

A Disaster Averted ?

The Bushmeat Crisis in Maniema Province.

**A summary report on a project to control and monitor the commercial bushmeat chain
supplying the city of Kindu**

October 2009

Summary

Commercial bushmeat hunting for the Kindu market represented the single most important threat to wildlife populations in TL2 landscape, including its nationally important population of bonobos. The TL2 project, in collaboration with the ICCN, successfully lobbied the provincial administration of Maniema for a three month closure of hunting and sale of bushmeat in Maniema Province. The closure also emphasized enforcement of existing laws protecting nationally protected species, including the bonobo, from any hunting, even in open season. The decree, the first in living memory to control hunting in the province, was put in effect from July through September, 2009. Monitoring before and during the closed season confirmed that the closure on hunting and bushmeat sales resulted in major reductions of hunting in Kindu's 12,000 km² bushmeat catchment, and in an almost total absence of bushmeat transported into Kindu during the closed season.

Key interventions leading up to the decree included:

- Public support for the measure by the governor of the province and the mayor of Kindu,
- A media campaign introducing the city of Kindu to the closed season and its reason,
- Individual contact of bushmeat vendors by their fellow traders recruited and trained for the purpose, to explain the control measures,
- Public meetings in key villages in the landscape where the hunting season was presented by traditional authorities, TL2 field staff and the ICCN focal point. The meetings answered questions and addressed concerns expressed by local hunters.
- Visits to hunting camps by TL2 staff and village chiefs to request compliance with the hunting ban.

Monitoring of bushmeat entering Kindu before the closure revealed the colossal scale of the trade, averaging 30 metric tons of wild meat per month. The slaughter clearly represented a major threat to the TL2 landscape's fauna, and in particular its population of bonobos. Thirteen bonobos were recorded in a sample of 387 bushmeat loads entering Kindu over the pre-closure period. At this rate of occurrence, we estimate that 270 bonobos were entering Kindu annually in the period leading up to the closed bushmeat season. This represented the death of at least three individuals per 100 km² per year.

Despite the success of this first closed season, there is still reason for concern:

- Enforcement was lax. Compliance was mainly achieved through an intensive information campaign. It far from certain that this will be adequate to ensure continued compliance during future closed seasons.
- Not all nationally protected species are being spared by hunters. Angolan and red colobus, two protected species currently favored by hunters in the landscape, are turning up in bushmeat loads following the opening of the hunting season in October. Further information campaigns and enforcement will be required to protect these vulnerable species.
- Given the huge off take coming from the TL2 landscape over the past decade or more, a three month closed season is likely inadequate to allow depleted faunas to recover. Extended closure will be required in the upcoming years.

Total costs of the monitoring program varied by targeted group. The most cost effective monitoring is to conduct checkpoints for bushmeat transporters entering the city at obligatory ferry crossings. Costs to man checkpoints averaged less than \$100 / week per post (excluding salaries). Monitoring of markets was also inexpensive, but less efficient since there are many markets and non market sales are frequent. Monitoring hunters is an effective means to monitor compliance where the impact on faunas is most direct. Monitoring of hunters has the added benefit of supporting enforcement. Costs, however, are considerably higher than for the checkpoint and market monitors.

Context

TL2 landscape, covers approximately 23,000 km², straddling the Lomami Basin from south of Opala to the Kindu – Katako Kombe road (1 to 3 degrees south latitude). The TL2 landscape constitutes the last major reservoir of fauna in the western half of the cuvette central (central Congo basin). The landscape supports significant populations of bonobos, primates, duikers and one of central Congo's last major remaining elephant populations (estimated at 500 – 1000 animals). Elsewhere in the region, faunas have been depleted by uncontrolled hunting, including most of the adjacent areas of Equator, Kasai Oriental and Orientale Provinces.

The TL2 landscape is currently under serious threat from uncontrolled bushmeat hunting.. Our surveys over the last two and a half years confirmed that this sparsely occupied landscape was focus of hunting pressure far out of proportion with what could be accounted for by the few scattered communities occupying the forest. Even in the most remote forest we found abundant evidence of hunting: camps with meat drying racks, snares, spent cartridges graffiti carved on trees (many bearing the names and identification of hunters from outside the landscape).

Almost all of the wild meat produced in TL2 was destined for commercial sale. Only a small percentage served the subsistence needs of the residents of the landscape. Kindu (population 135,500) and Kisangani (population 682,600) are the primary markets of TL2 bushmeat. Secondary markets for TL2 bushmeat include mining centers east of the Congo River (Punia, Kalima, Kailo) and agricultural and trading communities to the west (Katako Kombe, Lomela and Lodja in Sankuru district of Kasai Oriental). Over 85 percent of the estimated meat harvest from the TL2 landscape moved to the primary markets in the two provincial capitals

Focus on Kindu

Based on our initial overview, the bushmeat flow from the southern half of the TL2 landscape presented the most severe and urgent threat. Huge volumes of bushmeat were clearly moving out of this sector, which contained important populations of primates and small ungulates, and most significantly most of the landscape's remaining bonobos.

In mid 2008 we made the decision to focus our efforts at control of hunting and monitoring on this portion of the landscape. In addition to the need to protect the bonobos and other species, several other factors motivated our selection:

Importance of the Kindu market for controlling hunting in the TL2 landscape. Most of Kindu's bushmeat came from the southern half of the TL2 landscape. We do not have data to directly estimate bushmeat coming into Kindu from other sources, but information provided by bushmeat tax collectors and market vendors suggests that between 15 and 25 percent of Kindu's bushmeat comes from outside the TL2 landscape. Although Kisangani's total bushmeat consumption is estimated to be higher than Kindu's, it comes for a diversity of sources, of which TL2 is only one, and not the major source. Controlling bushmeat commerce in Kindu would have a major impact on the conservation of TL2's faunas and conservation of bonobo in particular.

Kindu's geography facilitates control and monitoring. Transportation of bushmeat into Kindu from the TL2 landscape is channeled through only three access points where all transporters must

cross the Kasuku river on pirogue (dugout) ferries. There are no alternatives. These choke points represented potential points for control and monitoring information exchange with transporters.

Support of the provincial administration. Maniema's provincial authorities offered their political support to the management and conservation of the TL2 landscape from the outset. The governor and other authorities expressed an interest in developing a bushmeat control program, the first in living memory for the province.

Objectives and Methods.

Our engagement with the bushmeat market of Kindu had two primary conservation objectives:

- 1) Bring an effective hunting season into place, and
- 2) Reduce hunting of endangered, fully protected species, in particular bonobo.

In addition we had a third objective:

3) To develop, test and deploy a cost-effective program to monitor hunting and commercial bushmeat coming into the city.

Interventions

Our primary interventions included: 1) lobbying for hunting seasons and enforcement of existing wildlife laws and 2) information campaigns. Direct enforcement of the bushmeat season was left to the provincial administration, although the project assisted in training provincial game wardens and environment officers in basic conservation law and its application. Lobbying to have a provincial hunting season and closure of the forest was initiated in August 2008, and culminated 10 months later in the signing of the decree by the governor establishing an initial three month closed hunting season (a 6 month closure is proposed for next year). Key events leading up to the governor's signature included a gathering of traditional authorities in April 2008 which allowed open discussion of the hunting controls and a proposal for a protected area in the landscape.

Information campaigns for bushmeat closure included preparation and distribution of a booklet listing and illustrating nationally protected species, programs on the local FM radio, direct contact of market vendors and bushmeat transporters often by fellow traders favorable to controls and recruited by the project. Public meetings were convened by traditional authorities in collaboration with ICCN and TL2 in the villages with high participation by hunters and traders. Questions were asked and concerns expressed. A major challenge was the need to communicate the distinction between totally protected species and partially protected species (which are subject to hunting seasons).

Monitoring.

Our monitoring focused on pre closure movement of meat and monitoring during closure to evaluate compliance and alternatives.

The monitoring program built on the faunal inventories and surveys of hunting in the landscape, and added specific activities including interviews to profile attitudes and behaviors of key players in the bushmeat chain (Figure 1). Kindu bushmeat monitoring focused on three links of the bushmeat chain: hunters, transporters and retail markets. In addition spot checks were made at three wholesale markets during the closure to evaluate meat flow.

Hunters: Hunters were contacted and camps visited before and during the closure. In addition, snare presence and camp use were recorded before and during the closure in the most sensitive zones (west of the Luidjo tributary to the Lomami).

Transporters: Bushmeat transporters were monitored at two check points, Kasuku and Dingi before and during the bushmeat closure. The Kasuku checkpoint was located at the southern Kasuku ferry crossing. The Dingi check point was located at the point where the paths from the northern (Bafundo) and Central (Kakungu) crossings merged. Monitors recorded all traffic passing the check

point on selected days from first light until dark (period during which the ferries operated). Almost all of this traffic consisted of either bicycle transporters or pedestrians. Less than 1 percent of passage was by motorcycle (passenger transport only). Cars and trucks have not used these abandoned roads since the late 1980's. Monitors addressed passing transporters and asked them if they would be willing to identify themselves and answer a few questions concerning their loads, knowledge of hunting and bushmeat sale regulations. They were offered an opportunity to express any opinions concerning the proposed park and hunting seasons. Respondents were classed as accepting or refusing an interview. A small number of loads transited without being approached. These loads were noted in the totals as non-contacted. All respondents whether they accepted an interview or not received a package of glucose biscuits at the end of the encounter. Encounters lasted generally less than 5 minutes.

Retail Markets. Monitors visited the Central Market and five smaller markets where bushmeat is sold on unannounced visits and recorded quantities and types of bushmeat offered for sale. During the pre-closure period, a sample of market vendors representing a range of ages, types of meat and level of activity were contacted at their sale post and asked if they would accept an in-depth interview at their convenience, most often at home after work. The interviews were conducted by trained monitors. Those who refused were classed as contacted.

TABLE 1 provides a chronogram of the activities over the project period.

Kindu's bushmeat chain

Bushmeat arrives in Kindu through a series of steps that begin with the killing of an animal by a hunter in the forest, and includes one or two exchanges with transporters to arrive in Kindu. Some bushmeat moves on from Kindu to other markets, including shipments by air to Kinshasa, sales to communities on the right bank of the Congo River, and transport to mining communities east of Kindu. These represent a small percentage of the sales or transport we recorded. Over 85 percent of the bushmeat arriving in Kindu from the TL2 landscape is consumed there.

FIGURE 1 presents the Kindu bushmeat chain, the activities undertaken to control hunting and commercial meat trade, and the monitoring to evaluate compliance. The four link chain presented in the figure characterized about 60 percent of the recorded transactions from the killing of an animal to its consumption in Kindu in the period leading up to the bushmeat closure. This chain consists of two intermediate links between hunter and consumer. The first of these transit links consists of multiple informal "wholesale" transactions in villages in the landscape. Meat is often brought in by hunters themselves or, occasionally, porters bring loads of meat from hunting camps to villages along the main bicycle tracks (abandoned roads) linking the hinterland with Kindu. The second link is the transport of bushmeat by bicycle from these buying points to Kindu, crossing the Kasuku River at one of three points: 1) Village of Kasuku, 22 km west of Kindu on the main track leading to the Lomami River and Sankuru (a further 100 km on), 2) Village of Dingi, 60 km north of Kindu, and west of the historic center of Lokandu, and 3) near the village of Bafundo, 120 km north of Kindu, at the end of the Balanga Road.

About 40 percent of bushmeat transactions consisted of modifications of the 4 linked bushmeat chain above. In 5 percent of recorded transactions, hunters by-passed middle men, to transport and sell their meat directly to wholesale buyers in Kindu or, more infrequently, directly to retail buyers. Thirty-five percent of transactions represented longer term agreements between specific hunters and retail vendors, with transport arranged by the vendor (often a family member). (FIGURE 2).

Profiles of the bushmeat actors

We interviewed and surveyed hunters, transporters and vendors to determine how they are involved in the hunting and bushmeat chain, and to evaluate compliance with the bushmeat closure and to evaluate attitudes related to this.

Hunters: The Kindu bushmeat catchment in the TL2 landscape is primarily in the traditional lands of the Bangengele and Balanga. Thirty-one hunters were encountered in the field by TL2 teams during their circuits in the forest. All were involved in commercial hunting. About one fourth (24 percent) were shot gun hunters; 76 percent used snares only. More than half of the hunters encountered (52 percent) had come into the TL2 landscape from elsewhere, most from the west, Sankuru district in Kasai Oriental Province.

Transporter: A total 1087 bicycle and pedestrian transporters were contacted over both the pre closure and closure period. Only 52 individuals (less than five percent) refused an interview. Bushmeat transport is predominately a male activity (91 percent), with bicycle transporters representing over 85 percent of the traffic. Less than half (46 %) of the respondents interviewed considered themselves bushmeat transporters by profession. Over 22 percent of respondents described themselves as students, seeking cash for school or university fees. The remainder of respondents (32 %) considered themselves occasional transporters or hunters transporting their own meat. Eighty-seven percent of 341 loads of bushmeat for which destination was determined, were classed for commercial exchange. Only 11 percent of loads were identified for subsistence use (rations for one family) and the remaining two percent of loads were associated with funerals, church gatherings or other ceremonies.

Vendors: In the period leading up to the closure of the bushmeat trade, two women TL2 staffers conducted interviews with 31 market vendors, all but two of whom were also women, and all resident in Kindu. Many of these women had specialized on the bushmeat trade. Over 40 percent had traded bushmeat for 20 years or more, and almost half of the traders said they traded in no other commodities, and had no other business. Less than 10 percent of the vendors had entered the business in the last five years. All but three of the vendors admitted that they had sold nationally protected species, the most frequent being the Angolan colobus. Fifteen vendors—over half the sample, reported they had sold bonobos, and of these, 11 said they had sold bonobo within the last six months. Only two vendors said they were totally unaware that there were laws protecting wildlife and regulating hunting and bushmeat trade. Fewer than 30 percent of the traders, however, had more than a minimum knowledge of the law, and only one vendor in 31 could correctly identify nationally protected species. None of the vendors had finished secondary school and only a third had attended more than two years of secondary school. Eight of the 31 vendors were totally unschooled. All of the vendors had children. Twenty of the vendors (65 %) were female heads of households: widowed, unmarried or not living with spouse.

Effect of bushmeat closure on hunting and bushmeat trade

The decree declaring the bushmeat season, with the accompanying information campaign, was followed by a nearly total halt of bushmeat traffic into Kindu. Before the closure, an average of 18.6 bushmeat loads a day were transported into Kindu over the three Kasuku River crossings described above. Loads averaged 54 kg. We estimated over 30 metric tons a month entered Kindu from the TL2 landscape. Following closure, our monitors recorded bushmeat only twice in 736 transport loads surveyed at the same crossings.

This apparent degree of compliance was unanticipated. Frankly, we were amazed by these results. We undertook several undercover investigations at wholesale markets, and looked as well at bushmeat coming in from outside the TL2 landscape or along transit points we were not manning (meat transported circuitously to the Congo River and brought in by dugout). Our results were the same. There was a near total absence of bushmeat available in Kindu. Only four meat loads were found despite extensive searches on the east bank of the Congo River. Not one market vendor was seen openly selling bushmeat, and undercover requests for bushmeat produced only one person willing to sell, and she was very fearful.

Hunters also complied with the closed season, though to a lesser extent. Our monitoring focused on the 1750 km² Ludjo sector, which contains one of the most important populations of bonobos. We found an over 85 percent drop in hunting camp occupation in the Ludjo sector during the closure. (Three recently occupied camps were found out of 22 camps visited during the closure). Most of the remaining active hunters encountered were outsiders from Sankuru District who claimed they had heard nothing of the closed season. All of the hunters left the forest (accompanied by local chiefs) following contact. One local hunter told us that since the commercial bushmeat season was only three months long, he would continue to set snares and stock meat in anticipation of the opening. Nevertheless, we did not find any active snare lines in over 850 km of reconnaissance in the Ludjo sector.

Discussion

Impact of uncontrolled hunting on faunas

The pre-closure inventories provide a window on the scale of the uncontrolled hunting in the TL2 Landscape. We must conduct further analyses to evaluate the full effect on faunas, but some indicators are already evident. Based on the composition of 387 bushmeat loads surveyed before the closure, we estimated an average of over 11 animals per load, 6 of which were primates, about 3 duikers, and the remainder filled out by red river hogs, larger antelope, porcupines, dwarf crocodiles, and bonobos. We recorded 13 bonobos in 387 bushmeat loads investigated.

This bushmeat came from a “catchment” of about 12,000 km² including some of the most important remaining areas of wildlife in the TL2, such as the Ludjo sector. FIGURE 3 shows the point origins of the 387 wholesale loads destined for the Kindu retail trade and consumption. Large blocks, such as the Ludjo are not indicated as a wholesale source since these are roadless areas and the bicycle transporters can only pick up meat from this area after it has been carried to one of the peripheral villages.

Extrapolating our estimates of the composition of the bushmeat flow, along with our measure of the daily quantities coming out of TL2 to Kindu, we estimate that in the period before the hunting season, over 6,300 wild animals entered Kindu each month in the form of bushmeat from the TL2 landscape: 3,350 monkeys, 2,250 duikers, and 19 bonobos. Annually the sums are colossal. Over 76,000 animals per year enter Kindu at this rate, of which 227 would be bonobos.

These estimates are a minimum of the total numbers killed, as the calculations are based on animals arriving near the end of the bushmeat chain, and do not account for animals that were consumed locally, lost or degraded in snare traps or discarded in transport. Nor does it take into account the small volume of meat going west to Sankuru.

Based on these estimates, the numbers of animals killed, as we have recorded them, would soon decimate the fauna over the Kindu bushmeat catchment, if the killing kept up at this rate. Based on discussions with hunters and meat traders, wildlife populations have already declined, in their experience. The possibility of even greater loss is evident by looking at areas in the north of the TL2 landscape in the region of Kisangani area, where hunting controls have arrived too late. Large sectors of this forest, within a radius of 100 km of Kisangani, have had their faunas reduced to the point of economic extinction, and for some species such as the elephant and bonobos, the species has become locally extinct, all within the last two decades.

Attitudes and Behavior. What changed and what did not.

Our surveys revealed that participants in the Kindu meat chain could change their behaviors quite markedly, and in short order. Attitudes, as we assessed them, did not seem to follow. We detected no marked change in attitudes before or during bushmeat closure, and if anything, negative responses seemed more frequent during the closure period than before (FIGURE 4). Nevertheless, the number of positive respondents surprised us, even for the case of hunters interviewed during closure, who were clearly involved in an activity counter to the objectives of the project. All of this leads us to

question how stable opinions are, and how important they are in predicting compliant behavior. The results do suggest continued information campaigns are worth while. The Kindu bushmeat actors changed their behavior in the face of very little direct enforcement, but intensive and often personalized lobbying and information campaign. In asking people how they learned about the bushmeat season, many suggested public media, especially local radio. A number of respondents cited personal contact from TL2 staff or the trained market vendors who were part of the “mouth to ear” information team. The public commitment of authorities, including the ceremonial closing of the bushmeat season at the Kindu market by the mayor added to the impact of information.

Bringing the closed seasons to hunters was also limited to an information campaign for this first time. The traditional chief of the Bangengele made several trips around the sector to speak with villages. Hunter compliance was less complete than was the case for vendors. All of our field team leaders and some sympathetic villagers expressed the observation that “a few seizures” would help bring the message home quickly to the hunters. None believed that information alone would suffice without enforcement.

How can compliance be sustainable?

Enforcement is likely to be necessary if we are to expect continued compliance. Enforcement has problems under current administrative arrangements. Ministry staff is underpaid, poorly trained and unsupervised. The risk of abuse of authority is high, even at their level. Too many bushmeat seizures end up the property of the environmental officers charged with enforcement. This will discredit the closed seasons and lead the local population to turn against the conservation projects. ICCN entering the picture will help. But the need to improve capacity in the provincial ministry is key.

The economics of control and monitoring.

This analysis is still in process, but a few points can be presented here:

Bushmeat is a valuable commodity under current conditions of price and availability. An average load of bushmeat coming into Kindu is worth about \$147 on the retail market. This represents an annual retail market value of over \$ 980,000 in Kindu. Mark up from the hunter to the final retail sale is on the order of 300 to 330 percent. Wholesale transporters told us they could expect to make clear a profit of over \$50 from a full load of meat.

This leads to obvious questions: Why would actors in the bushmeat business so easily give up the trade when enforcement was negligible? Secondly, given these profits, how can the trade ever be controlled?

We do not have answers to these questions at this point, but some possibilities are clear:

First is that if uncontrolled, the trade would soon become less viable as faunal populations are decimated. This is not a subsidized business, so there will be no government handouts to market vendors without meat or to transporters to buy new and bigger bicycles to reach and carry the last of the duikers and monkeys.. (A scenario sited by some hunters as the take off point of the current commercial trade, was the practice of Mobutu to give away shotguns to traditional authorities to ensure their loyalty. These individuals promptly hired professional hunters to use the guns and established themselves as barons of what became a lucrative business. The current administration has fortunately not gone down this path.)

Second, while the price differential shows potential profits, taxation can alter this. Bushmeat prices average \$ 2.72/ kg. In contrast beef, the most expensive meat, averages about \$5.60/kg, and chicken (the least expensive of domestic meat) averages \$3.80/kg. At present, taxes on bushmeat in Kindu are less than on domestic meat. Modifications in the tax structure could alter the economics of the bushmeat trade and drive demand away from bushmeat. Indeed, some members of the administration have already pointed this out, and there may be opportunity here.

Although our data is preliminary, a number of vendors and transporters we interviewed during the closure had already moved to other products, including domestic meat (goats and chickens) and fish (a seasonal commodity). This happened quickly, despite earlier claims by many that they could never do any other sort of trade. We also noted a major increase in domestic meat entering Kindu during closure, along the bicycle tracks. Most of this came from neighboring Sankuru. It will be important to see if the communities in the main hunting zones of TL2 can also shift to domestic meat production.

While much remains to be learned—and applied—to ensure the sustainability of the bushmeat controls, it is clear that the economics of bushmeat and its alternatives will play a major, if not deciding factor. Getting the economics right will be one of the next big challenges.

Followup:

Three issues loom for the continued utility of the hunting controls:

Increase the closed season. This should go to at least six months. A number of local people and provincial deputies already support this, so this is a target for next year.

Re-enforce the controls on killing protected species. We can expect compliance for bonobo, by and large, but colobus monkeys, protected nationally, are still a favored target. More needs to be done to inform hunters and consumers, and there will have to be some bushmeat seizures or arrests to bring the point home.

Monitoring. Who can take this on from TL2? Costs vary. The most efficient monitoring is at the Kasuku River crossings (under \$100/ week to man the post, excluding salary). Provincial staff can be trained and posted, but there would have to be guarantees that the posts are not abused (seizures taken for personal gain) and that funds to operate are deployed in a timely manner. These are difficult conditions to meet at present. In the short term, ICCN is the likely candidate to take on the monitoring associated with patrols of hunters in the landscape once a protected area is classed.

Thanks and Acknowledgement

This project owed much to many. To the provincial administration, traditional authorities, beginning with the governor, we express our appreciation for their support, without which the task would have been difficult. We appreciated as well the support of the mayor of Kindu. Many people served as monitors and educators. We thank them all for their contributions. The TL2 field staff, themselves committed to conservation, went beyond the call of duty to ensure the transmission of the conservation message.

TABLE 1. Chronogram of the main activities of the Kindu-Maniema Bushmeat control and monitoring project

	Aug 2008	Sept 2008	Oct 2008	Nov 2008	Dec 2008	Jan 2009	Feb 2009	Mar 2009	Apr 2009	May 2009	Jun 2009	Jul 2009	Aug 2009	Sep 2009	Oct 2009	Note
Establish legal controls																
Develop bushmeat provincial bushmeat policy	█	█	█	█	█	█	█	█	█	█	█	█				Culminates with signing of provincial decree establishing hunting seasons in June 2009
Provincial environment staff training 1		█														Introduce conservation legislation and nationally protected species
Provincial environment staff training 2					█											Logic and Methods of bushmeat control
Provincial environment staff training 3									█							Logic and Methods of bushmeat control
Easter workshop									█							Introduce hunting seasons and proposal for protected area to local stake holders
Bushmeat information campaign									█	█	█	█	█	█	█	radio, brochures, posters and person to person outreach at market, transport and hunters
Provincial level hunting season signed into law												█	█	█		Three month season proposed to be increased to six months in the following year.
Monitoring compliance																
southern sector faunal inventory and hunter survey		█	█	█	█											Evaluate threat of bushmeat hunting on bonobos and identify key players
bonobo core area monitoring			█	█	█	█	█	█	█	█	█	█	█	█	█	monitoring of core area with important populations
Kindu market vendors									█	█	█	█	█	█		monitor bushmeat entering Kindu; interviews, information campaign and followup monitoring
Bushmeat transport check points									█	█	█	█	█	█		interviews, information campaign and followup monitoring
Hunter followup										█	█		█	█		Information campaign and removal of hunters from areas proposed for formal protection.

The Kindu Bushmeat Chain : Interventions and monitoring

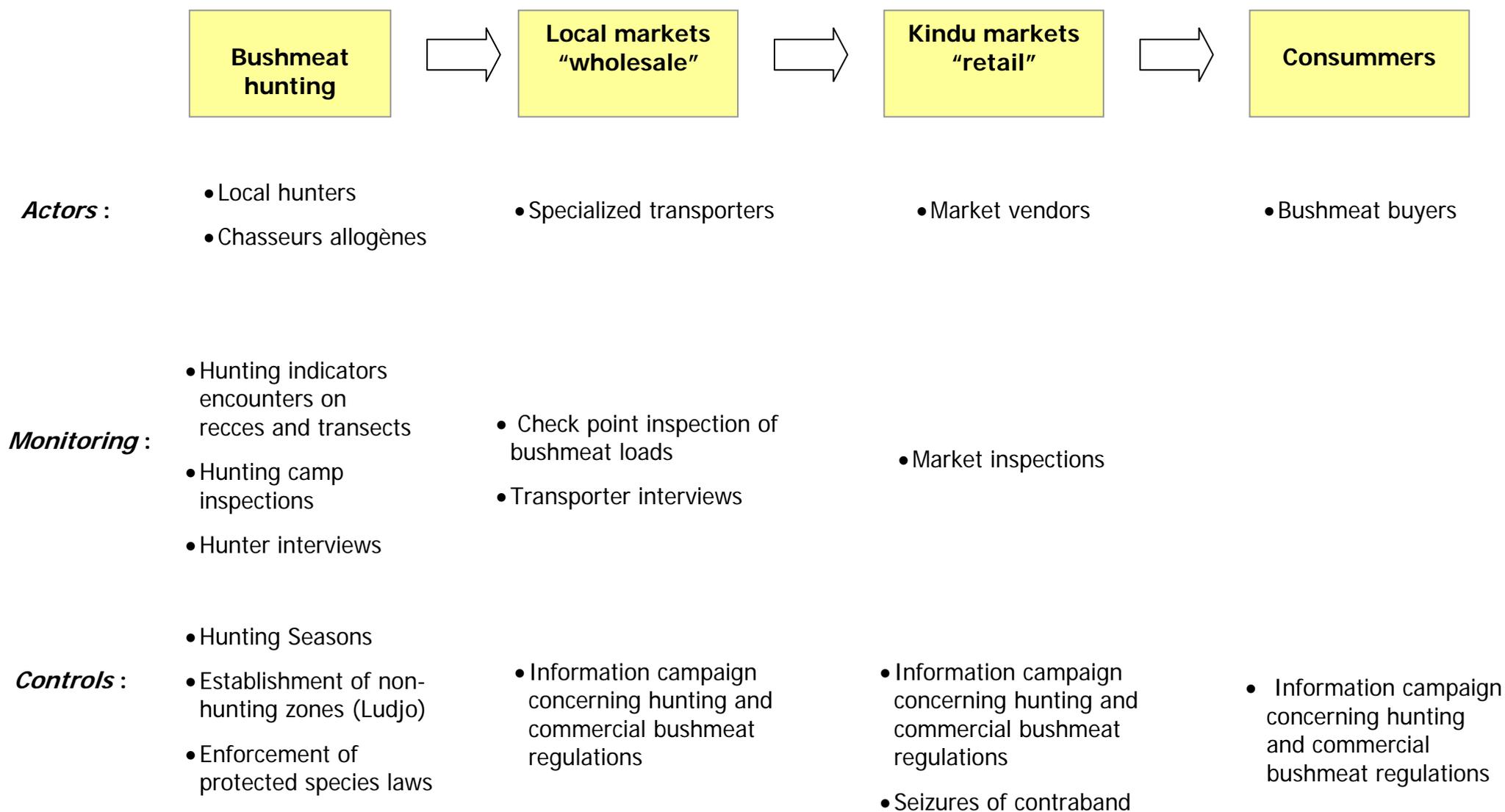


FIGURE 1. The Kindu Bushmeat Chain

La filière de *Bushmeat* : Transactions

Province de Maniema, Marché de Kindu

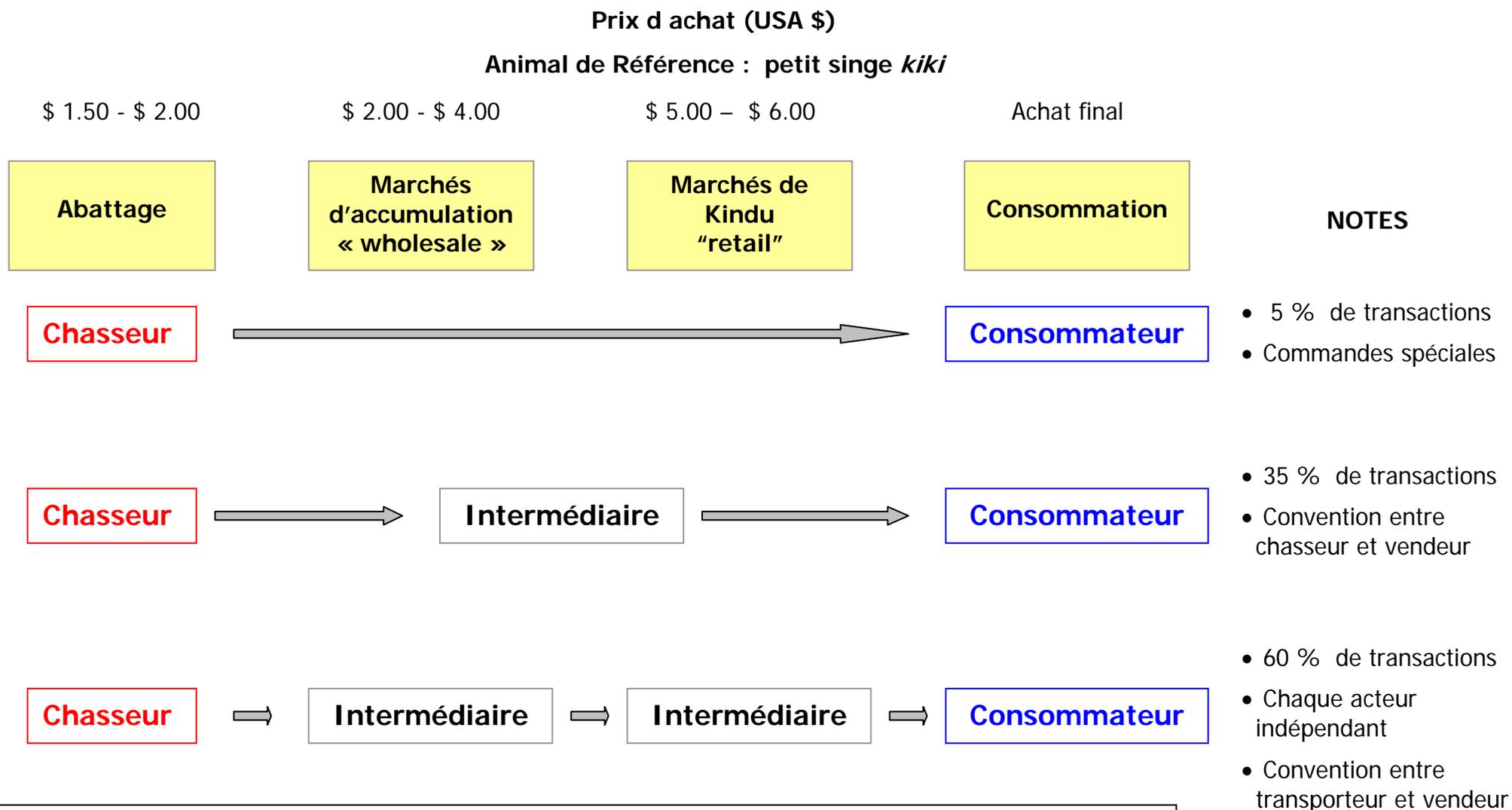


FIGURE 2. Bushmeat Chain transaction dynamics and economics. The reference animal, a small monkey, is used to assess price increases in meat as it moves up the chain from hunter to consumer. The price differentials are in similar proportion for other types of meat, even if the total values differ.

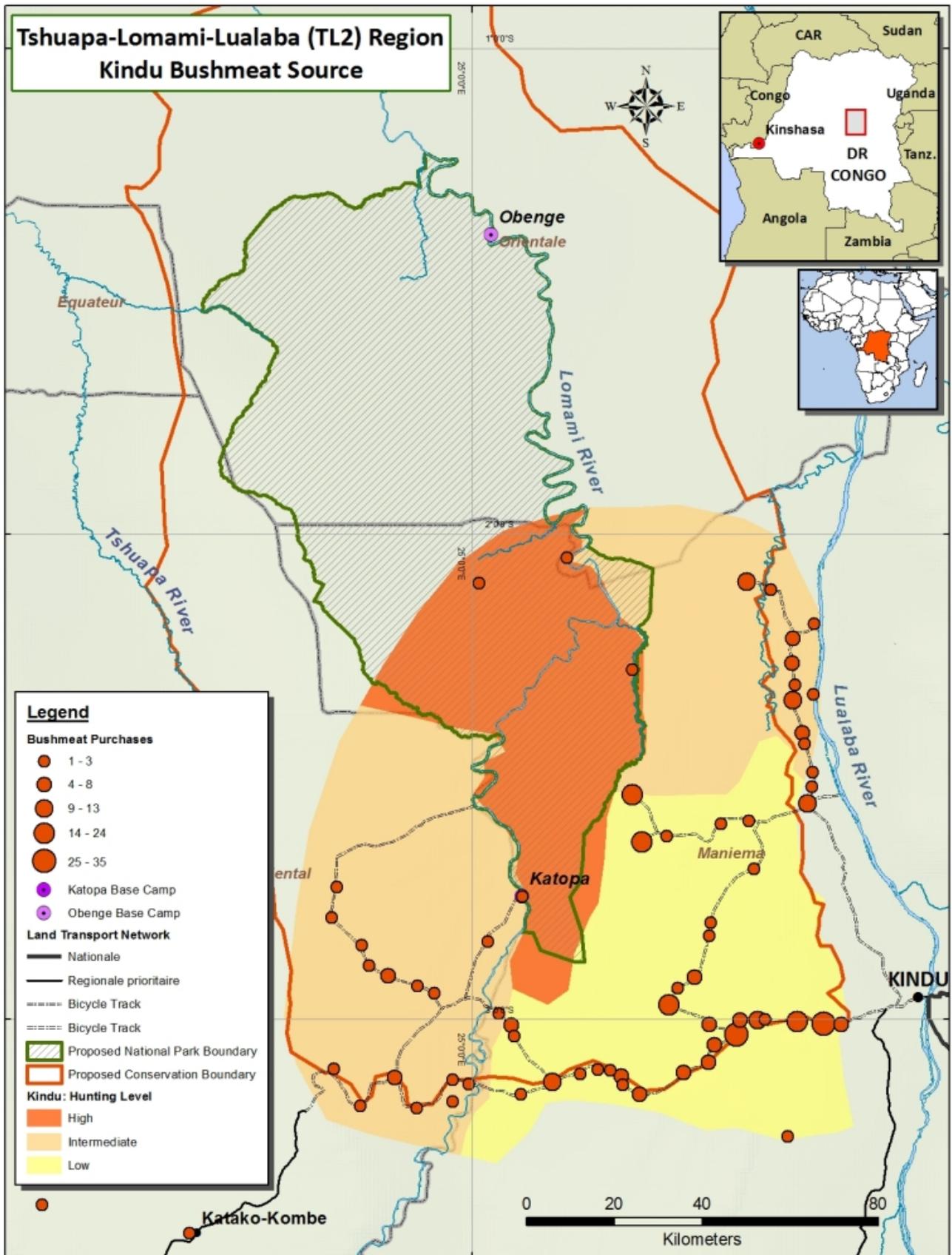


FIGURE 3. Kindu Bushmeat catchment with wholesale bushmeat locations for 387 surveyed loads from April through June, 2009.

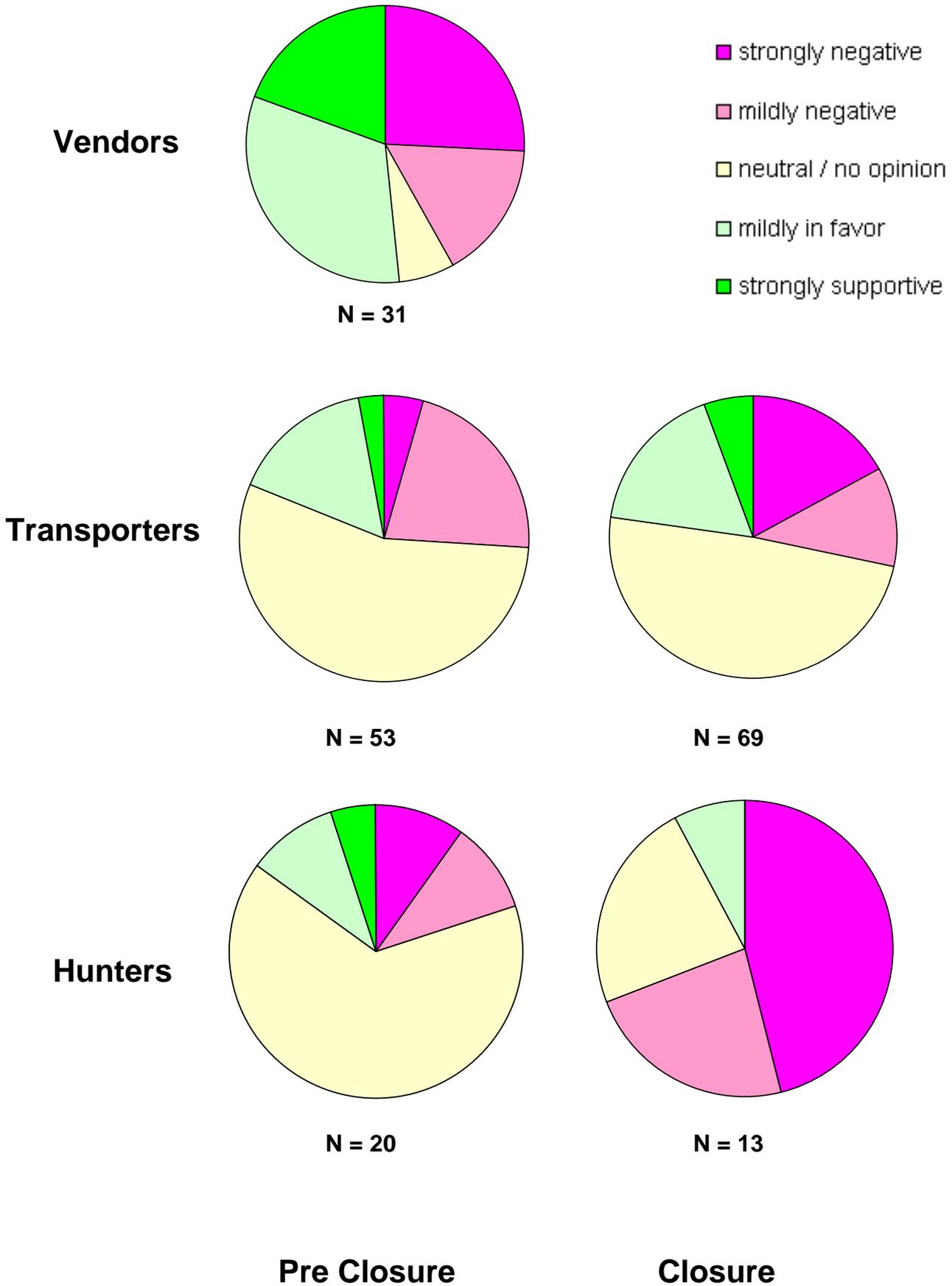


FIGURE 4. Attitudes toward controls on hunting and bushmeat sales of actors in the Kindu Bushmeat Chain, before (Pre-closure) during (Closure) hunting seasons. The number of interviews is give as N.