

Chapter 12

Bushmeat

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12.1 Background

The first published paper highlighting the term “bushmeat” originated within a journal in 1843 when the author Captain W. Allen accounted for his visit along the rivers of Cameroon in Western Africa. Allen (1843, p5) wrote, “the natives, who set fire to the grass in the dry season for the purpose of catching wild animals, which they call ‘bushmeat’.” Since then, the term bushmeat accounts for all “wild animals hunted for food, especially in Africa; the meat from these animals” (Oxford English Dictionary 2015).

In Central and Western Africa, bushmeat is essential for rural communities as a part of their diet, trade revenue, or culture. However, due to the continents unprecedented population growth, consumption and sale has risen to an unsustainable level that will result in the extinction of many species unless significant changes occur (Ape Alliance 1998; Chaber et al. 2010). The black rhinoceros (*Diceros bicornis*), western gorilla (*Gorilla gorilla*), and African wild ass (*Equus africanus*) are examples of mammals that are now critically endangered due to illegal poaching (Red List 2015a; Red List 2015b; Red List 2015c). A report published by UNICEF (2014) highlights that over the next 35 years, Africa will double in population with over 1.8 billion new baby births, indicating this problem is only going to get worse, particularly with improving life expectancy.

Over the last century, Western and Central Africans have migrated throughout the world, establishing communities in many major cities and towns (International Organization for Migration 2011). Within these countries, a variety of protein sources are readily available, yet consumers are willing to pay high prices in order

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Fig. 12.1 Giraffe killed for meat; poachers arrested by Big Life Rangers (Courtesy of Big Life Foundation, photographer Nick Brandt)

to obtain bushmeat species native to their homeland. To make matters worse, the increased wealth of consumers means traders are willing to go to extreme lengths in order to export/import bushmeat due to the financial incentives available. Therefore, even the more resilient species may end up endangered, in order to supply this ever-growing demand (Chaber et al. 2010). The photograph (Fig. 12.1) below shows the remains of a giraffe slaughtered for bushmeat by two poachers, both of which were arrested (Big Life Foundation 2015). Tracker dogs are often used by bushrangers to hunt for traps, injured and dead animals, and poachers. Figure 12.2 is a photograph of the remains of wild animals loaded onto a truck, including a zebra caught in snares from poachers (Big Life Foundation 2015).

There are many concerns regarding bushmeat consumption including eradication of species (John et al. 2002), poor hygiene (Federal Department of Home Affairs, 2014), inhumane slaughtering (Humane Society International 2015), and spread of tropical diseases (FDHA 2014; Subramanian 2012; Greger 2007).

Bushmeat is predominantly obtained from areas of extreme poverty including Africa, parts of South America, and Asia. Data provided by the World Bank (2015) shows that in 2013, of the top 20 poorest countries in the world, 18 of these are in Africa. Within these countries, moral principles governing the activities of a person and their behavior are lost in the need for survival. As a comparison, 12 of the richest countries in the world are in Europe (World Bank 2015).

Criminal gangs have exploited the desperate need for survival by persuading natives in abject poverty to hunt wildlife for trade. Endangered species are seen as being premium catches, procuring much higher markup prices; therefore natives receive incentives for obtaining these, even though this is completely illegal (File on 4 2004).



Fig. 12.2 Tracker dog with carcasses found in snares by Big Life Rangers (Courtesy of Big Life Foundation, photographer Nick Brandt)

12.2 Zoonotic Diseases

A zoonotic disease is one that is transferrable between animal and human host. These can be caused by any microorganism, including bacteria, parasites, viruses, fungi, and prions. Some of the most lethal diseases known to man have been the result of transference from animal to human, including anthrax, Ebola, and variant Creutzfeldt-Jakob disease (vCJD).

Non-domesticated animal species have an intricate role in the spread of endemic and emerging zoonotic diseases throughout the world. Since the turn of this century, international travel and migration, human encroachment and habitat expansion, and trade of live/dead animals have significantly increased (Travis et al. 2011). Endemic and emerging tropic diseases have also followed suit. Over the last 20 years, the media has headlined emerging diseases such as severe acute respiratory syndrome (SARS), Ebola virus disease (EVD), human immunodeficiency virus (HIV), and monkeypox, all of which originated from wild animals (Doyle 2015; Malone 2014; BBC News 2003).

Table 12.1 presents zoonotic diseases originated from wild animals, which have spread to humans through zoonosis. The microorganisms responsible for these diseases are not particularly heat resistant; therefore, thorough cooking is typically enough to destroy all of these. However, poor personal hygiene, cross-contamination

Table 12.1 Zoonotic tropical diseases spread from mammals to humans as bushmeat

Disease/Agent	Symptoms	Host animal(s)	Associated source(s) of origin
Ebola virus disease (including Ebola virus, Sudan virus, Reston virus, Bundibugyo virus, Tai Forest virus)	Fever, headache, muscle and joint pain, sore throat, internal bleeding, bleeding from eyes, nose, and mouth. Fatal in up to 90% of cases. No vaccines are currently available	Bats, primates, antelope, porcupine	Africa, predominantly Central and Western Africa
Leptospirosis	Fever, headache, nausea and vomiting, poor appetite, conjunctivitis, muscle pain, jaundice, symptoms of meningitis, seizures, coughing up blood. Can lead to brain damage, kidney failure, and death	Turtles/ Tortoises/ Reptiles	South America
		Mongoose	Africa, predominantly Central and Western Africa
Monkeypox virus	Fever, rash, intense headache, lymphadenopathy, myalgia. Can be fatal in young children	Primates, rodents	Africa, predominantly Central and Western Africa
Orthohepevirus A/ hepatitis E virus	Jaundice, anorexia, abdominal pain, nausea, vomiting, fever, hepatomegaly. Can result in acute liver failure which can lead to death	Deer, wild boar	Canada, UK, Europe, Asia, North America, South America
Rabies	Fever, paresthesia, paralysis, inflammation of the brain and spinal cord, coma. Can be fatal	Kudu, marmosets	Africa, predominantly Central and Western Africa
		Raccoon, squirrel	North America
Severe acute respiratory syndrome (SARS)	Fever, fatigue, headaches, chills, diarrhea, breathing difficulties. Reduction of oxygen in the blood which can be fatal	Bats, civets	Southern China
Simian foamy virus (SFV)	No reported illnesses from people tested positive for SFV	Primates	Africa, predominantly Central and Western Africa
Simian immunodeficiency virus/human immunodeficiency virus (HIV)	Nausea, vomiting, fever, enlarged lymph nodes, muscle aches, skin rash, weight loss. No vaccines are currently available; however, over the last 20 years, antiretroviral treatments have significantly improved life expectancy	Primates	Africa, predominantly Central and Western Africa

(continued)

Table 12.1 (continued)

Disease/Agent	Symptoms	Host animal(s)	Associated source(s) of origin
T-cell lymphotropic virus-1/human T-cell lymphotropic virus (HTLV)	Progressive weakness, muscle spasms, stiffness in muscles, constipation, weak bladder control. 95% of infected are asymptomatic. No vaccines are currently available	Primates,	Africa, Australia, North and South America, parts of Northern Europe
Yellow fever virus	Fever, nausea, loss of appetite, muscle pains, headaches, liver damage, jaundice, bleeding in urine, kidney damage	Primates	Africa, predominantly Central and Western Africa

Reconstructed from Travis et al. (2011), National Science Foundation (2013), FDHA (2014), Falk et al. (2013), Smith et al. (2012), WHO (2015) and WHO (2014)

during preparation, cuts, and exposed wounds are known routes that have allowed human infection. The handling and preparation of infected wildlife is therefore one of the critical transmission routes that must be carefully controlled. Table 12.2 highlights examples of highly resistant diseases originated from wild animals, including those associated with bushmeat. The *Bacillus anthracis* spores, responsible for anthrax disease, are resistant to sterilization temperatures, drying, and many disinfectants. These spores can easily be spread by release in the air, which is why the US Military has viewed it as potential biological terrorism threat (Inglesby 1999; FDA 2015).

12.3 Chemical Poisoning

Poisoning is widely used in many parts of Africa as a means of killing wild animals. The chemicals are cheap, easily accessible, silent, and very effective (Ogada 2014). Although illegal, they are often used to kill large carnivores such as lions, hyenas, and jackals as revenge attacks for killing farm animals. Poisons are also used to kill wild animals for bushmeat.

In 2001–2002, samples of bushmeat were taken and analyzed by scientific officers of the Ghana Standards Board. They found that 30% of samples contained chemical poisoning; all of which originated from locally sourced ingredients including residues of organochlorine, organophosphorus, and carbonates common in agricultural pesticides (FAO 2004). Further to this, Conservation International Ghana found chemical poisoning to be the second most popular method of hunting in Ghana (Opare-Ankrah 2007).

During a case study in 2007, involving traders and hunters from the Mfantseman District in Ghana, traders were asked about the severity to human health from the use of chemical poisons (Opare-Ankrah 2007). A general consensus was that no trader would buy or sell bushmeat that was believed to have been killed by poison.

Table 12.2 Highly resistant zoonotic tropical diseases spread from mammals to humans as bushmeat

Disease/Agent	Symptoms	Host animal(s)	Associated source(s) of origin
<i>Bacillus anthracis</i>	Symptoms differ depending on route of infection, however typically involve flu-like symptoms, nausea, vomiting, abdominal pain, headache, fever, swollen neck, bloody diarrhea, difficulty swallowing, meningitis, organ failure	Horse, cattle, sheep, camels, oxen, goat, donkeys, pigs, elephants, hippopotamus, lions, jackals, hyenas	Africa, North America, South America, Spain, Italy, Asia, Middle East, Philippines
<i>Mycobacterium bovis</i> /tuberculosis (TB)	Prolonged coughing, cough up blood, chest/breathing pains, chills, fever, fatigue, weight loss, seizures. TB is fatal if left untreated	Cattle, badgers, ferrets, cats, deer, lamoids	South America, North America, Africa, UK, Europe, Asia

. Reconstructed from Inglesby et al. (1999), FDA (2015) and Zumla et al. (2013)

One trader stated that, “people will not buy from me anymore if... get sick when they eat from here so I have to make sure the meat is good” (Opare-Ankrah 2007). This is easier said than done though as animals brought in for sale by hunters are often shot after being poisoned to prevent suspicion.

12.4 Bushmeat Trade

Due to the covert nature of the business and the extent of illegal international trade, it is impossible to give a true estimation of global bushmeat distribution (Smith et al. 2012). What is known though is that almost three-quarters of emerging diseases are of zoonotic origin, predominantly due to contact with non-domesticated animal species (Federal Department of Home Affairs 2014; Falk et al. 2013). The Parliamentary Office of Science and Technology (2005) estimated that between 1 and 3.4 million tons are harvested annually from Africa alone. This includes approximately 28 million bay duiker antelopes (*Cephalophus dorsalis*) and over 7 million red colobus monkeys (*Procolobus badius*).

Meat, milk, and their products are banned from entering the European Union (EU) from non-EU countries, even if imported in small quantities for personal consumption (EC regulation 745/2004). There are certain exceptions to this; however, with countries endemic with diseases such as foot and mouth disease (FMD) including Africa, the Middle East, and parts of South America (FAO 2012), the law is strict. In addition to this, many wild animals are regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (CITES 2015a), an agreement which has been accepted throughout Europe (CITES 2015b).

In spite of the abovementioned regulations and widespread media coverage relating to bushmeat, thousands of tons are illegally imported in to Europe every year (Chaber et al. 2010). In France, for example, it is estimated that approximately 5 tons of bushmeat are smuggled from Africa through Paris Roissy Charles de Gaulle Airport every week in personal luggage (FDHA 2014). Of this, a third is estimated as being protected under CITES (FDHA 2014). It can be almost impossible to identify all meat products without DNA testing due to the similarity in appearance of meat cuts, especially if bones, skin, or hair is removed (Food Inspectors 2014); therefore, this figure may be much higher.

12.5 Bushmeat Cases in the UK

In November 1999, two shopkeepers were caught trading bushmeat from their store in Ridley Road Market in Dalston, East London (Vasagar 2001a). An environmental health officer, on a routine store visit, noticed a sign advertising bushmeat for sale (File on 4 2004). The price list contained CITES listed endangered species including tiger (*Panthera tigris*) and gorilla (*Gorilla gorilla*), both of which are illegal to hunt worldwide (CITES 2014). Mobalaji Osakuade and his partner Rosemary Kinnare told an undercover environmental health officer that they could get anything they wanted providing they were willing to pay for it. This includes whole lions at £5000, lion and tiger heads at £1000, and antelopes, goats, cane rats, porcupines, and live giant snails. The couple had also been smuggling illegal snakes and lizards, traditionally used within traditional African medicines. Each was given jail sentences of 4 months (Vasagar 2001a; Vasagar 2001b).

In December 2001, Dr. Yunes Teinaz, an environmental health officer for London Borough of Hackney, began an investigation into a shop in Kejetia Mini Market on West Green Road, London (Pointing and Teinaz 2004). During a routine inspection, Dr. Teinaz discovered meat products being prepared and sold in squalid, unhygienic, pest-infested conditions. The kitchen preparation area was so bad that an emergency prohibition notice was issued due to an imminent risk of injury to human health (Pointing and Teinaz 2004). Figures 12.3, 12.4, and 12.5 were taken by Dr. Teinaz during the inspection for evidence in court. The store was closed down and unable to reopen until substantial improvements warranted re-inspection and approval. However, Paulina Owusu Pepra, the store owner, and her partner had reopened without approval. On 22nd October 2002, Dr. Teinaz returned with police and found meat products again being prepared and sold in similar unhygienic conditions (Pointing and Teinaz 2004). Police officers seized over 2 tons of rotten bushmeat including cane rat, giant snails that were decomposing in their own feces, pigs' feet, and a range of unidentified smoked meat, some with skin still attached. The owner, Paulina Owusu Pepra, appeared in court in December 2003 and was given a 3-month prison sentence and lifetime ban for preparing food for sale. Her husband, believed to have fled the country before sentencing, has not been found (Pointing and Teinaz 2004).



Fig. 12.3 Oil and grime encrusted pot used for frying meat (Courtesy of Dr. Yunes Teinaz)



Fig. 12.4 Unknown smoked bushmeat prepared in dirty sink (Courtesy of Dr. Yunes Teinaz)

In 2004, the British Broadcasting Corporation (BBC) launched a program on BBC Radio 4 about the potential illegal bushmeat trade in London markets (File on 4, 2004). In the radio report, a senior environmental health officer stated “we have found it [bushmeat] on sale to some extent or another in almost every West African



Fig. 12.5 Deep-fried bushmeat left to cool on a paper plate (Courtesy of Dr. Yunes Teinaz)

shop in the area [Hackney]. We were finding forty, fifty kilos at a premises at a time. You could go back a month later and see exactly the same amount again. It's huge business." (File on 4 2004)

In 2012, the BBC received reports that shops in Ridley Road Market, London, were being used as distribution points for illegal meat (BBC News 2012; Lynn 2012). Undercover reporters, with hidden video cameras, were sent in to investigate further. During the report, Dr. Yunes Teinaz stated "this is providing meat in to the human food chain which can carry infectious diseases. The people who are arranging this illicit trade are very dangerous. They only observe financial gains" (BBC News 2012). The undercover reporters enter a few shops, and after discussions with some butchers, one states "you tell me one day before, then you can have it OK? I can't keep it here too much. Don't tell anyone... Otherwise there will be trouble you know" (BBC News 2012).

Two years later, a UK television documentary, the Food Inspectors, conducted a follow-up investigation in to London markets looking for illegal meat (Food Inspectors 2014). In one video, a butcher, who sells a reporter bushmeat, tells the under reporter how it enters the country. He states "it's coming under the table. Special. Africa, France, coming Dover under... underground" (Food Inspectors 2014).

12.6 Conclusions

Within the UK, the Products of Animal Origin (Third Country Imports) (England) Regulations 2006, as amended by the Products of Animal Origin (Third Country Imports) (England) (Amendment) Regulations 2007, prohibits the importation

and sale of any meats outside of the European Union. However, with the strict regulations, government inspections, heavy fines, and potential jail sentences, this has not deterred the demand for this product.

It is expected that in extreme poverty-stricken areas, such as parts of Africa, South America, and Asia, bushmeat consumption is a necessity.

If wildlife is slaughtered only for these groups of people, and endangered species are left alone, this would become a sustainable option for the future. However, the majority of the World including the UK and Europe do not fall within this poverty-stricken category. Is bushmeat therefore essential to people living within these countries? No. Are ethical considerations made when bushmeat is illegally imported, sold, and consumed? Probably not. Therefore, before the endangered become extinct, we need to decide on how to act for the future. Instead of buying products that remind us of where we have come from, should we not be thinking more ethically and buy products that allow us to sustain for the future before it is too late?

12.7 How to Use This Case Study

One approach to using this case study would be to have the students read the case and then pose the following questions to them:

- How does this case encompass food ethics?
- What do you think drives bushmeat consumption?
- What are the risks involving bushmeat? [Think ethics as well as safety]
- What could be done to control/reduce bushmeat consumption?
- What would you recommend going forward, and why?

An alternative approach, instead of posing questions as above, would be to set students in to groups and have them role-play the part of the people involved in this case. Using this method will both actively engage students and allow them to understand the viewpoints of the case characters.

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Legislation Commission Regulation (EC) No 745/2004 of 16th April 2004 laying down measures with regard to imports of products of animal origin for personal consumption.

The Products of Animal Origin (Third Country Imports) (England) Regulations 2006, as amended by The Products of Animal Origin (Third Country Imports) (England) (Amendment) Regulations 2007.

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