

# Illegal consumption and trade of the pre-Caspian saiga population

## AN EXECUTIVE SUMMARY

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### **ABSTRACT**

This study reveals that the consumption of saiga meat in the rural districts of Kalmykia (Russian Federation) is both common and widespread. Local perceptions of meat availability and reports given by key informants emphasize that the supply of saiga meat – through local trade mechanisms – is irregular despite the continuing demand. Findings suggest that saiga meat consumption is associated with lower household socioeconomic status and limited protein access; however, people's views of the different qualities of saiga meat are diverse, reflecting a range of values, tastes and pre-existing cultural norms. The study explores the social norms underpinning consumption behaviour, and reveals an association between people feeling that eating saiga meat is socially acceptable and them actually consuming it. Findings underline the significance of tackling meat consumption for saiga conservation, and stress the need for a greater understanding of the human dimensions surrounding saiga poaching, trade and consumption.

## 1. PROJECT BACKGROUND

Illegal hunting continues to threaten the Critically Endangered saiga antelope, *Saiga tatarica*, across its range. In particular, the pre-Caspian population, southwest Russia, is facing a precarious future, attributable to persistent poaching. The trade and use of saiga horn is well recognised though poorly documented, but there is less focus on the nature and prevalence of saiga meat consumption.

This summary presents the findings of a socioeconomic survey conducted between May and July 2014 in rural Kalmykia, southwest Russia, which was a collaboration between Imperial College London and the Centre for Wild Animals for the Republic of Kalmykia (CWA). The project aimed to better understand the trade and consumption of saiga meat; specifically:

1. To determine the prevalence of household saiga meat consumption in western rural Kalmykia
2. To explore the values, tastes and norms surrounding saiga meat and consumption
3. To characterise the saiga meat trade, including motivations for poaching and barriers to control

## 2. METHODS USED

Fixed-choice questionnaires and open-ended key informant interviews were conducted in six settlements and 40 farms across eastern Kalmykia (Figure 1). All settlements were within the saiga's range, located within the Yashkul' and Chernozemlyi districts, and were associated with recent poaching activity and suspected saiga meat consumption. A systematic approach to household sampling was adopted – approaching every third household – to ensure even coverage across settlements.

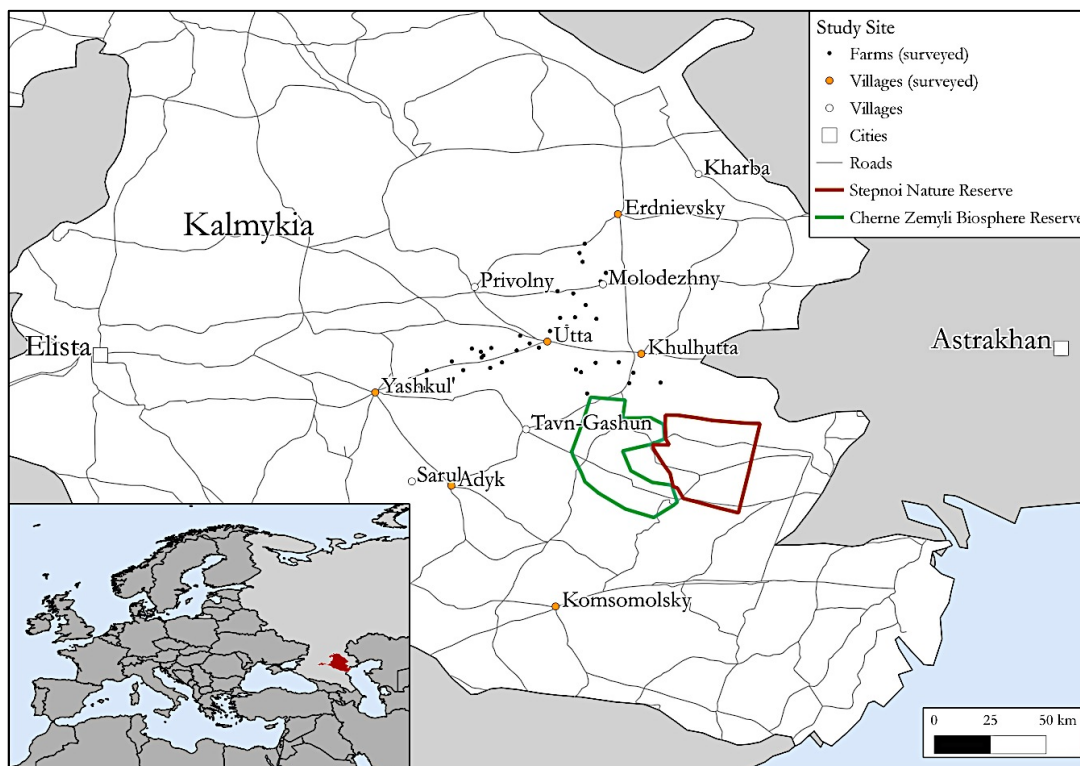


Figure 1. Study site

## 2.1. Questionnaires (n = 280)

Prevalence estimates: Given the expected sensitivity of speaking openly about illegal behaviours, prevalence estimates of saiga meat consumption were obtained using the Unmatched Count Technique (UCT) – an emerging indirect questioning technique in conservation research which is thought to reduce the bias in answers (see Nuno et al. 2013). In this technique, people are shown a list of activities (or items) and asked to say not which they do, but only **how many**. A randomly chosen half of the respondents are shown a list without the sensitive behaviour in it, and the other half are shown a list with the behaviour in it. The difference in the number of activities between the two groups is the estimate of the prevalence of the behaviour. Socioeconomic household data were also collected, enabling testing for associations between consumption and relative household wealth, ethnicity, household size, residency time and location.

Social norms: Based on a longstanding psychological framework for understanding individual decision-making – the Theory of Planned Behaviour – three different questions were asked to explore local people’s perceptions of prevailing social norms surrounding saiga conservation and illegal exploitation.

Perceived characteristics of saiga meat: Local perceptions of the relative value, taste and availability of saiga meat were explored using a ranking exercise. This required respondents to rank saiga meat in comparison to three other available domestic meats (mutton, beef and horse) on four criteria. Criteria included price, healthiness, taste and how commonly the meat is consumed within the village.

Poaching and control: Fixed-choice questions focused on perceived motivations behind poaching and the major barriers to effectively controlling illegal hunting and trade of saiga products.

## 2.2. Key Informant Interviews (n = 22)

Key informants were questionnaire respondents who were prepared to talk openly and extensively about the saiga trade, as well as officials and conservationists involved in saiga conservation. Triangulating information from different sources reduced uncertainty surrounding the sensitive issues of illegal meat consumption. Interviews were guided by a series of when, where, who and why questions within the broad themes of: poaching, use of saiga products, saiga meat trade, and consumption of saiga products.

# 3. KEY FINDINGS

## 3.1. Prevalence of sensitive behaviours

The UCT method gives an estimate of the proportion of people engaging in a sensitive behaviour. In order to reduce bias, people were asked first about TV shows which they watched, then about legal game hunting. Then they were asked about sensitive behaviours - saiga meat consumption and poaching. 26% ( $\pm 8$ ) of households had someone who had hunted for game in the last 6 months, while 34% ( $\pm 9$ ) had eaten saiga meat. The estimate of the proportion of households who had poached saigas in the last 12 months was very low, but was likely to be between 0% and 12% (Figure 2).

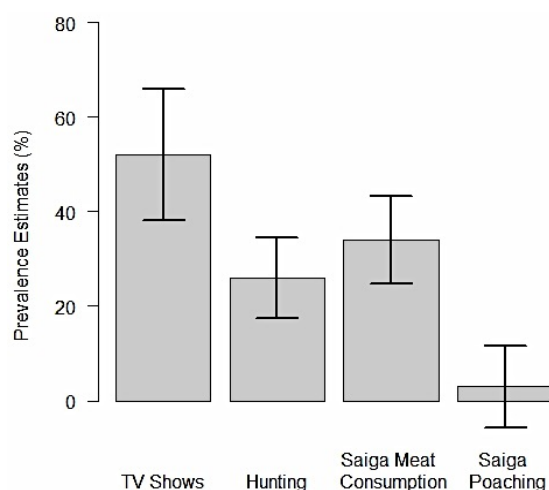


Figure 2. Household prevalence estimates for each target behavior (For TV shows list - the UCT warm-up question - estimates reveal that 52% ( $\pm 13$ ) of the study population had watched 'Let Them Talk' - a news programme - during the week prior to questioning)

### 3.2. Linkages between socioeconomic factors and saiga meat consumption

**Relative wealth:** Households headed by farm owners, professionals (e.g. teachers, lawyers) and pensioners were less likely to have consumed saiga meat than those headed by skilled workers (e.g. craftsmen, mechanics), unskilled workers (e.g. farmhands) or who were unemployed. Interestingly, households headed by farm owners had consumed significantly more types of meat in general than households headed by skilled workers, unskilled workers and the unemployed, in spite of having a significantly lower prevalence estimate for saiga meat consumption.

**Location:** Spatial factors associated with saiga meat consumption were also explored; households located in villages (<1000 people) had a higher estimated prevalence of saiga meat consumption than both steppe (e.g. farms) and town (>5000 people) households, but village consumption was only significantly higher than steppe consumption. Erdniyevsky and Khulkhutta both had significantly higher estimates of saiga meat consumption than Yashkul’.

**Other factors:** Ethnicity, household size and residency time had no significant effect on consumption.

### 3.3. Values, tastes and availability

People’s views of the different qualities of saiga meat are diverse, reflecting a range of values, tastes and pre-existing cultural norms (Table 1). The majority of respondents considered saiga meat as cheaper than other domestic meats – a perception that matches reported prices from key informants and villages. Saiga meat was sometimes referred to as a ‘delicacy’ and was considered more expensive in towns than in smaller, more rural, villages. People tended to rank saiga meat as healthier than three other readily available meats; during the dissolution of the Soviet Union and other times of hardship, saiga meat was often seen as a viable source of protein and a remedy for ailments. To a degree these beliefs are still embedded in rural Kalmykia. Sentiments such as, ‘if you are sick then you are permitted to eat saiga despite its illegality’, were shared by some people.

Table 1. Summary of the meat ranking exercise

Characteristic	Summary points	Details
Price	<i>Saiga meat is generally perceived as being a cheap source of protein</i>	58% of people (n=130) thought that saiga was the cheapest of the four meats, whereas 29% of respondents considered it as the most expensive. Respondents that were younger (<30) were more likely to rank saiga as more expensive (relative to the other meats) than middle aged (30-49) or older (50+) respondents. Social status had some effect on perception of price too; compared to students, pensioners were more likely to rank saiga meat as less expensive.
	<i>Saiga meat is more expensive in the larger towns than the smaller villages</i>	Specifically, saiga meat prices, relative to the other meat types, are perceived as higher in towns (Yashkul’ and Komsomolsk) compared with villages (Adyk, Erdniyevsky, Khulkhutta and Utta).
Health	<i>Saiga meat is generally perceived as being a healthier than other meats</i>	Saiga meat was ranked as the ‘healthiest’ meat of the four - 35% of respondents ranking saiga as top (n=121). None of the individual level or household level demographic variables tested could explain differences in opinions regarding the relative healthiness of saiga meat in comparison to the other meats.

*A complex link exists between saiga meat and healing*

Qualitative data revealed a complex relationship between saiga meat and health issues. Recurring themes were that saiga meat contained 'vitamins and minerals' that other meats lacked. Although today the use of saiga meat to treat illness is considered very rare, it would seem a more general perception of it being healthier lingers.

Taste

*Saiga meat is not as tasty as other meats?*

Respondents (n =112) considered horse the least tasty meat (50%), followed by saiga (36%), whilst mutton claimed highest proportion of first place rankings for the tastiest meat (70%). Analysis of ranked scores suggested that age of respondent has some effect on perceptions of taste, with younger people (<30) ranking saiga as tastier than middle aged (30- 49) and older (50+) people

Consumption and availability

*Saiga meat is less commonly consumed than horse, beef and mutton*

According to the meat ranking exercise for consumption (n=116), respondents perceived saiga as the least commonly consumed of all four meats (92%), followed by horse (7%). Whilst no one thought saiga was the most commonly consumed meat, 1% of respondents placed saiga second and 7% placed saiga the third most commonly consumed meat. Social status of the respondent explained some variation in rankings. Unemployed, homemakers and pensioners were more likely to score saiga meat as more commonly consumed than working respondents (full or partially employed).

### 3.4. Social norms surrounding saiga meat consumption

The vast majority of respondents either agreed (78%) or strongly agreed (14%) with the statement: *'I feel the same way about the importance of protecting saiga as other people in my village.'* This sentiment is in line with the general concern voiced by many people during the survey over the depleting saiga population in Kalmykia. The majority disagreed (82%) with the statement: *'most adults in my community believe that hunting saiga is acceptable.'* The final statement however, *'most adults in my community believe that eating saiga meat is a bad thing to do'*, had a greater variation in responses. Whilst 47% of respondents agreed with the statement, 20% were either neutral or not sure, and 27% disagreed.

Those people who agreed with the statement that most people believed it was a bad thing to eat saiga meat were less likely to have eaten saiga meat in the previous 6 months (based on the UCT results): 49% ( $\pm 14\%$ ) of those who agreed with the statement had eaten saiga meat, compared to 15% ( $\pm 12\%$ ) who disagreed with the statement.

### 3.5 An overview of trade

#### ***Motivations for engagement in poaching and trade***

Local perceptions (n=280) of the top reasons behind engaging in saiga poaching revealed a wide array of opinions. Supplementing income was the top reason given (34%), followed by main income (25%) and supplementing diet (18%). Although less common, recreation (15%) was another perceived incentive driving engagement in saiga poaching. Tradition and cultural reasons for hunting was perceived by only 1% of the survey population as a primary reason for engagement in the activity.

## **Poacher profiles**

Key informant interviews with hunters, farmers and ex-poachers revealed profound insights into the motivations behind poaching. *'The poor hunt for income and rich hunt for enjoyment'* was a common theme voiced by key informants during the interviews (72%, n=22). An ex-poacher near Utta summarised:

*"Hunters and poachers are different people and will hunt saiga for different reasons. Poachers generate income from poaching whereas hunters are more motivated by enjoyment [recreation] and possibly for meat consumption"*

Most key informants (82%, n =22) identified men, local to Yashkul' and Chernozemelsk districts, as the primary poachers:

*"I've seen many poachers recently; they are local people from nearby villages and they come on motorbikes"* - a farm owner based on the edge of the Chernye Zemli Biosphere Reserve (CZBR).

*"Poachers are local as they must know the landscape very well to catch saiga. To hunt saiga is a difficult challenge and requires great skill and commitment"* - An ex-poacher.

Another 'hunter' profile also emerged through discussions – many people stated that richer people, sometimes officials, engage in hunting too. Approximately half (47%, n=22) of the key informants, mentioned corruption as a notable force in the poaching situation in Kalmykia. Alongside limited resources and funding for rangers, corruption between government officials, rangers and poachers was a consistent theme mentioned by people during the survey:

*"There are people in Utta and Khulkhutta that rely on poaching for income – sales of meat and horns. They deliver horns and meat to Astrakhan. Over the last 12 years not one of these poachers has been caught by the authorities, but everyone knows who they are."*

*"The poachers today are not only local people but also the officials"*

*"Everyone in the villages knows who the poachers are; no one is willing to tell [the authorities]"*

*"[Poachers] tend to be those who live near the reserve or saiga hotspots and are unemployed or lack income, but hunting of saigas is also carried out by some rangers, officials and people in power, who conduct these activities for recreation"*

## **Scale and scope of the trade**

The saiga meat trade occurs at a variety of scales. Some of the meat is transported by bus (sometimes mixed in with mutton) to the urban centres of Elista in Kalmykia and Astrakhan in the neighbouring region (Astrakhan Oblast). Meat is also traded locally too:

*"The poachers sell meat along the road and take the trade to other towns too, probably Utta [...] this activity happens throughout the year. The sale and purchase of meat is very discrete."*

Local sales are both opportunistic and coordinated. A respondent from Erdniyevisky recalled a situation in early 2014 where people arrived from a neighbouring village, Kharba, looking to sell saiga meat from the back of a vehicle. Contrastingly, a key informant from Utta spoke of a more coordinated trade:

*"Village sales are coordinated by telephone and delivered by motorbike. People usually buy the entire carcass for about 1000 RU [28 USD] [...] there are many people [in Utta] after meat, some people place orders in [advance]."*

Two key informants mentioned a roadside cafe near Utta where saiga meat can sometimes be bought discreetly over the counter. Although it seems possible to access saiga meat throughout the year, some key informants believed that supply is higher in the summer and autumn (July-November), as the saiga are more likely to roam beyond the borders of the protected areas and the females are thought to carry more body weight.

## **Saiga products**

All key informants were asked about their opinions on the relative importance of horn products and meat for poachers and within the trade system. There were a variety of opinions but the majority of key informants (61%, n=22) perceived horns to be the most sought after product.

*“Today saigas are poached for their horns mainly. They are medicinal and fetch high prices in foreign markets”*

However, 39% (n=22) believed that personal consumption of meat and income generation through the meat trade have been the primary factors in driving poaching over recent years. As a farmhand near the CZBR summarised:

*“[poachers] target the male saiga [with horns], because they are highly valuable, but there are very few left. Instead, they will take females for the meat trade”*

### **Meat prices**

A third of key informants (36%, n=22) reported meat prices for saiga, which were given in both kilograms (n=8) and per carcass (n=2). Per kilogram, the mean price was 163 RUB (4.4 USD), range 120-200 RUB, and 1000 RUB (27 USD) (range n/a) for a single carcass. Buying by carcass equates to approximately 61 RUB/kg (1.7 USD), a calculation based on the average weight of an adult saiga being 16.5 kg (Kuhl, 2008). In Astrakhan region, the price of saiga meat may be as high as 200 RUB/kg (5.4 USD) but this, as reported, was explained by the infrequent passing of traders. One respondent was approached by traders in Elista, the capital of Kalmykia, offering saiga meat for just 120 RUB/kg (3.3 USD) highlighting the range in prices across the trade system. Three key informants spoke of changes in prices over the last decade. As one summarised:

*“In some areas [saiga meat] prices have risen - some view it as a luxury meat and poorer people can no longer afford it”*

Although domestic meat prices vary with season and between villages, beef was generally stated to be the most expensive (mean: 210 RUB/Kg (5.7 USD), range: 200-250), followed by mutton (mean: 190 RUB/Kg (5.1 USD), range: 170-200), then horse (mean: 160 RUB/Kg (4.3 USD), range: 160-180). In the settlements surveyed, people's perceptions of meat prices tended to align with the meat prices reported by key informants (see section 3.3).

### **Barriers to control**

Fixed response questions in the main questionnaire (n=280) revealed unemployment as the biggest perceived barrier to reducing saiga poaching (51%). A lack of legal protection (e.g. the penalties for infractions are too low/weak), insufficient law enforcement (e.g. rangers unable to catch poachers), and social pressure (e.g. hunting is seen as a normal thing to do by people around you) were considered as top barriers by far fewer respondents (15%, 14%, and 8% respectively). Many key informants singled out corruption as another major barrier.

## **4. CONCLUSIONS**

This study reveals that the prevalence of saiga meat consumption in the rural districts of Kalmykia (Russian Federation) is both high (34%,  $\pm 9$ ) and widespread (i.e. positive detection in every survey settlement except Yashkul'). However, the purposive approach to sampling settlements - targeting known poaching centres - reduces the generalisability of the household prevalence estimate. The villages of Erdniyevsky and Khulkhutta had the highest prevalence of consumption, which coincides with a study into local knowledge of saiga distribution that found greater reporting bias from these same two villages (Leon et al. 2010). UCT estimates also reveal that game hunting is widely pursued by households across rural Kalmykia (26%,  $\pm 8$ ). Hunters are intimately connected with the steppe environment and are probably most aware of the rules governing resource-use and the ongoing depletion in saiga numbers (pers. obs.). Opportunities to engage the game hunting community in future conservation initiatives within Kalmykia need to be explored.

Results indicate that poorer households within the study system are more likely to consume saiga meat, but also have less overall access to other protein sources than other households, especially farm owners. This finding suggests that impoverishment and limited access to a variety of protein sources are key factors in a household's consumption of saiga meat. According to informants, prices of saiga meat have significantly increased over the last decade. Purchased by the carcass, saiga meat costs on average 67 RUB (1.5 USD) per kilo – a three-fold increase from 2004 estimates (20 RUB, 0.5 USD; Kuhl et al. 2009). Even allowing for inflation (in 2004-2013 the mean inflation rate for the Russian Federation was 9.35% per annum; [www.inflation.eu](http://www.inflation.eu)), this represents a 50% increase in real terms. Despite this increase, saiga meat is still cheaper to buy than other common meats, such as beef and mutton, within the villages surveyed, further supporting the role poverty may play in driving consumption.

The economic drivers of consumption, however, are likely to be highly contextual. Respondents perceived saiga meat to be more expensive in the larger settlements and reports by key informants suggest prices range substantially across Kalmykia and Astrakhan region. Some respondents believed that saiga meat is becoming more of a luxury food item for the richer and more urban residents. The extent to which meat is traded further afield, and the nature of supply chain, is unclear, and warrants further investigation.

Across the study system, people's views of the different qualities of saiga meat are diverse, reflecting a range of values, tastes and pre-existing cultural norms. Saiga meat consumption and poaching were found to be sensitive topics, widely recognised as prohibited by law, and often referred to as taboo in traditional Kalmyk culture. This suggests that the prevailing social norms surrounding hunting saiga and consumption are 'in line' with conservation aims. However, individuals' perceptions of other people's views of the acceptability of saiga meat consumption were variable, demonstrating a conflict of opinions. Furthermore, respondents that perceived that their communities deemed consumption of saiga meat acceptable were more likely to be associated with consumption itself.

Given that local people within the study area hold highly positive attitudes towards saiga and their conservation (Kuhl et al. 2009; Howe et al. 2011), seeking ways in which to influence social norms, rather than attitudes, may have a stronger effect on decision-making surrounding saiga meat consumption. Public awareness events, such as Saiga Days, which are primarily focused at school pupils, need to involve the wider community and should draw greater attention to the direct impact of meat consumption. These events could provide a platform for bridging connections between different community members and re-aligning social norms surrounding consumption, as has been suggested by a study in Uzbekistan (Damerell et al. 2012). According to this study's findings and those of others (Kuhl et al. 2009; Leon et al. 2010), Khulkhutta and Erdnyevisky, and nearby villages such as Molodezhny and Utta, should be prioritized for future awareness-raising activities. Yashkul' is currently the main focus for Saiga Day because of long-standing relationships between the school and the Saiga Breeding Centre which is located near the village. The success of Yashkul's public engagement programme needs to be replicated in other villages.

This study presents a baseline from which researchers and practitioners can better understand the drivers and motivations of saiga meat consumption. It also suggests some of the motivations and mechanisms of trade; the scale, scope, and supply chain of saiga meat and other saiga products. Aside from further research, this study emphasizes the need for more rigorous species protection and enforcement to control supply at source, whilst highlighting the need for wider reaching public awareness activities to influence public perception of social norms concerning saiga meat consumption.

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For further information:

See a full project report at <http://www.iccs.org.uk/publications/thesis-archive-msc-con-sci/>

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