring in the bushmeat himself.*

Women

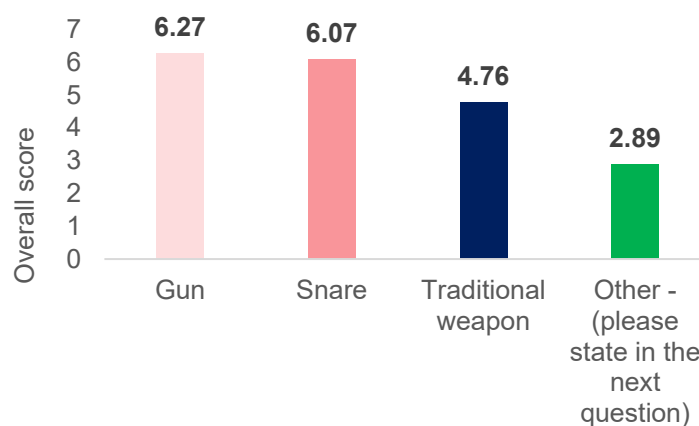
- *Women do the cooking.*
- *Women play a very minor role.*
- *Women are more or less restricted to cooking the meat but in the case of selling the meat both men and women are involved in the illegal bushmeat trade while only the females are involved in selling cooked bushmeat or bushmeat meals.*
- *Women dictate what is consumed in households and create demand for wild meat.*
- *Women drive the men to go out for bush meat.*

General

- *It depends on a number of issues such as household setup, eg male-headed or female-headed or female managed households, cultural issues, the geographical area location, poverty status etc*
- *Women are mostly in charge of the household and play a key role in deciding what the family eats. Growing up, my mom was never a fan of most bushmeat. My dad, however, is an avid bushmeat enthusiast. He will often buy it when he travels, but because my mom did not often prepare it, the appetite toned down. It is thus not surprising that none among my siblings cultivated a heavy taste for bushmeat. Had my mom been a fan, I am sure things would have been different. This makes the point that interventions aimed at wildlife conservation need to put women at the forefront. If you cure a man's taste for bushmeat, you would have cured one person, but if you change a woman's, you would have changed generations.*
- *In all Namibian groups there is no difference in meat consumption between men and women.*

Q10: Please rank the methods listed below according to which are most commonly used to hunt wild meat in this country.

Total responses: 51

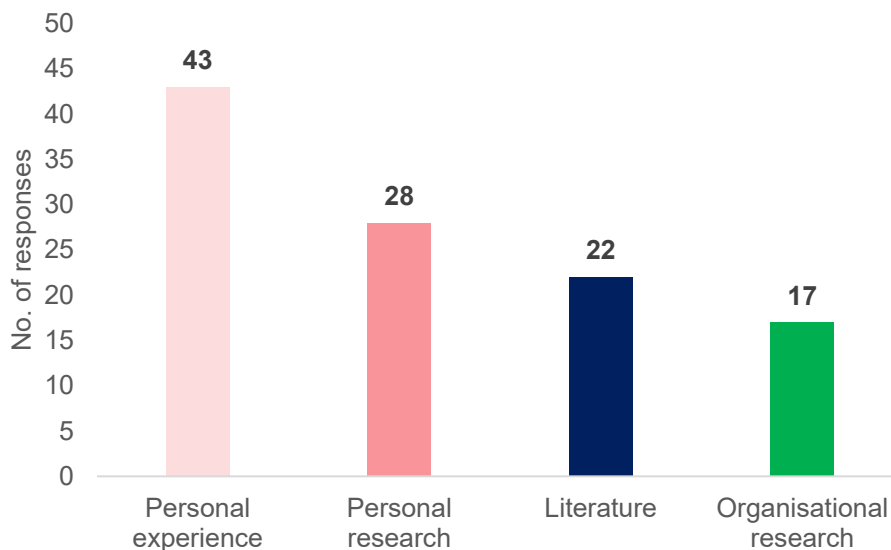


Please note the overall score is out of 8 and the higher the score the more common the method.

Other responses included poison (10 responses), pit traps (although rare), dogs, nets and other traps.

Q11: From what sources have you based the above responses?

Total responses: 110. Please note respondents could select more than one answer.

**Q12: Would you like to provide any further comments to the team?**

Answered: 23, Skipped: 42

Advice to the research team

- *"Including an observation to the reaction of people to law enforcement against illegal bushmeat trade and consumption would be very enlightening as some of the responses that we get from those involved are never very trustworthy because they are trying to hide something."*
- *"Make sure to touch on the different ecological zones of Cameroon because perceptions of wildlife vary."*

Questionnaire Design

- *"My overall comment is that the questionnaire is poorly designed and that options offered for the closed-ended questions are very limited and don't take into account the diversity and context specificity of a complex issue like consumption of wild meat. For example, rural-urban linkages are key in some countries. Many people who live in urban areas have rural homes too! The downside is that respondents will have to tick 'something' even if it does not provide a true reflection of their circumstances or situation on the ground. This will lead to wrong results."*
- *"The survey seems to have a bias in that the underlying assumption is that wild meat is illegal and unsustainable. This makes it rather difficult to answer the questions as there is confounding between legal and illegal wild meat harvesting."*
- *"It appears that this survey has been drafted with a certain outcome in mind. This is clearly indicated by the choice of words depicted to formulate the survey. People not familiar with Africa or African circumstances, should familiarise themselves with local conditions based on facts and not on emotive (social) media reports."*

Other

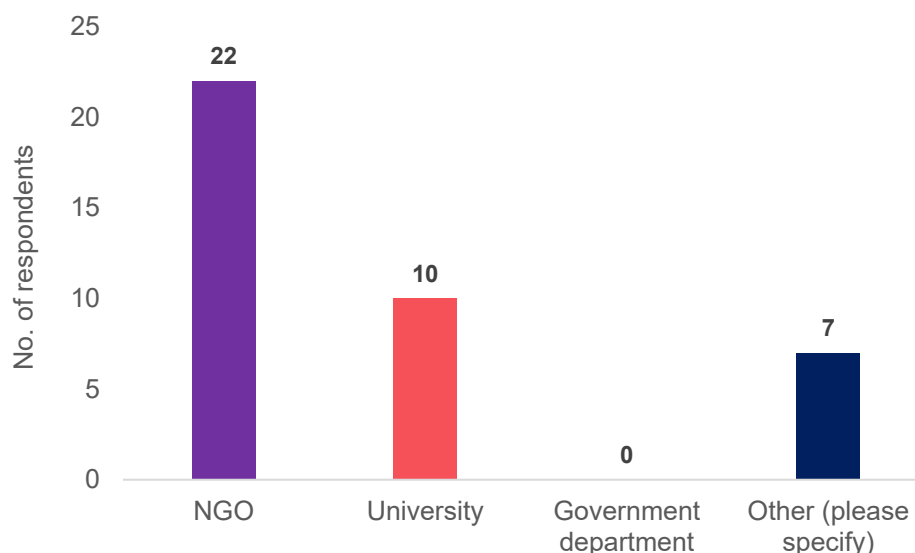
- *"In Africa, poverty and cultural practices should be taken in consideration to reduce bushmeat consumption. Cases have been studied in central Africa by many FAO projects. We need to improve stakeholders' livelihoods for a sustainable solution!"*
- *"There is some level of illegal offtake but there is also a large legal supply of game meat and the consumption of game meat in Namibia is encouraged."*
- *"I also have some knowledge of some other Southern African countries, eg Namibia, in which sustainable wildlife harvesting for wild meat is deeply embedded in the country's culture and celebrated. It is not generally considered a problem. Wild meat consumption drawn from sustainably managed ungulate populations is widely practiced across Southern Africa. The subregional social-ecological dynamics are very different from the African tropics. When unsustainable, the typical driver is poor resource tenure or property rights conflicts."*
- *"It would be good to differentiate between legal and illegal wildmeat consumption. There is huge legal and commercial market in South Africa, Namibia and other southern African countries. Wild meat contributes daily protein to many citizens. Also note that there is formal market for what sounds like very exotic meat - crocodile, giraffe, zebra, etc - in southern African countries."*

Annex 2. Survey 2 – Factors affecting the success of wild meat alternatives projects?

Total responses to the survey monkey: 39 people

Q1: Select the type of organisation/institution you currently work for?

Answered: 39



Other included someone who works for a 'school', a USAID contractor, international research organisation and an independent statistical consultancy. Please note some Other responses were duplicates or not applicable.

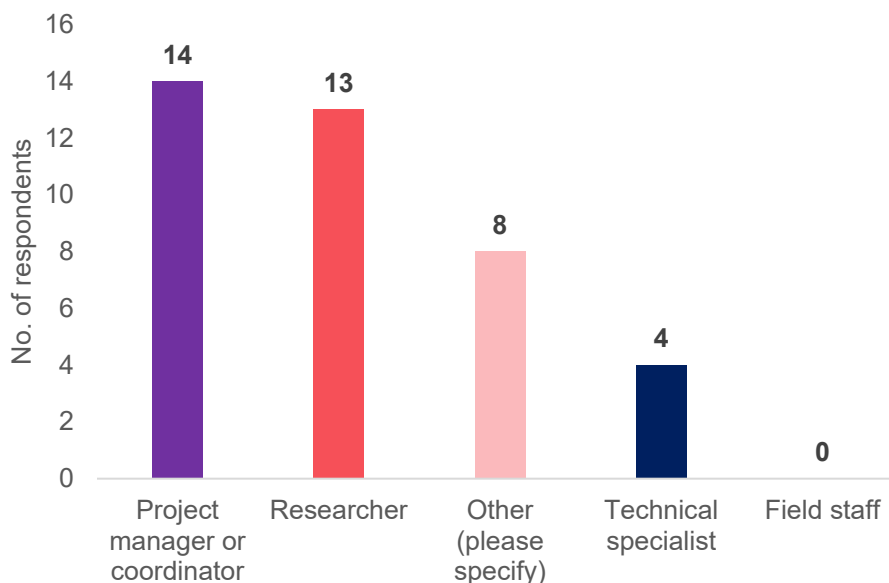
Q2: What is the name of your organisation/institution?

Answered: 29, Skipped: 10

International	SSA
Birmingham University (1 response)	African Wildlife Economy Institute (1 response)
CIFOR (2 responses)	Chiktern Woodland Project (1 response)
Conservation Outcomes (2 responses)	FCTV (3 responses)
DAI (1 response)	Forest and Environment Development Association (FEDA) (1 response)
FFI (2 responses)	Green Development Advocates (1 response)
Griffith University (1 response)	Makerere University (1 response)
Royal Holloway University of London AND Royal Society for the Protection of Birds (1 response)	Millennium Ecological Museum (1 response)
WCS (2 responses)	Namibia Nature Foundation (1 response)
WWF (2 responses)	University of Kisangani (3 responses)
ZSL (1 response)	

Q3: What is your position within this organisation/institution?

Answered: 39



Other included: Director, student, policy and advocacy officer, and statistical consultant and researcher. Please note some Other responses were duplicates or not applicable.

Q4 Tell us about an alternatives project you are working on

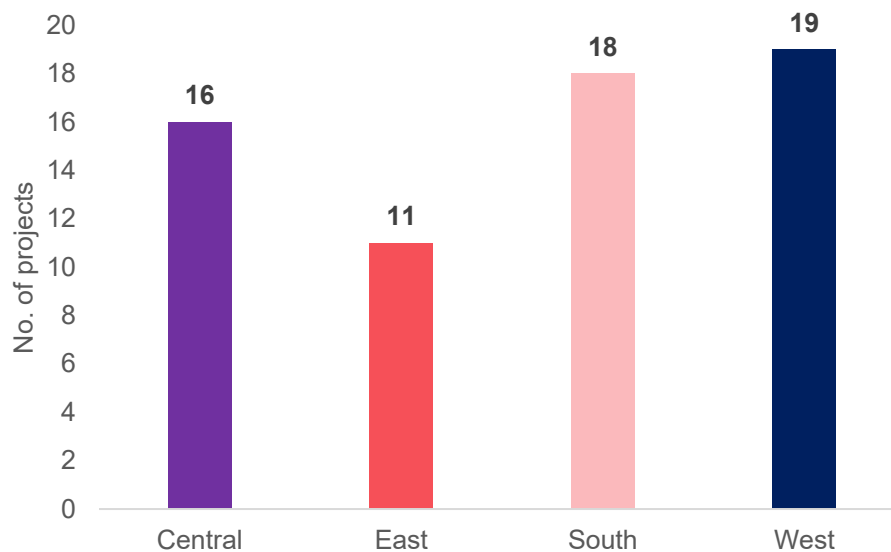
Answered: 10, Skipped: 29

Name of project	Year started	Year finished	Brief description
Support to the CBD decision on a sustainable wild meat sector	2019	ongoing	The project aims to better understand the barriers and opportunities to enabling a sustainable wild meat sector.
Professionalisation of small-scale timber producers and timber dealers	2013	2015	Bushmeat alternatives is not the purpose of the project, but timber producers are sometimes hunters, so we ended up assessing the value chain of bushmeat in the Congo basin countries
Livelihood alternative for community-based engagement against illegal wildlife trade	2016	2020	Re-group community members around VSLAs (community banks), and through these, introduce income generating activities in accordance with the context and the communities concerned. Main IGAs are horticulture, poultry, banana-plantain farm...
Ensuring Liberian forest connectivity through community forestry and innovative financing mechanisms (golaMA)	2014	2020	Communities have been guided through the steps to establish formally recognised community-managed forests and are supported in the development of conservation-friendly management plans. The project does not provide alternative protein sources, but aims to improve alternative income sources. Bee-keeping was introduced with ongoing training and support for bee-keepers through an organisation which also buys the bee-keepers honey. Cocoa farming has been promoted by training and support to increase yields (for example through adopting better varieties of cocoa). Training and

Name of project	Year started	Year finished	Brief description
			demonstrations of swamp-farming techniques have also been introduced, which enable farmers to produce multiple harvests per year for produce such as rice, peanuts and beans. A small-loan fund has been set up which provides access to low-interest credit, with interest accruing to community-forest management bodies, and conservation activities being carried out in place of interest payments. Loans may be used to support non-bushmeat incomes such as petty goods trade and farming.
Development of a demonstration project to catalyse the game meat market in South Africa	2017	ongoing	Formalisation of South Africa's game meat market based on sustainable wildlife offtakes as part of the ecological management of protected areas, particularly those that are communally-owned.
Wildlife Products Value chain Development	2016	ongoing	Creating greater value from wild harvested free-ranging wildlife
WWF GreenTrust Game Meat Initiative	2018	2021	Conservation Outcomes is trying to establish game meat (non-threatened antelope and plains game) projects as a more sustainable source of protein relative to commercial agriculture. The aim is to set up these projects in protected areas that have approved management plans in place, whereby the off takes are done according to ecological principles. These schemes will provide much needed revenue for the protected areas and the rural communities surrounding them.
SWM	2018	2023	-
Projet de developpement d'un model de gestion durable de la viande de brousse en faveur des communautés vivants autour de la Réserve de Biosphère du Dja.	2015	2018	Sustainable management of wildlife resources
Reduction of Bushmeat hunting in Albertine Region	2011	2013	Focusing on reduction of bushmeat consumption and incidental injuries to chimpanzees especially in the private forests of Western Uganda, the project engaged ex-hunters into an association that worked to improve livelihoods through alternative income generating activities (improved farming, goat schemes, loans and credit services) and awareness raising for the greater community

Q5: In which sub-Saharan African country(s) was this intervention implemented?

Answered: 14, Skipped: 25

**Central**

- Cameroon - 5
- Central African Republic - 2
- Chad - 1
- Congo Dem. Rep. - 3
- Congo Rep. - 2
- Equatorial Guinea - 1
- Gabon - 1
- Sao Tome and Principe - 1

East

- Burundi - 1
- Eritrea - 1
- Ethiopia - 1
- Kenya - 1
- Rwanda - 1
- Somalia - 1
- South Sudan - 1
- Sudan - 1
- Tanzania - 1
- Uganda - 2

South

- Angola - 1
- Botswana - 1
- Comoros - 1
- Lesotho - 1
- Madagascar - 1
- Malawi - 1
- Mauritius - 1

- Mozambique - 1
- Namibia - 2
- Seychelles - 1
- South Africa - 3
- Swaziland - 1
- Zambia - 1
- Zimbabwe - 2

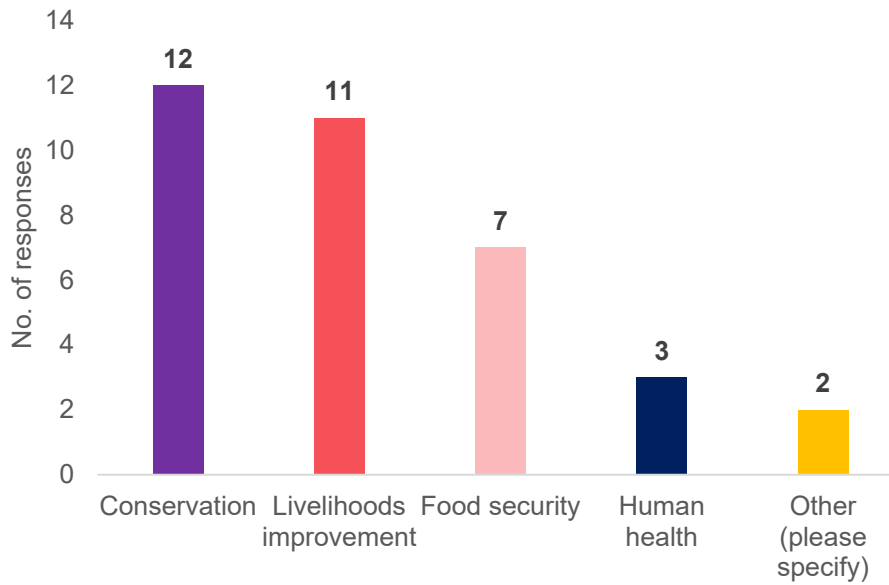
West

- Benin - 1
- Burkina Faso - 2
- Cabo Verde - 1
- Cote D'Ivoire - 2
- The Gambia - 1
- Ghana - 1
- Guinea - 1
- Guinea-Bissau - 2
- Liberia - 2
- Mali - 1
- Mauritania - 1
- Niger - 1
- Senegal - 1
- Sierra Leone - 1
- Togo - 1

Q6: For what purpose did you implement this bushmeat alternatives project?

Answered: 14, Skipped: 25

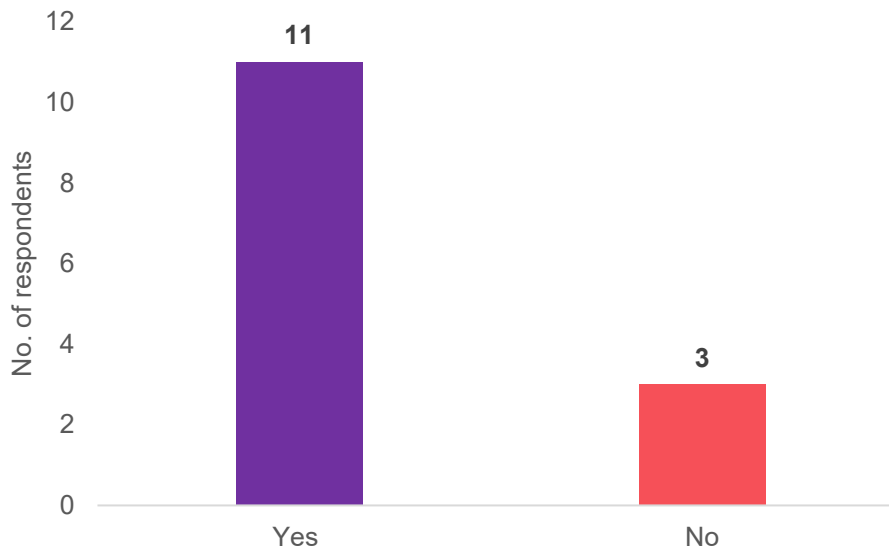
Please note respondents could select multiple answers.



Other specified objectives included economic development and generating local support for conservation.

Q7: Did you consider drivers of food choice when designing and/or implementing this project?

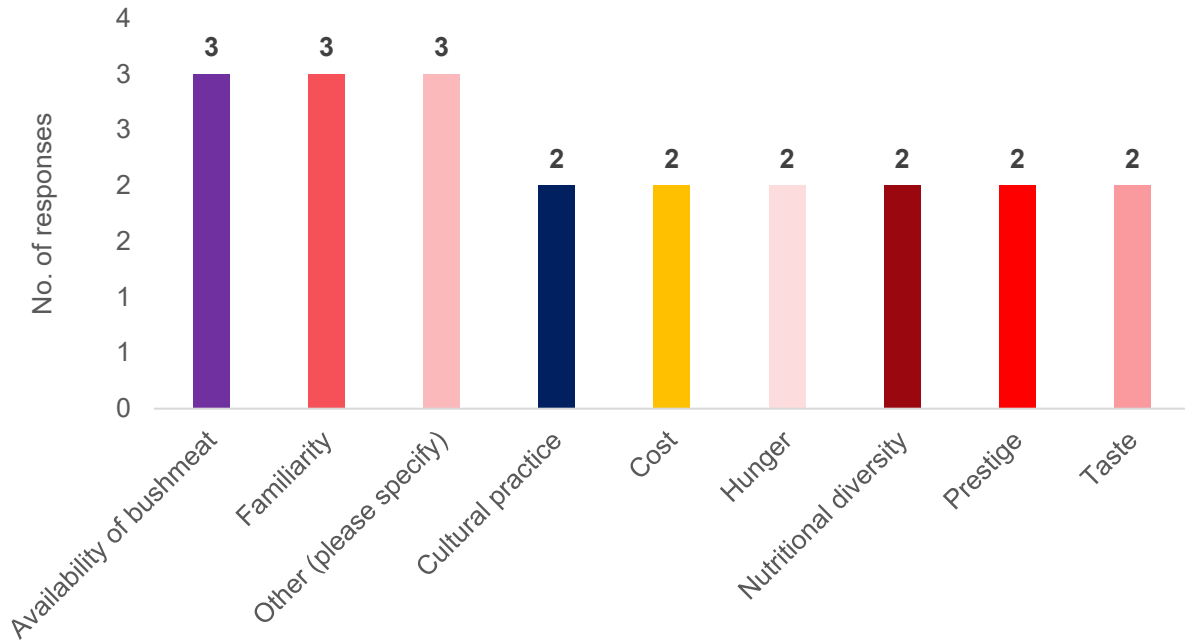
Answered: 14, Skipped: 25



If yes, which drivers of wild meat consumption did you attempt to address?

Answered: 8 Skipped: 31

Please note respondents could select multiple answers.



Other specified objectives included legality and regulations, and intrinsic conservation value.

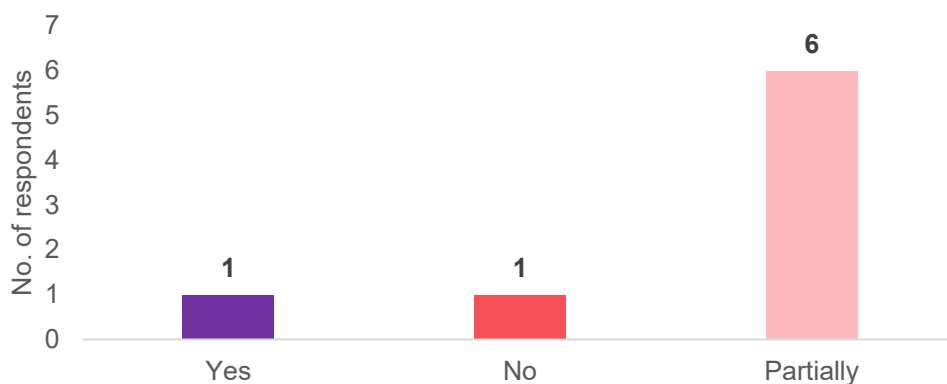
If no, why not?

Only one answer to this question:

“The most pressing conservation threat was considered to be hunting at commercial scales for export to urban bushmeat markets, rather than being driven by local food demand. The project was designing primarily to tackle this ‘commercial’ component of hunting and did not have the aim of decreasing local bushmeat consumption - although this is likely necessary for long-term sustainability of wildlife resources.”

Q8: Did the project achieve its intended results?

Answered: 8, Skipped: 31



Reasons why people chose ‘partially’ included:

- *Project in an early phase*
- *Project ongoing*

- *“Anecdotally, the reliance on commercial hunting appears to have reduced in some communities, but some commercial hunters and traders are likely to have moved elsewhere or shifted trade routes. Also, it isn't possible to attribute any change in hunting to alternative livelihood activities alone, since these are being implemented alongside law enforcement efforts at road-blocks and awareness-raising of national hunting laws.”*

Q9: On what metric are you basing your above response?

Answered: 7, Skipped: 32

- *Questionnaire surveys following a baseline survey*
- *Anecdotal reports from field staff and community members, a household survey that was conducted at the start of the project, and has recently been repeated, and mid-term evaluations of the alternative livelihoods programs which were based on interviews with community members.*
- *The effective utilisation of offtakes from protected areas as part of their ecological management*
- *Export sales*
- *The successful implementation and sale of game meat (non-threatened antelope species and plains game)*

Q10: Briefly describe any lessons learned from implementing bushmeat alternatives projects

Answered: 7, Skipped: 32

- *A focus on alternatives to bushmeat **undermines the potential for establishing and growing a sustainable wild meat sector.***
- *Camera traps as part of the project were taken by local people and sold.*
- ***Changing behaviour is difficult** and it takes time and need patience.*
- ***The way income is generated may be important** - for instance people may prefer regular, reliable amounts, such as what is provided by salaried employment, rather than irregular sums of money such as what is provided by activities such as hunting or mining.*
- *South Africa has numerous small protected area that require active management of wildlife numbers, which is a potentially important source of meat to local communities and a broader market. Amongst the key restrictions in unlocking the market, **veterinary and health restrictions** are a primary consideration in relation to diseases such as Foot-and-Mouth Disease and Bovine Tuberculosis.*
- ***Formalising the market is challenging** especially in local markets where the vested interests lie with livestock producers.*
- *There are **significant bureaucratic barriers** in the South African red meat industry. In addition, there are logistical challenges to harvesting game meat in a safe manner.*

Q11: What are the main characteristics of an effective bushmeat alternatives project?

Answered: 9, Skipped: 30

- *Promoting a **sustainable legal** wild meat sector.*
- *For us the main characteristics of an effective bushmeat alternatives project are: - The **development of the domestication activities** by forest populations with species that are hunted; - **good sensitisation** of the population on the diseases that can be contracted from food that are eaten by wild species and the necessity to ensure.*
- ***Taking in account local people wills and reality.***
- *It should influence the underlying **social norms** of unsustainable wildlife use and needs to be implemented over **timescales long** enough to achieve this.*

Alternative livelihood projects need to be **designed based on the needs of individuals and communities themselves.**

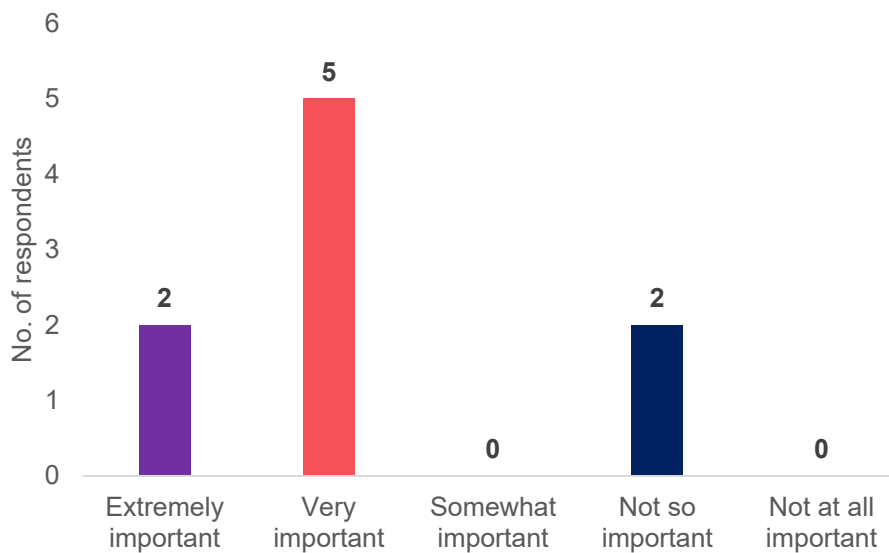
Success also depends on effective and credible **local governance.**

The **diversity of needs and livelihood barriers** for people in communities needs to be considered, for instance if there is a high proportion of transient immigrants, they are likely to respond best to different projects than those with higher social capital.

- **Determining what the drivers** of wild meat offtakes are and how they can best be managed.
- **Bushmeat alternatives are generally a load of rubbish** as they are not usually pro-conservation. Better to work with and incentivise more sustainable bushmeat markets.
- **Focus on the needs and desires of the beneficiaries** and work through a **shared leadership** to determine what is appropriate.

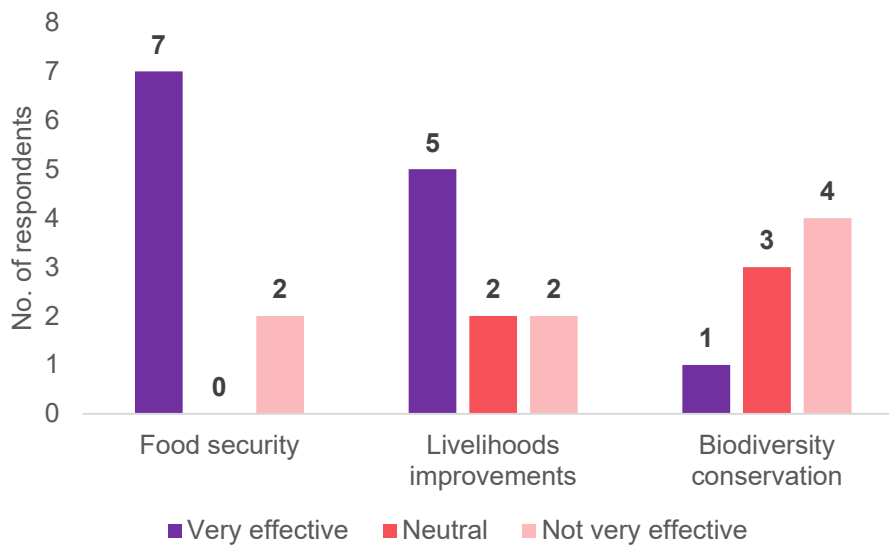
Q12: How important do you think it is to consider food choice in the design and implementation of bushmeat alternatives projects?

Answered: 9, Skipped: 30



Q13: Generally, what do you feel about the effectiveness of bushmeat alternatives projects for achieving?

Answered: 9, Skipped: 30

**Q14: Would you like to provide any further comments to the team?**

Answered: 5, Skipped: 34

- *Most forest populations are really poor, so it is a huge task to talk about sustainable management.*
- *The focus in southern Africa is not the same as the bush meat trade further north. Well managed wildlife offtakes off of protected areas in southern Africa are a potentially important source of meat for local communities living around protected areas and a potential income stream that can make protected areas more financially viable.*
- *It is very interesting to consider the other side of the problem. Both initiatives are working for the promotion of conservation, but with completely different methodologies. It is so context specific.*

Annex 3. Evidence review of factors affecting success of protein alternatives projects

The websites of the following 25 donor agencies and conservation-focused organisations were searched for alternative protein projects to reduce demand for bushmeat. The websites were selected from key organisations the research team knows have supported (either in the past or through existing projects) wild meat alternatives projects – we selected development organisations as well as conservation organisations to see if there were any key learnings from the development sector.

- [Darwin Initiative](#)
- [Illegal Wildlife Trade \(IWT\) Challenge Fund](#)
- [USAID](#) and USAID funded programmes (eg [CARPE](#))
- [Global Environmental Facility \(GEF\)](#)
- [GEF Small Grants Programme](#)
- [U.S. Fish and Wildlife Service \(USFWS\)](#)
- [Deutsche Gesellschaft für Internationale Zusammenarbeit \(GIZ\) GmbH](#)
- [Agence Française de Développement \(AFD\)](#)
- [EU](#)
- [French Facility for Global Environment](#)
- [ECOFACT](#)
- [Wildlife Conservation Society \(WCS\)](#)
- [World Wildlife Fund \(WWF\)](#)
- [International Union for Conservation of Nature \(IUCN\)](#)
- [International Primatological Society](#)
- [International Primate Protection League](#)
- [Ape Alliance](#)
- [Congo Basin Forest Partnership \(CBFP\)](#)
- [Central African Forests Commission \(COMIFAC\)](#)
- [TRAFFIC](#)
- [UN Great Apes Survival Partnership \(GRASP\)](#)
- [Disney Conservation](#)
- [Mongabay](#)
- [Frankfurt Zoological Society](#)
- [Zoological Society of London](#)

The websites of the following 24 development focused organisations were then searched for alternative protein projects in sub-Saharan Africa to enhance food security and nutrition:

- [Shell Foundation](#)
- [Vétérinaires Sans Frontières](#)
- [Bill and Melinda Gates Foundation](#)
- [ActionAid](#)
- [Médecins Sans Frontières](#)
- [Send a Cow](#)
- [Heifer International](#)
- [Aga Khan Development Projects](#)
- [The Adventist Development and Relief Agency \(ADRA\)](#)
- [DFID Development Tracker](#)
- [NGO Aid Map](#)
- [Stockholm environment institute](#)
- [International Livestock Research Institute \(ILRI\)](#)
- [CGIAR](#)
- [Anglican Diocesan Development and Relief Organization](#)
- [WorldFish](#)
- [Natural resources institute](#)
- [CARE International](#)
- [Oxfam](#)
- [Catholic Agency for Overseas Development \(CAFOD\)](#)
- [Christian Aid](#)

- [International Institute for Sustainable Development \(IISD\)](#)
- [FARM Africa](#)
- [Episcopal Relief & Development](#)

Hunting wildlife for meat is widely practiced in sub-Saharan Africa (SSA) but also, is widely understood to be unsustainable in many countries. This threatens both biodiversity conservation and food security. As a result, many NGOs and government bodies have undertaken wild meat 'alternatives projects', including those that aim to provide alternative protein sources, for example, through captive-rearing of wild species.

However, there are limitations to the assumptions that underpin these projects, and limited evidence of their effectiveness. This report presents initial findings from online surveys and a review of project reports and websites conducted to explore the factors affecting the success of alternative protein projects across SSA, with a focus on Cameroon and the Dja Faunal Reserve in particular.



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