

Veterinary Anthropology in Bhutan:

Negotiating State Policy, Buddhist Ethics, and Ritual
Worlds in Animal Health and Production

By

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This is to certify that to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any other degree or purpose.

I certify that the intellectual content of this thesis is the product of my own work, and that all assistance received in preparing this thesis and all sources have been acknowledged.

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Catherine Schuetze

Abstract

This PhD thesis offers an ethnographically grounded contribution to the emerging field of veterinary anthropology in the Himalayan region. The research examines how Bhutan's veterinary livestock production and local animal health care practices function within the eco-social environment of Bhutan's Himalayan Buddhist Kingdom. A Bhutanese form of veterinary culture is revealed, shaped by ongoing negotiations and adaptations in Bhutan's eco-social world.

The research explores how Bhutanese state veterinary personnel, who promote bioveterinary, capitalist, industrial livestock development programs, navigate ethical tensions around intensified animal production and slaughter in a Buddhist society where killing animals is perceived as morally problematic. It also examines how these state bioveterinary development agendas are resisted or reshaped by Buddhist ethical frameworks and national identity politics, embodied through religious practices such as animal liberation and anti-slaughter movements.

Furthermore, the research addresses these dynamics in alpine environments by examining how yak-herding communities maintain herd health and productivity through the plural veterinary strategies of state bioveterinary technologies, ethnoveterinary medicine, and ritual practices aimed at maintaining multispecies and more-than-human relationships of health in their Himalayan cosmologies.

The thesis introduces the analytical tool, the 'Economy of Karma', to interpret the decision-making rationales of animal agriculturalists and veterinarians concerning activities associated with animals, like killing. In this heuristic model, material and economic benefits are weighed alongside the cosmological register of future life outcomes modelled as karma.

The research advocates for a decolonised approach to veterinary livestock development, critiquing how the colonial influence of bioveterinary science is misaligned with Bhutan's sustainable development goals, framed as Gross National Happiness. This Eurocentric bioveterinary hegemony limits policy imagination, which is compounded when public discourse on animals is dominated by the single-optic focus point of the debate between livestock development and Buddhist-inspired national animal identity politics. These forces constitute practices of world-making,

marginalising alternate voices, leaving no space for a multi-optic view, or pluriversal perspectives.

Additionally, this thesis includes several appendices containing supplementary research outputs. A lexicon of western Bhutan's yak herder vocabulary was compiled. An ethnoveterinary survey of 14 districts in Bhutan documented over 300 ethnoveterinary medicine ingredients and their uses. Sixty-six traditional Tibetan veterinary and animal husbandry texts were collected and listed in a bibliographic table.

This research fills a gap in the literature by providing the first veterinary anthropology work from Bhutan and the Tibetan cultural region. This interdisciplinary and multi-sited ethnography frames health as a relational and multispecies phenomenon, attending not only to human experiences but also to the roles, agencies, and vulnerabilities of animals, microbes, spirits, and environments. This analysis builds upon previous multispecies ethnographies, extending its more-than-human perspective to encompass Bhutan's enlivened environments, including animals, mountains, rivers, forests, minerals, and the deities and spirits that inhabit them.

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Plate 1- The author outside the Department of Livestock offices in Thimphu.

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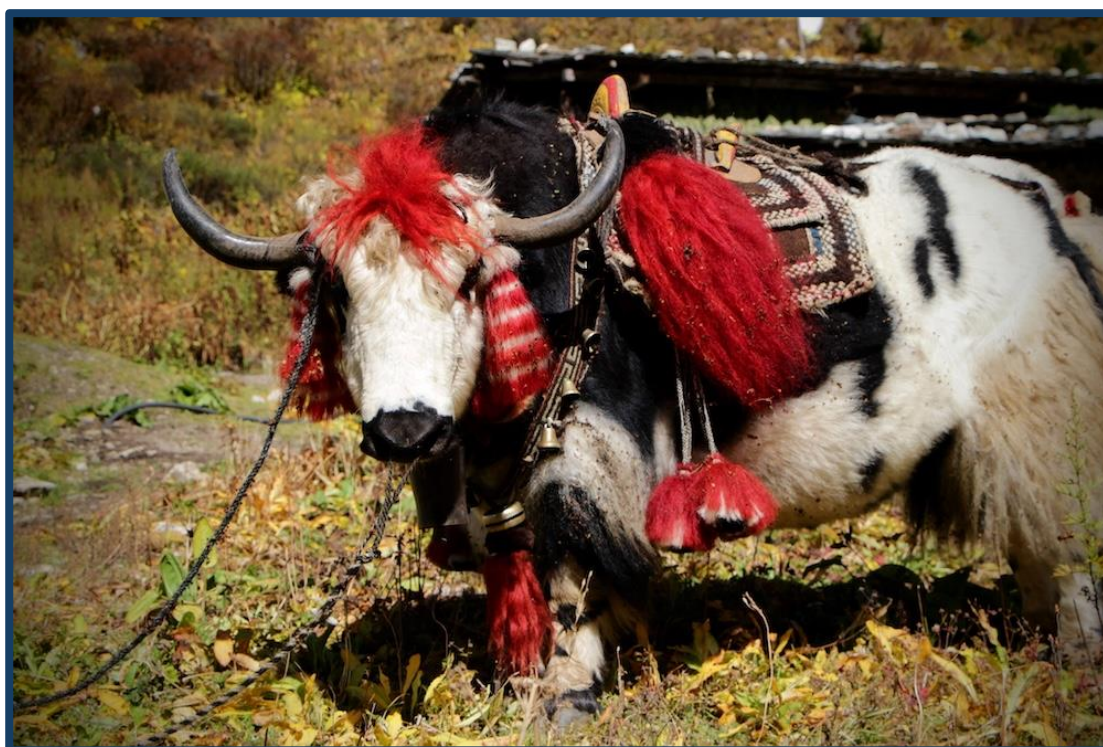


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Language, Transliteration, Translation

The national and official language of Bhutan is *Dzongkha* (*rdzong kha*, the Language of the Fortress). It is a Tibeto-Burman language written in the Tibetan script, which has its roots in the clerical Classical Tibetan language, known as *Chöke* (*chos skad*, Dharma language) in Bhutan. *Dzongkha* has diverged significantly from Tibetan and *Chöke* in both spelling and pronunciation, to the point of becoming mutually unintelligible. Until the 1960s, *Chöke* was the only written form in Bhutan, but it was gradually replaced by *Dzongkha* in schools and the government as a relatively new standardised language (Phuntsho 2013, p.53). The *Dzongkha* Development Commission has continued to develop and standardise *Dzongkha* language and grammar since then. Despite this, many Bhutanese still do not speak it.

Apart from *Dzongkha*, Bhutan has over twenty documented languages and many more dialects. English is taught in schools, and most younger Bhutanese speak English to varying degrees of proficiency. Nepali, in its Bhutanese variation, is commonly spoken throughout the country, particularly in southern Bhutan. The livestock herders of western Bhutan speak *Drokey* (*'brog skad*) or *Bjobkey* (*bcob skad*), which is related to *Dzongkha*. Eastern Bhutanese speak *Sharshop* (*shar phyogs pa*), and the herders there speak *Brokpa* (*'brog pa*).

I encountered many of Bhutan's languages and dialects during this research. I spoke and read Tibetan before this research began. I learnt conversational *Dzongkha* while in Bhutan and conducted interviews in *Dzongkha* with *Dzongkha* speakers and English with those proficient in it. While working in areas where other languages and dialects were spoken, local government personnel or research assistants interpreted the interviews and responses into English, which I recorded.

In this thesis, non-English words, excluding people's names and place names, are italicised. For readability, I have used a Romanised version based on how the terms were pronounced to me. After the word's first appearance, in parentheses, I provide the *Dzongkha* transliteration if appropriate, using the Wylie convention, and the corresponding English definition. I only use a language marker if the language isn't *Dzongkha*, e.g., *Bjobke* (Bj). Appendix One contains a list of this terminology to assist the reader.

Abbreviations

Table 1- List of abbreviations used in this thesis

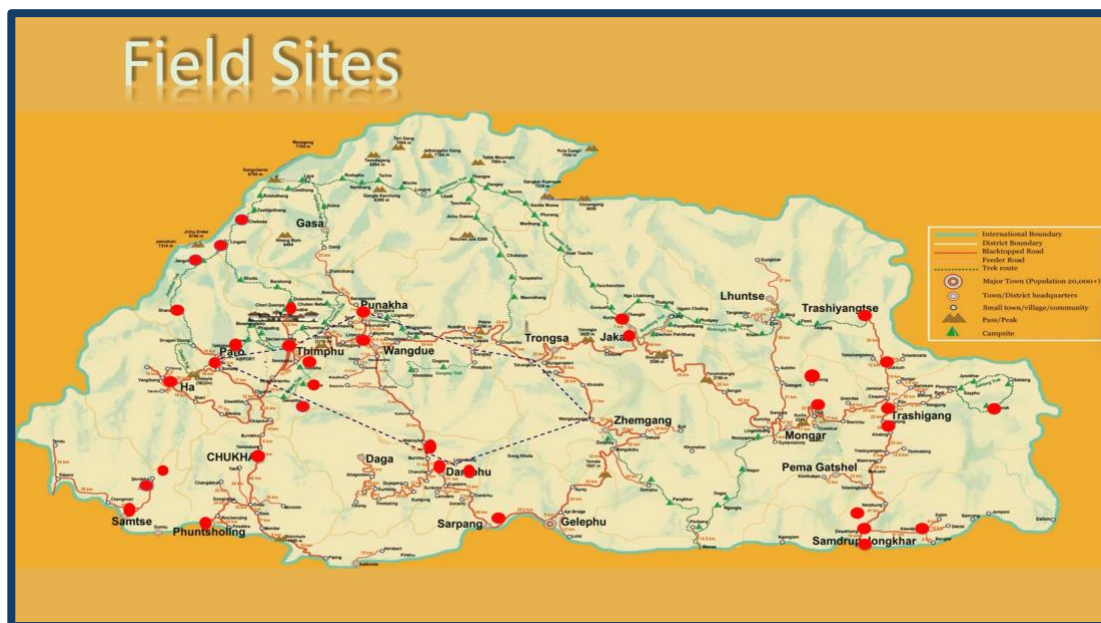
Abbreviation	Meaning
ABC-AR	Animal Birth Control- Anti-Rabies
BAFRA	Bhutan Agriculture and Forests Regulatory Authority
BHU	Basic Health Unit
CNR	College of Natural Resources
DoL	Department of Livestock
DVH	Dzongkhag Veterinary Hospital
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
GNH	Gross National Happiness
GNHC	Gross National Happiness Commission
JAST	Jangsa Animal Saving Trust
MoAF	Ministry of Agriculture and Forests
NAH	National Animal Hospital
NCAH	National Centre for Animal Health
NITM	National Institute for Traditional Medicine
RGoB	Royal Government of Bhutan
RNR	Renewable Natural Resources
RSPCA	Royal Society for the Prevention of Cruelty to Animals
TNVR	Trap, Neuter, Vaccinate, Release

Maps of Bhutan and Field Sites



Map 1- Map of Bhutan.

Source: <https://nationsonline.org>



Map 2- Field sites are represented by red dots.

Source: <https://btcl.bt/bhutan-tourist-map>



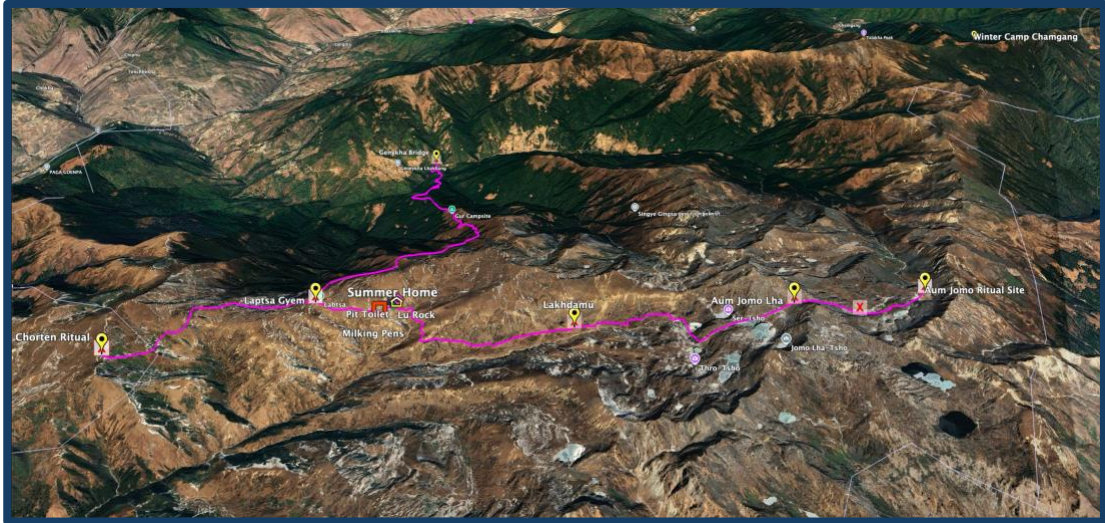
Map 3- Yak Herder Research: Dagala Route= Pink. Lingshi Route= Green.

Source: Google Earth.



Map 4- Lingshi area research sites: villages and mountains.

Source: Google Earth.



Map 5- Dagala field site.

Source: Google Earth.



Map 6- Dagala summer house, milking yards.

Source: Google Earth.

Prologue

As I entered Bhutan on my motorbike for the first time, I passed beneath a large traditional ornamental archway marking the border with India. The chaotic crush of traffic, along with the noise and smell of Indian street life, immediately gave way to Bhutan's clean and tranquil streets. Within metres of India, the houses transformed into traditional Bhutanese architecture,¹ and people strolled along the footpaths in national Bhutanese dress.² After submitting my travel documents and permits at the immigration office, I rode north across several mountain ranges on the road to Thimphu.

This leg of my motorbike journey had begun the previous day from the neighbouring Indian Himalayan state of Sikkim. I had been visiting veterinary colleagues I had worked with for twelve years, who had become dear friends. As I navigated the road from Sikkim to Bhutan, I reflected on the journey I had made over those years. This journey was not only geographic and temporal but also intellectual and academic.

It began on my first visit to Sikkim in 2002 to work voluntarily as a clinical veterinarian. As a co-founder of Vets Beyond Borders, I then helped develop a statewide street dog sterilisation and anti-rabies vaccination program with the Government of India's Department of Animal Husbandry.³ Sikkim and Bhutan have long-held cultural, political, religious, and familial ties. The relationships between the veterinary personnel of both regions resulted in my introduction to the Bhutan government's veterinary services in 2007. I visited Thimphu for meetings about establishing a national dog management program similar to what we had done in

¹ The state mandates all Bhutan's buildings are designed to preserve traditional architectural styles, ensuring new constructions are culturally relevant.

² In another state mandate, citizens should wear the national dress, a knee length wraparound robe for men (*gho-go*) and a full-length wrap dress for women (*kira-dkyi ra*). While this is enforced in government offices, schools, and on formal occasions, it is relaxed at home and in other casual public spaces. The architecture and national dress mandates are part of broader policies that the state implemented in the late 20th century in efforts to impose a unified national identity and cultural unity. Minority groups have opposed these changes, fearing for the preservation of their own cultural identity, traditions and practices.

³ For more information about Sikkim's successful SARA program, see Byrnes et al. (2017).

Sikkim. Over the next few years, I travelled to Bhutan several times in relation to the dog management program and to assist local animal welfare groups. The most recent was this motorbike ride to start my PhD veterinary anthropology research.

My interest in what is now called veterinary anthropology developed while working in South Asia with Vets Beyond Borders. I had managed street dog sterilisation and anti-rabies programs, supported animal welfare shelters, conducted veterinary training programs, and coordinated international veterinary volunteers in the Himalaya and India. Additionally, I assisted local organisations and government departments in implementing veterinary public health programs focused on rabies and dog population management. The public health programs' science and methodology, which involve desexing and vaccinating over 75% of the dogs in each area, are relatively simple. I naively projected that, with enough resources, the programs would rapidly expand across entire states and regions of India. However, I soon learnt that despite some technical challenges, the science of veterinary public health was not the complicating factor.

The main obstacles I faced stemmed from the combined force of millennia of cultural, religious, and socio-political power dynamics. This experience was a quick and painful realisation of how essential these socio-political and eco-cultural factors were to the successful implementation of veterinary and public health initiatives. After over a decade of directly experiencing this lesson daily, I came to appreciate the value of medical anthropology, or in this case, veterinary anthropology, to our work.

Throughout that decade, other aspects of my lived experience contributed to an interest in veterinary anthropology and traditional veterinary medicine. Before moving to India, I had practised traditional Chinese veterinary medicine, acupuncture and holistic and herbal veterinary medicine.⁴ While in India, I lived in Dharamshala,⁵

⁴ I recognise that the term 'traditional' is problematic, I discuss it further in the introductory chapter. China's institutionalised form of its culture's herbal and physical veterinary therapies are recognised internationally as traditional Chinese veterinary medicine (TCVM). Veterinarians often study it as a postgraduate certificate or diploma course through international educational institutes. I completed my TCVM certificate qualification in 2005.

⁵ Dharamshala is a town in the western Himalayans where the Dalai Lama lives amongst a large population of Tibetan refugees and monastics. The Tibetan Government-in-Exile and many Tibetan institutions are based here, including the *Men-tsee-khang*, Tibetan Medical and Astrology Institute.

where I studied Tibetan language, Tibetan medicine, and Vajrayana Buddhism.⁶ I volunteered as a veterinarian for the local Tibetan, Indian, and expatriate communities. Additionally, I completed an honours degree in 2012 in Asian studies and medical anthropology, researching animal ontologies in Tibetan medicine, *Sowa Rigpa* (*gso ba rig pa*, Buddhist medicine, literally “the science of healing”). While undertaking these studies and interacting with Tibetan *Sowa Rigpa* doctors and animal caretakers in the Himalaya, I began investigating the existence of traditional Tibetan veterinary medicine and other local veterinary practices in the areas where I lived and worked. This exploration continued in Bhutan, when the state’s veterinary department invited me to conduct PhD research on veterinary anthropology and Bhutanese traditional veterinary medicine.

Besides an interest in ‘traditional’ or ethnoveterinary medicine, my fascination with other aspects of veterinary anthropology grew during those years in Asia. I collaborated with many local South Asian veterinarians alongside international veterinary doctors from diverse backgrounds, religions and communities. In addition to being trained in different medical and surgical protocols, these veterinarians also carried beliefs, practices and ethical frameworks regarding human-animal relationships, conceptions of suffering and welfare, animal sentience, cosmology, animal death, and afterlives. These views were often formed from within their respective cultures and reinforced during veterinary school. This experience demonstrated how veterinary identities and practices are not uniform but are shaped by regional cultures and religions.

South Asian veterinarians often perceived animal sentience and afterlives from their Indic religions’ worldview of karma, cosmology, and past and future lives. These beliefs created socio-religious restrictions that affected some veterinary practices, particularly those related to killing, like euthanasia and animal slaughter. In contrast, the foreign volunteers were influenced by their Eurocentric and predominantly Christian cultures, which established ethical standards around animal life and death, including the routine use of euthanasia.

⁶ Vajrayana is one of the three major traditions of Buddhism. While it originated in India, it was mainly practised in Tibet and diffused across the Tibetan cultural area by proselytising Buddhist monastics and political forces.

Conflict often resulted when these two culturally distinct groups of bioveterinary-trained practitioners and their embodied practices intersected during our South Asian animal welfare and public health programs. I frequently mediated these transcultural conflicts, uniquely positioned as an Australian-trained veterinarian from a Christian background, with a deep engagement in Buddhist cultural norms and traditional Asian veterinary perspectives.

I had come to appreciate that there is no homogenised global version of veterinary science or veterinary identities. There is also no single stream of veterinary professionalism. The industry now offers a range of specialised fields and diverse career paths, and these have evolved over time. As a young person, I was inspired by books and TV shows about veterinarians. An early influence was James Herriot's auto-ethnographic stories, which romanticised the profession and its mission to help animals. In his time, Herriot often worked on small farms with animals of production, such as sheep and cattle, as well as working animals like horses and farm dogs. This is quite different from how we typically envision a veterinarian's role in urban society today.

These days in Australia, most veterinarians, like me, work in urban or semi-rural areas, primarily in clinical roles treating dogs and cats. This shift from production animal to small animal veterinary practice occurred before I began university. Alongside this trend toward small animal practice, the profession has undergone a significant global shift in gender ratios since James Herriot's time. When I attended university in the 1980s and 1990s, half of my class was female. Now, women comprise 90% of Australian veterinary students, and similar trends are observed in most countries. Such a shift is not merely demographic but intersects with changing professional identities, expectations of care, and the broader political economy of veterinary work. Left unexamined, the normalisation of this trend risks obscuring the social, cultural, and institutional forces that have shaped it—such as gendered assumptions about empathy, care, communication, or the types of labour valued within clinical settings.

When I moved to India, I realised Australian small animal veterinarians and their practices differed significantly from those in other regions. The urban, small animal veterinary identity is an aberration from the historical role of veterinary traditions, which typically emerged from state-employed veterinarians who maintained animals

for food, transport, warfare, and colonisation.⁷ I began to see the historical, economic, political and cultural drivers of this divergence. For example, Indian veterinarians predominantly worked for the state, supporting subsistence communities in animal production, reproduction, and food security. They were primarily trained in large animal production and reproduction—an area I had promptly forgotten about after graduating. Furthermore, they treated tropical diseases unfamiliar to me, as well as viral diseases like canine distemper and rabies, which are rare or don't exist in Australia.

While some veterinarians provided clinical treatments of livestock or pet animals, clinical care was not their primary role. This type of veterinary practice supports the state's priorities of food safety, security, and public health. I was learning abruptly that my veterinary identity (urban, female-led, pet-focused, private business) diverged from the profession's origins and the ways most veterinarians experience their craft.

In Asia, I found a distinct veterinary culture where my methods and habits felt out of place.⁸ When I first moved to India, I was often asked to help my friends and neighbours with their cows and goats. I was lost because I had never worked in large animal production medicine or performed a caesarean on a cow, which are standard skills and practices for veterinarians in South Asia. As a result, I was considered a relatively ineffective veterinarian. Such humbling experiences caused me to reflect on the different educational backgrounds and professional demands that my colleagues and I encountered. Society demanded specific skills and knowledge from each of us. We each developed our approach from our specific local cultural sensibilities, socio-economic environments, religious ideologies, and state policies.

In this regard, during my second visit to Bhutan in 2008, a senior veterinarian leaned over and confided in me, "I've never spayed a dog," he said, adding that his university days were long ago, and veterinary schools at that time had not taught

⁷ See Joanna Swabe's (1999) excellent social history of human-animal relationships and the rise of veterinary medicine for an overview of this global trend in veterinary science. She demonstrates the role of colonisation in the global spread of Eurocentric forms of veterinary science.

⁸ I use the word habit to remind myself and the reader that while much of veterinary medicine is backed by scientific data, there are also many habitual practices passed down from teacher to student, or employer to new graduate, with little or no scientific evidence to support them. Some things are done because it was always done this way.

students this procedure. By then, after many years working alongside veterinarians in South Asia, I didn't find this admission unusual. Like other veterinarians, he was educated and worked in animal production for community subsistence livelihoods, employed by the state. These professionals progressed through seniority to office positions— administration, research, or laboratory work. This seniority and the 'doctor' title afforded them great respect from their fellow citizens and younger colleagues. However, in developed countries like Australia, it may seem unorthodox that a veterinarian is unfamiliar with desexing a dog. But this is no different to my South Asian friends' confusion over me being unable to treat their cow.

While working in the Himalayas, I found there were not only differences between international and local veterinarians, but also differences between the international volunteers. This diversity sparked stimulating exchanges of ideas but often led to frustration when each believed their way of knowing was the most valid. While we were all correct when operating within our respective medical and social frameworks, I recognised that multiple versions of 'veterinary science' and veterinary professional identities existed. I realised that bioveterinary science was not a globally homogenised system of knowledge and practice. The localised production and articulation of professional identities were culturally specific and embedded practices specific to their time and place. There was no correct 'this' or 'that' way. There was only a contextualised expression of a geographically grounded, temporally located articulation of eco-social forces that produced a complex interplay of culture, identity, and medicine.

Each veterinary culture contained inherent assumptions that informed that specific mode of seeing and knowing in the world. Each centre of knowledge production and veterinary education was embedded within regional eco-social, geographical and political contexts. The resultant normative bodies of knowledge and practice were further contested and altered after graduation, particularly through embodied engagement with diverse communities. Moreover, this process depended on regional and individual human-animal relationships, which are neither homogeneous nor enduring.

The importance of the human-animal relationship to veterinary anthropology was reinforced to me during a conversation with a senior Buddhist monastic. "Which are the most important animals in Bhutan?" I asked this Rinpoche one morning. His

simple yet profound answer exemplified how human-animal relationships shape the veterinary profession. “That depends on which animal is most valuable to the people around them,” he replied. He went on to say:

Cows and goats are essential to farmers, and 161s are prized by yak herders. The *bjobkyi* [*byogb khyi*- Bhutanese mastiff, herding dog] is also important to herders, but less so than the yak. The *zimkyi* [*gzim khyi*- pet or indoor dog] is important for some people in Thimphu. *Changknyi* [*chyang khyi*- stray or homeless dog] are less valuable than the other two dogs. So, you must treat [as a veterinarian] the animals valued by those people. But according to the dharma, all [animals] are sentient beings deserving of kindness and compassion.

Rinpoche had been explaining the Buddhist concepts of dependent origination and the nature of reality. He had expanded the lesson to include this veterinary example. An animal’s value depends on the perspective of, and relationship to, the person assigning that value. It will change over time, influenced by human attitudes and socio-economic conditions. I realised then that much of my veterinary work relies on this human-animal relationship.

The patients I treated, and even whether I treated them, was determined by the humans accompanying them. Animals do not independently arrive at a veterinary facility for care; their humans determine it. Veterinary involvement with production animals also depends on the humans (and states) associated with agriculture, and on geo-socially specific farming systems. For instance, we don’t treat yak in Australia as there are none.⁹ Consequently, our veterinary education does not incorporate yak production or medicine, which challenged my knowledge base when working in Bhutan.

Conversely, Indian and Bhutanese veterinarians do not encounter Australian wildlife, and thus, are not trained in their medicine. Australian wildlife is a good example of the complexity that eco-social forces like geography, economics and evolving human-animal relationships have on veterinary practice. Until recently, Australian veterinarians were also only minimally trained in wildlife care, as there was no economic benefit to the state or to privately operated veterinary businesses. A shift occurred only recently, when human attitudes towards Australian wildlife

⁹ Yak’ (*g.yag*) is not the linguistically or culturally correct term for most animals of this species (*Bos grunniens*). Bhutan’s herders have many names for yak of different age groups, genders and uses, which I list in Appendix Two. For simplicity, however, I use the common term ‘yak’ here to refer to all sub-types of yak.

changed, resulting in widespread public requests and donations for their veterinary care, particularly after the catastrophic 2019–2020 Australian bushfires (Schuetze 2025).

Throughout my decades as a veterinarian, I have observed that the value assigned to individual animals and entire species determines who, when, and to what extent those animals are subject to veterinary interventions. And subsequently, these societal, commercial and state priorities determine the type of veterinary education students receive. Veterinary practices are contingent on these human-animal relationships, which vary culturally, geographically, and temporally. I observed how eco-social forces shape the variations in embodied practice, human-animal relationships, and the meanings of care, which I had previously noted while working in South Asia. Veterinary anthropology is well-suited to analyse these complex dynamics between human-animal relationships and the cultural, ecological, and social environments in which veterinarians operate.

This brief autoethnography followed my professional journey to Bhutan. It also described my intellectual journey toward the emerging discipline of veterinary anthropology and transcultural perspectives on human-animal relationships of health. This journey culminated in my motorbike ride to research Bhutanese veterinary anthropology and ethnoveterinary medicine.



Plate 3- Bhutan's national animal, the takin.

Introduction

Bhutan's national animal, the takin, is one of the world's most peculiar-looking creatures.¹⁰ This unlikely, hooved quadruped ambled awkwardly through its reserve near Thimphu, the capital of Bhutan. The takin's appearance, which resembles part cow and part goat, has inspired fantastical myths and origin stories featuring Buddhist saints and morality tales. Images of animals like the takin inevitably float through the imagination when one thinks of Bhutan. Tigers traverse the highest altitudes, while giant Himalayan black bears lumber across the mountains, occasionally preying on yak calves and unfortunate herders who cross their path. These yaks and their herders roam the high-alpine landscapes in both commercial and karmic entanglements. Herders also trade in small mountain creatures, cordyceps, which are more valuable per gram than gold.¹¹ Majestic, black-necked cranes nest in summer valleys of ripening rice fields. Herds of elephants in the southern jungles raid villages for food supplies, crops, and the occasional alcohol still.

The most visible animals, however, are those in domestic settings. Farm animals and livestock like yaks are ubiquitous in every pasture, village, town, and field, while dogs roam the streets, keeping everyone awake with their nocturnal songs. These domesticated animals, their health, illnesses, productivity, and profitability, are the focus of this ethnography, along with those involved in maintaining their health and productivity, the entangled humans and the more-than-human entities of Bhutan's sacred landscapes.

¹⁰ The Bhutanese Takin (*Drong gimtse* Dz; *Budorcas taxicolor whitei*) is a subspecies of Takin found in Northern India, China and Tibet, listed as vulnerable on the IUCN red List.

¹¹ I call this insect-pathogen fungus (*Ophiocordyceps sinensis* or *Cordyceps sinensis*) cordyceps in this thesis. It is a prized medicinal ingredient of Asian traditional medicines. It grows in high alpine areas of Tibet, the Himalayas, and Bhutan. Its Bhutanese name, *yartsa guenbub* (*dbyar rtsa dgun 'bu*), meaning winter worm, summer grass, reflects its life history. The caterpillar (worm) is colonised by a pathogen fungus, slowly killing it. The fungal hyphae emerges from the soil in summer appearing like grass, by which time the caterpillar's dead body is an underground husk (Cannon et al. 2009, Wangchuk & Wangdi 2015, Choki 2021).

Human society has built increasingly complex webs of interdependence between itself, animals, and the environment throughout history. We have domesticated animals to utilise them as a renewable natural resource, which is generally accepted by society (Swabe 1999, p.5). Animals also played crucial roles in conquest and colonisation, transporting and feeding armies and state actors in their efforts to dominate and occupy new territories. While animal domestication has brought many benefits to humans, maintaining such an intimate relationship with animals and their diseases has posed significant challenges to society. One such complication was the escalating transfer of microorganisms between animals and humans. Thus, since the early days of continual close contact with animals, more complex and interdependent health relationships have emerged across species, entangling animals, the environment, and humans in new health ecologies.

In response to these challenges, animal agriculturalists, states, and armies developed a range of animal healthcare techniques to preserve animal resources, enhance food production, and manage illnesses.¹² Physical therapies using medicinal plants and other substances were used to treat animals. Over thousands of years, this knowledge gradually became encoded, transmitted, and eventually institutionalised into regional veterinary traditions. These knowledge systems vary significantly, ranging from the oral transmission of local herder wisdom in a single valley to lineages of animal health care practices found across regions. The most recent and widespread iteration of these is Eurocentric veterinary science, institutionalised via large modern veterinary teaching hospitals in urban areas.

In this thesis, I call these institutional forms of veterinary medicine ‘veterinary regimes,’ following Joanna Swabe. Swabe (1999, p.8) describes these as,

the social practices and institutionalised behaviours that have emerged in response to the problem of maintaining animal resources and protecting human health and economy... the growing and increasingly formalised ways in which humankind has sought to deal with the problem of animal health and disease as

¹² I use the term, animal agriculturalists, to encompass the different forms of animal agriculture that humans engage in. This can range from the intensive industrial farming of chickens in enclosed housing, to pastoralists who graze livestock across fields and forests. It also includes transhumant pastoralists, like yak herders, who move seasonally through a fixed rotation of pasturelands on a yearly schedule. Many animal farmers, particularly in subsistence economies, however, mix species and systems. Commonly, any combination of historically ‘traditional’ indigenous breeds and husbandry practices can be found integrated with contemporary industrial techno-scientific intensive agriculture.

our dependency on animal resources has continued to increase and intensify throughout the course of human history.

In using the word 'regime', I am emphasising the governmentality, power, and control that are inherent in state veterinary regimes such as Bhutan's (Foucault 1980).¹³

As Swabe describes above, state veterinary regimes are concerned with food security and self-sufficiency, public health, and local and transnational economies. They also support rural livelihoods by increasing animal production and reproduction, as well as promoting market economies. Animal health care is provided mainly where it supports those goals of productivity.

Another goal of veterinary activities is to control zoonotic diseases. These are infections that can spread between humans and animals, posing a risk to human health, such as rabies or tuberculosis, or to animal production and human health, such as avian influenza and swine flu. Thus, many of Bhutan's veterinary personnel are engaged in animal reproduction and productivity, zoonotic disease control, and livestock preventive health, with a lesser focus on individual animal health and clinical treatments. These veterinary departments practise a globalised, institutional form of veterinary practice and biotechnology-based interventions that I call bioveterinary science in this work.

In contrast, local embedded animal production, health, and healing knowledge found in regional communities and cultures, unrelated to bioveterinary science, is colloquially, and often academically, referred to as traditional, holistic, herbal, or ethnoveterinary medicine (EVM). Although EVM has been codified and institutionalised in some countries, like traditional Chinese veterinary medicine, Bhutan lacks an institutional form of traditional veterinary medicine. Bhutan's EVM comprises an oral transmission of generational and localised knowledge, with no known textual or institutional history.

The Bhutanese use the term 'traditional' in relation to EVM to differentiate between local, embedded knowledge and practices and externally introduced modes

¹³ Michel Foucault used 'regimes of truth' to demonstrate the ways governments use power/knowledge through state institutions and practices as systems of control over its people. The state's power operates in subtle ways, often through knowledge and discourses, which are internalised by individuals and groups, leading them to govern themselves in forms of social control.

of biomedicine and bioveterinary medicine. I recognise that using ‘traditional’ can be problematic in anthropological research due to its connotations of fixity, timelessness and inferiority. It can obscure the hybrid, messy and negotiated practices that exist on the ground. While acknowledging this problem, I defer to the Bhutanese use of ‘traditional’ in relation to EVM and non-biomedical forms of health care and use it throughout this thesis.¹⁴

Many communities, such as Bhutan, embrace local health relationships and illness beliefs that include actants who are neither human, microbial, nor animal, but are grounded in the country’s spiritual and religious cosmologies. Within this context, as Latour (2007) describes, actants are anything capable of exerting influence and participating in the co-constitution and shaping of social and ecological realities. In Bhutan, these actants include the numinous beings inhabiting the ‘sacred landscape’ of natural and constructed sacred sites across the country; they are ‘more-than-human’.¹⁵ Bhutan’s spiritual cosmology of worldly and local deities, spirits and demons is believed to affect human and animal health, illness, fortune, and misfortune, in “a densely knit network of interrelations” operating within a relational ontology (Choki 2021, p.153).

Health and wellbeing here is based on the mutual dependence of “the living, the spiritual and the physical earth”, where the “formless deities are also environmental beings who live co-constitutively with humans” (Choki 2021, p.154). These actants, beings, spirits, deities, or forces “mediate the relationship of people and landscapes to such an extent that the social and spiritual interactions of humans and nonhumans result in their mutual constitution” (Allison 2019, p.2). Thus, Bhutan’s animal production and healthcare practices are deeply embedded in religious ideologies and

¹⁴ For example, Bhutan’s Ministry of Health (MOH) writes, “Today, both Traditional and Allopathic methods of medicine are practised and implemented in the kingdom,” (MOH 2024). ‘Allopathic’ is commonly used in South Asia to refer to biomedicine and bioveterinary medicine, in contrast to Ayurveda, homeopathy, *Sowa Rigpa* and Unani forms of medicine. Bhutan’s state also uses the term ‘traditional’ in relation to traditional knowledge, which includes EVM, in its efforts to protect Bhutan’s intellectual property and materiality for future generations. Part of that protection includes archiving Bhutan’s oral knowledge and traditions of animal care, illness, and healing, which was a part of this research.

¹⁵ While the term sacred can be problematic, signalling Christian heritage and values, it is often used to reference sacred sites, sacred natural sites, sacred cosmologies, sacred geographies, sacred groves, and sacred landscapes. Bhutanese scholars similarly apply sacred to references places and objects that hold spiritual and religious value and significance, which is how I use sacred in this thesis (Ura 2001, 2023a, Tashi 2023, Allison 2019, 2017, Kuyakanon & Gyeltshen 2017, Knapp 2015).

local cultural sensibilities, producing a multi-species, relational, eco-social health assemblage embedded in a Vajrayana Buddhist and a Bhutanese cosmology. Harmony was maintained between the humans, animals, environments, and numinous beings, through relational practices such as rituals and propitiations, thereby preventing illness and declining productivity. The practices were also used to negotiate and mitigate conditions understood to be the material effects of spirits harming animals and humans.

Scope

This thesis examines how Bhutan's veterinary livestock production and local animal health care practices function in the eco-social environment of this Himalayan Buddhist Kingdom. By exploring contemporary human-animal health relationships, it offers a grounded contribution to the emerging field of veterinary anthropology in the Himalayan region.

In Bhutan, animal health and production emerge from a complex interplay between state-driven bioveterinary policy, sustainable development goals, Buddhist ethical norms, national identity politics, Indigenous ritual practices, and local ethnoveterinary knowledge. While state veterinary practices, derived from globalised bioveterinary livestock development, introduce biomedical frameworks and industrial animal production methods, these often clash with deeply embedded Buddhist anti-slaughter ethics and local spiritual ontologies. Bhutanese veterinary personnel navigate these tensions in a variety of ways.

Alpine yak herders maintain health and harmony through culturally specific ritual practices and healing traditions, demonstrating how health is understood as a relational, multispecies and more-than-human phenomenon involving humans, animals, spirits in the sacred landscape. Ultimately, Bhutan's veterinary landscape illustrates a distinct form of veterinary anthropology—one shaped by ongoing negotiation, adaptation, and pluralistic healing practices within the culturally complex matrix of health relationships.

This thesis calls for a decolonised approach to examining veterinary practice and ethnoveterinary knowledge in Bhutan through an ethnographic lens. This ethnography also approaches health as a relational and multispecies phenomenon,

attending not only to human experiences but also to the roles, agencies, and vulnerabilities of animals, microbes, spirits, and environments.

Specifically, these are the questions I examine in this thesis:

- How do Bhutanese state veterinary personnel, promoting international bioveterinary and livestock development paradigms, navigate ethical tensions around intensified animal production and slaughter in a Buddhist society that perceives killing animals as morally problematic?
- How do Buddhist ethical frameworks and national identity politics, expressed through community religious practices like *tshethar* (animal liberation) and anti-slaughter movements, resist or reshape state veterinary development agendas that promote industrialised livestock production in Bhutan?
- How do alpine yak-herding communities integrate more-than-human cosmologies, ritual practices, and ethnoveterinary medicine to maintain multispecies health relationships and herd health and productivity?

Bhutan's Special Year

The year 2008 was pivotal for Bhutan. Three significant national events captured the world's attention and created consequences that forever altered this tiny Himalayan kingdom. These events, in turn, transformed the lives of Bhutan's street dogs and the operation of its state veterinary systems, and provided the circumstances that introduced me to Bhutan. The first event celebrated the monarchy's centennial year, honouring the first four Kings and their accomplishments. During his reign, the fourth of these Kings initiated a process that stripped the monarchy of its power. This process culminated in March 2008 with the second event: Bhutan's inaugural democratic elections, ushering in its first parliamentary democracy and a new constitution. Finally, in November 2008, the Oxford-educated Jigme Khesar Namgyel Wangchuck was crowned the fifth King, the first to ascend the throne solely as head of state without governmental authority. His coronation was broadcast nationally and garnered international media coverage. These three events attracted a vast global audience, including media representatives,

foreign dignitaries, international agencies, and official visitors, effectively launching Bhutan onto the world stage (Yuan 2008).¹⁶

As I introduced in the prologue, my involvement with Bhutan began at the end of 2007. The government aimed to control the large number of free-roaming dogs in Thimphu before their international debut and the arrival of VIP visitors in 2008. Their current policy of impounding roaming dogs was struggling, and my Sikkimese colleagues wanted to share the methods and protocols of Sikkim's successful dog management program. Following several official visits, I was invited by the Department of Livestock to conduct this PhD research in Bhutan, in part due to the relationships that had been formed over the years.

Veterinary Anthropology

By the time I arrived in Bhutan on that motorbike ride from Sikkim, my experiences with various regional veterinary systems revealed that veterinary identities and practices were far from uniform. Instead, they were shaped in complex ways by local and regional eco-social forces like religion, culture, economics and geography. Of course, both 'culture' and 'religion' are themselves deeply contested terms in anthropology—culture for its tendency to essentialise or reify difference, and religion for its historically Eurocentric framing and the difficulties of applying it across diverse cosmologies. Still, these categories offer a helpful starting point for understanding veterinary anthropology, or how veterinary knowledge and authority are situated and negotiated in specific settings.

One of the key factors to understanding veterinary anthropology lies in the human-animal relationship. In many ways, veterinary anthropology explores the healthcare aspects of this relationship and illuminates how evolving human-animal relationships shape and redefine veterinary knowledge production, practices, identities and regimes.

¹⁶ This year was also significant for the global financial crisis that impacted Bhutan, as it did other nations. Even though Bhutan is a small country, it is not isolated from broader global events and economic impacts.

Origins and Development

The field of veterinary anthropology is relatively new, with only a few academic publications to date. I briefly summarise the discipline's progress, including definitions and theoretical developments. This thesis takes its point of departure from those works.

The disciplinary backgrounds of early researchers, who specialised in livestock development, shaped their attempts to define veterinary anthropology in the 1980s (see Knight & Sollod 1982, and McCorkle 1989). Academic interest has grown over the last decade, since the University of Edinburgh's Centre for Medical Anthropology hosted the first veterinary anthropology academic gathering in 2016 (Marsland et al. 2016). The presentations demonstrated the complexities of veterinary encounters, the many species involved, the myriad human-animal relationships, the medical objectification of bodies (biocapital), governance (biopower), and the cultural influences on illness experiences and medical practices. Frédéric Keck (2016) proposed that veterinary anthropology be understood as an anthropology *of* veterinarians and *with* veterinarians, narrowing the discipline to bioveterinary practitioners.

The 2016 Association of Social Anthropologists Conference panel, *Anthropologies of Veterinary Medicine: Healthcare across Species Lines* soon followed (Wanner & Irvine 2016). This panel examined how human and animal lives shape, and are shaped by veterinary care, and how healthcare is negotiated across species lines. They proposed that human and animal lives influence veterinary practices, and in turn, veterinary care and other animal healing practices shape the lived experiences of both humans and animals.

Then in 2020, the first digital conference of the newly formed Network for Veterinary Humanities was held in Vienna— *Doing Animal Health in More-than-Human Worlds* (Gutjahr & Weich 2020). This collaboration led to the open-access journal, *Frontiers in Veterinary Medicine*, adding veterinary anthropology as a new research topic, resulting in six research publications and a review article.

Ludek Broz, Frédéric Keck, and Kerstin Weich's (2023, p.2) review article proposed that veterinary anthropology is a "collaboration between veterinarians and anthropologists to analyse how animals participate in social life at the incidence of diseases that question notions of animal health and human health" and a

“philosophical reflection on human-animal relations, elaborated in collaboration with veterinarians while simultaneously observing their role in those relations.” They also repeated Broz’s 2016 definition of an anthropology *of* veterinarians and *with* veterinarians. They go on to suggest that veterinarians are “cultural brokers” whose expertise “inform, format and structure modes of human animal relationships in fundamental ways” (Broz et al. 2023, p.7).

In this regard, the review article argues that bio-veterinary medicine increasingly influences both human and animal lives through the ‘veterinarization of society’ via processes of biopolitics, biosecurity, and biocontrol (Broz et al. 2023, p.6). Broz previously used this term ‘veterinarization’, defining it as:

a regulatory mechanism whereby the veterinary sciences, enacted in varying degrees of tension with long-standing modes of management such as hunting, play an increasingly prominent role in the mediation and reorganization of contemporary socioecologies (Broz et al. 2021, p.1).

In some ways, this term draws from the concept of the ‘medicalisation’ of society, but in a veterinary context.¹⁷ These concepts link Michel Foucault’s work on power/knowledge and social control. In this thesis, I use a similar term ‘veterinisation’ to refer to bioveterinary science’s power over society in reconfiguring animals’ bodies, lives, and deaths, human-animal relationships, social relations, environments, and farming systems. State and institutional veterinary regimes use biopower and biocontrol to enact these power dynamics, transforming society, humans, animals and environments.

The definition of veterinary anthropology has adapted and diversified over the decades to reflect new theoretical approaches and social science epistemologies. Consequently, a single, unified definition is unfeasible. It will continue to evolve as the discipline develops, and new scholars become engaged in this burgeoning field.

Veterinary Anthropology Beyond Euro-America

In the special issue of *Frontiers in Veterinary Medicine* discussed above, only two of the seven papers were based in the Global South—specifically, Bangladesh (Høg et

¹⁷ ‘Medicalisation’ is a concept extensively debated in medical anthropology and sociology. While it is defined in many ways, it generally refers to the ways that human physical, emotional and social phenomena become defined and treated as medical problems, often requiring medical interventions. It examines how medicine acts as a form of social control, revealing power dynamics in society (Howson 2021).

al. 2021) and Uganda (Arvidsson et al. 2022). One paper analyses Halal slaughter in New Zealand from within the framework of bioveterinary research (Chao 2022). All seven papers focus exclusively on bioveterinary science. The review article acknowledges and examines this academic bioveterinary and Euro-American bias, recognising that bioveterinary medicine became institutionalised globally through (post) colonial expansions (Broz et al. 2023, p.8). They highlight that most veterinary social science research predominantly represents the Global North, implicitly generalising bioveterinary medicine as the default form of veterinary practice worldwide.¹⁸ Surprisingly, they question whether this lack of research is because the veterinary profession is not widespread outside Euro-America (2023, p.7), which a quick internet search would contradict. However, in recognising the lacuna in trans-cultural perspectives, they highlight the Euro-American centrism and bioveterinary bias that pervades many contemporary veterinary humanities and social science publications.

The authors then suggest that veterinary anthropology can cultivate sensitivity to forms of dissenting knowledge and practice in the Global North, such as complementary and alternative veterinary medicines (CAVM),¹⁹ which perhaps further exemplifies the 'centrisms' identified in the last paragraph. Many of these CAVM therapies originated in Asia from, among others, the institutionalised forms of traditional veterinary medicine in India and China. These two countries and their global diasporas represent a significant percentage of the population worldwide, including pet owners and veterinarians. Indian state veterinarians and paraveterinarians integrate Ayurvedic herbal medicines into their bioveterinary therapies (Schuetze 2020).²⁰ Furthermore, Chinese veterinary herbal medicines and

¹⁸ The terms 'Global North' and 'Global South' are socio-political constructs used to denote enduring global power relations and legacies of colonial power and knowledge, where wealthier industrialised states dominate (Usually Euro-American) and historically colonised regions (e.g. Africa, Asia, Latin America, Oceania) are marginalised in economy, politics, and knowledge. I use these terms in this thesis interchangeably with Euro-American or Eurocentric, and instead of the colloquial 'West' or 'Western'.

¹⁹ CAVM, integrative veterinary medicine, and holistic veterinary medicine are terms used to describe animal healing technologies and practices developed outside of, or before, contemporary Euro-American bioveterinary science. Examples include acupuncture, herbal medicine, naturopathy, chiropractic, homeopathy, and other forms of physical manipulation like massage or moxibustion. Many of these therapies originated in Asia, or from non-biomedical European traditions.

²⁰ Paraveterinarian, paravet, or veterinary para-professional are terms used to describe a trained person who assists the veterinarian under their supervision or carries out authorised animal health procedures autonomously.

acupuncture are standard therapies in China and among the Chinese diaspora worldwide, increasingly studied by many veterinarians like me. Chinese and Indian academics regularly publish scientific studies on their traditional veterinary medicines (Xu et al. 2024). Therefore, these therapies are not alternative, nor is their efficacy disputed among a significant proportion of the world's population, including those living in Euro-American communities.

Moreover, the definition of veterinary anthropology introduced earlier—an anthropology *of* veterinarians and *for* veterinarians—excludes animal health practitioners who are distinct from bioveterinary traditions, along with their medicines and therapies. These practitioners are frequently located in the Global South, such as India and Bhutan. There are very few publications addressing transcultural perspectives of animal health or the veterinary anthropology of the Global South. Therefore, as Broz et.al. (2023) discussed, research on trans-cultural perspectives, veterinary traditions unrelated to Euro-American bioveterinary science, and work located in the Global South is an urgent priority. This thesis aims to contribute to that lacuna.

Animal and human relationships of health, animal care and healing practices, as well as bioveterinary science, have been largely overlooked by anthropologists until recently, when the 'animal turn' shifted focus towards interspecies and more-than-human health interactions. Consequently, there is limited research on health constructs such as explanatory models of illness, pluralism and other topics well investigated by medical anthropology. Nevertheless, the related field of ethnoveterinary research boasts a rich history, with numerous works spanning most continents and countries, including the Global South.

Ethnoveterinary Medicine

Ethnoveterinary medicine (EVM) refers to the discipline that researches local animal health and production knowledge and practices. It also refers to the medicines and ingredients used on animals to maintain their health and productivity. EVM has been well documented in Asia, and several publications were produced from

In India and Bhutan, paravets performed most of the clinical and field work, as directed by their government department or supervising veterinarian.

Himalayan areas surrounding Bhutan, like Sikkim (Bharati & Sharma 2012) and Arunachal Pradesh (Maiti et al. 2013).

In Bhutan, I have only found a few references to EVM. The College of Natural Resources (CNR) undertook preliminary surveys on Bhutan's EVM, usually through student research projects and essays. These efforts were driven by Dr Phub Dorji, the previous CNR director, whose interest in EVM produced the early archives (Dorji 2007, Cheda 2006, Sonam 2010). The results mainly documented medicinal ingredients and their use, which is summarised in Chapter Six. In other publications, Dasho Karma Ura described Bhutanese practices of supplementary livestock feeding, fixing fractured limbs, and mantra healing rituals (Ura 2023b, p.151).²¹ Others report that buckwheat was used to treat cattle diseases (Norbu & Roder 2003), farmers in south east Bhutan knew of seven plant-based medicines for their livestock (Chetri 2018), and *thignye* (*thi gnye*, *Zanthoxylum armatum*) was used to kill ticks on cattle in eastern Bhutan (Namgyal et al. 2021). Aside from this, I have yet to find historical textual sources or further academic publications related to Bhutanese EVM.

Lately, EVM has become part of mainstream veterinary discourse through the rationalisation of its materials and methods in scientific terms. A clear example is the use of turmeric (*Curcuma longa*) in treating cow udder infections (mastitis). Traditionally applied as a paste or infusion, turmeric has long been used in Asian EVM practices for its believed healing and antimicrobial qualities. Recent biomedical research has supported these claims, showing that curcumin—the active compound in turmeric—has anti-inflammatory, antibacterial, and wound-healing properties. These findings have helped grow a broad interdisciplinary literature that examines and sometimes formalises the effectiveness of EVM practices. Such research is especially important given the issue of antibiotic misuse, as it presents culturally rooted and locally available alternatives to conventional pharmaceuticals. In this way, EVM is increasingly seen not just as a source of local knowledge but also as a potential part of sustainable animal healthcare and responsible antimicrobial stewardship.

²¹ Dasho Karma Ura (2023b, p.151) describes the short mantra for cattle called '*phags pa nor phyugs bsrung zhing spel ba zhes bya ba bzhuks so*'. The title of the mantra- book is '*phags pa re ma tl sogs rta gzungs bong gzungs phyugs gzungs bcas bzhuks so*'.

While such studies and methods are valuable—and indeed essential for reintroducing EVM practices into contemporary animal healthcare—they often continue to frame EVM as a derivative discourse. That is, EVM is frequently validated only insofar as its materials or methods can be incorporated into biomedical frameworks or made understandable through scientific rationales. This epistemological filtering not only risks obscuring the cultural logics, cosmologies, and relational ontologies that underpin EVM but also reinforces a hierarchy of knowledge where Euro-American scientific paradigms remain the benchmark against which all other systems are judged. In doing so, the deeper worldviews embedded in ethnoveterinary practice—ones that often involve nonhuman agency, spiritual forces, and multispecies relationships—are flattened or erased. Thus, even as EVM gains scientific credibility, it is often domesticated into a biomedical model that marginalises its epistemic distinctiveness.

Explanatory Models of Illness

Veterinary anthropology is a multispecies field of study. Animal actors are crucial respondents, as are the microbial organisms often targeted by animal healing techniques. In addition, these multispecies health networks frequently include the environment and spirits, or supernatural beings. In these complex networks, different illness causes, or aetiologies, are often understood in specific ways corresponding to local culture and religion. These ways of explaining illness, or explanatory models, then determine the form of treatment that is required. Therefore, how people understand an illness's aetiology and their explanatory model for that illness is foundational to a broader appreciation of a range of health behaviours.

Arthur Kleinman (1986) proposed a theoretical model of medicine as a cultural system. He introduced the concept of medical arenas, describing popular, professional, and folk medicine as culturally constructed clinical realities. Additionally, he developed the term 'explanatory models,' which are "tied to specific systems of knowledge and values centred in the different social sectors and sub-sectors of the health care system," (Kleinman 1986, p.36). The work of Kleinman and those adopting a similar approach has profoundly influenced succeeding generations of medical anthropologists, many of whom employed and expanded upon

frameworks of explanatory models in their ethnographies,²² although some were critical of the essentialising and reifying effects of artificial constructs like categorising human beliefs (Dein 2007). Nevertheless, models can be helpful for heuristic purposes too. We may see and categorise multiple explanatory models, even though they are not always understood as separate models in the ethnographic context.

In this regard, Bhutanese animal illness and health narratives, or explanatory models, are similar to those described for human illness and health in Bhutan. They relate to the intersection of religious sensibilities and social ecologies, particularly the confluence of Buddhism and Buddhist medicine, *Sowa Rigpa*, and local animist beliefs (McKay & Wangchuk 2005, Dorji & Melgaard 2012, Tae 2017, p.10).

Multiple narratives for the cause of illness can be applied to the same patient or experience of illness simultaneously. Additionally, illnesses can arise from both material and immaterial causes (for example, spiritual harm), whether the patient is an animal or a human. Understanding explanatory models of animal illness and health can reveal the motivations behind treatment choices, having practical implications for health and veterinary departments. What is surprising is that veterinary anthropology has been slow to adopt this approach, with only a couple of publications analysing explanatory models of animal illness (Šterk & Brložnik 2023, Muthiru et al. 2024).

This thesis is an intervention that seeks to offer a multispecies approach to explanatory models incorporating several of Bhutan's illness aetiologies. These concepts are fundamental to the herders' narratives of illness and their treatment choices, as I explore in greater detail in later chapters. Bhutan's yak herders perceive humans, animals, microbes, and spirit/deity entities as intertwined within the same health ecosystem. They are interdependent and co-dependent in matters of health and illness. This creates a multispecies explanatory model of illness causation in which multiple aetiologies impact embodied beings and spirit entities within a web of mutuality in health networks.

²² For example, Foster (1976), Weiss & Somma (2007), Helman (2014), Sanuade et al. (2021).

Veterinary Pluralities

The presence of multiple explanatory models for illnesses in animals suggests the existence of plural veterinary systems, or a veterinary plurality. Bhutan's plural medical practices for humans include two institutional state systems— biomedicine and *Sowa Rigpa*— and numerous local alternative healers and practitioners (Tae 2017). In contrast, Bhutan's plural veterinary practices for animals remain mostly undocumented and are not incorporated into the state's veterinary frameworks. Bhutan's veterinary department dispenses biomedical pharmaceuticals and also a limited selection of herbal/Ayurvedic medicines imported from India. There is no formal system for traditional veterinary medicine or a veterinary *Sowa Rigpa* for Bhutan's animal patients. However, alternative healers and practitioners are found throughout Bhutan, and this thesis contributes by offering one of the first documentations of these systems.

While EVM research is growing, there are only a few studies that mention veterinary pluralism globally, and two of these are from East Africa (Nyamanga et al. 2008, Caudell et al. 2017). Although many EVM studies suggest that pharmaceuticals are used in conjunction with traditional medicine, they are not examined within the context of veterinary pluralism, which highlights the differences between the epistemologies of ethnoveterinary and veterinary anthropology research.

Fijn's Mongolian ethnographic multispecies research on herders and their herds also describes the use of pharmaceuticals combined with EVM (Fijn 2011, 2023, 2024). Two upcoming book chapters discuss medical and veterinary pluralism in the framework of plural traditions and medicines (traditional and bioveterinary) and plural traditions in the context of interspecies healing, where methods and medicines are used similarly for humans and animals by the same practitioner (2025a, 2025b).

Medical pluralism is a fundamental concept in medical anthropology as it captures the complexity and dynamism of how individuals seek and negotiate healthcare. Jonathon Tae's (2017) ethnography on Bhutan's medical pluralism is a good example. Veterinary pluralism, the veterinary counterpart of medical pluralism, is likewise prevalent in Bhutan. Pluralism is significant to this thesis because Bhutan's veterinary personnel report many animal health practices beyond bioveterinary medicine. However, limited work has been done documenting and understanding this health-seeking behaviour. This thesis outlines the explanatory models of Bhutanese

yak herders for animal illness and the veterinary plurality they engage with. Thus, this ethnography begins to address that gap in the literature.

Illness Aetiologies and Spirit Harm

In Bhutan, spirit/deity illness aetiologies feature prominently in Bhutanese health narratives (Tae 2017), affecting both humans and animals. In this thesis, I refer to spirit/deity causes of illness as 'spirit harm', or 'spirit causation' (following Samuel 2005, p.122), and discuss them within the context of explanatory models of animal illness, ritual healing practices, and veterinary pluralism.

Spirit/deity beliefs and practices are often documented in ethnoveterinary research. However, scholars from fields outside the humanities, such as scientists and livestock development professionals, frequently dismiss these practices as dangerous superstitions that should be eradicated. In contrast, many others recognise significant benefits arising from the epidemiological and husbandry knowledge and the veterinary practices that are culturally encoded in cosmology and religion (McCorkle et al. 1996, p.10, Martin et al. 2001, pp.16–17, Wanzala et al. 2005, pp.4–6).

Indeed, Wanzala et al. (2005, p.5) suggest that separating the study of ethnopharmacy from the magico-religious use of EVM ingredients in healing appears artificial and is scientifically indefensible. They reference Lawrence's (1988) observation that listing diseases and their treatments outside their social and cultural context is "as dry as prairie dust- and essentially meaningless" (Wanzala et al. 2005, p.5). In this thesis, I incorporate spirit harm as a causation of illness and extend multi-species health relationships to include deities/ spirits, and environments.

Theoretical Framings

Animal Studies and More-Than-Human Studies

The key point is that non-humans are constitutive of politics, and are inseparable from social, political, economic and environmental history (Yeh & Gaerrang 2021, p.462).

Recent debates in geography and anthropology have centralised animals as research questions, attempting to dismantle human exceptionalism and consider the agency of the non-human other (Yeh & Gaerrang 2021, p.462). This 'animal turn' explores the role of animals in society, religion, and culture as key topics of inquiry to

understand how humanity is defined in relation to animals. Interdisciplinary animal studies scholarship investigates the human-animal relationship and how concentrating on animals may reveal more about the human experience. Lately, this has extended beyond animals to encompass other parts of the more-than-human world (Tan 2012).

Multispecies ethnography and more-than-human geographies are a crucial part of animal studies, emphasising that non-human others can include objects and energies as well as animals (Yeh & Gaerrang 2021, p.462). In this way, the lives and deaths of other beings and entities linked to human social worlds are revealed. It highlights the interconnectedness of human and non-human lives, scrutinising the subjectivity and agency of the numerous organisms entangled with humans, whose existences are influenced by economic, religious, political, and cultural forces. As Tim Ingold described, life is a continuous entanglement, where humans and animals co-constitute their environments in a fluid and relational manner. They are fellow wayfarers navigating, perceiving, and adapting to the world alongside humans (Ingold 2021, p.15). This approach incorporates insights from environmental studies, veterinary science, religious studies, and animal studies, broadening traditional ethnography to include understudied organisms such as insects, fungi, and microbes (Tsing 2015).

Relationality in Animal Studies and Buddhism

Relationality, mutual becoming, and multispecies coexistence are significant themes in both animal studies and this thesis. Relationality asks how humans, other animals and beings become what they are through relations, or everyday contacts of care and interaction. Relational ontology extends this further, arguing that entities don't pre-exist their relations, that their identities, agencies and boundaries are co-constituted in practice. This perspective defines entities by their relationships rather than as isolated individuals or as categories such as livestock and commodities. Furthermore, relational ontologies encompass elements like mountains, landscapes, and spirits, indicating that these exist interdependently with human society.

Relationality and relational ontologies challenge traditional Eurocentric hierarchies and dualities, such as those between nature and culture, mind and body, and animal and human. Donna Haraway (2016) uses the term '*natureculture*' to emphasise this entanglement. She also proposes that species evolve and change

through their relationships with others; they 'become with' (2010). Drawing on feminist relational ontology, she illustrates that no species exists in isolation but is co-created through history, practice, and interaction. She contends that ideas of the domestication of 'companion species' signify one-sided control; rather, humans and animals co-domesticate each other through ongoing reciprocal relationships.

As a result, relational ontologies have become a pivotal theme in contemporary animal studies scholarship. Feminist theorists and theories are often applied to postcolonial studies and animal studies, highlighting the parallels between the ways patriarchal colonial power subordinates women, colonised societies, and animals alike. These perspectives contribute to this thesis's understanding of the ecological and cultural contexts in which veterinary practices and regimes in Bhutan are situated.

In a related framework, the Buddhist philosophical theory of dependent origination (*rten 'brel*), taught in Buddhist communities like Bhutan, aligns with relational ontologies. This doctrine suggests that nothing exists independently; all phenomena arise from causal conditions, emphasising the interdependent and contingent nature of all phenomena. In this way, mutual causation fundamentally constructs our experience of the world (Samuel 2014, p.574). Since all things, both of the mind (however loosely defined) and body, emerge in dependence on multiple causes and conditions, nothing exists by itself or from itself. Thus, all things are interconnected, contingent, impermanent, and subject to change. While recognising that the doctrinal understanding of Buddhism, karma, and similar concepts can be interpreted differently in practice, the broader framework of karma and Buddhist philosophy remains widely understood and actively practiced in Bhutan.

Consequently, all beings, including humans, animals, microbes, and non-visible beings such as deities or spirits, do not exist independently but are in a constant state of relational entanglement, caused by past karma and continually creating new karma. The twelve links of dependent origination illustrate the cyclical nature of suffering and provide a pathway to free oneself from rebirth, constituting the ultimate objective of Buddhist practice.

The concepts of relationality and 'becoming with' map well with Bhutanese ontologies and cosmologies due to these similarities. However, the soteriological

goals of liberation from Samsara and concepts of dependent origination, as well as karma, limit further comparisons.²³

The same Vajrayana and Himalayan cosmologies that support ideas of relational ontologies render other concepts developed in the Euro-American academy problematic. Many authors have already analysed the difficulty of mapping or translating Eurocentric concepts and terms onto Himalayan and Tibetan cosmologies (Maurer 2025, Lopez 1998, Tan 2016, 2018a). Using terms such as supernatural, spirits, ghosts, gods, and demons tend to compress the diversity of different types of beings and flatten Himalayan worlds, reifying what are, in reality, permeable and impermanent designations.

Moreover, classifying the nature of the relationships Himalayan and Tibetan people have with these non-human beings defies simple translation to English terms and concepts found in Eurocentric Christian culture. 'Multi-species', 'other-than-human' and 'more-than-human' are insufficient in capturing Vajrayana and Himalayan cosmologies, as Petra Maurer demonstrates (2025, pp.132–135). Scholars like Gilian Tan (2016, 2018a, 2018c) recommend prioritising local perspectives by using emic terms and relating the relationships, rather than risk obscuring local meanings and contexts. Petra Maurer (2025) settles on the term 'beings' or 'deities and demons' for the sake of simplicity. I will use emic terms where possible, and 'spirit' in relation to ideas of illness causation, such as spirit-harm, but acknowledge that the English meaning of this word does not map well onto local understandings. As an analytic bridge, I discuss 'multi-species' or 'more-than-human' relationships that include humans and non-human beings, particularly those involving health. But this should be understood as a heuristic tool, not an equivalence.

Decolonising Veterinary Anthropology and the Academia

Academic imperialism and colonialism persist both within bioveterinary science in Asia and in academia globally, perpetuating Euro-American hegemonic epistemologies and ontologies globally. There has been a surge in recent scholarship on decolonial thought and practice, with vigorous debate on the topic. Many now

²³ Samsara refers to the cyclic nature of existence, where beings transmigrate through endless births in the six realms of existence in Buddhist cosmology. Rebirth in samsara is driven by karma and the mental states that cloud the mind and lead to unwholesome actions— ignorance, attachment, and anger.

recognise what Kathleen Gough proposed in 1968, that anthropology was a “child of Western imperialism” (Gough 1968, p.12). Some early anthropologists were facilitators of the colonial-imperial project, “agents of empire”, and the academy still perpetuates colonial concepts, imagery, assumptions and methods (Striffler 2024, p.243).

Academic imperialism is a term that helps us consider how global power imbalances privilege these Eurocentric norms, particularly in disciplines like anthropology and social science. Syed Farid Alatas’ (2006) seminal work points to how modes of knowledge production emanating from the Global North have continuously marginalised diverse epistemologies from the Global South. Such practices are apparent in many areas, including international livestock development in Asia, where they erase alternative ontologies and globalise animals and animal agriculturists, creating a single Eurocentric version of capitalist development.

The epistemic colonisation of Bhutanese veterinary practices occurred first in India. Colonial ideologies and Eurocentric political and biomedical influences on Indian centres of veterinary knowledge production shaped the worldviews of Bhutanese veterinary students who trained there. Furthermore, local Indian and Bhutanese knowledge systems, along with alternative epistemologies, were marginalised, dismissed, or coerced into conformity with Eurocentric colonial standards. The Global North’s dominance in academia made Cartesian dualisms of nature/culture, mind/body, and Euro-American epistemologies of techno-science normative.

For many Bhutanese, relational human and non-human ontologies, along with the relational nature of phenomena, are normal due to their connection to Buddhist philosophies and local spiritual and cosmological traditions. Indigenous authors from cultures that embrace a relational ontology like this are often marginalised or ignored in publications, especially in the sciences like veterinary science, due to academic imperialism expressed as techno-scientific exceptionalism. In addition, academic power structures “work to uphold Eurocentric knowledge and the colonial present”, thus reproducing and perpetuating colonial ontologies by universalising them and further subordinating other ontologies (Sundberg 2014, pp.33–34).

Moreover, even though most animal studies scholarship currently focuses on Euro-American cultures of the Global North and is published by Euro-American

scholars, many current theories the social science academy puts forward may have their foundations in Indigenous and non-European cultures. Relationality and more-than-human geographies are examples of this. They were often borrowed from Indigenous philosophers, scholars and activists who remain unacknowledged (Sundberg 2014, Todd 2016, Yeh & Gaerrang 2021).

Furthermore, there is a growing ontological resistance to Eurocentric capitalist development across various fields, including animal agriculture in Bhutan. Developing transcultural perspectives on human-animal relationships, relational health ontologies, and interspecies healthcare ecologies within academia is crucial. This would challenge the hegemonic assumption that the Global North's epistemes and ontologies represent universal truths, revealing a web of relational worldviews. Additionally, our increasingly multicultural societies require a decolonial approach to health services in the Global North, such as veterinary practice, and demand fresh perspectives on human-animal relationships. Veterinary anthropology can serve as a valuable tool for analysing these collective shortcomings, shedding light on academic power asymmetries.

This thesis's decolonial perspective will analyse veterinary regimes in Bhutan and their practices, like livestock development, through the lens of coloniality and imperialism. That is, how the lingering persistence of Euro-American capitalist development and bioveterinary hegemonies shape how veterinary knowledge, livestock improvement, productivity, animal bodies and their value, and biosecurity are understood and enacted. I approach veterinary genealogies, hegemonies, and animal ontologies as historically contingent world-making (or worlding) projects that implicitly or unconsciously prioritise the Global North's power/knowledge hierarchies, species, and value metrics over others.

Genealogy of Knowledge and Optics

Hegemonic discourses, power/knowledge structures, and institutions influence Bhutanese animal ontologies and health relationships. As demonstrated throughout this thesis, Bhutan's veterinary regimes and practices are shaped by a web of philosophies, cosmologies and technoscientific belief systems intersecting at various temporal-spatial points in response to local, national and transnational power relationships. In Bhutan, the power/knowledge of the state and its veterinary regimes promote particular bioveterinary and scientific discourses concerning animals and

animal agriculture, seen in practice as sustainable development and rural poverty alleviation. Buddhism's cultural dominance in Bhutan also exerts significant power/knowledge, presenting alternative, sometimes oppositional, animal ontologies in cosmologies and kinship models. We can analyse how these contested ontologies shift and alter their power/knowledge relationships through genealogies of knowledge. Despite Buddhism's hegemonic status in Bhutan, other layers of discursive plurality are found in Bhutan's minority cultural groups and their cosmologies.²⁴

The different discourses or epistemes that construct animal ontologies create a non-linear series of power relations that are constantly in flux. The Bhutanese state shapes these ontologies through governmentality, surveillance, biopower, and biocontrol. The Buddhist elite promote their alternative ontology using their moral and religious authority, and the fear of future karmic consequences (more on this later).

I highlight these two separate views because they dominate public and private debate about animals and livestock development in Bhutan, taking all the oxygen from the room, so to speak, causing other narratives on animals and animal production practices to be sidelined or dismissed. When dominant discourses leave no room for alternative ideas and discussions like this, framing them as a single-optic vision can be a helpful tool (Kim 2015). As different groups view the world through their own single-optic frame of vision, this leads to "a posture of mutual disavowal – an explicit dismissal of and denial of connection with the other form of injustice being raised" (Kim 2015, p.19). These groups cannot see the others' perspective because their own belief illuminates but also obscures (Kim 2015, p.19).

Krithika Srinivasan has used Claire Kim's analytic tools in the Indian context to argue that the single-optic focus on cows, meat consumption, and Hindu identity politics of cow protection and vegetarianism has resulted in virtual silence in

²⁴ At this point, it is essential to recognise that this thesis restricts its analysis to dominant discourses of Bhutan's animal ontologies and health epistemologies that are traced to state bioveterinary science, livestock development, and Buddhism. Bhutanese culture cannot, however, be understood exclusively through these ideas. Bhutan's plural society warrants further investigations on these subjects.

scholarship and public discourse on “the multiple, intersecting impacts of commercial livestock farming on social, ecological, and animal wellbeing” (Srinivasan 2023, p.776). Kim and Srinivasan argue for a multi-optic analysis of the social justice issues being debated, an “ethics of mutual avowal, or open and active acknowledgement of connection with other struggles”, a way of seeing other points of view from within other perspectives (Kim 2015, pp.19–20, Srinivasan 2023). I borrow from Srinivasan’s Indian example to apply this framing to the similar situation of Bhutan’s animal identity politics and veterinary livestock development programs, both of which demonstrate a single-optic view. I show how this preoccupation silenced, marginalised or dismissed other ways of analysing animals and development in Bhutan.

In doing so, I draw on concepts of relationality and positionality to demonstrate the nuances inherent in multispecies relationships in Bhutan. These relationships defy simple oppositions, such as those that a single-optic view might foster, for example, animals as sentient beings or animals as commodities. Employing a multi-optic vision “begins with and in turn reinforces a sense that positionality is a very complicated thing” and that it is “better imagined as fractured, contingent, and continually disputed” (Kim 2015, p.20).

The Ontological Turn and Pluriverses

A multi-optic view could work well with the concept of multiple or plural ontologies that debates in animal studies, geography, environmental studies, science and technology, and development studies propose (Alberti et al. 2011, Blaser 2014, Escobar 2016, Todd 2016, Yeh & Gaerrang 2021). This notion challenges the assumption that there is a single objective world that all cultures interpret differently. Instead, the ‘ontological turn’ argues that different cultures inhabit and enact multiple realities rather than merely perceiving the same world differently (Alberti et al. 2011). It critiques nature-culture dualisms, suggesting that other cultures do not only have alternate views of the world but live in entirely different worlds. It also challenges the idea of universalism or exceptionalism, the belief that Euro-American techno-scientific and philosophical knowledge represents a single universal truth about the world, a single world reality, or a ‘one-world world’. The ontological turn moves away from a one-world assumption toward recognising that many worlds are enacted through diverse knowledge systems, practices, and material relations.

In this regard, Amerindian-informed scholars such as Mario Blaser and Arturo Escobar argue it is critical to move beyond the politically fraught and analytically limiting binaries of ‘developed’ and ‘developing’ worlds. Instead, they advocate for the concept of *pluriversality*—a vision of a world in which multiple ways of being, knowing, and relating coexist. These plural ontologies, or ‘pluriverses’, reject dualisms and embrace interdependence and relationality. As such, they offer a powerful alternative to dominant ‘one-world’ frameworks that seek to universalise Eurocentric, capitalist, techno-scientific modes of knowledge and development.

The one-world framework is a helpful model to envisage the power of colonial epistemes, but it has limitations in a country like Bhutan that was never colonised. Other authors have also pointed to limitations in this model, suggesting that the pluriverse concept of multiple worlds or ontologies is too static, neglecting power relationships and the inherent tensions between different worlds that continually shift and reform (Blaser 2014, Gamble 2022).

Ruth Gamble has adapted Arturo Escobar’s pluriverse model and Mario Blaser’s modified version into a “pluriverse with more plurality” in the Himalayan context of Pemakö, a region in Tibet just east of Bhutan (Gamble 2022, p.5). The Himalaya’s unique nature as zones of transition and contestation between India and China, along with the hegemonic discourses of Buddhism, result in multiple ontologies and their genealogies being traced here. In Pemakö’s case, the Chinese and Indian states are not the type of hegemonies usually associated with the one-worlding of European capitalist modernity. Therefore, in Pemako’s pluriverse, “multiple, hegemonic ontologies combine elements of the one-world worlds and the pluriverse,” (Gamble 2022, p.5). Gamble also proposes that Vajrayana Buddhism’s non-dual ontological foundation allows Pemakö’s people to incorporate “new, relative ways of being in their worlding practices”, provided these don’t conflict with Buddhist morality (Gamble 2022, p.5).

Emily Yeh and Kabzung Gaerrang (2021) utilised similar frameworks to analyse how herders living in eastern Tibet hold multiple ontologies, or worlding practices, relating to multispecies entanglements and environmental politics. In their approach, asymmetrical power relations produce competing ontologies of the pika, an animal conceptualised differently by Tibetan pastoralists, the Chinese state, and environmental politics. Yeh and Gaerring suggest these ontologies are not strictly

bounded or directly oppositional, but that a performative 'becoming with' assemblage of humans and others conduct multiple practices of worlding:

where different 'worlds' or ontologies necessarily interact as they strive and struggle to maintain themselves through continued enactments. Such multiple worldings thus do not produce radically bounded and pure ontologies (Yeh & Gaerrang 2021, p.465).

They refer to Mario Blaser's work on political ontology to suggest the herders live within plural worlds or ontologies that are not distinct from each other but are "asymmetrically connected, always interacting and intermingling, and sometimes but not always in conflict" (Yeh & Gaerrang 2021, p.465).

Following these authors, I use a modified pluriverse model for Bhutan, which is part of the Tibetan cultural area, sharing many similarities with Pemakö and eastern Tibet. In Bhutan, multiple ontologies interact to form pluriverses that are changing as power structures, development, and political economies transition. These affect animal and health ontologies in some ways similar to eastern Tibet but different in other aspects of the performative 'becoming with' practices of worlding.

Throughout the thesis, I follow various discursive threads and their genealogies to demonstrate their influence on health relationships and animal ontologies. As a result, animal ontologies are complicated and transitioning, influenced by intersecting discourses between the state, bioveterinary regimes, Buddhist leaders, herders and farmers, and a rapidly modernising, educated, urban elite. These discourses and ontologies are not uniform, chronological or static but form a pluriverse that continually interacts, transforms, and is sometimes in conflict. I show how these pluriverses impact Bhutan's veterinary regimes and, in turn, how the veterinisation of society is both the result and also a cause of these processes.

In particular, I focus on two single-optic views of animals in Bhutan. The state simultaneously adopts and promotes a single-optic lens and vision of Eurocentric colonial capitalist modernity by prioritising industrial bioveterinary livestock development programs. The Bhutanese state is unique in adopting policy development and dominant discourses about sustainable development through the post-growth economics of GNH. I show how this bioveterinary single-optic analysis silenced or marginalised societal debate and scholarship on other aspects of GNH apart from economic growth and food self-sufficiency.

National identity politics also co-opted GNH to promote a Bhutanese identity based on Buddhism and Buddhist morality, which resists the universalising of bioveterinary development through anti-slaughter movements, religious practices involving animals, and Buddhist animal ontologies and cosmologies. This single-optic view leaves no room for debate about other issues of intensive industrial livestock agriculture, like animal welfare and cultural and environmental harm.

Throughout this thesis, I demonstrate how these dominant discourses, with their differing animal ontologies or single-optic views, constitute practices of worlding that affect Bhutan's veterinary regimes. They also influence how Bhutanese people and Bhutan's animal agriculturalists rationalise decisions that affect animals.

Economies of Karma

When calculating economic rationalisation and decision-making while utilising animals in Buddhist societies like Bhutan, additional intangible social and spiritual costs are included alongside material economics. Usually, animal agricultural economics includes the material costs of farming, like purchasing stock, feed, transport, and labour. However, farmers and veterinarians in Buddhist societies must include intangible costs like karma and future lives in a complex and dynamic karmic profit and loss calculation. While karma can be explained in many ways, it is most simply described as cause and effect. The Buddhist argument for non-violence is based on this belief in karma. Due to accumulated negative karma from previous actions, like killing, sentient beings are endlessly propelled from one birth to another in the cycle of existence called samsara.

The Buddha said, "There are no beings who have not been one's mother, who have not been one's sister through generations of wandering in the beginningless and endless Samsāra" (Chophel et al. 2012, p.101).

In this framing, beings perform virtuous and non-virtuous activities that leave positive and negative imprints on their mindstreams. These imprints are carried forward through and beyond this life, affecting the material and psychological welfare of their future lives in both positive and negative ways. Therefore, when calculating the net benefit or harm of any decision, veterinarians and animal agriculturalists rationalise 'this life' material and social benefits alongside 'future life' outcomes as a type of multi-life profit and loss calculation.

These concepts have been used to analyse decisions made by Tibetan pastoralists in the interdependent domains of religion and economy. Emily Roza Sulek (2016, p.2) proposed a conceptual tool, the ‘economies of sinning’. She used the example of yak herders collecting cordyceps to calculate the negative impact of collecting versus the results of other economic activities. I argue that this model is limited in the context of Buddhist animal farmers and veterinarians because it only calculates the non-virtuous actions or negative karma that result from these activities, what Sulek calls sin.²⁵

I propose using an extended model based on karmic calculations, known as the ‘Economy of Karma,’ which encompasses *gewa* (*dge ba*, virtuous activities) and *dikpa* (*sdig pa*, negative actions), as well as the futures they create in relation to human-animal activities. Although other authors have used the Economy of Karma in different contexts, this model has not been applied to more-than-human entanglements and veterinary activities.²⁶ I use the Economy of Karma as an analytic tool to understand decision-making in animal agriculture and other human-animal relationships in Bhutan. It is useful when analysing the economic rationalities of the Bhutanese state, veterinarians, pet owners, religious practitioners, herders, and animal farmers.

When using the term economy, I include the current material and economic benefit of activities, for example, the profit derived from selling a yak for slaughter. This is added to calculations derived from Buddhist philosophy, where actions toward animals are evaluated not only in moral terms, but also through cosmological and relational registers that influence practice. Particularly, the concept that we accumulate karma from interacting with others because we exist in a web of relationality that includes all sentient beings, including animals. This relational karmic web extends across innumerable past and future lifetimes.

In using this heuristic model, we should be mindful of the risks of over-systematising what are, in practice, deeply situated and interpretive moral

²⁵ The term ‘sin’ has a specific meaning that was used by early translators who often misapplied Judeo-Christian equivalents for Vajrayana Buddhist terminology like *mi gewa* and *dikpa*. Given this discrepancy, the “economies of sinning” is not quite the correct meaning in this context.

²⁶ For example, the economy of karma has been used in the context of gift giving and the moral economy of exchange (Klima 2015, Huang 2023) and Mahayana Buddhism’s rationality for killing people (Kovacic 2018, Kovan 2022).

judgments. In Bhutan, for example, karmic reasoning is often not articulated in abstract doctrinal terms but is instead lived, negotiated, and reproduced through everyday acts (practice). It may emerge more as spiritual sensibility, moral intuition, or everyday ethics—not always framed as ‘religion’ per se. This is why, at times, the idiom of practice may better capture how karmic concerns shape decision-making in animal agriculture and other more-than-human relations—often in ways that elude doctrinal formulations and instead reflect embodied, context-sensitive interpretations. Ethnography is a perfect vehicle for highlighting this messiness, the tensions, and overlapping practices.

Methodology

This ethnography was primarily concerned with the humans and animals engaged in the constellation of animal production, health and healing in Bhutan. The animals most commonly the subject of veterinary regimes in Bhutan are livestock and dogs. I mainly engaged with yaks and their herders in the high alpine pastures of western Bhutan, where I spent several months during the summers of 2014 and 2015, and also visited winter encampments. By employing a multidisciplinary and multi-sited ethnographic methodology, this research contributes to understanding veterinary anthropology in Bhutan, encompassing the diverse and interdependent aspects of human, animal, spiritual and environmental health care in a more-than-human world.

Fieldwork

I spent 14 months in Bhutan from 2014 to 2015 as a guest of the state Department of Livestock (DoL), primarily working with their field staff.²⁷ My entry point was the collegiality I had shared with my veterinary colleagues during previous visits. Like many social sub-groups, the veterinary industry is a small community that readily embraces new members with immediate professional regard and inclusion. As part of a veterinary culture, this sense of professional membership has been noted by others (Hamilton 2007, p.40), and I experienced it when meeting my colleagues across South Asia. Additionally, as many of Bhutan’s veterinary personnel have pursued

²⁷ See Appendix Three for more information on this state department.

postgraduate studies in Australia, this shared educational and cultural connection has strengthened our close professional friendships.

I spent time with numerous DoL paravets while surveying 14 of Bhutan's 20 districts, as well as with the yak herders, ritual healers, traditional health practitioners, and animal farmers residing there.²⁸ Maps of the field site and survey locations are provided in the frontmatter, page xiv. The DoL paravets and veterinarians accompanying me were my guides, translators, organisers, and friends. They connected my research efforts and were a constant presence at each site of this multi-sited ethnography. They formed an invisible web that stretched across Bhutan, and I traversed its strands from district to district. Through their eyes, I encountered and comprehended Bhutan's animal health and healing networks. I learned about the RGoB regimes of control, biopower, and bio-surveillance over animals, farms, and farmers from these DoL personnel. They took me to their workplaces, both in the offices and in the fields. I accompanied them on official field trips, departmental events, and social occasions, celebrating births, weddings, and funerals. At times I stayed in their homes or government field offices. As a guest of the DoL, they were responsible for my safety and conduct, shuttling me to the places I wished to survey, making local introductions, and translating the various languages and dialects spoken in the regional areas.

The extensive records maintained by the DoL field officers concerning the animals farmed in their regions—such as species, numbers, health issues, disease occurrences, productivity, and the farming systems used—proved invaluable. They were also acutely aware of each community's social and political issues. The paravets moved between homes, pastures, and farms, engaging with villagers, farmers, and herders, listening to their concerns and providing assistance where possible. Additionally, the paravets served as the DoL liaison officers in each district, conducting training sessions and censuses, implementing government policies and programs, and treating animals directly in the field. This close contact and departmental immersion were so profound that in the early months of my fieldwork I

²⁸ Paraveterinarians, or paravets are called *gonor* (*sgo nor sman pa*) in Bhutan. Throughout this thesis, I refer to them as paravets. Veterinary doctors (*sgo nor drung 'tsho*) and other personnel from the DoL may also be called *gonor* colloquially.

realised my research question had shifted from traditional veterinary medicine to the veterinary anthropology of the state veterinary personnel, as well as traditional practitioners.

Thanks to the DoL's reach into every small corner of Bhutan, I encountered hundreds of herders, farmers, and healers. The paravets were well recognised in their communities. They knew many families by name, along with local leaders, religious figures, ritual practitioners, bone setters, and other animal healers. In this way, the field staff connected me with a key group of informants: local farmers, herders, healers, medical practitioners, and, importantly, the animals they cared for. A third group of informants included religious practitioners from the state religion, Vajrayana Buddhism, and other local traditions. Some of these religious figures were involved in animal welfare practices and projects, which enhanced my understanding of human-animal relationships within Bhutan's spiritual and cultural realms. The fourth group consists of those agentive beings who are invisible to the naked eye: the non-corporeal beings, deities, spirits, and the microscopic organisms that cause disease.

To simplify the various labels used to denote animal producers like farmers, herders, those managing intensive industrial production units, or the local small-scale families or holdings of subsistence livelihood, I use the term 'animal agriculturalists' as an overarching category. This term encompasses all animal species and types of animal production. I use the term 'herders' when I refer to transhumant agropastoralists, like yak and cattle herders, who move their herds between seasonal rangelands.

I conducted nearly 200 interviews with animal agriculturalists, herders, healers, and personnel from government agencies, including the Department of Livestock, animal welfare groups, and religious practitioners. In the northwestern high alpine yak herder regions, which are the focus of Chapters Six and Seven, I interviewed 62 people. Verbal informed consent was gained before each interview, in accordance with the university's Human Research Ethics approvals that were granted for this fieldwork. The interviews were semi-structured, featuring open-ended questionnaires conducted in *Dzongkha*, *Sharshop*, Nepali, Tibetan, other local dialects, or English. They were recorded on an audio device for later analysis, and a few key interviews were filmed. DoL personnel sometimes translated in real time when I

could not follow the interviewees' regional languages and dialects. The original interview files, transcriptions and other identifying data were kept on a password-protected computer and an external hard drive backup.

Pseudonyms and Confidentiality

I have used pseudonyms in some areas of this thesis to protect participants' confidentiality and anonymity. The use of pseudonyms is an often unquestioned expected ethical practice in ethnographic research (Weiss & McGranahan 2021). Recently, however, this assumed practice has sparked academic debate for several reasons, including the difficulties of maintaining anonymity with the rise of the internet, social media and mobile phones (Bickford & Nisker 2015, Duclos 2019, Walford 2018). The thick description required of ethnography writing can reveal the identity of participants and places to those from small communities (Bickford & Nisker 2015). Some argue that anonymity provides additional analytic value for the researcher beyond protecting their participants (Vainio 2013). The continued concern about power relations, accountability, recognising intellectual labour and intellectual knowledge, and risk management raises many arguments for and against pseudonyms (Weiss & McGranahan 2021, Tilley & Woodthorpe 2011, Duclos 2019).

Bhutan is populated by fewer than 800,000 people and therefore, it is impossible to de-identify high-profile participants, such as religious leaders and heads of Government agencies. In these contexts, I have used their real names. Within the small DoL where I was stationed, most people are familiar with one another. Therefore, I have used pseudonyms and at times conflated participants' information to protect their anonymity. At other times, I simply refer to their job title, such as a livestock officer, veterinarian, or paravet. Participants from the general public are similarly de-identified or given a pseudonym.

Reflexivity and Decolonising Myself

I embarked on this fieldwork feeling confident, perhaps overly confident, that after 12 years of living and working in South Asia, I was prepared for Bhutanese culture and the challenges of fieldwork. However, I soon learnt that anthropological research was unlike simply living in a country. While conducting fieldwork, I could not retreat to an enclave of expatriates for respite from culture. Instead, a process that Vajrayana Buddhists call *lo jong* (*blo sbyong*, mind training) took place. I refer to

the systematic breaking down of my cultural assumptions, preconceived beliefs, Eurocentric bioveterinary and social science epistemologies and ontologies, and identity. This is painful but necessary work to avoid the epistemic harm of the alternative. In other words, I have been 'becoming with' the beings, entities and environments of Bhutan.

I echo the calls of decolonial and feminist theorists like Juanita Sundberg and Zoe Todd to expose the ontological violence that Eurocentric epistemologies generate in scholarship and ordinary life. Along with Juanita Sundberg, as a fellow inhabitant of a:

white supremacist settler society, I have a profound obligation and responsibility to confront the widespread implications of colonialism in my scholarship and to ask what [geographical] thought has to become to face the political, philosophical, and ethical challenges of decolonizing. This is especially the case in relation to thinking about the land and how human societies interact with those cast as nonhuman. (Sundberg 2014, p.34)

Zoe Todd (2016) recommends that anthropology adopt a decolonial approach and incorporate the critical works of Indigenous thinkers and scholars whose unacknowledged contributions already inform many current trends in Euro-American scholarship, such as relationality. She emphasises the importance of ensuring marginalised voices are heard within academic discussions. Therefore, I have sought Indigenous scholars and sources throughout this thesis where possible.

My positionality as a white woman and veterinary doctor, trained in the Global North, necessarily shaped both the possibilities and constraints of this research. At times, my identity afforded me privileged access—for instance, receiving special treatment in professional settings. However, it also exposed me to gendered vulnerabilities, particularly as a single woman navigating a patriarchal society where alcohol plays a central role in social life. These dynamics at times raised concerns around road safety, drink-driving, and sexual harassment, influencing how I conducted fieldwork.

I also recognise that cognitive bias due to my Australian education and background influenced my perception of the ethnographic context, informants, and the animal health practices I observed. My decade of living and working in the Himalaya, along with my Buddhist practice, may have slightly moderated this bias or it may have obscured my view in other ways. On the other hand, my training in traditional veterinary, herbal, and Tibetan medicine enhanced my understanding of

local veterinary practices. I have endeavoured to address my cognitive bias while writing the thesis. Even so, I apologise to my Bhutanese colleagues and informants for any potential errors or misinterpretations I have made.

Ultimately, my positionality as a scholar-practitioner of veterinary health care, integrative medicines, and Buddhism has facilitated access, emic perspectives and a more participatory participant observation. The validity of 'situated knowledge' as a scholar-practitioner is no longer controversial. This is thanks to the work of feminist and more-than-human theorists such as Donna Haraway, who argues for "politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims" (Haraway 1991, p.195). Buddhism holds corollary claims that it is only through personal practice that the truth of reality can be perceived.

Ethnoveterinary Survey

Along with this participant observation research, I conducted an ethnoveterinary survey across 14 districts of Bhutan, interviewing nearly 200 informants. I sought renowned healers, herbalists, bone setters, and others experienced in animal care, including herders, animal farmers, and muleteers. I recorded the demographics of animal farmers and herders, their veterinary knowledge, animal healthcare practices, local names for animal diseases, treatments, and the medicinal ingredients they used or were familiar with. I identified these medicinal ingredients using a range of methods. Some were everyday culinary items like oil, whey, yeast, salt, and raw sugar, while others were animal ingredients no longer in use, such as bear bile and takin meat and bones. Where possible, I identified plants by their local and scientific names. In cases of uncertainty or to validate local information, I consulted several traditional medicinal plant books from Bhutan and Tibet.²⁹ If they could not be identified through these means, specimen plant samples were photographed, collected, and/or dried for later identification by Bhutanese botanical experts. The preliminary results of the ethnoveterinary survey are compiled in Appendix Five.

²⁹ Monograph on Medicinal Plants of Bhutan- Volume I (Jamphel et al. 2006); Monograph on Medicinal Plants of Bhutan- Volume II (Wangchuk, Samten, Dolma, et al. 2009); Low Altitude Medicinal Plants of Bhutan (Wangchuk & Samten 2009); Low Altitude Medicinal Plants of Bhutan (Wangchuk, Samten, & Ugyen 2009); Monographs on the Use of Traditional Medicine in Primary Health Care (Wangchuk & Chodon 2012); A Handbook of Tibetan Medicinal Plants (Dekhang 2008).

This data still requires validation and analysis by the relevant Bhutanese authorities and experts, for example, the National Biodiversity Centre. My Bhutanese research permissions included a technical clearance from the National Biodiversity Centre to collect 'Bhutanese Traditional Knowledge' of biological resources. I also obtained research permissions from the Council of Renewable Natural Resources Research of Bhutan.

While conducting ethnoveterinary research interviews in Bhutan, nearly every animal agriculturalist reported using ritual healing methods to treat animals affected by spirits or deities. It was evident that plural explanatory models of health and ritual healing permeated Bhutanese socio-spiritual worlds. Therefore, these more-than-human health relationships and cosmologies are included in the latter chapters of this thesis, illuminating key issues in Bhutanese ethnoveterinary treatments.

Sampling Methods

I employed the snowball sampling method to seek informants for the research project. Snowballing, or chain-referral sampling, is an effective technique for identifying and recruiting informants in ethnographic research. This approach involves asking initial informants to refer other potential participants, thereby creating an organically expanding network of informants. Snowballing is particularly useful for reaching hidden or hard-to-reach populations and in contexts where trust and social connections are vital for gaining access to informants (Kirchherr & Charles 2018, pp.2–3). Multiple sampling entry points were utilised from various community sectors and sites across Bhutan to reduce the selection bias inherent in this method.

In the context of veterinary anthropology in Bhutan, snowball sampling aids in identifying key informants such as local veterinarians, livestock owners, and religious practitioners involved in animal care. When community introductions are made solely by veterinary personnel, there is a risk of gatekeeper bias. Thus, gaining access through animal welfare groups, religious practitioners, and the public helps mitigate such bias in the samples. By leveraging the social networks of these initial contacts, I aimed to build a comprehensive and representative sample of informants, facilitating a deeper understanding of the cultural and social dynamics of animal healthcare behaviours and human-animal relationships.

Interdisciplinary and Multi-Sited Ethnography

This research methodology is grounded in an interdisciplinary and multi-sited ethnographic approach. It draws from medical anthropology, animal studies, Buddhist studies, and multispecies ethnography. By integrating various disciplinary perspectives and conducting research across multiple sites, this study captures the diverse and interconnected nature of human-animal relationships in healthcare practices along with their cultural, ecological, and spiritual dimensions. An essential part of ethnographic methods, participant observation naturally results from being involved in veterinary personnel's regular duties, functions, and social events.

The project included multiple research sites. Multi-sited ethnographic methodology involves more than just utilising several research sites. It examines the connections between sites, as well as the relationships and interconnections that produce a phenomenon or event. Anna Tsing's (2015) seminal work involving the matsutake mushroom, global supply chains, ecological interdependence, and alternative economies in a world shaped by capitalism and ruin is an excellent example of multi-sited and multispecies ethnography.

The Bhutanese are a profoundly religious and religiously plural nation. Understanding the spiritual beliefs and practices associated with the care of animals within Bhutanese communities provides context for this research. Buddhist ethics and norms permeate every aspect of society; therefore, incorporating religious studies into this ethnography may help elucidate some of these hegemonic forces. However, conflating religion and spirituality can obscure essential distinctions, especially in a context like Bhutan, where institutional Buddhism, state policy, lay ethics, and personal spiritual practice can all pull in different directions. By integrating religious studies with ethnographic methods, we can move beyond doctrinal analysis and elucidate how spiritual and cultural beliefs influence the grounded, embodied veterinary practices and human-animal relationships.

I include non-corporeal beings, or spirits, in this multispecies ethnography. These active spiritual entities affect other lives and realms within the sacred landscape and are integral to the health matrix. This comprehensive approach ensures that the research captures the full spectrum of factors shaping veterinary practices in Bhutan.

The benefits of interdisciplinary ethnography in medical anthropology and veterinary anthropology are extensive. Interdisciplinary approaches allow

researchers to address the complex nature of health, illness, and medical practices. By integrating insights from various fields, researchers can cultivate a more nuanced understanding of health's socio-cultural, biological, and environmental determinants. This is relevant to veterinary anthropology in this ethnography, where religious rituals are examined within the context of multispecies health and healing relationships that include intricate care systems. Furthermore, it highlights the interdependence of human and animal health, revealing how veterinary practices can influence human health and lifeways. In Bhutan, where animals play a significant role in daily life and spirituality, understanding these interdependencies is vital.

In the early stages of this research, I gathered Tibetan veterinary and animal husbandry texts that are described in Appendix Six. Although this PhD project evolved into an ethnography rather than a textual study, I still include the bibliography as an appendix to showcase the sources I collected, which may be helpful for future research on traditional Tibetan veterinary medicine.

Given the broad range that veterinary anthropology can encompass, the ethnographic research in this thesis is presented as a case study to contribute to and further explore this emerging discipline.

Chapter Outline

This thesis is presented in two parts. Part One examines the tensions that arise from within the milieu of Bhutan's Buddhist culture, state bioveterinary regimes, and their industrial livestock development agendas. In this tangle of hegemonic forces, state veterinary personnel adapt to different one-worlding and cultural influences.³⁰

I begin in Chapter One by describing the ethnographic field, Bhutan's demographics, religions, people, and health care traditions. I briefly summarise regional veterinary traditions that influenced veterinary care in Bhutan, and the colonial origins of Bhutan's bioveterinary systems. This introduces the hegemonic discourses and their genealogy that influence animal ontologies in Bhutan, and hence

³⁰ One-worlding or a one-world world are concepts advanced by AmerIndian, decolonial, and science and technology studies scholars (e.g. John Law, Marisol de la Cadena, Mario Blaser, Arturo Escobar). It describes the hegemonic Eurocentric worldview that universalises a single reality defined by Western science, capitalism, and development. It marginalises or diminishes other ways of being, knowing and world-making. One-world worlds stand in contrast to pluriverses, or plural ontologies.

veterinary practice. I then summarise human-animal relationships and animal studies scholarship in the Tibetan cultural area, Vajrayana Buddhism, and in Bhutan.

Chapter Two narrows the focus to Bhutan's bioveterinary regimes, the Department of Livestock. The department's primary goals are analysed within the context of the state's sustainable development model, Gross National Happiness (GNH). I analyse the department's goals of intensifying livestock development and increasing animal production through the competing discourses of GNH that different sectors of Bhutan have co-opted as their own. I show the impacts of the one-worlding forces of Eurocentric capitalist bioveterinary livestock development on veterinary regimes and through the veterinisation of society, animal agriculture, the environment and Bhutan's socialscapes.

The problem of being a veterinarian involved in livestock production, slaughter and animal killing while living in a Buddhist nation is explored further in Chapter Three. Through ethnographic examples of rabies control in dogs, meat production, animal euthanasia, and humane slaughter practices, I demonstrate how Bhutan's veterinary regimes face an impossible task. They must juggle state demands to provide food security through animal agriculture and killing while also conforming to national identity politics that promote Buddhist ethics, anti-slaughter and a Buddhist animal ontology. I discuss the strategies employed to manage these tensions that result from the clash of pluriverses in Bhutan.

In Chapter Four, this theme is continued through an ethnography of community religious practices like animal release or *tsethar* (*tshe thar*) and its impacts on Bhutan's veterinary regimes. The intersecting processes of veterinary livestock development and community resistance are analysed, revealing the veterinising effect of society through state biopower and biocontrol. These interacting and evolving pluriverses of animal ontologies and human-animal relationships changed Bhutan's landscapes and socialscapes. I show how community resistance to these forces has, in turn, altered Bhutan's veterinary regimes.

In Part Two, I expand on the tensions between culture and state that I explored in Part One, but in the context of yaks and their herders in northwestern Bhutan's high-altitude pasturelands.

Chapter Five introduces the yak herders of western Bhutan and an ethnographic account of my time there. In this context, it explores human-animal relationships,

animal ontologies, and the negotiations around these in an increasingly Buddhicised society with respect to animal production and slaughter. The Economy of Karma model is useful here in rationalising decision-making around this life versus future life wellbeing. In this sense, the ritual economy of *tshethar* is analysed, including its impacts on the state's veterinary regimes.

I explore yak-herder kinship networks in multispecies and more-than-human health relationships in Chapters Six and Seven. Initially, the high alpine world is described, including the pluriverses of intersecting and evolving animal and spirit ontologies. Explanatory models of illness, veterinary pluralities, and traditional veterinary medicine are explored through ethnographic examples.

Chapter Seven continues this theme, focusing on the more-than-human world of this sacred landscape. The various diagnostic methods and treatments used to address spirit harm in livestock are discussed. I then present ethnographies on rituals and practices, previously described for humans, but that are also routinely applied to animals. I show how similar concepts and health narratives extend to humans, animals, spirits and environments, in their 'web of mutuality'.

In the conclusion, I summarise the outcomes of this thesis, an ethnography of Bhutanese veterinary regimes, more-than-human health relationships in a Buddhist country, and ethnoveterinary medicine. To my knowledge, this research is novel. As we progress through the chapters, a clearer picture of Bhutanese human-animal relationships and the influence of the state, along with its religion and culture, on these relationships emerges. This analysis diverges from previous multispecies ethnographies and shifts towards a more-than-human perspective by incorporating non-corporeal spiritual actors within the intertwined lived experiences of the Bhutanese, their animals, and the veterinary regimes.

Part One: Veterinarians and Animals in This Buddhist Land

Part One of this thesis explores the tensions arising within the milieu of Bhutan's Buddhist culture, livestock development, and state veterinary regimes. I outline Bhutanese human-animal relationships, animal ontologies in Buddhist cosmology, and negotiations around these with respect to animal production and slaughter. This issue has become particularly sensitive in a society that is becoming increasingly Buddhist, with its ethical norms and national identity politics fostering anti-slaughter views and Buddhist animal liberation practices. Especially when the same society has rising levels of meat consumption, industrial animal farming, and pet keeping.

Bhutan's state veterinary personnel, veterinarians and paravets, are responsible for many different activities relating to animals and are the peak body responsible for domestic animals. Most of their work focuses on livestock development and food security, ranging from subsistence free-range animal agriculture to intensive, housed, industrial animal agriculture, with many Bhutanese farmers operating in a range of both. As such, veterinary work promotes animal farming for human utility, animal slaughter for food, disease or population control, and the 'veterinisation' of society.

I begin by examining various aspects of Bhutan's veterinary history, development, culture, and function. I describe the specific nature of Bhutan's veterinary regimes and analyse how the cultural and environmental forces of this Buddhist Himalayan kingdom have shaped veterinary programs and identities into a specific Bhutanese form of bioveterinary medicine. I trace the discursive genealogies that have impacted this ongoing process, as well as the effects on veterinary regimes of Asia's colonial past and recent engagement in global, capitalist development. Ethnographic examples are provided to demonstrate the ways society has shaped veterinary regimes, and conversely, the ways veterinary regimes, through biopower and biocontrol, have 'veterinised' society.

Chapter One- The Land of the Medicine Dragon

Bhutan is commonly known as the 'land of the dragon' and the 'land of medicinal plants', reflecting its rich biodiversity of medicinal plants (Phuntsho 2013, pp.6–11).³¹ Bhutanese even refer to themselves as *Drukpas* ('brug pa, dragon people). The two names—dragons and medicine—correspond to the central themes of animals and healthcare in this thesis. This chapter introduces those themes by firstly outlining the ethnography's locale, contextualising Bhutan's people, places, religions, and cultures to provide a concise overview of the country's history, state formation, and relevant medical and veterinary traditions that inform this work.

The region's unique medical and veterinary environments have shaped Bhutan's state veterinary regimes and ethnoveterinary practices. I introduce the discursive genealogies that have influenced Bhutan's veterinary regimes and other local animal healthcare traditions. In this context, I examine the colonial history of India's centres of knowledge production, where academic colonialism has embedded bioveterinary and Eurocentric animal ontologies into Indian veterinary institutes. Although Bhutan has never been colonised, its veterinarians are influenced by their undergraduate education at Indian veterinary institutes. Furthermore, these processes have promoted a global capitalist model of livestock production and bioveterinary science, reinforced through engagement with international postgraduate education and development agencies.

The final section of this chapter introduces the animals of Bhutan, who form a large part of this multi-species ethnography. After summarising the state of animal studies in the region, I examine animal ontologies through the lens of Bhutanese spiritual cosmologies, particularly Indic cosmologies and Buddhist moral prohibitions against killing animals. Furthermore, I discuss how this contrasts with the ontological status of animals in Eurocentric capitalist bioveterinary models, which quantifies them as economic units of production and as property. Tensions arise from these conflicting ontologies, affecting many animal farmers and veterinarians in Buddhist societies, a recurring theme I explore throughout this ethnography.

³¹ Land of the dragon (*druk yul*). Tibetans also called Bhutan the Southern land of medicinal plants (*lho phyogs sman ljongs*).

I then introduce the animal farming and herding systems in Bhutan, which are evolving in response to recent transitions to capitalist development and the ‘veterinisation’ of animal agriculture. I show how this is tied to state political economies, international development agencies, and funding schemes, demonstrating the one-worlding of veterinary techno-scientific livestock development programs. These programs, driven by state veterinary regimes, favour European exotic breeds in intensively farmed systems over traditional, transhumant indigenous breed systems, altering both landscapes and socialscapes. This chapter’s exploration of key actors, cosmologies, health ecologies, and ethnographic locales provides the necessary context for interpreting the remaining chapters of the thesis.

Demographics, Environment, Economy, Religion

During the motorbike journey I described in the prologue, I witnessed a dramatic change in geography, flora, and fauna while riding from the Indian border to Thimphu. I experienced Bhutan's remarkable diversity and beauty, where over 70% of the land is under protected forest cover—a national mandate that underscores Bhutan's commitment to environmental protection. With altitudes ranging from sea level at the Indian border to 7,500 m on the northern Tibet/China border, Bhutan's 38,394 square kilometres of steep river valley systems are nestled between Nepal to the west, India to the south and east, and Tibet/China to the north.

I rode past fast-running rivers supplied by snow and glacial melt on that first motorbike trip, some of which originate from the Tibetan plateau. These river valley systems make Bhutan ideal for hydroelectric projects. Hydropower-generated electricity sold to India represents Bhutan’s largest export. Conversely, most of Bhutan’s imports come from India (Nidup 2015, p.123). Over the last thirty years, Bhutan has experienced rapid development, bringing economic gains and self-sufficiency to many areas. However, despite exporting hydroelectricity, Bhutan maintains an ongoing trade deficit with India of nearly 17,000 million Ngultrum annually (NSB 2020, p.266).³² This is partly due to food imports, as Bhutan's domestic production cannot keep pace with its consumption (RNRSCS 2015, pp.62–63). Therefore, the state is actively working to reduce its reliance on Indian imports.

³² The national currency, the Ngultrum, or Nu (dngul kram), is tied to the Indian rupee.

Part of this strategy involves boosting the production of animal-based food through intensive animal agriculture and livestock development, driven by state veterinary regimes.



Plate 4- Bhutan's steep mountainous terrain.

Over half of Bhutan's 745,000 people work in agriculture, mainly in subsistence farming of rice, chillies, vegetables, and livestock (NSB 2020, p.98), and are supported by Bhutan's Ministry of Agriculture and Forestry (MoAF) and its veterinary regimes. While overall unemployment is low at 2.7%, youth unemployment is higher as young graduates from the national education system seek better opportunities than those available to their parents. These graduates aspire to paid employment rather than returning to subsistence agriculture and are encouraged by their parents to remain in Thimphu to compete for limited government or the more recent expansion of tourism, retail and trade positions. This trend contributes to urban migration and the depletion of farm labour resources in rural and herding areas, hindering animal agriculture and yak herding.

Bhutan is often called a Vajrayana Buddhist Kingdom and is home to the last publicly active Buddhist monarchy in the Himalayas and Tibetan cultural areas

(Chophel et al. 2012, p.97, Allison 2019, pp.4–5). Buddhist ideas and practices have significantly shaped Bhutanese culture and politics since the consolidation of the state in the 17th century (Phuntsho 2013, p.65). The official religion, Vajrayana Buddhism, is primarily represented by the Drukpa Kagyu (*brug pa bka' brgyud*) and Nyingma (*rnying ma*) schools (Rigyal & Prude 2017, p.64). The government sponsors and supports monastic institutions, monastics, religious festivals, and monuments (Rigyal & Prude 2017, p.61). The state and many of its people consider Vajrayana Buddhism fundamental to Bhutan's national identity (Rigyal & Prude 2017, p.61). Approximately 75% of Bhutanese identify as Buddhist, 22% as Hindu, and only a handful as Christian (Bureau of Democracy, Human Rights and Labor 2015, p.1).



Plate 5- A Buddhist retreatant lives in a cave by a glacier above Gangyul in northern Bhutan.

Bhutan's plural religious environment includes pre-Buddhist religious and spiritual beliefs that persist alongside Buddhism. This is a vast subject well researched by others; therefore, this thesis only discusses those aspects related to animal agriculture, health and healing.³³ The land is believed to be inhabited by

³³ As described by: Elizabeth Allison on the sacred landscapes (Allison 2015, 2017, 2019), Geoffrey Samuel on religion, medicine, subtle bodies, and culture (Samuel 1993, 2012, 2013, 2016, 2019, Samuel & Johnston 2013), Toni

beings who reside within features of both the natural and built environments. These deities and spirits are not enlightened and, although long-lived, are believed to die and be reborn like other beings in Buddhist cosmology. Some are regional protector deities associated with specific locations, often mountains, while others are smaller, local spirits (Allison 2015, p.450). These spirits are actors in Bhutan's more-than-human health ecologies. They are incorporated into illness narratives and form part of reciprocal health relationships involving animals, their humans and environments.

According to Bhutanese understandings, the renowned Indian Buddhist saint Padmasambhava, also known as Guru Rinpoche, began taming landscapes and people in the 8th to 9th centuries by compelling regional deities to take vows of obedience to Buddhism and protect the Dharma (Samuel 2013, pp.77–78). Since then, Buddhism's ongoing effort to syncretise local traditions has continued this taming and civilising mission in many parts of the Tibetan cultural area, including Bhutan. Buddhist monastics, such as the Je Khenpo, the spiritual leader of Bhutan, negotiate with deities, subduing them with their tantric power and binding them to Buddhist oaths. Despite these efforts, the regional and local spirits have not all been absorbed into the Buddhist pantheon to date.

A tradition often referred to as *Bön* persists in many locations in Bhutan, where *Bön* priests and practitioners engage in rituals, some of which are related to health. These local village religious practices may have no connection to the long lineage of scholarly monastic *Bön* traditions (Samuel 2013, p.80), but are active around and within Buddhist communities.³⁴ The sacred landscape I described earlier may constitute a form of indigenous animism that, when combined with Buddhism, *Bön*,

Huber on local village rituals (Huber 2020), Kelzang Tashi on *Bön* and village ritual practices (Tashi 2023), Françoise Pommaret on religion (Pommaret 1996, 2010, 2014), and many others. See the next footnote for more references.

³⁴ Analysing the complexities or even the definition of what *Bön* means in Bhutan is beyond the scope of this thesis. I refer to Geoffrey Samuel's summary of Buddhism and *Bön* as "complex, situationally-variable signifiers used in a variety of historically-specific contexts" (Samuel 2013, p.92).

Kelzang Tashi's monograph "World of Worldly Gods: The Persistence and Transformation of Shamanic *Bön* in Buddhist Bhutan" (2023) is an ethnographic study on the world of *Bön* in his field site in central Bhutan.

Françoise Pommaret published several papers on aspects of *Bön* in Bhutan (Pommaret 1996, 2010, 2014).

Many other authors have contributed to the question of community rituals, *Bön*, and Shamans in Bhutan. I refer the reader to their existing work (CBS 2004, Dorji 2002, 2004, Dema & Baburaj 2022, Phuntsho 2013, Allison 2017).

and shamanistic beliefs, forms a unique socio-spiritual ecology affecting all aspects of Bhutanese life (Allison 2023, p.2).



Plate 6- A small stupa in northern alpine Bhutan marks a built sacred site in the landscape.

Bhutan's Himalayan mountains were shaped by immense geological forces when two major continents collided. As a result of this collision, the Himalayas form a zone of transition in geology, culture and politics. Bhutan is wedged in this transition zone between the two great Asian powers—India and China (Phuntsho 2013, p.15). Bhutan's northern people migrated in successive waves from Tibetan and Mongolian regions, spoke various Tibeto-Burman dialects, and practised Buddhism. These *Drukpas* are Bhutan's dominant cultural group and play a significant role in the institutional iteration of Bhutan's history, culture, and leadership. Bhutan's southern population migrated to this borderland more recently and has an Indo-Aryan linguistic and cultural background, primarily of Nepali origin. While originating from a variety of castes and ethnolinguistic groups, the Bhutanese Nepali communities have become more unified over the years, sharing the Nepali language as a unifying trait (Hutt 2005b, p.21).



Plate 7- Bhutan's geography extends from the Indian plains in the south to the harsh northern alpine environments like Lingshi village, one of my field sites in September 2014.

Bhutan has over twenty languages (Phuntsho 2013, p.51), religious and medical pluralism (Tae 2017, p.16), and distinct subcultures and dialects in each region. The three most populous ethnic groups are the *Sharchop* (*shar phyogs pa*, Easterners), the *Lhotshampa* (*lho mtsams pa*, Southerners), *Ngalong* (*snga long*) in the northwest, with the central Bhutanese forming a fourth, undefined group with unique dialects and traditions (Hutt 2005a, pp.4–5). In brief, and at risk of generalisation, the *Sharchop* speak *Tshangla* (a Tibeto-Burmese language), are primarily Buddhist (mainly Nyingma), and share cultural, linguistic, and familial links with the people of Arunachal Pradesh (India) to their east. The *Lhotshampa* speak Nepali, predominantly practice Hinduism, with a few identifying as Christian, originate from Nepali cultural groups, and bring their Ayurvedic and other local medical traditions with them. The *Ngalong* speak the Tibeto-Burmese dialect known as *Dzongkha*, which became the state language in 1961. They are Buddhists, mainly of the Drukpa Kagyu and Nyingma schools, and incorporate Tibetan local and institutionalised medical traditions such as *Sowa Rigpa*. The *Ngalong* have historical, cultural, and familial ties with the Sikkimese to their west (Hutt 2005a, pp.4–5). Although the *Ngalong* population is in the

minority, they, along with the central Bhutanese, are politically dominant and form the ruling elite.³⁵

Modernisation and Development in Bhutan

The modernisation and development of Bhutan began when the third King, Jigme Dorji Wangchuk (reign: 1952 to 1972), initiated foreign policy and land reform, abolished serfdom, negotiated Bhutan's membership in the United Nations, and planned for development. The fourth King, Jigme Singye Wangchuk (reign: 1972 to 2006), continued along the path set by his father and established the well-known concept of Gross National Happiness (GNH), asserting that it is more important than Gross Domestic Product (GDP). He emphasised the cultural, social, and environmental aspects of development, and the GNH policy has now become a vital part of the government, civil service, and even the private sector.

The fifth king, Jigme Khesar Namgyel Wangchuck, continues the course established by his predecessors. Bhutan has embraced further modernisation, international tourism, and initiatives aimed at balancing development, economic benefits, and conservation. Since the reign of the third king, a global and plural government-sponsored medical service, along with a free national veterinary service, has been integral to these development efforts.

The Bhutanese monarchy and government have taken immense efforts to preserve Bhutan's culture, religion, and environment. They have tried to balance the benefits of economic development, education and technological advancements against the risks of cultural and environmental erosion. As a result, Bhutan is a fascinating blend of modernism, combined with nostalgia for a somewhat homogenously constructed past. It is not uncommon to see post-graduate educated Bhutanese in national dress sitting in burger cafes in Thimphu, which have traditional architecture and furniture, sipping lattes, eating American-style burgers, while speaking English and discussing their recent overseas trips and the latest

³⁵ For more on Bhutan's history, it is well documented elsewhere (Aris 1979, Aris 2005, Dorji 2008, Phuntsho 2013). However, these sources provide little information about Bhutan's healthcare practices and even less about animals, their relationships to them, animal illnesses, and ethnoveterinary practices. When animals do appear in historiographies, they reference food and animal slaughter (Ura 1995); transport, livestock, and herding—including yaks, sheep, cattle, mules, and ponies (Aris 1979, pp.67, 263); and religious imagery and cosmology (Phuntsho 2013, p.123). The political history of Bhutan is, however, well researched.

smartphones and other gadgets. Bhutan's development is discussed in more detail in Chapter Two.

History of Bhutanese Medicine

Sources on healthcare history in Bhutan are limited, as Jonathon Tae (2017) discusses in detail.³⁶ References to the social or ecological history of animal healthcare, human-animal relationships, or animal illness in Bhutan are only found after the rise of the modern state in the 20th century. Without veterinary histories, we must turn to Bhutanese concepts and practices of human health and healing to provide context for the country's animal healing practices and illness narratives. While several different types of healthcare exist in Bhutan's plural medical environment, it is crucial to understand that these practices are not distinct, separate systems in the field, they are separated here for the sake of discussion.

The first institutional system of Bhutanese medical practice, *Sowa Rigpa*, originated in Tibet (McKay 2007, p.175). The first Tibetan *Sowa Rigpa* institution was established in southern Tibet during the 8th century. At that time, the land south of Tibet, which had not yet unified as Bhutan, was known as *lho menjong* (southern land of medicine) and medicinal ingredients were traded throughout the region that would become Bhutan (Phuntsho 2013, p.6). Over the subsequent centuries, several Bhutanese practitioners trained in this and similar Tibetan medical institutions, supported by affluent patrons and the ruling elite. In the mid-20th century the Bhutanese government established its own traditional medicine teaching and clinical institutions based on *Sowa Rigpa* theory, texts, and practices (Dorji & Melgaard 2012, p.26). Traditional medicine services then became accessible to all Bhutanese, not just the elite.

Bhutanese exposure to biomedicine and medical practitioners only commenced in the early 20th century, with sporadic visits from members of the British colonial administration in India. Four sons of Bhutanese elite families eventually attended

³⁶ The few comprehensive medical histories include Melgaard and Dorji's *Medical History of Bhutan* (2012), which provides a narrative continuum from early Buddhist times (7th CE) to the current state-run biomedical institutions. McKay and Wangchuk (2005) along with McKay (2004, 2007) provide Bhutan's most comprehensively supported medical histories. Other sources include the Ministry of Health website (Ministry of Health 2020), and Bhutan's Faculty of Traditional Medicine website (Faculty of Traditional Medicine 2020) and its journals (Faculty of Traditional Medicine 2018), and newspapers and popular media, such as Tashi (2020).

Indian universities in 1924; two of these sons trained as doctors and two as veterinarians, becoming the first recorded Bhutanese doctors and veterinarians in the country (McKay 2007, p.185). The national biomedical public health system developed in the 1950s and 1960s following the establishment of the Bhutanese National Assembly and the introduction of the Five-Year Plans (McKay 2007, pp.189–190).

Public health education has gradually embedded biomedical concepts and terminology into Bhutanese public discourse and illness narratives. As outlined here, the Bhutanese state maintains a plural medical system that includes both biomedical and traditional practices. The medical history and medical anthropology of Bhutan have been documented and discussed in several publications, albeit considerably less than other regions of the Tibetan cultural area, such as Nepal, Sikkim and Ladakh.³⁷ However, this thesis is the first to examine the veterinary anthropology of Bhutan.

Regional Veterinary Regimes

The influence and legacy of any single ‘profession’ should never be assumed to be, or have been, uniform across the globe (Davis 2008, p.266).

This section analyses the influence that regional veterinary traditions played on Bhutan to better understand how Bhutanese institutional veterinary regimes developed their unique identity. Although culture cannot be distilled into discrete categories, for heuristic purposes, I have identified different spheres that have shaped contemporary veterinary personnel and systems, as well as cultural concepts of animal health, illness and healing.

Bhutanese veterinarians and paravets live embedded in Bhutanese cultural sensibilities, religious ideologies, national identity politics, and medical ecologies. The social environment reinforces Vajrayana religious narratives and Buddhist medical traditions, especially the *Sowa Rigpa* perspective on health and illness. These veterinary professionals encounter a range of human and animal health models and practices, often in clinical settings. Here, certain assumptions about the body, animal

³⁷ For example: Tandin Dorji (2004), Phurpa Wangchuk (2010), Alex McKay and Dorji Wangchuk (2005), Rinchen Pelzang (2010), Namgay Lhamo and Sabine Nebel (2011), Kunzang Chopel, Sue Smith and Jon Mason (2024), Mona Schrempf (2015a, 2015b, 2015c, 2019), Amanda Duncan (2008), Johanna Prien (2015), Jonathon Tae (2017), and the Men-jong So-rig Journal of the Institute of Traditional Medicine Services, Bhutan.

ontologies, and illness are often assumed (usually within the bioveterinary/Eurocentric model), but are also subverted, contested, and rearticulated in response to local sensibilities and beliefs.

In addition to these eco-social factors, Bhutan's state veterinary system was developed to support rural subsistence farming and animal production, not for the clinical treatment of urban dwellers' pets. Therefore, the state employs all veterinarians, including those few who provide small animal services. As a result of Bhutan's unique geography, farming methods, socio-economic conditions, endemic and zoonotic diseases, animal species, local and imported breeds, and state policies, a veterinary regime specific to Bhutan emerges. In these ways, we see how a veterinarian is a cultural product of their geography, religion, and society.

The following section explores how, when, and why veterinary institutions emerged, their crucial role for the state, especially in developing communities in Asia, and how they became an integral tool of colonisation. This summary lays the foundation for understanding Bhutan's veterinary regimes, hegemonic discourses, and local animal health and healing concepts. It also helps illuminate why Bhutan's livestock development programs adhere to bioveterinary frameworks and how the political economy of Bhutan's animal-based food systems is transitioning towards European methods of intensive industrial animal agriculture and European livestock breeds.

Colonialism in Veterinary Regimes

The spread of colonial veterinary medicine reached South Asia through the European (primarily British) colonial apparatus, including its military, administration, and veterinary regimes. Several scholars aptly argue that the British (and European) colonial project, accompanied by its military forces, transported cavalry, cattle, and sheep herds along with their associated diseases and veterinarians across the globe.³⁸ English military veterinarians were enlisted to support the military, its animals, and the administrative framework needed to manage the colonised communities (Mishra 2011, p.593, Rahman 2004, p.55).

³⁸ Swabe (1999), Davis (2008), Mishra (2011, Mishra 2015), Chakrabati (2010), Upadhyaya (2024), Rahaman (2021), and Sarkar (2022).

Colonialism and imperialism infiltrated Indian veterinary schools when the British colonial project transplanted European education to India from the 1830s as a civilising mission (Seth 2007, pp.1–3, Davis 2008). They established local veterinary institutions from 1862 to enhance veterinary capacity among the local population, which were modelled on European colleges, primarily centred on horse health, breeding, and military animals (Mishra 2015).³⁹ Local animals, along with their diseases and indigenous animal health and healing traditions, were intentionally neglected (Mishra 2011, p.616), despite that most of India's population relied on livestock for survival (Davis 2008, pp.260–262). The colonial veterinary teaching schools maintained strong connections to the biomedical veterinary traditions that were present when the British quit India in 1947. These forms of colonialism positioned Eurocentric animal ontologies, illness narratives, disease aetiologies, their cures, and medical and surgical therapies as hegemonic (Rahman 2004, p.55).

Academic colonialism therefore instilled European scientific epistemologies and ontologies regarding animals, their production, health, and healing into Indian universities and veterinary culture. This form of colonialism persisted through power imbalances that prioritised and perpetuated Euro-American hegemonic norms, framing notions of what constitutes valid veterinary knowledge and scholarship worldwide. Therefore, Bhutanese veterinarian students were affected by colonialism by attending Indian veterinary institutions that promoted Eurocentric discourses of human-animal relationships, animal ontologies, and scientific epistemologies that diverged from their own culture's historical worldview of animals, illness, and healing.

In addition, any Bhutanese veterinarians subsequently advance to postgraduate studies, often in Australia under Commonwealth Government Scholarships and various aid programs. This postgraduate study in bioveterinary science and livestock development further entrenches them within dominant Eurocentric, capitalist frameworks of animal ontologies and intensified techno-scientific methods of livestock development. As such, international livestock development agencies in Asia

³⁹ The first colonial military veterinary school was founded in India in 1862 (Rahman 2004, p.55). Its primary aim was consistent with earlier European veterinarians in the country: to support military campaigns by ensuring the health of horses and transport animals. These animals were vital to the early Indian armies of the British Empire.

are another example of one-worlding, in which theories, techniques, and paradigms developed for the Global North are uncritically transplanted into other cultural or geographical settings, such as Bhutan.

Veterinary regimes worldwide play a crucial role in the animal industrial complex. The production and slaughter of animals for human utility and benefit are central to these endeavours. In this ontology, animals are viewed as renewable natural resources to be exploited. Legally, humans own animals and can act as they wish with them, including killing, provided it is within the constraints of each state's animal welfare legislation. This utilitarian perspective, which views animals as property lacking agency and sentience, has been normative in Euro-American society and law. This view aligns more closely with veterinary practice in the Global North.

These discourses about animals were shaped by the complex of Christian (mainly Protestant) religion and European moral philosophy and have been examined by numerous authors (for example, Waldau 2002, Waldau & Patton 2006, Kemmerer 2012, Gross 2014, Chen 2016).⁴⁰ In brief, human exceptionalism posits that animals are inferior. Human rationality, language, and ethical reasoning bolster this exceptionalism, asserting that only humans warrant moral consideration. Humans are granted dominion over animals, which are viewed as lacking immortal souls and the capacity for reasoning. Consequently, animals are accorded merely instrumental value, existing to serve human interests. These concepts became enshrined in law, leading to the classification of animals as property that humans could exploit at will.

This contrasts significantly with the Indic presentation of animals, as discussed earlier in this chapter. Conflict often arose when these Eurocentric animal ontologies and bioveterinary epistemologies encountered the communities in the regions they colonised, including India. Asia's Indic-based religions present an alternative cosmological model that legitimised the animal as a sentient and cognitive being with whom we may share a kinship through past-life relationships. These presentations of animal ontologies do not exist as a fixed, static dichotomy. There are many other complicating and intersecting cultural, spiritual, political and economic aspects that inform individual, regional and national hegemonic discourses about animals and

⁴⁰ The writings of Aristotle, Thomas Aquinas, René Descartes, Thomas Hobbes, and Immanuel Kant, along with the Christian Bible, profoundly influenced European society's understanding of animals and their treatment.

animal-based agriculture. However, in public debate, the primary tensions stem from these two ontologies.

Aside from animal cosmology and human-animal relationships, colonial veterinary education has posed additional challenges for Bhutanese veterinarians. Health scientists from the Global North often take their biomedical epistemology for granted as a foundational principle upon which all other practices and knowledge systems are built (Broz et al. 2023, p.4). Cartesian dualities that separate the mind from the body and nature from culture are equally prevalent in Euro-American education and science. When Bhutanese veterinarians pursue postgraduate studies at international universities, the reductionist Eurocentric scientific model and animal ontologies are further promoted as truth, or as a one-world world. However, Bhutanese veterinarians are not merely scientists. They are also embedded within a plural Bhutanese medical culture and explanatory models of sickness and health. These models encompass spirit harm illness aetiologies and the non-duality of mind and body.

The complexity of Bhutan's medical pluralism defies simple categorisation and reification. The tensions and negotiations surrounding local knowledge systems and introduced forms of biomedicine and bioveterinary medicine are complex (Tae 2017, Pelayo et al. 2022, Gerke & Samdrup 2025). I frame them here as heuristic tools, despite the risk that categorisation flattens such nuance. Rather than describing static realities, these binaries reflect how individuals and institutions navigate competing visions of health, knowledge, and authority. As such, Bhutanese veterinarians must navigate these sometimes conflicting epistemologies within their professional identities.

Challenging Colonialism

Veterinary anthropology is well-suited to critically examine and uncover forms of colonialism and imperialism, such as the international development agenda's tendency to homogenise animal agriculture, healthcare, and bioveterinary modes of zoonotic disease control in Asia (for example, see Srinivasan et al. 2019). In this context, the deep-rooted and persistent colonial foundations of veterinary medicine in India have only recently come under scholarly scrutiny. Diana Davis (2008) highlights the social and political factors that impacted veterinary education and

policy, and led the British Indian veterinary regime to focus almost exclusively on army horses for much of its existence.

This Eurocentric focus on veterinary education and knowledge production has encountered challenges in other colonised nations, such as South Africa (Davis 2023), and academic fields beyond veterinary science.⁴¹ The effects of colonial expansion have undeniably permeated all aspects of contemporary society and have been extensively researched across different fields. Several South Asian authors analyse aspects of colonialism and imperialism in contemporary Indian society.⁴² One of these works critiques the colonial construction of rabies control programs in India from a public health perspective (Srinivasan et al. 2019). While this paper doesn't address veterinary teaching institutes, it advocates for decolonising veterinary public health policies concerning rabies and other zoonotic diseases.

Although epistemic colonialism has shaped Indian veterinary centres of knowledge production and, hence, Bhutanese veterinarians, engagement with bioveterinary medicine and its perception and practice vary significantly throughout Asia. An 'Indianised' version of bioveterinary science and animal ontologies continues to evolve as bioveterinary techno-scientific expertise is reconfigured within Indian society, and in relation to its various genres of traditional medicine. Similarly, Bhutanese veterinary culture has taken this 'Indianised' bioveterinary science and 'Bhutanised' it through embedded practice in Bhutan's cultural milieu.

Bhutanese veterinarians must navigate the divide between European and Buddhist animal ontologies, particularly in relation to livestock production and reproduction. They mediate a plurality of perspectives on animals and health that are influenced by Bhutan's diverse religions, cultures, and plural health systems. Consequently, Bhutan's state institutional veterinary regime has a culturally specific, distinctive character. The veterinary influences on that character are discussed next.

⁴¹ These problems have been analysed in the context of Bhutanese scholarship, highlighting the cultural hegemony of Euro-American academia, and the lack of decolonisation efforts in Bhutan (Tobgay 2023).

⁴² For example, in development (Muschik 2018), education (Seth 2007, Alvares & Shad Saleem Faruqui 2012), and the colonial history of bioveterinary science in India (Chakrabarti 2010, Mishra 2011, Mishra 2015, Rahaman 2021, Venkat 2022, Abraham & Varughese 2024, Upadhyaya 2024).

Asian Traditional Veterinary Medicine

Veterinary health care has existed in Asia for thousands of years. Early texts in the Indic traditions date back to the 2nd century BCE (Rastogi & Kaphle 2011, p.2), in Tibet to the 7th century CE (Stobs rgyal 2007, Maurer 2001, 2024), and in China to the 6th century BCE (Balieva & Kostadinova 2016). Additionally, some of the world's first institutional forms of veterinary care, veterinary teaching institutions, and national systems of veterinary dispensaries were established during the reigns of the Indian kings Chandra Gupta Maurya (300-298 BCE) and Ashoka (237-232 BCE) (Rahman 2004, p. 55). In contrast, European veterinary traditions emerged somewhat later than their Asian counterparts. The first European veterinary teaching facility was established in 1791, but European veterinarians quickly spread globally through the vehicle of colonial occupation.

Aside from these documented veterinary traditions, institutions and textual sources, there would have undoubtedly been many local practitioners, practices and therapies available as regional and localised forms of embedded ethnoveterinary knowledge. The two large countries sandwiching Bhutan, India and China, have extensively documented historical and contemporary traditional veterinary systems and practices.⁴³ The vibrant history of trans-Himalayan trade undoubtedly influenced Bhutan in many ways. Pack animals were extensively used, and it is conceivable that veterinary practices, medicines, and other ethnoveterinary therapies travelled to Bhutan with those travellers and traders.

Animals in the Field Site

Animal Studies in the Tibetan Cultural Area

Animal studies in the Tibetan cultural area is a fascinating exploration due to the complex intersection of religion and culture with animal ontologies, cosmologies and human-animal relationships. As part of the Tibetan cultural area, Bhutan has maintained historical, cultural, and religious ties with these regions, similar in high-alpine geographies, yak herding livelihoods, and religious and spiritual ecosystems. However, from this region, little has been published on human-animal relationships,

⁴³ For more information on contemporary EVM in the regions surrounding Bhutan, see Appendix Four.

transcultural approaches to veterinary anthropology, and more-than-human relationships of health.

The ‘animal turn’ in academia has only recently reached Tibetan regions. It is worth, therefore, briefly summarising this work to date. While animals are frequently mentioned in Tibetan studies literature in relation to their representations in art, history, philosophy, cosmology, and literature, the human-animal relationship is not the primary focus.⁴⁴ What has been published on the human-animal relationship mainly concerns topics such as nomads and herding lifestyles, animal sacrifice, medicinal ingredients, hunting, animal release (*tshethar*), and vegetarianism. Nimrod Baranovitch (2023, pp.715–718) comprehensively summarised the Tibetan human-animal relationship and the current publications on the topic. He concluded that throughout history Tibetans have had a complex relationship with often contradictory attitudes towards animals, blending nomadic lifestyles, the necessity of killing animals, and local practices such as animal sacrifice, with Buddhism’s aspirational compassion for all sentient beings, including animals (Baranovitch 2023, p.717).

In relation to contemporary work, three Tibetan academics have published auto-ethnographies about their lives and experiences in Tibet (Rdo rje don grub & Stuart 2014, Chos bstan rgyal 2014, Bum 2016). When writing about the human-animal relationship, these authors provide invaluable information, perceptions, and cultural context that are rarely available to foreign researchers.

Another Tibetan academic, Kabzung Gaerrang (2011, 2015, 2016, 2017, Yeh & Gaerrang 2021) published several essential pieces analysing Tibetan herders’ relationships to animals, religion and killing, the modern vegetarian movement, anti-slaughter movements, *tshethar*, the complex relationship to the Chinese state, development, or resistance to development, and environmental perceptions. In these ways, Tibet holds many similarities to Bhutan, particularly in the complex negotiations Tibetans face between their religious beliefs, moral economies, fiscal economic realities, and state biopower and bioregulation.

⁴⁴ See Appendix Six for publications on historical Tibetan veterinary and animal husbandry texts, including Petra Maurer’s (2001, 2019a, 2019b, 2020, 2024) multiple publications on horses, their care and medical treatments (hippology and hippiatry).

Gillian Tan has driven animal studies scholarship on the Tibetan plateau, with her publications describing yak herders of Kham, *tshethar*, and multispecies relationships (Tan 2012, 2014, 2016, 2017, 2018a, 2018b). Her analysis of the socio-religious and geo-political relationships of humans, animals, the environment, and animal rituals corresponds significantly with the Bhutanese situation. Her nuanced analysis of the intersections of religion, environment, and human-animal relationships has been invaluable to animal studies debates by introducing trans-cultural perspectives.

Natasha Fijn's work in Mongolia highlights the value of multispecies perspectives in ethnographic research when analysing herders' relationships with animals and their environment. Her work has innovated multi-species scholarship, visual ethnography, sensory ethnography, and concepts of mutualism in animal domestication (Fijn 2011, 2021, 2022, 2023, 2024, 2025b, Fijn & Terbish 2021). She emphasises the significance of observing and interacting with animals within their ecological contexts, which is pertinent to the Bhutanese setting. This approach enriches the ethnographic data and fosters a more profound empathy and understanding of the experiences and behaviours of animals. She does this by shifting the gaze from humans to the other-than-human world, decentralising the human as the object of study and narrating from the perspective of the non-human other (Fijn & Kavesh 2021, p.7).

One of the earliest ethnographies in animal studies within a Buddhist culture is Barbara Ambros's (2012) *Bones of Contention: Animals and Religion in Contemporary Japan*, although Japan is not part of the Tibetan Cultural Area. This important work investigates the Japanese pet funeral industry, offering valuable insights into the role of Buddhism in shaping animal ontologies.

Another remarkable example of interdisciplinary scholarship in animal and religious studies arises from a different part of the Himalayas. Radhika Govindrajan's (2018) monograph, *Animal Intimacies: Interspecies Relatedness in India's Central Himalayas* asks what it means to live and die in relation to other animals. Her research is conducted in a Himalayan Hindu community located hundreds of kilometres from Bhutan. Nevertheless, the ideas of close multispecies relationships between animals and their guardians, the interaction between villagers and local wildlife, and regional and national politics concerning animals, along with their influence on these relationships, hold relevance for Bhutan and its Himalayan context.

The Bhutanese Animal in Text

Bhutanese people depend on animals at every level of society, providing food, fibre, transport, and companionship. As a biodiversity hotspot, Bhutan is home to many endangered wildlife species and a variety of indigenous livestock breeds. Some wildlife approaches the mythical, such as Bhutan's national animal, the takin, and the yeti, which many Bhutanese believe exists. Bhutan's unique sociopolitical, geographic, and religious environment makes questions of human-animal relatedness a unique and fascinating exploration.

In Bhutanese literature, animal references appear in biographies, folktales, Buddhist texts (Ura 1995, 2023a, Choden 2007, Karchung 2013), and animal husbandry and transport publications (Penjore 2003, Chand 2017). Additionally, numerous scientific and modern bioveterinary research publications address topics such as zoonotic diseases like rabies and bird flu (Tenzin et al. 2012), public health problems like antimicrobial resistance (Rizal et al. 2018), animal husbandry (Nidup et al. 2011) and other animal diseases (Dukpa et al. 2011). However, few social science and humanities publications mention Bhutanese animals. Those that do describe animal slaughter (Miyamoto 2015, Miyamoto et al. 2021), vegetarianism (Lhamo 2011), human-wildlife conflict (Tshewang et al. 2021a), and religious practices like *tshethar* (Chophel et al. 2012, Miyamoto et al. 2021), transhumant pastoralism (Ura 1993, 2002, 2023b, Chand 2017, Wangchuk, Dhammasaccakarn, Tepsing, et al. 2013) and animal sacrifice (Rigyal & Prude 2017, p.66). Given the centrality of animals in Bhutanese life, this small collection seems a scant contribution to animal studies scholarship when compared to other regions.

Only a couple of publications specifically engage in human-animal relationships in Bhutan. Mari Miyamoto (2015) and Miyamoto et al. (2021) discuss issues of yak and cattle herders' relationships with their *nor* and herders' response to animal slaughter in Bhutan's Buddhist culture. Jelle Wouters (2021) and his students from the Royal Thimphu College analysed herders' relationships with their animals, specifically amongst the yak herders of Lingshi. The book chapter derived from their research argues that herders, their yaks, local deities, and the environment are constituted relationally through a dense network of intersubjectivity. Several publications attend to the problem of human attitudes towards wildlife and the human-wildlife conflict

that occurs when livestock are killed (Jamtsho & Katel 2019, Tshewang et al. 2021a, Yeshey et al. 2024).

As discussed in the Introduction Chapter, veterinary anthropology arises from the dialogue between animal studies and medical anthropology. It distinguishes itself from ethnoveterinary research, which is more closely tied to ethnomedicine and livestock development disciplines. A scattering of ethnoveterinary publications on the Tibetan cultural area exists, and three mention EVM in Bhutan (Chetri 2018, Namgay et al. 2021, Ura 2023b, p.151). To the best of my knowledge, however, there are no publications on Bhutan's veterinary anthropology.

The Animal in Vajrayana Buddhism

The recent 'animal turn' has also influenced religious studies, illuminating popular perceptions of animals and their value, meaning, and societal role. There is a renewed focus on this subject following the recognition that early religious scholarship overlooked the consideration of non-human animals. Since animals are cosmologically included in Bhutanese religious and traditional medical belief systems, I propose that these local religious and spiritual perspectives on human health and healing also influence health perceptions in animals. Jonathon Tae (2017) asserts that Bhutanese views on human health and illness arise from a blend of Buddhism, local religions, and animistic beliefs. Therefore, it is essential to comprehend these traditions because they form dominant discourses on animal illness and veterinary praxis.

Buddhist cosmology posits the animal realm as one of the six realms of cyclic existence, or samsara, sitting one step below humans but above hell beings and hungry ghosts (Jinpa 2017).⁴⁵ All beings in these six realms, including animals and humans, are sentient, or *semchen* (*sems chan*, mind possessor). They are presented as a provisional, impermanent identity, and life moves fluidly between various realms through rebirth until liberation from samsara is achieved. The "shared, kindred participation in the continuous flow of life" (Walters & Portmess 2001, p.5) positions human and animal existence as temporary and interchangeable due to the forces of karma that drive the process of rebirth. The extension of this philosophy often leads

⁴⁵ These six realms are the god, demi-god, human, animal, hungry ghost and hell realms.

to ethical and compassionate actions towards animals. Treat them kindly, as you may be an animal in your next life, may have been one in your last, or this animal might be your beloved relative, like your mother from a previous rebirth. The religious phrase, 'all mother sentient beings', expressed in Buddhist prayers, embodies this idea.⁴⁶

Additionally, animals are the only beings with whom Buddhists have direct contact among the six realms of samsara (Schuetze 2012). Thus, they often become the focus of cultivating the great compassion that is integral to the Mahayana Buddhist tradition's graduated pathway to enlightenment and core values (Schuetze 2012). The concepts of animal sentience and their deep connection with humans through rebirth are so widely accepted that they appear in daily prayer recitations and conventions familiar to most Bhutanese Buddhists (Rinpoche 2009).

Killing is the foremost non-virtuous activity (*dikpa*) to be avoided in the Buddhist canon, resembling the views of the Abrahamic religious traditions. In Buddhism, not only is encouraging others to kill frowned upon, but engaging in livelihoods that involve killing is also discouraged. The crucial points of divergence between Buddhism and the Abrahamic traditions regarding the treatment of animals is that Buddhism categorically views it as a *dikpa* to kill both animals and humans. However, this does not imply that all Vajrayana Buddhists and Bhutanese are vegetarians or that they completely abstain from killing animals.

While humans and animals are considered to have equal value in Buddhism from an ontological perspective, a distinct hierarchy places humans at the top of existence, making them more valuable than animals. This is (doctrinally) because human rebirth occurs halfway around the cosmological rebirth wheel. It symbolises the ideal circumstance for receiving Buddhist teachings and achieving enlightenment, which, in Buddhist terms, is the ultimate goal of this human rebirth. As a result, the concept of human exceptionalism enables Buddhist communities to exploit, kill, and consume animals for human benefit.

Bhutan's meat and dairy consumption rises each year and is the highest per capita in South Asia (Chophel et al. 2012, Dema 2015, Miyamoto et al. 2021, M Rai 2024).⁴⁷

⁴⁶ "May I attain enlightenment for the benefit and welfare of all mother sentient beings." (Rinpoche 2009).

⁴⁷ See livestock production data in Appendix Three, Figures 6– 14. Meat and dairy consumption will be discussed in the next two chapters.

While this growing statistic may pass unnoticed in other cultures, Buddhist ethical prohibitions against killing animals have led the Bhutanese Buddhist clergy to deliver sermons on the serious soteriological implications of killing and consuming their 'kind mother sentient beings'.

This moral dilemma, the desire to eat meat, and the religious and cultural prohibitions against killing are not unique to Bhutan. This situation has led to tensions and cultural adaptations that are also observed in other Tibetan cultural areas. Several publications explore Buddhism, vegetarianism, and animal ethics in relation to this apparent contradiction. They highlight key texts in the Buddhist canon that address the issue, alongside historical and contemporary practices surrounding this conflict (Phelps 2004, Chopel et al. 2012, Cheng 2014, Stewart 2015, Barstow 2017, Ohnuma 2017, Miyamoto et al. 2021).

Different Buddhist cultures develop geographically specific strategies to minimise the cognitive dissonance linked to using locally available animals for food. This can also be interpreted as a relative karmic calculation or the Economy of Karma. In regions where large bovines like yaks are abundant, such as the Himalayas and the Tibetan Plateau, cultural narratives claim that it is less negative to kill one large animal that feeds many, compared to several smaller animals to feed the same number of people. Thus, killing one animal equates to one karmic unit. In cultures where fish are more prevalent, they are perceived as less conscious. In this context, the Economy of Karma posits that killing one fish produces only a fraction of a karmic unit. As a result, it's believed that a higher number of smaller, less aware beings can be killed for less negativity than one large, more conscious animal.

Many Buddhists believe that praying over the meat on their plate links their minds with the consciousness of the animal that died to provide it. They think this practice can positively influence the animal's future rebirth and karma. As a result, it reduces harm to the animal by improving its future welfare, thereby lessening the negativity of eating that meat and creating virtue in the person praying. The higher the status and qualities of the practitioner, the greater the benefit they can offer to the deceased animal, influencing the positive and negative karmic balance. This explanation is often used to justify why prominent Tibetan practitioners, such as the Dalai Lama, eat meat. However, Chatrul Rinpoche, a revered reincarnate practitioner famous among Bhutanese and Sikkimese Buddhists, stated that only two living

humans can positively affect these deceased animals in this way. He promoted vegetarianism for the other eight billion people on the planet.



Plate 8- Meat from a yak that died naturally drying in the house rafters.

Another cultural strategy to reduce dissonance when consuming meat is to eat livestock that have died from natural causes. This meat is free from the stain of killing and is thus considered neutral karma. The phenomenon of ‘naturally dead meat’ has been observed throughout the Himalayas and across the Tibetan Plateau. I’ve often heard Bhutanese herders discuss butchering livestock that died naturally, and I’ve seen people on Bhutan’s steep, winding roads butchering a cow that had fallen off a cliff. Only meat from livestock who die from accidents or predation is used; sick animals are not eaten but are buried or burnt instead. Historically, this meat from a natural death has long been preferred in Bhutan. For instance, the third King of Bhutan permitted only meat from naturally dead animals in his kitchens. People would bring carcasses of animals that had died from natural causes to be stored in the royal storehouses, and in return, they could take a live animal from the King’s herds (Ura 1995, p.80).

These are just a few examples showing how animals can inhabit multiple shifting and overlapping ontologies in Buddhist cultures. Complex, context-dependent calculations assign value to animals' bodies and lives. The Economy of Karma calculations weigh the relative positive and negative karma of killing (or not killing) them, alongside economic rationalisations within the framework of multiple lifetimes.

What's in a name?

While living and working in Bhutan, I encountered many different names for animals and livestock. The state designates all domestic animals as livestock. Technically, pets are also included under this designation, and Bhutan's veterinarians and paravets are housed within a government 'livestock' department. The centrality of livestock in the veterinarian's role and professional and personal identity is demonstrated throughout this thesis and found in state plans, protocols, proposals and reports. The stated objectives of the DoL's extensive national veterinary regime all concern livestock development and rural economies.⁴⁸

The state adds a further designation where livestock is classified as Renewable Natural Resources (RNR), and veterinary agencies are included under the RNR sector. Interestingly, the meaning of the English word 'livestock' and the *Dzongkha* words *nor* (*nor*, wealth) and *gonor* (*sgo nor*, wealth at your door) are similar, indicating that animals are viewed as a form of capital, stock, or wealth. This perspective persists when the bodies of these animals are turned into commodities through their parts, and they are counted as units of production rather than as individual lives. Government reports and media releases list livestock production in terms of kilograms of meat and litres of milk, which further distances the audience from the idea of a whole living animal. This process of de-personification, de-identification, and obscuring the number of animals killed is a strategy used by the meat and livestock industries worldwide and is not unique to Bhutan. Regardless, the result is that in this system, animals are distanced from ideas of personhood, kin through reincarnation, and from the status of 'sentient beings.'

⁴⁸ Objectives of the Department of Livestock: - to enhance food and nutrition security and rural livelihood through promotion of livestock farming - to enhance effective and efficient delivery of livestock services - to generate appropriate technologies for enhancement of livestock production - to encourage youths (sic) and public sector investment in livestock enterprises - to promote sustainable management and utilisation of Natural Resources and contribute to RNR sector growth. (MOAF 2019)

Other *Dzongkha* words for animals include *semchen*, often used informally to refer to animals, emphasising their relationship to us as fellow sentient beings. *Sogchak* (*srog chags*, life possessor)⁴⁹ is primarily used as a term for animals in medical texts. Buddhist texts frequently use the term *dudro* (*dud 'gro*, low destiny or to go low or bent over) to refer to animals, indicating either their quadrupedal stance or the idea that rebirth as an animal is viewed as lower on the cosmological ladder compared to human birth (Schuetze 2012).

The general presentation of Bhutan's Buddhist animal ontologies is as 'sentient beings' and 'kin through rebirth'. Amongst yak herders, my research, and that of others, describes Bhutan's herders' relationship with their yak as one of mutuality, kinship, and a multi-life karmic dance that recognises personhood and agency.⁵⁰ Therefore, are yak sentient beings, interspecies kin, wealth at the door, or renewable natural resources? Can animals occupy all categories simultaneously or move between them depending on external circumstances like financial needs? These questions are at the heart of public debate in Bhutan. These Bhutanese human-animal relationships and animal designations dominate the popular and social media, drive public protests, and are debated in parliament.

Veterinarians and animal agriculturists are continually negotiating these rationalisations within social and professional contexts. Negotiations, moral economies, and societal pressures shape and reshape Bhutanese veterinary practices and identities. European veterinarians do not face 'this life' versus 'future life' welfare calculations, are not limited by societal pressures regarding Economies of Karma, nor by the stigma linked to killing animals. This situation is unique to bioveterinary-trained veterinarians working in a Buddhist society like Bhutan.

Bhutanese Animal Systems- Herders and Farmers

For most rural Bhutanese, life with these renewable natural resources, that is, animals, is a daily reality. Mixed farming systems of livestock and crops (rice, vegetables, orchards) are practised by 63.4% of agricultural households, while only

⁴⁹ This 'life' has a particular form in that it is conscious, and this term does not refer to things that are classified as non-sentient but 'alive' in a Buddhist context, like plants.

⁵⁰ For example, Chopel et al. (2012), Karchung (2013) Miyamoto (2015), Miyamoto et al. (2021), and Wouters (2021).

6.5% kept livestock alone (RNRSCS 2015).⁵¹ The majority of Bhutanese households now keep Jersey or Jersey-cross cattle and poultry.

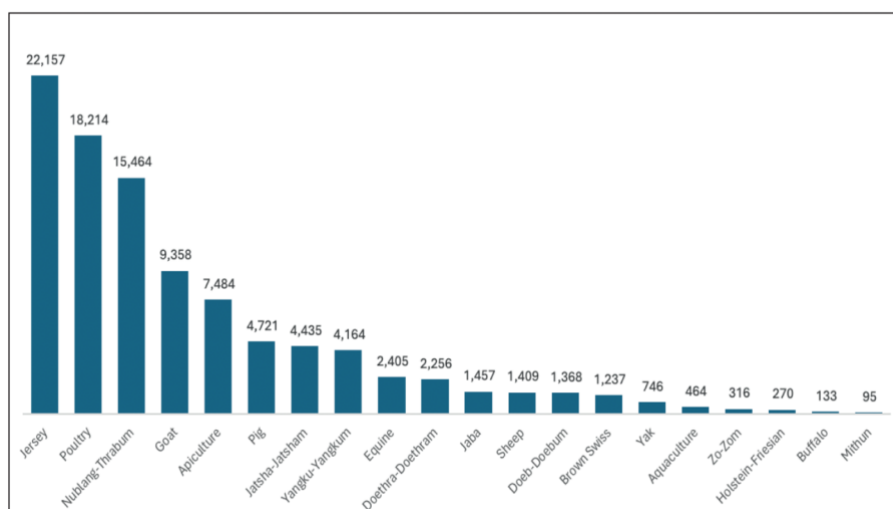


Figure 1- Holdings by type of Livestock- 2025.

Source: NSB (2025, p.81)

Bhutan’s geography, culture, religion, and microclimate exhibit a great variety across different regions, which, to a certain degree, influences the types of animals kept, their farming methods, and the accompanying agricultural practices. The high-altitude northern alpine areas are over 4,000 metres in altitude and are home to livestock and their transhumant herders, *bjob* (*byogp*) in the west and *brokpa* (*brog pa*) in the east (Phuntsho 2013, p.36, Wangchuk, Dhammasaccakarn, & Tepsing 2013). They move herds of yak and cattle between seasonal grazing lands. They also often own horses, donkeys and mules as pack animals. These areas also had sheep in the past. However, the import of cheap fabrics from India and Bangladesh, competition with crop farming, and conflicts with wildlife have significantly reduced sheep farming in recent decades (Phuntsho 2013, p.44). Dasho Karma Ura, however, attributes some of this responsibility to the DoL’s improved breeding programs (Ura 2023b, p.158).

Mixed farming practices are prevalent throughout the central Bhutanese regions, which comprise rugged mountain valleys that extend to the southern Indian border. They include seasonal cropping, rice, orchards, market vegetables, and livestock

⁵¹ See Appendix Three for more data on Bhutan’s livestock populations and livestock production.

farming, such as cattle, pigs, poultry, sheep, goats, and fish farming. Many villagers still maintain small backyard flocks of poultry, goats, and a few cattle for milking. In the lower to mid-altitudes, intensive farming of fish, pigs, dairy and poultry, alongside cropping and vegetable cultivation, is common and increasing.

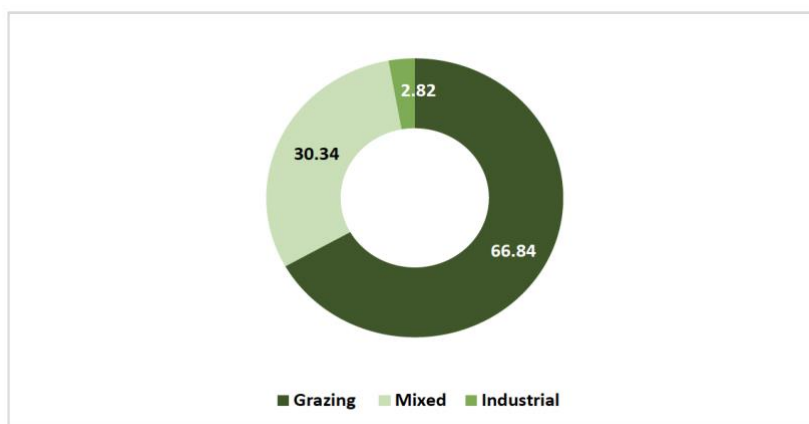


Figure 2- Percentage of holdings rearing livestock by rearing system.

Source: RNR Census of Bhutan (2019, p.76)

This southern borderland region features a narrow strip of flat or plain land that was settled relatively recently in the 20th century. Farming practices in this area align with those found in similar regions in India and Nepal and those of central Bhutan. The relatively flat terrain facilitates the DoL’s recent focus on increasing intensive, industrial models of animal farming, promoting aquaculture, and establishing megafarms in these areas.⁵² The more economically disadvantaged *Lhotshampa* community welcomed the government subsidies and support that came with the farms and had no significant religious objections to intensive animal farming and slaughter. In contrast, many northern *Drukpa* communities opposed these farming methods because of religious sentiments and community pressure, see Chapter Four.

Three systems of rearing and feeding cattle are found throughout the country. The most common is still the grazing system, where cattle roam freely to graze on vegetation, eating grass, leaves and other plants. In contrast, recent changes

⁵² A megafarm is a large, industrial animal agricultural operation, or factory farm. It is characterised by capitalist systems of maximising profit through mass production and efficiency, intensive farming methods with tight control over conditions, and restricting animal movement and reproduction.

promoting industrial systems operate in housed, stalled, intensive farms where 90% or more of the feed is produced elsewhere, like purchased bags of commercial animal feed. However, one-third of Bhutanese agriculturalists operate a mix of these two systems (RNRSD 2019, p.76). The shift away from free-ranging grazing is slow but steady. The majority of animal agriculturalists (66%) still practice an open grazing system. Only 2.8% solely use intensive methods, and 30% operate in a mix of both intensive industrial systems and extensive grazing methods (RNRSD 2019, p.76).

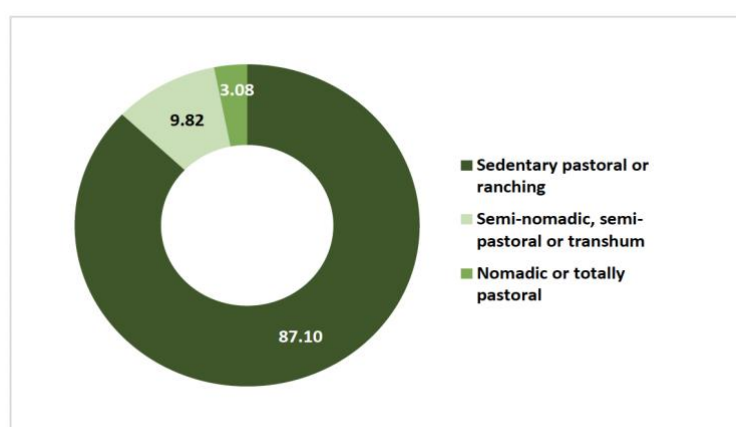


Figure 3- Percentage of holdings rearing livestock by different grazing systems.

Source: RNR Census of Bhutan (2019, p.76)

Where agriculturalists practice grazing, the systems vary. In sedentary or ranching pastoral holdings, farmers stay in a permanent residence. Semi-nomadic, semi-pastoral, or transhumant systems, see the holder return to a permanent home for part of the year or establish a semi-permanent home for a time period. They might also cultivate food crops at some point during the year. The least common system in Bhutan is nomadic or totally pastoral, where livestock and their herders have no permanent residence and move from place to place, depending on food availability and weather (RNRSD 2019, pp.77–78).

The Changing Place of Animals in Bhutan

To boost dairy production, one of the interventions of the livestock department has been to increase productive (improved) cattle and reduce unproductive (local) cattle (RNRSCS 2015, p.32).

Over the past few decades, the DoL has driven programs aimed at increasing livestock production, motivated by state policy to provide food security in Bhutan. Their strategy focused on transitioning farmers away from the local indigenous

breeds they have nurtured for centuries. The DoL favoured ‘improved’ breeds, as they call them, which are mainly European breeds of cattle, pigs, and poultry, such as the Jersey dairy cow, the Duroc pig, and poultry like the Hy-Line Brown (Ura 2023b). These are intensively farmed, high-producing breeds that are often cross-bred with local animals. However, they are usually not suited to Bhutan’s rugged environment and require housing and supplemental feeding. Therefore, the introduction of ‘improved’ breeds has required more intensive, industrial farming methods, facilitating sedentary social systems. It has also enabled the emergence of megafarms, aligning with the state’s drive to boost livestock production.



Plate 9- Village stall system in southern Bhutan.

The label ‘improved’ is a value-laden term, implying that imported European animals are superior. Indigenous cattle cross-bred with European breeds, mainly Jersey, are included under the label ‘improved’, similarly raising their status. This may be an intentional marketing strategy to increase farmers’ uptake of the new animals and systems, which is gradually gaining traction. During the time I was in Bhutan for fieldwork, the percentage of ‘improved’ cattle increased from 24.1% in 2012 to 27.3% in 2018 (RNRSD 2019, p.71).



Plate 10- Intensive system of 'improved' breeds in a stalled dairy shed (Trashigang).

These efforts have garnered support from international development agencies and universities, which provide technical assistance and funding, further aligning the Bhutanese state's veterinary regime with a globally homogenised, one-world model. That trend continued until now, when 41% of Bhutan's bovines are European improved breeds, mainly crossbreeds, and the majority of agricultural families farm improved cattle and chickens (NSB 2025, pp.85–95).

Dasho Karma Ura has been tracking and commenting on “the relentless push by authorities to replace local breeds with improved European breeds over the last several decades” (RNRSD 2019, p.xviii), along with the resultant material and cultural changes (Ura 2002, 2023b). He described the chain of events, policy initiatives, and programs that occurred over a forty-year period (Ura 2023b). The shift from extensive to intensive farming has changed farmers' relationships with their animals, the environment, and their traditional culture and values, exemplifying the veterinisation of society. The commodification and commercialisation of animal agriculture alter cultures and practices in complex ways, impacting local livelihoods, ecologies, and bodies (Srinivasan 2023).



Plate 11- Intensive ‘improved’ poultry farm (Samdrup Jongkhar).

Despite these changes, the policies and programs have not achieved their intended outcomes either.

After 40 dedicated years, the Department of Livestock’s sacrifice towards the promotion of dairy products, especially by diffusing crossbreeds, seems to be heading towards an ambiguous result: increasing dairy imports that partly widen the current account deficit; swift loss of knowledge of indigenous breeds; and the collapse of knowledge of indigenous feeds and fodder dependent on the continuity of the indigenous cattle herds that were a viable aspect of the traditional economy (Ura 2023b, p.161).⁵³

Moreover, the rapid transition from indigenous to ‘improved’ livestock breeds has created new challenges for the DoL, where “the consequences of this choice will carry over many other spheres, with outcomes that have not yet been contemplated” (Ura 2002, p.3). The fifth King of Bhutan noted, with concern, the depletion of genetic diversity in village animals during his regional tours (Ura 2023b, p.158). The DoL is now tasked with preventing the extinction of Bhutan’s unique indigenous livestock breeds through targeted breeding programs and encouraging farmers to reinvest in indigenous livestock farming once again (Nidup et al. 2011, Tenzin et al. 2023).

⁵³ See Appendix Three, Figures 6- 19, for national livestock statistics and animal production data.

One livestock species that European breeds could not ‘improve’ upon, however, is the yak. Unique to the high-altitude regions of Central Asia, it is synonymous with the Tibetan cultural area and has supported human existence in those regions for centuries. Life in these altitudes and the remoteness of these borderland areas, however, present significant challenges. Yak herding is declining each year, despite government programs aimed at encouraging herders to maintain their way of life, preserve their traditional culture, and serve as a form of borderland frontline surveillance for national security. Yak numbers peaked in 2014 but have since slowly declined by 35% to 29, 400 in 2024, reflecting pressures on yak herders and their lifestyles (RNRSCS 2015, NSB 2016, 2025).



Plate 12- Pack and riding horses are still used in high-altitude areas like Lingshi.

A related issue is the decline of pack animals in many areas. As a landlocked mountainous nation, Bhutan has, until recently, relied on pack animals, such as mules, horses, bullocks, and yaks, for transport. These animals have played an essential role in Bhutanese life. Muleteers are renowned for skilfully managing large trains of mules and other animals as they traverse the high mountain passes between Bhutan and Tibet, and, to a lesser extent, south to India. Before the Chinese communist army took over Tibet in the 1950s, Tibet served as Bhutan's primary trading partner, with mule

and yak trains frequently crossing many high mountain passes between the two nations. Perhaps due to Bhutan's rugged, vertical terrain, riding horses and mules never became popular, unlike on the Tibetan Plateau, where horse riding and racing are integral to Tibetan cultural identity.

Road and bridge construction has become a significant focus in Bhutan's development. Opening new transport routes has enabled rural farmers to access markets, gradually shifting them from a subsistence economy to a cash-based one. As new farm roads are built each year, vehicles replace pack animals in those areas within one to two years. Consequently, pack animals have vanished from some regions in Bhutan. Many were relocated to more remote areas, abandoned in forests, or repurposed for other types of work, such as tourism.

Conclusion

This chapter presents the ethnographic locale, veterinary regimes, ethnoveterinary medicine, Bhutan's animal and agricultural systems, and how they are changing. It summarised existing scholarship on animal studies in the Tibetan cultural area and Bhutan. I introduced the fundamental issue of bioveterinary-trained veterinarians practising in a Vajrayana Buddhist Kingdom. I briefly traced the discursive genealogy of dominant animal and health narratives, cosmologies, and animal ontologies, highlighting how these contrast between European and Indic philosophies and cultures. I introduced the effects of colonialism and imperialism in Indian and Bhutanese veterinary education, both at undergraduate and postgraduate levels, as well as the ongoing influence of international livestock development agencies. I continue, over the following few chapters, to analyse how Bhutan's intersecting cultures and spiritual traditions shape community understandings of animal ontologies, illness causation, health narratives, and interspecies relationships.

The impacts of colonialism on veterinary education and veterinarians continue to resonate within Bhutan's veterinary culture today, even though Bhutan was never colonised by an external power. The dependency on Indian and international veterinary education, imperialistic Eurocentric development agendas and funding, and transnational economics significantly influences Bhutan's veterinary regimes and veterinarians. When these forces are combined with local animal ontologies and national identity politics, with their associated Buddhist ethical discourses, complex,

intersecting, and evolving animal ontologies result. These affect Bhutan's veterinary regimes, environments, animals, and society, the impact of which is examined throughout this research.

These factors are examined in detail in Chapters Two and Three, which investigate the professional duty of Bhutanese veterinary personnel to enhance domestic food sufficiency through animal production. The challenge lies in achieving this while also operating within a hegemonic Vajrayana Buddhist culture where the principles of Buddhism and compassion for all sentient beings shape Bhutanese national identity and normative ethical behaviour through hegemonic discourses and practices of worlding.

Chapter Two- Practising Veterinary Medicine in the Bhutanese Buddhist Society of Gross National Happiness

In this chapter, I outline the state veterinary regimes, their history, people, culture and roles. I then discuss GNH, the guiding framework for the state's development, which was directed by the Gross National Happiness Commission (GNHC) in consultation with each state department.⁵⁴ I analyse the impact of veterinary regimes and animal agriculture in Bhutan and the ways it aligns, or doesn't, with GNH's development frameworks. In particular, I demonstrate the 'veterinisation' of society due to Eurocentric, capitalist, intensive livestock development models, operating through the biopolitical reach of the state into the lives of animals, farmers, and religious institutions.

Veterinary Regimes and Animal Husbandry in Bhutan

Karma, a young, vibrant paravet, was appointed as my guide and interpreter for the Lingshi area of my research in 2015. He was posted to the remote Renewable Natural Resources (RNR) centre in Lingshi, where he served the local community as the representative of the DoL. The RNR centre was a small collection of rooms in the remote Lingshi village in northern Bhutan near the Tibetan border. It is only accessible on foot, a two to three-day walk from the nearest trailhead in Paro. Karma was joined there by colleagues from the other departments that formed the RNR centres in each district, including forestry and agriculture. Like other small villages in Bhutan, Lingshi housed a community of additional government personnel who staffed the small school, the health clinic, the department of works, a medicinal plant collection centre, and a local government office.

Karma was a twenty-five-year-old unmarried young man with a penchant for wildlife photography, who enjoyed living in remote areas like these. Karma had graduated from the College of Renewable and Natural Resources in 2012 as a paravet. During his last two years at the Lingshi RNR centre, he became a well-known member

⁵⁴ The GNHC was dissolved in October 2022 and its functions segregated and transferred to different government agencies.

of the local community. Karma's role as a paravet was to implement government programs and policies such as vaccination and deworming livestock and dogs, milk, egg, fibre and meat production schemes, delivering herder and farmer training programs, and collecting livestock and disease census data. He only treated sick and injured animals occasionally. He operated semi-autonomously, being three days' walk from the nearest road head and government veterinary centre in Paro. Veterinarians rarely, if ever, venture this far from their headquarters. When they did, it was for an official event, such as the one I attended with them, the annual Mastiff Dog Show, and not for clinical reasons. Therefore, Karma served as the state representative in this district for all matters relating to domestic animals.

I first met Karma at a cafe in Bhutan's capital, Thimphu. I was seeking a PhD research field site within Bhutan, specifically among communities and individuals with a tradition of animal healing and knowledge of local medicine. Karma made an immediate impression due to his enthusiasm, understanding of, and friendships with the local herder families, as well as an evident love of being high in the Himalayan mountains, exploring the region, and photographing wildlife. He was a relatively junior paravet, which explained his remote posting. As he progressed through the seniority ranks, he expected to be posted to more urban centres, the penultimate being Thimphu or other regional capitals.

Karma works for the state veterinary regime, the DoL. A few veterinarians and paravets work for the Bhutan Agriculture and Forest Regulatory Authority (BAFRA), another branch of the ministry. These veterinary departments and their development activities are the subjects of this chapter, as well as Chapters Three and Four.⁵⁵ The state employs DoL veterinary personnel to improve subsistence livelihoods, food security, public health and increase animal-based agriculture. This aligns with Bhutan's development objectives, which inform the policy and program initiatives of the veterinary regimes. As a result, the majority of the DoL personnel's everyday work is directed towards increasing animal production, reproduction, and the profitability of animal agriculture for human health and utility. Animal healthcare activities are delivered in support of animal production objectives, as well as those of

⁵⁵ See Appendix Three for more detail about the structure, aims, objectives and function of the DoL and the Ministry of Agriculture and Forests.

veterinary public health initiatives, such as rabies control. Pet care is a lesser priority, but one that is increasing with urbanisation and growing trends in pet keeping.

Yak Surgery on the Roof of the World

“Dr. La, the Gup’s [rgap- village leader] family is asking if you know how to treat a yak with a hole in his side. He has a hernia,” Karma explained. “It’s only a young yak, about three years, but they’re worried because they can see his insides.” He was referring to a young male yak from a herd near Lingshi in Bhutan’s northern alpine area, where I was undertaking fieldwork.

“How did it get the hole?” I asked.

“Oh, it was an injury from another yak’s horn,” he replied. “This happens quite often. Normally, we just leave them alone and see if they get better or die.”

“Well,” I said, thinking aloud, “we could probably try some surgery and stitch up the hole, but we’ll need equipment, anaesthetics, and suture material—and I’ll need people to help. I can’t guarantee it’s going to work.”

“That’s okay, Dr. La,” Karma said. “They don’t have any other option, so if you want to give it a go, they’re willing to try.”

Karma and I then listed the necessary equipment, medicines, and supplies. He walked for two hours back to Lingshi to gather what was available at the dispensary, returning the following morning. Most of the equipment and suture materials were intended for dog desexing and were not big enough for surgery on such a large animal.⁵⁶

When he arrived, the herders had roped the yak and led him into a dusty courtyard surrounded by a dirt wall behind the house. The yak was tied securely, with its legs hobbled and its head twisted to the side. His horns were tied to the fence to prevent movement.

I admitted to the group, “I’ve never really done surgery on a cow, let alone a yak. I’m not very experienced with large production animals.”

To prepare, I called Dr. Thinlay, a veterinary colleague in the DoL, and asked him how to administer an epidural injection to a yak. “Well, first,” he said, “pump the tail

⁵⁶ Due to the shortage of veterinarians and their posting in regional centres, paravets often perform the dog desexing surgeries in remote areas like Lingshi.

up and down until you see a dip between the vertebrae. That's your spot. Use a long needle."

"Oh no," I replied, "I don't have a long needle. I'll have to use what's in the supplies here."

"Well," he continued, "inject the local anaesthetic as deeply as you can into that space."

I followed the instructions, but I wasn't sure if I had struck the right spot since the yak didn't appear to lose sensation in the area we needed to work on. By that time, a crowd had gathered, including many children, all curious to see what the foreigner was doing to the yak.

I decided to inject a local anaesthetic block around the hernia, located on the left side of the yak's abdomen. The opening was a round, ten-centimetre wide hole, in the perfect shape of a yak horn. I could see abdominal fat protruding, partially blocking the hole.

I asked the family to get the yak down on the ground. They skilfully hobbled his legs, twisted his head, and tied him down so he couldn't stand or move. One person sat on his neck, holding the horns, while others held ropes tied to each leg to prevent thrashing.

The sun was hot, and the work was sweaty as I bent down to feel the edges of the hole and locate the muscle layers I needed to suture. The yak grunted and bellowed in alarm at what was unfolding, heightening my anxiety about operating on a new species. I had repaired numerous hernias in the past, just not on a yak. The theory remains the same, though.

As I worked on the yak's hernia, I pointed out the layers of anatomy to Karma. "See that?" I said, gesturing to the inside of the hernia. "That's the peritoneum."

"Yes, Doctor," Karma replied, peering closely. "I see it."

"Now," I instructed gently. "You have to free up the scar tissue first. Then use your thickest suture material to close the hole."

Using scissors, I carefully separated the layers of tissue that had stuck together. I sifted through the thick, tough layers as quickly as I could, aware that the yak had been on the ground for a long time and that the herders, holding the ropes and restraining the animal, looked tired.



Plate 13- The author operating on a yak's hernia. The yak survived to rejoin his herd.

Once the layers were cleared and the hole closed with sutures, I applied antibiotic ointment around the wound and injected antibiotics to prevent infection. As I stepped back, the herders slowly released the ropes. Finally, the man kneeling on the yak's neck removed his weight and stepped away.

After a few moments, the yak struggled to his feet, shook his head, and briefly pawed at the ground, appearing disoriented but stable.

"Have you ever performed surgery like this, Karma?" I asked, eager to know about his experience.

"No, Doctor," he said with a shake of his head. "Other than desexing dogs, we don't do surgeries up here. It's too high and too far from the district veterinary hospital. I don't know how to do surgery like this, and none of the veterinary doctors ever come up here."

His words underscored the herders' isolation and their limited access to technical veterinary care in this remote, high-altitude area.

As I stood there, watching the yak slowly regain his footing, I reflected on the challenges of living in such a remote area. The community was days away from the nearest roadhead, and everyone here was entirely self-sufficient. While there were local schools, a nursing clinic, and a veterinary dispensary, the resources were minimal. Karma, for instance, was the only connection to livestock and animal care in

the area. If he needed to visit other villages or travel to Thimphu, the district headquarters, there were no other DoL representatives to support the community in his absence. His food and veterinary supplies are carried for three days on his own back from the roadhead, or on a pack animal if the budget allows. As he noted, veterinarians seldom venture into remote areas like these. There are just not enough of them.

This situation highlighted the precarious nature of life in such isolated regions, where state services relied on a few individuals, minimal supplies, and inadequate infrastructure. These challenges compound the burdens of daily living for highland communities. Bhutan's rugged and remote geography also poses a challenge to the DoL's objectives of assisting farmers, herders, and animals in every remote corner of this Himalayan landscape. However, since its inception in the 1960s, this small government department has expanded to service most regions of Bhutan, grown in size and scope, and diligently implemented the state's development goals and policies. Karma was part of this frontline team, delivering healthcare to the margins of Bhutanese society.

The Department of Livestock

Karma and his colleagues work for the Department of Livestock (DoL), Ministry of Agriculture and Forests, Royal Government of Bhutan. This government is a relatively young institution whose experiments in democracy, sustainable development, environmental protection, and GNH have drawn global interest and scholarly attention. This interest, combined with Bhutan's unique animals, environment and cultural heritage, creates a sense of mystery and allure that captivates international audiences eager to participate in the experience. Consequently, Bhutanese agencies and personnel are more likely to receive international grants and project funding than their Indian counterparts. This includes postgraduate opportunities and scholarships. The appeal of working in Bhutan encourages many PhD supervisors and other international specialists to collaborate on projects with local counterparts. The outcome is highly trained and skilled veterinary personnel equipped with more funds and resources than their neighbouring state veterinary departments in India. Additionally, their education and international support enable them to extensively

publish academic works in peer-reviewed journals. However, there weren't always as many opportunities.

The Bhutanese Department of Agriculture and Animal Husbandry was established during the first Five-Year Plan, commencing in 1961. Initially, veterinary expertise was sourced from India until Bhutan developed its own veterinary capacity. Bhutan's DoL structure and functions are modelled on the Indian Department of Animal Husbandry. Similarly, India provides free veterinary services to assist subsistence farmers and enhance food production and biosecurity. In 1992, the concept of Renewable and Natural Resources (RNR) was introduced, marking a shift toward an integrated approach to agricultural development.

Veterinary Peoples and Places

DoL paravets, like Karma, train for two years at the College for Natural Resources (CNR) in bioveterinary intensive models of animal agricultural science and animal husbandry. They undergo six months of surgical training for both large and small animals, including caesareans on cattle and a two-week course in desexing dogs.

Bhutan's veterinarians study for five years at Indian veterinary teaching institutes, funded by scholarships from the Government of India. After this, they often pursue M.A. and PhD degrees at international universities, mainly in Australia, through overseas aid scholarships. As a result, veterinarians and paravets become deeply entrenched in Eurocentric scientific and bioveterinary epistemologies during their educational journeys.

Veterinary education at Indian veterinary schools prioritises agriculture and animal husbandry to prepare students for careers in public service, assisting subsistence farmers and food production sectors. Companion animals and horses are not priorities, resulting in less clinical training in these subjects when compared to veterinary institutions of the Global North.⁵⁷ Consequently, the veterinary care available for pets and equines in India and Bhutan is lower than that found in modern, affluent Euro-American veterinary clinics. Nonetheless, the situation is gradually changing. Demand for veterinary clinical care of companion animals has

⁵⁷ 'Small animal' or 'companion animal' are the veterinary terms for pet animals like dogs and cats who provide the resource of companionship.

emerged in the last thirty years, driven by rising pet ownership among the upper-middle class, the elite, and the monarchy. In addition, since the national stray dog population control and anti-rabies program commenced in 2007, DoL personnel have developed clinical and surgical skills in street dog surgery and sterilisation.

Until recently, Bhutan's veterinarians were primarily located in offices or laboratories. A shortage of veterinarians meant they were seldom assigned to fieldwork. Instead, they held positions in management, research, and program and policy development. Both veterinarians and paravets are promoted into office and administrative roles based on seniority, which gradually reduces their involvement in clinical veterinary duties. Some paravets have also pursued postgraduate studies at international universities, focusing on different aspects of livestock development and production. These individuals often return to managerial roles within the department. In Bhutan, there are significantly more paravets than veterinarians, with paravets typically working in the field while veterinarians are based at regional or national headquarters

Bhutan's paravets represent the public-facing side of the DoL. Most paravets work as Livestock Extension Officers (LEO) and are assigned to each of Bhutan's 205 gewogs (rged 'og, small administrative unit or block). In these regional and rural areas, paravets are the primary clinical practitioners, often more likely to perform clinical work and surgeries than veterinarians, such as desexing dogs in remote locations. Paravets are the primary contact for farmers and herders, enjoying a relatively high status. They distribute medicines and vaccinations and provide educational programs for farmers on topics such as nutrition, husbandry, disease control, breeding, animal production, and pasture management. In addition to the LEOs, paravets also work in government breeding and research facilities, regional laboratories, District Veterinary Hospitals, and departmental headquarters. I mainly accompanied the paravets serving as LEOs in regional areas.

The number of Bhutanese veterinary doctors doubled in the early 2010s thanks to a more extensive Government of India grant that funded additional students to attend veterinary school in India. This allowed one veterinarian to be assigned to each

Dzongkhag Veterinary Hospital (DVH),⁵⁸ with three working at the National Animal Hospital (NAH) in Thimphu, where the majority of small animal veterinary work is needed. Many of these new graduates were inexperienced and worked in isolation at the regional veterinary hospitals, lacking guidance from senior clinicians. They sometimes relied on the more experienced paravets for advice. They reported facing challenges with the demands of their multi-faceted responsibilities, which now include clinical work alongside the duties previously held by veterinarians, as mentioned earlier. Those I met were eager to learn, dedicated to their work, passionate about animal welfare, and felt a strong responsibility to provide excellent animal care.



Plate 14- The author with female DoL personnel in Thimphu

There is a marked gender disparity in the DoL, where 82% of personnel are male (RNRSCS 2015, p.x). This may be due to the combined forces of Bhutan's gendered professional workforce, and the historical male dominance in professional positions

⁵⁸ Dzongkhag (rdzong khag, district)

in general, and in veterinary science in particular. While gender ratios in veterinary personnel are changing worldwide, with a marked feminisation of the workforce, that has not yet occurred in Bhutan.

The government policy of universal healthcare commendably extends to all animals, including pets, even though pet ownership falls outside the stated mission of the DoL. To support companion animals, the DoL constructed a new NAH in Thimphu, designed in a similar style to modern veterinary hospitals in Australia. They also inaugurated the City Veterinary Hospital in Phuentsholing, located on Bhutan's southern border with India. In the past two decades, veterinary duties in these urban veterinary hospitals have grown to prioritise clinical and surgical treatment for dogs and cats, reflecting the transforming relationships between humans and animals shaped by development and urbanisation. This changing human-animal relationship has stimulated new iterations of veterinary practice and identity in some of Bhutan's clinical settings.



Plate 15- DoL personnel in Soe, field staff are usually mostly male.

Veterinarians are not permitted to practice privately in Bhutan, nor is there any expectation of that future necessity. Bhutan lacks a veterinary registration system or a regulatory authority akin to the state veterinary surgeon boards found in Australia, as all veterinarians are employed by the state and are regulated accordingly.

Furthermore, there are no Bhutanese laws or regulations defining what constitutes an act of veterinary science, despite decades of veterinary services being provided.

When I first visited Bhutan in 2007, after working in India for many years, I was pleasantly surprised by the advanced level of veterinary laboratory and diagnostic services compared to those found in India. The previous decade of development funding and postgraduate training had propelled the Bhutanese veterinary profession far ahead of its Indian counterparts in these areas. This progress has underpinned the DoL's strategic plan to enhance domestic food self-sufficiency and food security, while reducing the nation's reliance on imports from India. Their technologies of livestock development included improving laboratory-based disease surveillance, vaccination production, promoting intensive animal reproduction methods such as artificial insemination, embryo transfer, crossbreeding indigenous animals with European 'improved' breeds, as well as implementing mega-farms.



Plate 16- DoL laboratories are full of techno-scientific equipment.

In addition to these development activities, veterinary preventative medicine is a vital component of any veterinary regime. This branch of veterinary science aims to enhance animal health by preventing disease, illness, and injury. This is achieved by ensuring optimal nutrition and environmental conditions, protecting against threats such as predators, and preventing diseases through deworming and vaccinations.

Related to this are activities aimed at safeguarding human health from zoonotic diseases and unsafe animal-derived foods. Consequently, veterinary public health, a crucial function of state veterinary regimes, protects human health by improving animal health. Veterinary preventative medicine and veterinary public health are fundamental to the mission of Bhutan's state veterinary regimes, the DoL and BAFRA. The national rabies control program serves as an example of a veterinary public health initiative and is discussed in Chapter Three.

Bhutanese Veterinarians are Bhutanese First

Bhutan is a rapidly developing nation where communication technologies such as television, commercial radio, and mobile phones have arrived relatively recently. The country became the last to introduce broadcast television in 1999 as part of a deliberate government strategy to prevent outside influences on its culture (Avieson 2015). Most of my DoL colleagues spent their childhoods in villages and on farms during a time before urbanisation drew people to regional centres like Thimphu.

Consequently, they are immersed in cultural identity, spiritual ideologies, national identity politics, and embedded in local health and medical beliefs alongside the rest of Bhutan's population. The DoL personnel live surrounded by traditional health care practices and narratives, local and Buddhist spiritual traditions, and sacred landscapes with their local spirits and regional deities. They continue to participate in cultural and spiritual rituals, diverse healing practices, and various human-animal relationships. These veterinary professionals did not evolve in a bioveterinary vacuum, isolated from the rest of Bhutan. It was their education, first in Bhutan and then the colonial legacy of their education in Indian institutions, that promoted science epistemologies, bioveterinary models and Eurocentric animal ontologies. They must develop the skills to negotiate between these two cultural systems within the clinical and professional encounter.

DoL personnel develop two vocabularies and worldviews while in the field. Another way to conceptualise this is that they possess dual identities and embody them simultaneously in their work life. The first is a trained animal scientist engaged with biomedicines, Eurocentric systems of animal agriculture, imported 'improved breeds', and explanatory models of the microbial causes of disease. The second is a Bhutanese citizen embedded in cultural, health, and religious ecologies, with layered explanatory models of illness that contribute to a plural medical society. These

veterinarians and paravets grasp, if not fully endorse, local concepts of illness aetiologies, display varying levels of religiosity and spiritual practice, and adhere to national ideals of good Bhutanese citizenship. Personnel utilise local vernacular and regional lexicons of animals and ailments when interacting with farmers and herders. In their conversations, they comprehend and share illness narratives such as spirit harm and karma. They also accommodate alternative healing methods, including rituals, often performed before, during, and after their bioveterinary therapies. This is shown in Chapter Six.

Despite these common understandings and negotiations, DoL personnel can face challenges when implementing their bioveterinary and livestock development initiatives. As a result of community resistance, the DoL was compelled to adjust its programs and policies to better align with local sensibilities and cultural constraints, which is examined in Chapters Three, Four and Five. For now, I continue to analyse bioveterinary livestock development within the context of Bhutan's sustainable development goals and GNH, from which several, sometimes opposing, hegemonic discourses originate.

Gross National Happiness- Sustainable Veterinary Development?

“We are contributing to our people's GNH,” said Wangdruk, a DoL district livestock officer. “We are empowering poor rural farmers, helping them to produce more milk. Then we get these methane digesters installed; we got a grant for that. They can use the methane as fuel for cooking in the house,” he continued.

“We set up community dairy cooperatives, supply chains for the farmers to sell the surplus milk to market. Then get cash income from this. Before, without vehicles, their milk couldn't make it to market,” he concluded with a satisfied smile. “This is our sustainable development, we Bhutanese prioritise GNH, we are the happiest country because of this.”

He drove me to see one of these systems in a nearby village that afternoon. Inside a tin-roofed shed, eight Jersey and Jersey-cross cows stood on a concrete floor in two rows facing each other. They were tied with a short rope around their neck to a central metal rail. A water trough and food container were in front of them. Behind them, their sloppy faeces were spread around the floor as they rocked from foot to foot, swatting at the ever-present flies with their tails. I asked if they were ever

allowed out of the shed to walk around. “They are not strong like our local breeds,” Wangdruk explained. “Their thin legs break easily in our mountains. So, for their welfare, we keep them indoors.” I later found out the cows are taken to a separate area when they are due to give birth, but then returned to the milking shed shortly after, when the newborn calf is taken away. I had asked several DoL people whether this vision of GNH included the GNH of those tethered cows. The answers, or lack of them, suggested that even in the veterinary departments, GNH here was oriented toward people, not animals.



Plate 17- Dairy cooperatives like these allow local farmers to market their dairy products (Samdrup Jongkhar).

GNH promotes happiness as a development goal over the growth-oriented neoliberal measurement of GDP, and is often attributed to Bhutan’s fourth King (Bothe & Schmidt 2017). It first appeared in print in 1987 and became the Royal Government of Bhutan’s official development policy in 1999 (Phuntsho 2013). This concept has influenced international development agencies and led to a United Nations resolution recognising happiness as a fundamental human goal, with the 20th of March designated as the International Day of Happiness (Bothe & Schmidt 2017). It has also enhanced Bhutan’s allure, attracting tourists and international funding to the country. GNH comprises four pillars: good governance, preservation of cultural heritage, environmental conservation, and sustainable development. The world has

observed this national experiment in governance and development closely. GNH is an ambitious project that continues despite numerous challenges.

GNH is a contested concept, both within Bhutan and in academic circles, that, while well-publicised, may actually have little impact on government policy (David & Samuel, 2016, p. 27). Several studies offer a more critical analysis of this experiment than that presented in internal government reports (Bothe & Schmidt 2017, Miyamoto 2017, Schmidt 2017, Schroeder 2017). Some critics, such as Schmidt (2017, pp.1–3), argue that the GNH project supports and even codifies the government's efforts in nation-state building, aiming to create a nationally homogeneous Bhutanese identity that promotes the ethics and philosophy of Buddhism as hegemonic and enforces a common language. Schmidt further asserts that political authorities utilise GNH as an ideological tool to establish a singular Bhutanese development pathway, leaving no room for debate. "This 'silence' and 'invisibility' of opposition or competing views is a major characteristic of present-day politics in Bhutan" (Schmidt 2017, p.3). This 'silence' is also found in veterinary development, as I show in this chapter.

The paradox of GNH is that it doesn't seem to achieve its stated goals for everyone. Income inequality and uneven development, particularly in rural areas, are rising rather than falling (Schmidt 2017, p.3). Support for this argument appears in the 2016 United Nations World Happiness Report, which ranked Bhutan as only the 84th happiest country (Helliwell et al. 2016).

GNH policies direct Bhutan's development activities, including those of the veterinary regimes. GNH discourses can also be used to challenge veterinary development and livestock production, as I show in this section. To summarise, GNH is constructed on Buddhist ethics, forming a hegemonic discourse in Bhutan. GNH is also argued to form part of the religious nationalism project that, along with Buddhist animal liberation and anti-slaughter movements, promotes a model of good Bhutanese citizenship that is based on Buddhist doctrine (Miyamoto et al. 2021, pp.127–128). The religious nationalism movement uses this aspect of GNH discourse to disrupt livestock development initiatives and oppose animal killing.

However, as I demonstrated earlier, economic sustainability and food security are integral to the DoL's goals. Their state-funded programs, approved by the GNHC, see Bhutan's veterinary regimes implementing the same animal production and livestock

development initiatives that the religious nationalism movement opposes. As a result, veterinary personnel are caught between competing GNH discourses, answering to both hegemonic GNH discourses and often find themselves standing in the middle between them. The DoL must rationalise how to balance the competing GNH objectives of sustainable and equitable socio-economic development with environmental conservation, and the preservation and promotion of culture, which in Bhutan means Buddhist culture and ethics.

The Four Pillars of GNH- A Balancing Act

GNH has captured the cultural imagination both inside and outside the country. However, the meaning and function of GNH can be interpreted in different, sometimes opposing, ways. Various sectors of Bhutanese society adapt GNH to their own philosophy and political ideology, using GNH to justify their own agendas and, in this case, their construction of animal ontologies. As I introduced earlier, state veterinary discourses exclusively promote Eurocentric bioveterinary livestock development models. The DoL argues that these increase Bhutan's GNH and align with GNH's sustainable development goals by elevating rural economies, reducing poverty and malnutrition, and ensuring food security and self-sufficiency. Intensive livestock systems are institutionalised in this context and function to veterinise Bhutan to a single vision of Eurocentric capitalist animal agriculture.

In contrast, Buddhist and community groups leverage discourses of GNH as a form of Buddhist hegemony, utilising karma, anti-slaughter, vegetarianism, and *tshethar* narratives to promote a Buddhist national identity. They advocate for Buddhist ethics, expressed in this context as anti-slaughter, and envision that this will reduce Bhutan's collective negative karma and, hence, improve GNH for all of Bhutan.

The DoL has often been forced to adjust its development programs as a compromise with the competing Buddhist discourse and GNH agenda, while also addressing shifting political economies, transnational politics, international development agendas, and domestic politics. These complicated, enmeshed and evolving power dynamics compelled the DoL to form new iterations of its veterinary regimes and identities.

GNH as Buddhist Modernity

GNH philosophy was developed based on Buddhist philosophy and ethics, extending the middle-way approach that balances material wellbeing with spiritual, emotional and cultural wellbeing (Ura & Galay 2004). Jessica Locke (2020) uses Mahayana Buddhist philosophy and politically themed Buddhist texts to argue that the theory of governance driving Bhutan's politics is a form of Buddhist modernism. She frames GNH as a "modernist iteration of the traditional mandate of Buddhist governance" and a "Buddhist social contract" evolving from good Buddhist governance (Locke 2020, p.12). Similarly, many Bhutanese Buddhists have conceptualised GNH and its Buddhist ethics to support hegemonic Buddhist animal ontologies and discourses, as I discuss later in this chapter.

The Bhutanese state operationalises these philosophies and ethics by requiring that GNH policy and indicators be integrated into all state initiatives, including those of its veterinary regimes. This screening occurs during the GNHC's process of formulating and coordinating Bhutan's Five-Year Plans, which are its central development blueprints. As such, the GNHC played a hybrid role, combining that of a traditional planning commission with the function of a value-based policy gatekeeper, ensuring Bhutan's GNH development philosophy remained central to governance (Verma & Ura 2022). Therefore, the GNHC assessed the veterinary policies and programs presented by the DoL using a GNH Policy Screening Tool. In this way, veterinary livestock development plans and projects were evaluated for their social, cultural, environmental, and economic impacts, which was supposed to ensure they align with GNH policy and, hence, Buddhist ethics.

GNH and Veterinary Livestock Development

The DoL, as part of Bhutan's Ministry of Agriculture and Forests, faces the mammoth task of eradicating poverty, enhancing incomes, and achieving national food security (Dorji et al. 2023, p.9). They must theoretically balance that with GNH's objectives: equitable and sustainable development, environmental protection, cultural preservation, and good governance. Faced with these competing drivers and GNH objectives, I show in this section how the DoL may have prioritised rapid economic development over other GNH objectives, in this way aligning Bhutan with other capitalist developing economies that use GDP to measure progress.

Bhutan is not immune from pressures that have led other states to see economic growth as a core political imperative, including pressures to raise material living standards and create employment within a context of globalised capitalism and consumer culture (Hayden 2015, p.162).

To support the DoL's development objectives, a significant portion of their postgraduate veterinarian training focuses on livestock development, which has significantly enhanced Bhutan's veterinary services. This includes biotechnologies such as artificial insemination and embryo transfer. Postgraduate training has also imparted the skills necessary to effectively research, monitor, report, and publish in accordance with Euro-American academic standards and bioveterinary epistemologies, rendering Bhutan's veterinary systems appealing to international scholars, development agencies, and industry experts.

As a result, the DoL receives ongoing support disproportionate to that of their South Asian colleagues. This support comes from university collaborations, as well as further international postgraduate scholarships, equipment donations, research grants, and funding from international development agencies. Senior veterinary personnel are also dispatched to regional and international industry and governmental events, and given board positions in supporting agencies, such as the World Organisation for Animal Health, and others.

Over the last few decades, the DoL has developed the expertise, 'lingua franca', connections, and capacity to function at an international standard in delivering livestock development, animal production targets, veterinary public health objectives, and academic publications. However, in contrast to Euro-American Christian nations that evaluate progress using GDP alone, in Bhutan, tensions have emerged due to conflicting animal ontologies and competing one-worlding discourses of GNH. In the veterinary sphere, different actors use GNH to justify their agendas regarding animals, for example GNH as economic development and GNH as Buddhist modernity.

The GNHC has thus far approved the DoL's Eurocentric intensive livestock development programs. I argue that it has done so only because there was no alternative vision offered. The GNHC relied on each ministry's professional expertise to develop and propose appropriate programs based on the state's overarching aims and objectives. In this case, the veterinary personnel's professional education and international development funding priorities aligned with a Eurocentric capitalist model of livestock development. An example of this is intensifying livestock

production in housed sedentary systems using European breeds, like the farm I described at the start of this section.

GNH and Veterinary Scholarship

In this regard, there is very little critical scholarship analysing GNH, sustainable livestock development and animals in Bhutan. More broadly, critical works regarding GNH and Bhutan's development either completely ignore livestock (Schmidt 2017), mention livestock as a list of resources (Kris Rai 2024), or repeat state livestock development discourses even when they critique GNH in other domains (Schroeder 2018, p.119).⁵⁹

What has been published reflects departmental epistemologies that are restricted to the GNH goal of economic development, demonstrating the silence and invisibility of opposing views that Schmidt (2017) identified.⁶⁰ One paper did critically analyse GNH, but in terms of the relevance of its models and indicators to the issues of Bhutanese farmers (Samdup et al. 2014). A second paper researched and proposed an alternative model to assess development progress in rural areas, finding that equitable socioeconomic development was the main challenge to GNH in rural farmers (Samdup et al. 2019).⁶¹

The impacts of changes to land use policy, forestry management, and the nationalisation of grazing lands have been analysed by some, however, these works do not discuss GNH specifically.⁶² In this context, Dasho Karma Ura has written on the issue several times, warning that pastoralism is “a highly sophisticated and symbiotic animal management system” (Ura 2002, p.40), where the separation of livestock from forestry will modify “vegetation composition on the one hand and herd diversity on the other” (Ura 2002, p.2). Despite being the principal architect of GNH policy,

⁵⁹ These are examples of the invisibility of animals in the social sciences. The ‘animal turn’ in academia is still turning, not yet complete.

⁶⁰ These publications include prioritising Eurocentric intensive livestock systems to increase animal productivity through crossbreeding with ‘improved’ European breeds (Samdup et al. 2013, Samdup 2018), improving market chains (Tanglertpaibul 2017), and developing agricultural cooperatives (Dendup et al. 2018).

⁶¹ Samdup, Udo, and van der Zijpp (2014) argued that GNH policies, domains and indicators may not be relevant to the (then) 69 per cent of the population living in rural areas, recommending that inclusive policies be developed that better address farmers’ issues. They then researched an alternative GNH assessment model using social, economic and environmental indicators.

⁶² For example, (Moktan 2010, Wangda 2016, Wangchuk et al. 2023)

surveys, and domains, and director of the Centre for Bhutan Studies and GNH, Dasho Karma has not extended these analyses to include GNH.

Two other critical analyses of the government and DoL's development policies that affect livestock did not explicitly mention GNH in their work either (Miyamoto 2015, Namgay et al. 2021).

'Fortresses' of Forests, Nublang Cows, and Transhumance Lifeways

Dasho Karma Ura has been urging caution for decades regarding the impacts of policy changes in Bhutan's forestry management, land-use policy, the nationalisation of grazing lands, and intensifying livestock development (Ura 1993, 2002, 2023b). These state initiatives are a risk to Bhutan's landscapes and socialscapes, unevenly impacting transhumant agropastoralists.

The dominant policy narrative in Bhutan is that local cattle are low yielding, use large tracts of pasture as well as forest, and cause forest degradation; therefore, they need to be reduced or replaced with high-yielding exotic breeds that require smaller spaces and have higher milk yield. These policies have a huge impact on the way the livestock are now raised and how rangelands and socialscapes are changing or likely to change (Namgay et al. 2021, p.2).

The DoL has spent the last few decades improving animal agriculture efficiency, productivity, and profitability by transforming migratory and extensive livestock grazing systems into intensified dairy and livestock systems (Miyamoto 2015, Namgay et al. 2021, Ura 2023b). These intensive systems house and tether European cattle breeds or crossbreeds (as well as chickens and pigs) that are fed commercial feed mixes imported from India or improved fodder grown locally. These intensified industrial systems are gradually replacing indigenous Bhutanese breeds that previously grazed extensively in forests (Namgay et al. 2021, Ura 2023b). They are promoted as aligning with GNH for several reasons (Schroeder 2018, p.119). Firstly, increased milk yields improve the economic and nutritional status of rural farmers, although Dasho Karma Ura offers research that challenges this narrative (2023b, pp.152–157). Secondly, this intensive system is claimed to alleviate grazing pressures in forests and promote environmental conservation, albeit without evidence, as I analyse next. Thirdly, the livestock are protected from wildlife predation, reducing human-wildlife conflicts. These justifications for GNH policy alignment have little

evidence to support them, apart from increased animal production and farmers' incomes.

Namgay, Millar and Black (2021) reviewed government records and policies, suggesting that government policies specifically discouraged and planned to stop cattle-based transhumance with its forest grazing. They show that livestock and breeding policies are “biased and grossly discriminatory against the indigenous breeds *Nublang* and *Jatsha-Jatsham*” (Namgay et al. 2021, p.4).⁶³ They point to the current Livestock Five-Year Plan (12th), which also biases exotic breeds, where all allied services and the bulk of the budget are directed towards improving livestock, crossbreeding with exotic species, and funding intensive/ semi-intensive systems. “All technical and fiscal incentives are directed at increasing the population of the exotic breeds over local breeds”, where the Livestock policy exclusively promotes crossbreeding livestock species with ‘improved’ breeds for increased production (Namgay et al. 2021, p.7).

Government policies and promotions such as these have lured transhumant cattle farmers to adopt exotic crossbred cattle, even though they initially preferred indigenous breeds for their hardiness, strength, high butterfat milk, and ease of management (Ura 2023b). Exotic crossbreed cattle populations grew 269% from 1994 to 2018, while indigenous breeds declined by nearly 29% in the same period (Namgay et al. 2021). These development activities and changes in pastoralists' farming systems, from transhumant to intensive, have profoundly changed villagers' daily lives and environments. They also tie them to transnational market economies of Indian livestock feed and pharmaceutical purchases.

Transhumant pastoralism is a feature of Bhutan's intangible cultural heritage that may have existed for thousands of years. Like its alpine pastures, Bhutan's forests have evolved under grazing pressure to form unique ecosystems (Namgay et al. 2021, Ura 1993, 2002, 2023b). These ecosystems and Bhutan's indigenous livestock breeds are essential to the country's genetic resources. However, pastoralists are blamed for environmental damage due to grazing and large herd sizes, driving policy changes that force them into sedentary lifestyles, disregarding their preferences or culture

⁶³ *Mithun*, *Nublang*, their crossbred offspring *Jatsha* and *Jatsham*, and other indigenous livestock breeds are described by Tenzin, Chankitakul and Boonkum (2023).

(Miyamoto 2015, Namgay et al. 2021, Ura 2023b). Structural pressures from changes to the Forest and Conservation Act, the Land Act, and the DoL's policy push towards intensive sedentary livestock production have restricted the mobility of cattle-based agropastoralists. These policies have been approved through the GNHC but may be influenced by international concepts of fortress conservation and veterinary livestock development.

Fortress conservation is a controversial conservation approach adopted by many nations of the global north that encloses or fences conservation areas. The model excludes human society, who are usually marginalised indigenous people. Even though Bhutan allows resident human populations in national parks, some have argued that national policy is influenced by fortress conservation models it restricts access to forest resources for food, hunting, building or other traditional uses (Katel & Schmidt-Vogt 2011). The structural and economic pressures restricting access to grazing by transhumant cattle agropastoralists may constitute another example.

Studies on yak and cattle transhumant pastoralism show good, locally-managed pasture management practices (Ura 2003, 2023b), no evidence of forest overgrazing (Namgay et al. 2021) or that its effects are limited and manageable (Wangchuk et al. 2015). Moreover, seasonal livestock migration routes may allow adequate time for forest regeneration (Moktan et al. 2008). These research papers all point to global discourses of conservation that dominate and influence forest management policies without supporting evidence.

Their view, developed through Western education, and supported and reinforced by donor agencies, influences the image of the environment and the urgency to protect areas for conservation. These exaggerations of environmental degradation, supposedly caused by the herders and local people's access to natural resources, have become a common belief among some foresters and environmental agencies (Chambers, 1997 in Namgay et al. 2021).

Mari Miyamoto (2015) described her ethnographic research in a pastoral village within a national park in eastern Bhutan. Her focus on the cultural politics of forest environmentalism, traditional cattle pastoralism and forest grazing, religious discourses, slaughter, and the DoL's livestock intensification projects illustrated a similar nexus of policies and programs as the previous works. Her close ethnographic research revealed additional aspects complicating the situation. The villagers, encouraged by the DoL to 'depopulate' their cattle for environmental and

productivity reasons, associated that with the anti-Buddhist activity of slaughter, which led to resistance. They also resisted the DoL's efforts to crossbreed their cattle, recognising that the crossbred cattle would cause a transition to sedentary living. In this example, the villagers' actions can be interpreted as a form of ontological resistance to the one-worlding of state veterinary policies and programs.

One could ponder the existence of alternate political motivations for these policy shifts when Bhutanese research shows that managed seasonal grazing and traditional pasture management practices enhance biodiversity and conservation (Ura 2023b, Millar & Tenzing 2021, 2022, Namgay et al. 2021). Additionally, Dasho Karma Ura points out the many ways that indigenous cattle breeds may surpass introduced 'improved' breeds especially if veterinary techno-science and nutritional support were provided. Local cattle are more hardy and strong, more resistant to ticks and other parasites, more resistant to diseases and the effects of changing climates, less likely to become injured in rough terrain, have roughly double the reproductive lifespan, have longer milking intervals, have higher butter content in their milk, require less human and physical resources to maintain, less people to herd them, able to survive from forest grazing and don't need as much supplemental feeding. In fact, "the preference of farmers for the jatsham breed was rooted in intuitive and historical understanding of its multiple benefits compared to costs of jersey and brown Swiss" (Ura 2023b, p.153). There is a risk that Bhutan's indigenous cattle breeds may disappear unless policy changes occur (Ura 2023b, Namgay et al. 2021).

Does Intensive Animal Agriculture Align with GNH?

Aside from these problems, I expected to find publications that critically analyse the potential risks that intensifying animal agriculture poses to Bhutan's environment, culture, health, and sustainability. I also expected to see analysis on how these development policies, with their inherent risks, align with the four GNH pillars, such as environmental conservation, sustainability, and preserving cultural heritage. Similar policies and programs have raised serious concerns in other nations, which are now well-documented (Ilea 2009, Narayanan 2016, Constance et al. 2018, Korthals 2018, Broom & Doron 2020, Doron 2021, 2023, Srinivasan 2023), including by the United Nations Food and Agriculture Organisation (Steinfeld et al. 2006). There is, however, a serious lacuna in scholarship and public debate on "the consequent animal, ecological, and social vulnerabilities" (Srinivasan 2023, p.776) of

Bhutanese intensive animal food systems. This silence is especially notable given the considerable scholarship devoted to GNH and development in other domains.

The inherent risks of intensive animal systems merit analysis, including those described here and in Chapter Four, such as the decline in indigenous livestock breeds. The loss of this genetic resource is already being felt in Bhutan, with calls for increased breeding and genetic conservation, particularly in light of the changing climate (Ura 2023b, Tenzin et al. 2023).

Other risks associated with intensifying livestock in stall-feeding systems affect all four GNH pillars. They include severe environmental damage and local pollution, human health issues such as zoonotic diseases (e.g., COVID-19, Avian influenza), increased antimicrobial use and antimicrobial resistance, and climate change. Moreover, intensively farmed animals require more agrochemicals, such as anti-parasite pharmaceuticals and antimicrobials, thereby linking farmers to global agrochemical companies in capitalist economies. Animal manure accumulating near animal farms contributes to local pollution and increases the risk of zoonotic disease transmission, as well as the spread of antimicrobial-resistant bacteria to other species. This dung was previously returned to the forests by grazing animals, enriching soils and ecosystems. We do not yet know the long term impacts of this change (Ura 2023b). These risks are not unique to Bhutan and occur globally.

Bhutan's mountainous geography limits large-scale agriculture and the production of sufficient grass, hay, grains, and other animal feed to support large numbers of housed animals. Therefore, pasture and fodder resources do not meet the domestic requirements for intensive livestock. Consequently, some intensive animal feed is imported from India to feed stall-kept cattle, pigs, and poultry, challenging trans-national political economies and farmers' financial precarity. This also challenges state narratives of GNH, self-sufficiency and of decreasing the 'rupee crunch'. The mass production and transport of animal feed through monoculture agriculture are also identified as sources of environmental degradation and climate change (Constance et al. 2018).

The feed may also contain antimicrobials, which contribute to antimicrobial resistance and threaten both human and animal health (Rizal et al. 2018). It also ties smallholder farmers into transnational capitalist market economies, which can be economically precarious. Some animal fodder is grown domestically as 'improved'

pastures using exotic seeds, with plans to use an additional 26,600 acres in Bhutan (Namgay et al. 2021, p.7). Five hundred acres of pasture crops are already cultivated at the Samrang megafarm, which required deforestation to establish. Moreover, the long-term impact of growing monoculture pasture species on Bhutan's environment, which may require fertilisers, herbicides, and pesticides, has not been determined. These are just a few of the complications affecting GNH and its four pillars.

Animal welfare in intensive systems is a growing global concern as it tends to be poorer, if not severely compromised. In stalled, tethered dairy systems, many cows may remain in their stalls for extended periods of months or more, having no opportunity to walk and only able to stand or lie down to the length of their rope tether. Pig and chicken welfare is similarly marginal in intensive situations due to various factors related to crowding, hygiene, disease, and slaughter practices. Another issue is the significant amounts of methane pollution, leading to methane stress in poorly ventilated enclosures. Animal slaughter practices in Bhutan currently demonstrate marginal animal welfare, which is concerning, given the rising rates of production and slaughter (Dorjee et al. 2025).

Conclusion

This chapter introduced Bhutan's veterinary regimes, their people and function. DoL personnel impact multispecies relationships and health networks through state policies, practices, animal surveillance, livestock development programs, and training in animal health and production. Paravets are the face of the DoL in the field where they negotiate their identities as animal scientists and also Bhutanese cultural citizens. These identities are performed synchronously when engaging herders and farmers in their animal health and production setting. They operate as illness translators, delicately holding Eurocentric scientific and bioveterinary systems alongside Bhutanese cultural and religious paradigms within the same conversation.

Bhutan's veterinary regimes, the DoL and BAFRA, are caught between competing animal ontologies and visions for GNH. The state's development discourses promote a GNH where rural communities that are plagued by poverty and malnutrition are happier when their socio-economic situation and children's health improve, which are the official objectives of the DoL. These considerations are overlaid with political economies, transnational trade and identity politics. Veterinary personnel navigate

these cultural politics and tensions surrounding competing epistemologies and ontologies by segregating their work and community lives, and their professional and national identities. This is not always seamless.

I have shown how development has changed and complicated national discourses of religion, national identity, and food security. The messy edges of veterinary livestock development reveal a complicated relationship with GNH discourses and policy, suggesting that food security and economic development priorities have overtaken other GNH objectives.

I propose that the invisibility of alternative discourses and lack of policy imagination result from several overlapping processes. When analysed through the one-world schema, ontological occupation colonises Bhutan's academic and planning discourses, including the GNHC. Firstly, forestry and conservation policy reproduce some global discourses of conservation, which restrict Indigenous people's access to resources, such as grazing by transhumant cattle pastoralists. Secondly, Bhutan's veterinary personnel are embedded in bioveterinary livestock development ontologies and epistemologies. This, understandably, results from twenty or more years of formal education and the priorities of funding agencies. These one-worlding forces represent hegemonic global systems, reshaping traditional beliefs and animal ontologies into one of a Eurocentric capitalist modernity.

A related process is the dominance of cultural and identity politics in debates about animals, religion and GNH. These are driven by the alternate one-world force in Bhutan, Buddhification. The identity politics of religious nationalism and the competing GNH discourses of development and food security have left no room for discussing "the more-than-human impacts of animal agriculture" (Srinivasan 2023, p.776). When reviewing the socio-political context of animal farming in India, Krithika Srinivasan (2023, p.776) pointed to how the often violent identity politics of religion, meat and cows have created a single-optic focus in scholarship and public debate. As a result, a multi-optic view of the multiple intersecting impacts of livestock farming is missing. She proposes that the role of social science research is to engage with "the plural justice implications of India's rapidly intensifying livestock landscapes" on the "multiple, intersecting impacts of commercial livestock farming on social, ecological, and animal wellbeing" (Srinivasan 2023, p.776).

In a similar manner, I suggest that the current livestock development systems single-optic focus does not fulfil GNH goals. Hegemonic discourses on identity politics and food security have dominated GNH and public debate, creating two competing single-optic focus points. Dasho Karma Ura (2002, 2023b), Namgay, Millar, and Black (2021), and Miyamoto (2015) offer a multi-optic perspective by aptly arguing for the risks to cultural heritage, genetic diversity, and environmental resources. Bhutan's intensive animal production systems improve rural economies in the short term but lack evidence to support long-term sustainability. The veterinary regimes are now stuck in a policy quagmire, having begun this journey 60 years ago. A deeper social science analysis of the multi-optic impacts of intensive livestock farming is required. One that engages with the 'plural justice implications' of Bhutan's multi-species worlds. However, by then, it may be too late to turn back. As Dasho Karma Ura warned three decades ago, the long-term impacts of these changes are impossible to predict.

The next chapter continues the theme of contested animal bodies. I delve further into the fundamental problem at the core of these tensions, killing animals in a Buddhist society, which is an integral part of veterinary work.

Chapter Three- Contested Bodies- Caring, Killing and Karma in a Buddhist Community

Many people enjoy eating meat, but few want to kill other sentient creatures. These inconsistent beliefs create a 'meat paradox'. If farmers turn into butchers, then the people ostracise them, but these people don't mind eating meat (Yuden 2020a).

This chapter expands on the tensions and dilemmas identified in Chapter Two, specifically the issue of killing animals in a Buddhist society. This ongoing public debate over Bhutan's national identity has converged on top of the DoL due to their involvement in industrial animal agriculture and slaughterhouses. I explore the issues of exteriorising slaughter outside Bhutan's borders, and the proposed solutions to Bhutan's meat paradox, such as humane hygienic modern slaughterhouses run by veterinary professionals, or nationwide vegetarianism. Public resistance to animal killing is also demonstrated in stray dog and rabies control initiatives, which is my first example.

Veterinary livestock development activities are contested not just by the Buddhist elite and clergy but also by some communities, farmers and herders. I demonstrate how veterinary personnel navigate these eco-social forces and contested discourses around animal life, death and moral citizenship, negotiating their bioveterinary animal ontologies with their Bhutanese national identities. These ethnographic vignettes illustrate the rationale behind their decisions and actions concerning animals, at times using karmic calculations, the Economy of Karma, and at others their bioveterinary epistemologies and GNH. I analyse the strategies used to manage the cognitive dissonance that results from balancing competing beliefs and animal ontologies in the same space and professional identities.

The Problem- Animals and Killing in Vajrayana Buddhism

"Bhutanese want to eat, but they don't want to kill," I was told repeatedly, neatly reflecting Bhutan's meat paradox. The meat paradox refers to the psychological conflict that arises from the human desire to consume meat and the moral discomfort that accompanies causing animal suffering in the process (Khara et al. 2021, p.1). This cognitive dissonance has been widely explored in Eurocentric Christian cultures, but

it has received less attention in Asian and Buddhist contexts. I noticed that this paradox is particularly pronounced in Buddhist cultures due to differing beliefs about animals, which I discussed in previous chapters. In Buddhist cosmology, animals are seen as sentient beings, viewed as kin to humans through the cycle of rebirth, where it is believed entirely possible they may have been our relatives in past lives or may become so in future ones. Many Buddhist morality tales illustrate this relational ontology, emphasising that animals can feel emotions and suffer as humans do. In Bhutan's predominantly Vajrayana Buddhist culture, this kinship through reincarnation has created a moral directive—killing any sentient being, including animals, is regarded as a non-virtuous action.

Despite these cultural and ethical beliefs, the Bhutanese have an insatiable appetite for meat that increases yearly, coinciding with growing urbanisation and rising affluence. Bhutan boasts the highest per capita meat consumption in the region, increasing from 13.5 kg per capita in 2014 to 15.7 kg per capita in 2022 (Dema 2015, Yuden 2020a, Ritchie et al. 2023). Due in part to religious aversions to killing animals, the Bhutanese produce less than half of their meat requirements domestically. Over 10.5 metric tonnes of meat are imported from India annually, costing the country 2.7 billion Nu (MoF 2016). These animal product imports contribute to Bhutan's foreign deficit with India, which is often called the rupee deficit. One of the DoL's priorities is to enhance food and nutrition security while reducing Bhutan's rupee deficit. They aim to achieve this by reducing the imports of animal products, especially dairy and meat, and attaining self-sufficiency in food production.

The DoL faces inherent controversy when planning for this livestock development, though. For veterinarians, their responsibility for animal production for food means their profession is intrinsically linked to the social stigma of killing and animal slaughter is regarded as un-Bhutanese.⁶⁴ For example, the DoL's attempt to establish a humane and hygienic domestic slaughter facility in 2015 triggered nationwide religious protests, initially driven by the clergy, but later taken up by the general public. This issue reached the highest levels of government and was debated

⁶⁴ In addition, fishing and hunting are prohibited in this Buddhist Kingdom.

in parliament. Consequently, the DoL abandoned the slaughterhouse plans due to community backlash and resistance.⁶⁵

Bhutan is distinctive for having these restrictions. No other government or food system, including other Buddhist states, faces such societal constraints regarding animal agriculture. These tensions arise, in part, from competing cultural designations of animals— as food and units of production or as sentient beings and kin. I separate these two discursive forces for heuristic purposes only. There is considerable mingling and conflation between them, which should not be overlooked. These discourses intersect with other animal ontologies from Bhutan’s pluriverse, creating tensions for veterinary personnel and animal agriculturists working within Bhutan’s cultural framework. As a result, Bhutan’s DoL and veterinarians are compelled to develop a specific Bhutanese style of veterinary system and identity.

Feed Dogs but Don’t Kill Them- Buddhist Narratives

Thimphu had incredibly large street dog numbers compared to other Himalayan areas due to the unique combination of religion, culture, affluence and tourism. The estimated 5,500 roaming dogs (*pangkyi*) were culturally and socially accepted here (Rinzin 2015, p.6). In less developed and economically impoverished areas of India where I had worked, the people barely had enough food for themselves. Dogs had less to eat, and so the dog population was relatively small. However, Thimphu was a growing urban metropolis with many hotels and restaurants that provided ample food waste to support a healthy roaming stray dog population. People also supplemented this food.

One day, I was riding my motorbike through Thimphu when I noticed people stopping on the street at dog food bowls or where dogs gathered on meridian strips, street corners, and parks. These people ladled food from containers in the back of their cars or emptied food from their bags. Some of these feeding stations were outside restaurants, hotels, cafes, or people’s houses. I often saw people coming out to feed the dogs with leftovers from their household meals or scraps from restaurants.

⁶⁵ The details of this event has been reported by others (Miyamoto et al. 2021, The Bhutanese 2015, Dema 2015, 2016, 2017).

The street dogs also found food in the rubbish and waste from these restaurants. This food source helped them thrive and drew more dogs to the area to make use of it.

A few days later, a rubbish truck drove down the street behind my hotel collecting garbage. People milled about, waiting their turn to empty their bins. Among them, at least thirty dogs waited patiently. Suddenly, a violent burst of barking, growling, and hackles stirred the scene as the dogs argued over who had priority at the front of the queue. The dogs knew this was where the mobile buffet stopped, where food scraps fell out of bins or were tossed to them. Following the metallic clanking of the rubbish truck and bins, they were drawn to the food source.

“We are Buddhists, La. We are kind to dogs. We want to feed them. It's our duty to care for our mother sentient beings. When we see animals suffering from hunger, we can do something about that, and so we must. They might have been our parents in our last life. They might be our children in our next life. It is our duty, our dharma, to take care of these hungry dogs,” explained a woman waiting her turn to empty her bin. I heard this sentiment often when discussing the dogs of Thimphu. Another familiar morality tale about the many dogs living around Bhutan’s monasteries was also repeated. It was said these dogs were monks or nuns who had transgressed their vows in past lives. Due to this, they had slid down the rebirth ladder to a dog rebirth. However, they were attracted to the monastery because of past life memories and habits and wanted to live near their friends. The monks and nuns respected their need to be close and, where possible, provided for them.

The monastery’s head monk told me how they struggled with dogs being dumped at the monastery, and they had too many dogs. “People think because we are a *gonpa* [*mgon pa*, monastery, temple] that we look after the dogs, La. They think we will feed them and that it's safe place for them. But we, too, have our limits. We can't have all the dogs living in our *gonpa*, it creates problems,” the monk said. “Young *kushus* [*sku shogs*, monks, ordained monastics] get bitten. We struggle for enough food to feed [them]. Dogs bark and disturb our *rimdro* [*rim gro*, religious ritual, ceremony] and *gomchens* [*sgom chen*, meditators]. It can be dangerous for people coming for prayers or *kora* [*skor ba*, circumambulate, to go round] at the *gonpa*,” he finished. I heard this story often during my work with street dogs across India and the Himalayas. We worked in many Buddhist communities and monasteries where people would dump dogs and puppies at the monastery during the night, thinking that at least they had a

chance for Buddhist blessings. They had a chance at life rather than dying of starvation on the streets.

I have also heard of dogs being relocated from monastery to monastery and community to community. This translocation, where dogs are moved to new areas to reduce their numbers, is quite common. The dogs are captured and transported in trucks or cars to another town, municipality, or monastery. They are then often released secretly at night. People wake up to find a whole new population of dogs in their area that wasn't there before. The new dogs compete with the existing ones for habitat, food, and access to females in heat. The disturbance and increased aggression lead to more fights. This results in a rise in human dog bite victims and more deaths from rabies in both dogs and humans. For this reason, translocation has been condemned in veterinary public health programs because it worsens the problem of dog bites and rabies transmission. However, Buddhist communities lacking the resources, knowledge, or capacity for alternative actions see it as a quick fix to their immediate issues.

While talking to the monk, I reflected on my conversation with the District Commissioner of New Delhi, India the previous year. We were discussing a coordinated street dog sterilisation and anti-rabies programme for his megacity. He said, "I've just been to Washington for some meetings, and I didn't see any dogs roaming around the streets. How do they do it? Why can't we just follow their program?" I replied that America doesn't tolerate roaming dogs and that all the strays are captured. If they're not claimed by the owner or rehomed, then over one million dogs are euthanised per year in the US.

He looked shocked and turned to his secretary beside him and said, "That is terrible! We have to do something about that. Don't they understand that dogs are an important part of the ecosystem? They have a right to be here just like we do. We can't remove them from their homes and take away their right to live in the community."

His shock that Euro-American countries killed most of the homeless dogs highlighted how human-animal relationships differ in Asia compared to the Global North. It also reinforced the idea that society influences veterinary policy, programmes, and activities. Veterinary identities are shaped by culture, and in these

countries, a key part of that veterinary identity is to avoid, or reduce, killing animals for population control.

These social negotiations between the biomedical understanding of public health and the hegemonic Buddhist culture can be traced back to 1970. Bhutan's National Assembly debated the issue at length, resulting in this policy, "Bhutan being a Buddhist country, the killing of dogs should be exclusively restricted to the mad ones" (McKay 2007, p.192).

How to Kill Rabies Without Killing Dogs?

Dog population management in Bhutan, the Himalayas, and other parts of Asia demonstrates how culture, religion, and modern influences shape veterinary policies and practices. In India and Bhutan, where I have mainly worked, killing dogs for population control was not culturally accepted, even though Bhutan had tried it before. The Bhutanese public protested their government's previous tactics of shooting dogs on the streets. It was dangerous, often only injuring the dogs, and children were traumatised by the sight and sounds (Rinzin 2015, p.10). A similar situation occurred when attempts were made to poison the dogs with strychnine baits. Eventually, the government limited its killings to only rabid dogs during rabies outbreaks to reduce public health risks. Part of the WHO rabies mitigation strategy at that time was also to kill any dogs that had contact with a rabid animal. However, when the state followed that protocol, these additional killings also sparked protests.

Then, in 1990, the government built enclosures to hold the in-contact dogs while waiting to see if they had developed rabies (Rinzin 2015, p.10). This was a publicly accepted solution, rather than indiscriminately killing dogs in areas affected by rabies. Over the years, the DoL often changed their rabies and dog population control policies in attempts to align with international biomedically structured public health approaches to zoonotic disease management. These changes reflected their bioveterinary training and biomedical understanding of disease and control. However, community complaints against all the methods they tried—killing for population control, killing in-contact dogs, and impounding dogs—were driven by Buddhist Bhutanese identities. This led the DoL to revise their policies and practices once more.



Plate 18- Mass rabies vaccination drive, National Animal Hospital, Thimphu, 2014.

The influence of Buddhism and Bhutanese national identity strongly motivated the DoL to adopt dog desexing and rabies vaccinations (TNVR) to manage dog populations.⁶⁶ This strategy addressed public health concerns about rabies outbreaks and also appeased the religious sentiment in Bhutan. However, personnel and resource restrictions prevented them from performing widespread desexings and vaccinations. It was insufficient to affect populations and rabies transmissions. As a result, in advance of the national events of 2008 I described earlier, the state had begun a large impounding operation to rid the streets of Bhutan's stray dogs. This is when my colleagues in Sikkim dispatched me to Thimphu to share their successful program.

My meetings with the DoL that first week in 2007 focused on reviewing the science of dog population ecology, management and rabies control. I was dressed in a *kira*, a women's national Bhutanese outfit that is a mandatory dress code for Bhutanese entering official buildings. The DoL director sat at the head of the table while other department staff arranged themselves down the sides of the long table

⁶⁶ This program was called TNVR (Trap, Neuter, Vaccinate and Release). The term TNVR is used by organisations from the USA like Humane Society International (HSI). The term ABC-AR (Animal Birth Control Anti-Rabies), was developed in India and used by Indian based organisations and many other international bodies.

according to their rank and power, those higher sat closest to the director. Most chewed *doma* (*rdo ma*, spiced betel nut), which was arranged on plates along the table.⁶⁷ Assistants refilled the cups in front of each participant from large flasks of tea.

My presentation reviewed the most effective way to control rabies and dog population in a country that wasn't willing to capture and kill dogs like many industrialised countries do. "When you sterilise and vaccinate the dogs, they form a stable ecology of rabies-free dogs," I explained. "There are fewer dog fights over mating and resources, fewer dog bites, and subsequently less rabies infections that spread through the dogs, to livestock and people," I concluded. "They also protect their territory and prevent new, unvaccinated dogs from migrating into the area. In other Buddhist places where we work, like Sikkim and Dharamsala, the dogs become more friendly and eventually grow old, lazy and fat," I added to laughter. "However, to achieve this, you need to sterilise and vaccinate at least 70% of the dogs to maintain a stable population," I concluded, noting the frowns and mumbles around the table.

I was told that while they, as veterinarians, were already aware of the science I had just described, Bhutan lacked the operational resources to effectively sterilise and vaccinate all the country's dogs.

"We have only thirty-five veterinary doctors working over the whole country," said one of the senior veterinarians. "Most of us work in the office. We manage development programs, laboratories, and disease outbreaks," he concluded.

"The paravets do the treatments and surgery in the field. Can't you train them to do these surgeries?" the director asked. "Impounding the dogs did not work and is too expensive to continue. But we don't have the budget for that manpower, vehicles, equipment, medicines and vaccines," he added. "If you can't train the paravets for this surgery, can you help us find the budget and the veterinary doctors? Can Vets Beyond Borders supply this?" he finished.

⁶⁷ Chewing *doma*, a betel leaf (*Piper betel*) wrapped around a piece of areca nut (*Areca catechu*), is common in Bhutan and an important cultural tradition. See Franciose Pommaret's (2003) article for more details.



Plate 19- Talking with DoL personnel about ABC-AR, 2008.

I said I would try but knew we were a small organisation and most likely could not gather the resources for such an extensive national program. I returned to Bhutan in early 2008 with a colleague from Vets Beyond Borders. We spent a month researching and designing a national dog population management and rabies control program tailored to the Bhutanese situation, with an estimated 50,000 dogs (Rinzin 2015, p.6). This included pet dog rules and regulations like pet registration, desexing, leash laws, and vaccination certificates. Until now, Bhutan's dogs had not often been subject to extensive governmental biopower, except during rabies outbreaks. The new need for control was the direct result of rising rates of urbanisation, middle-class growth, affluence, and pet ownership. Abandoned puppies and pet dogs fed into the stray dog population.

In addition, many of these new pets were imported breeds. To use the language of livestock production, 'improved' dog breeds were internationally imported breeds that were believed to be superior to indigenous breeds. Karma Rinzin (2015, p.iv) found that 40% of the 71,000 Bhutanese pet dogs were allowed to roam. Thimphu's pet dogs, of which the Alsatian was the most common imported breed, often roamed and bred with street dogs, increasing their population and changing their genetics. A large percentage (90%) of the community reported that these roaming dogs are a

problem to society, and 84% supported a TNVR program to control the numbers (Rinzin 2015, p.iv) instead of impounding and killing.

However, at that time, Thimphu's municipal corporation was catching and impounding dogs every day. This was a poorly managed program because it was run by the waste management services, not by those with animal expertise like the veterinary personnel.⁶⁸ The dogs were kept in large open fenced enclosures in the forest behind the rubbish dump. Dogs died daily from malnutrition, disease, dog attacks, hypothermia and infections. Many Bhutanese citizens, religious organisations and a few international animal welfare groups complained about the dog pound.



Plate 20- Lama Kunzang Dorjee and Jangsa animal saving trust volunteers at the Memlakha pound, 2009.

Jangsa Animal Saving Trust (JAST) and the Royal Society for the Protection of Animals (RSPCA) were two Civil Service Organisations (charitable associations) based in Thimphu who became intrinsically involved in keeping these pound dogs

⁶⁸ Veterinary personnel were reticent to become involved in the dog pound project and few had even visited the site. This reluctance to intervene, even unofficially, in another state institute's activities reflects a significant problem identified in other Bhutanese contexts. That is, the lack of inter-ministerial cooperation and collaboration. There are many factors to consider, including the patriarchal nature of state authority, the siloing of institutes and their initiatives, and the censoring of Bhutanese public discourses. This is worthy of further analysis but is outside the scope of this current work.

alive and fed. They, along with many dedicated people, visited the Memlakha dog pound near Thimphu each day to feed the dogs and care for the sick. Many others came desperately searching for their pet dog that had been caught up in the catching program. Volunteers from JAST, RSPCA and others took the worst-affected dogs to the NAH for medical care and then transferred those that survived to the RSPCA shelter, which was already overflowing.

The land next door to the RSPCA had now been donated to JAST and quickly fenced off. This allowed JAST to employ caretakers and bring in volunteers who looked after around 100 dogs rescued from the pound, and dozens of puppies in various states of sickness and injury. JAST also began a mobile ambulance to transport sick or injured animals from the Thimphu area to the NAH for treatment and then to one of the two dog shelters for care.

Lama Kunzang Dorjee, the charismatic founder and spiritual leader of JAST, told me that they were lucky that the DoL National Centre for Animal Health (NCAH) was also nearby their facility in Serbithang.⁶⁹ “Most days we request one veterinarian to come here and help us. Even though it isn't part of their duties, they do their best to treat the dogs. We also take more seriously sick dogs into the NAH where the vets there will treat them.” He looked sadly around him, whispering prayers and muttering mantras over the dozens of puppies that volunteers were trying to feed, knowing most would die soon. Eventually, community protests and pressure from community and religious groups, such as JAST and the RSPCA, led to the closure of the Memlakha pound in 2009. The remaining dogs were transferred to the JAST and RSPCA shelters.

It was estimated that most of the impounded dogs died during this time. A few lucky ones escaped, were reclaimed by their owners, or ended up living at the two dog shelters. One evening, while having dinner with a veterinary colleague, he pondered the situation and suggested it would have been better to humanely euthanase the dogs from the beginning. “But Bhutanese would never allow such widescale killing. They are afraid for their national karma.” The next section analyses

⁶⁹ *Lam* or *lama* (*bla ma*) are titles used in a colloquially sense for monastics or spiritual teachers of some attainment or rank. The Dzongkha Development Corporation dictionary defines a *lama* as an abbot, guide, guru, or spiritual teacher (Department of Culture and Dzongkha Development 2025, p.531).

these concepts of collective or national karma, and other complications of being a veterinarian in a Buddhist society.



Plate 21- Jangsa animal shelter.

The Bhutanese Veterinary Dilemma- To Kill or Not to Kill

Veterinarians working within Buddhist and other Indic religious cultures face a complex ethical dilemma that arises from the differing hegemonic animal ontologies found in their professional education and cultural contexts. While their veterinary education and global frameworks conceptualise animals as 'property' along global legal and economic frameworks, their religion and culture perceive them as sentient beings with agency, emotions, the capacity to suffer, and inherent rights to life. The culture holds that killing these animals is a non-virtuous activity (*dikpa*). Moreover, Buddhist doctrine teaches that any occupation reliant on killing is a non-virtuous livelihood to be avoided. This creates a dilemma. Veterinarians are trained to increase animal production, facilitate animal use, provide humane euthanasia, and oversee slaughter processes, all while working in a society that regards such activities as unethical. In this context, the colonial legacy of veterinary regimes in Bhutan,

bolstered by international development efforts, complicates the work of Bhutanese veterinarians.

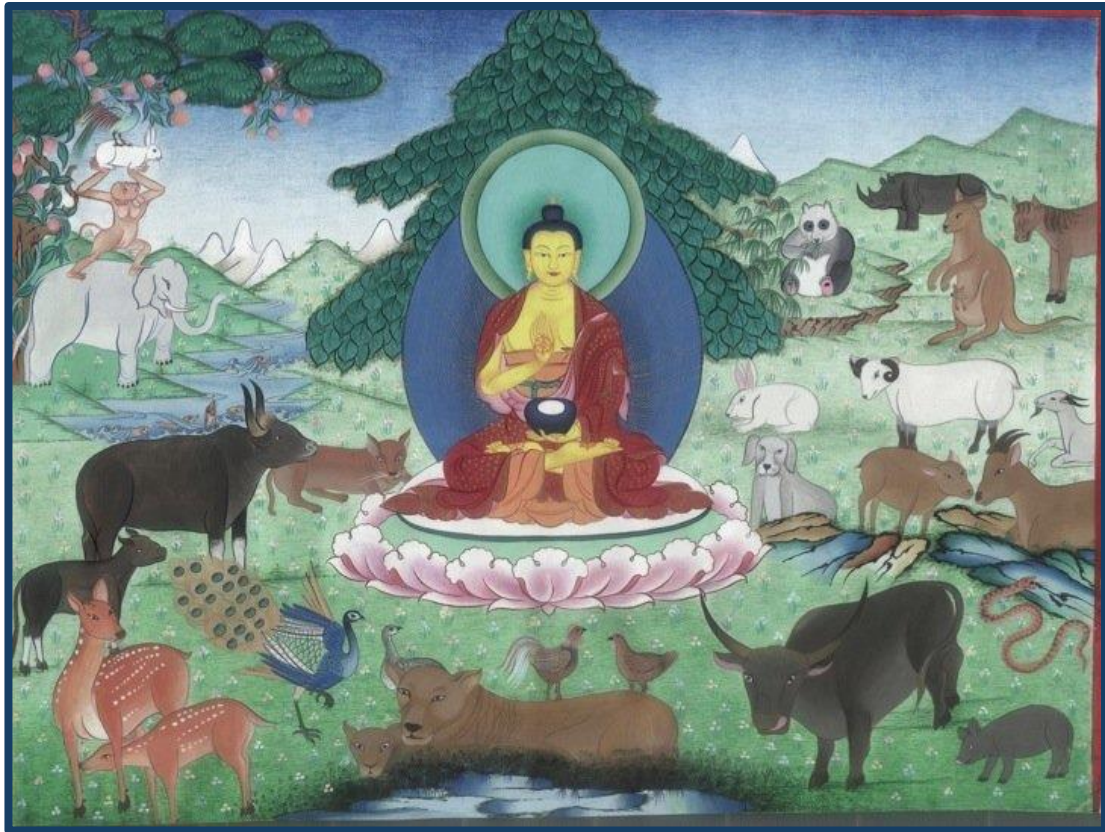


Plate 22- Tibetan art incorporating animals and the Buddha.

Source: Jangsa Animal Saving Trust.

Karmic Calculations in Veterinary Euthanasia

Buddhists, including Buddhist veterinarians, develop narratives and cultural strategies to manage the cognitive dissonance that arises from euthanising or otherwise killing animals while adhering to their beliefs. Some of these strategies are flexible. Most involve calculations of karma, or the Economy of Karma. For example, I know pregnant Buddhist veterinarians involved in street dog desexing programs who choose not to spay pregnant dogs during their pregnancy. Their reasoning was a simple karma calculation. They believed that the karma of causing a mother dog to lose her puppies could lead to the veterinarian losing her own pregnancy.

Some involve more complex calculations and rationales understood through the Economy of Karma. The net outcome of karma associated with euthanising rabid dogs involves many complicating factors. Rabies is deadly to infected animals and humans. The Dalai Lama granted veterinarians like me, working in street dog programs,

permission to humanely euthanise rabid dogs for two surprising reasons. The first is for the future life benefit of the infected dog. By euthanising them, we prevent that dog from biting other animals and humans, thereby stopping the spread of rabies and saving lives. Euthanasia (a *dikpa*) prevents rabid dogs from accumulating negativities from killing, which benefits their future lives and enhances their long-term welfare from a Buddhist perspective. Fortunately, it also aligns with veterinary welfare goals to reduce suffering in the present.

The second reason relates to reducing the veterinarian's buildup of negativity (*dikpa*) from euthanasia. The Dalai Lama advised that veterinarians should perform euthanasia with an altruistic motivation. Compassionate killing, which considers the dog's welfare, sacrifices the veterinarian's future positive outcomes for the benefit of the sentient being. If done mindfully, the resulting altruism and compassion can lessen the negativity associated with killing and, as a result, reduce the accumulated negativities. Buddhist prayers and blessings can also support the future welfare of the animal that was euthanised, while helping to mitigate the killer's karma. In an extreme interpretation, one Australian Buddhist veterinary colleague pondered that she should deliver all the euthanasias in her clinic because she alone understood this philosophy and could perform the prayers that influence the future lives and long-term welfare of the animals that she euthanised. This way, she could also mindfully and compassionately help her colleagues avoid the negative karma from killing. Through this, she could improve both the dogs' and the other veterinarians' future welfare. Like this example, the Economy of Karma can be understood in countless ways.

Euthanasia disputes were common when international veterinary volunteers worked with Asian veterinarians in street dog programs. Both sides thought the other inhumane. International veterinary volunteers in India wanted to euthanise many animals they believed were suffering unduly, while Indian veterinarians thought that euthanising the animals was premature or unnecessary. They argued that the animals would prefer to be alive rather than dead and that euthanasia could ultimately increase the patient's suffering after death if they were reborn in a lower realm.

I observed a shift in both worldviews over time. The local veterinarians we collaborated with began analysing the extent of intractable suffering in the cases they handled, gained access to humane euthanasia methods, and raised their euthanasia

rates. Occasionally, animals were quietly euthanised after dark. However, they informed others that the animals had mysteriously died overnight from natural causes, thus removing the stigma associated with killing in an Indian or Buddhist community. In contrast, long-term international veterinary volunteers euthanised fewer animals upon returning home, somewhat altering their worldview regarding life, death, and killing. Concepts of animal welfare are also contested in trans-cultural contexts and influence euthanasia decisions and practices.

Animal Welfare Constructs in a Trans-Cultural Context

Comparisons between different cultural constructs of animal welfare highlight the difficulty bioveterinary science has of mapping onto local Bhutanese culture. Bioveterinary medicine describes animal welfare by focusing on an animal's immediate physical and behavioural needs—this life's welfare. The RSPCA has simplified this into the five freedoms: freedom from hunger and thirst; from discomfort; from pain, injury, or disease; from fear and distress; and the freedom to express normal behaviour (RSPCA 2021). While animal welfare science is more detailed than this, the core principles are the same. A standard view in veterinary circles is that animals are better off dead than suffering unnecessarily or facing the prospect of suffering. Examples include euthanising stray dogs, animals with paralysis needing extensive care, or elderly animals with urinary incontinence or dementia. This view is so ingrained in Euro-American society that it influences laws to support early humane euthanasia. Veterinarians in Australia also have the duty to euthanise healthy animals if owners do not want them, and to euthanise animals whose owners cannot or will not pay for simple treatments, like a puppy with a broken leg. Though upsetting to some, these practices are regular in veterinary clinics and follow techno-scientific standards of animal welfare.

Buddhist communities have different concepts of animal welfare, combining Buddhist teachings, karma, and beliefs in past and future lives with local spiritual traditions. These ideas were outlined earlier in this section and the Introductory Chapter. To summarise, Buddhist cosmology sees animals as sentient beings that experience rebirth, cycling through six realms of existence. This cycle is shaped by karma, cause and result, which shapes the future well-being and lives of the collectives, groups and communities.

One interpretation of karma in this context is that a person's current suffering results from past negative actions, whether in this life or previous ones. One must purify this karma by going through the suffering, allowing the seeds or imprints of the negative actions to ripen, and, therefore, run their course. In Vajrayana Buddhism, it is also possible to purify or cancel negative karma through specific rituals and practices, such as *tshethar*. For example, saving another life can generate enough positive karma to counteract the negative karma affecting one's life. However, if an individual dies without facing the consequences of that karma (positive or negative), it will carry over into the next life. Therefore, from a Buddhist viewpoint, one concern with euthanasia for an animal's overall and long-term welfare is that, even if the animal is suffering now, ending that suffering prematurely means it will carry that karma into its next life and face it again.

Another related issue is the unknown destination of an animal's rebirth within the six realms of Buddhist cosmology. Therefore, immediately after death, the animal may descend the karmic ladder and be reborn into a hell realm, where it would face significantly greater suffering than it currently experiences. This outcome is seen as more likely when negative karma remains unresolved in the current life and is abruptly ended by euthanasia. Some of that karma lingers and will resurface in future lives. If this future suffering were known to occur, even from a bioveterinary animal welfare perspective, euthanasia that increases an animal's suffering would not benefit that individual. The cosmological idea of suffering and karma extending to future lives is a foreign notion in Euro-American culture and in bioveterinary science, which typically dismisses any explanation for life, illness, and health that is not physical. Euro-American animal ontologies that determine bioveterinary beliefs indirectly imply that an animal's consciousness and ability to perceive suffering are tied to the body and do not persist after death.

Welfare-directed euthanasia in Buddhist communities is problematic and has serious consequences for the person performing the act of killing. The karma linked to killing is considered one of the heaviest within Buddhist doctrine. It is believed that veterinarians gain negative karma even when they carry out humane euthanasia. Although killing animals attracts less karma than ending human life, it is still a *dikpa*, a harmful act with negative future effects for the person involved. As previously mentioned, professions involving killing are seen as unvirtuous.

As a result, the person performing euthanasia might risk their social standing within a Buddhist community. When I first started working in Himalayan and Indian communities, veterinarians rarely euthanised animals. This pattern was not limited to Indian Buddhist and Bhutanese communities. Japanese veterinarians often avoid euthanising pets due to their culture and religion (Sugita & Irimajiri 2016), preferring palliative care for sick and dying animals. As Barbara Ambrose (2012, p.48) notes, Western views tend to prioritise the quality of an animal's life, whereas Japanese perspectives often focus on the duration of life, sometimes sacrificing quality. Vajrayana Buddhism also emphasises the importance of a long lifespan for future benefits in life.

What these various Buddhist traditions share is that killing animals is always seen as a harmful and unvirtuous act that results in negative future consequences for the person who kills. The next section looks at cultural narratives of collective, or national karma, and other strategies and narratives used by Buddhists and veterinarians within Buddhist communities to navigate the tension they experience as Buddhists when killing animals.

Collectivising Karma

Any group of people brought together by virtue of their membership in a political unit or even simply their shared exposure to a political, economic, or environmental event are there due to their collective karma (Locke 2021, p.314).

The laws of karma, dependent origination, and concepts of collective or national karma drive dominant discourse on Buddhist animal ontologies. These theoretical arguments also support the religious nationalism movement's anti-slaughter, *tshethar*, and GNH narratives, as Buddhist expressions of the national Bhutanese identity.

Collective karma refers to how sentient beings create common future outcomes from the collective karma generated by moral and ethical behaviour within groups, whether they be families, local communities, or nations. As a result, sentient beings experience the same world similarly through their collective karma. Dasho Karma Ura, the architect of the Gross National Happiness framework, describes collective karma in the following way.

By recognising the true nature of interdependence, one can see that all *Karma* is collective, that all enlightenment is collective, and therefore that happiness and

the policies required to promote it must be oriented toward collective achievement (Ura 2012, cited in Givel 2015, p.16).

Collective karma can be consciously created through group participation in merit-making activities such as prayer rituals, meditation, or, in this case, rejecting slaughter and performing *tshethar*. A group's intentions and actions are positive or negative karma, which is amplified by political decisions on a larger scale. Individual karma is also at play, and karma calculations account for both the quantity of individual and collective karma resulting from our actions towards others in the Economy of Karma model. "Theorising collective karma places us within a web of mutuality—the irreducibly interconnected, "in-it-together-ness"—that is our social life" (Locke 2021, p.318). These relationships and karmic meshwork extend to all future lifetimes, further magnifying the long-term effects of karma beyond our current life.

The anti-slaughter movement uses collective or national karma to promote the negative consequences for Bhutan, and its citizens, should they endorse killing within the country. The philosophy dictates that any collective, and hence, political decision to embrace animal slaughter would magnify the karma of killing, affecting all of Bhutan, not only those who perform the killing. Put another way, a group's moral consensus affects all members of the group. As such, these concepts form part of the nation-building narrative that promotes Buddhist ethics and moral laws as the modern Bhutanese identity. This ongoing public discourse drives religious and public protests against the DoL and its activities involving animal killing, like stray dog population and rabies control, and slaughter for food production.

Collective karma was also used to initiate national meat ban days. Bhutanese Buddhists are taught that the effects of good and bad karma are amplified on cosmologically auspicious days and months. Therefore, the effects of positive activities like *tshethar* are multiplied many times, while the effects of negative acts like slaughtering animals are similarly multiplied. Therefore, the nation's collective karma is protected by banning the slaughter and sale of meat on these karmic multiplying days.

Cultural Modes of Resistance

As long as people consume meat, it is the government's responsibility to ensure food security. Therefore, if there are importers, we must facilitate them. Similarly,

if there are producers, we must facilitate them, however, in order to respect the sentiments of our religious institutions and those who do not support the production of meat, the government is not forcing individuals to open farms. (Lyonpo Yeshey Penjor, Minister of Agriculture and Forests in Yuden 2021).

The cultural politics associated with the anti-Buddhist behaviour of killing disproportionately affect Bhutan's veterinary regimes. The DoL and BAFRA are the only government departments engaged in animal production and slaughter, which are considered anti-Bhutanese within national identity politics (Miyamoto et al. 2021). Therefore, Bhutan's veterinary services straddle two models of good Bhutanese citizenship. In the first model, they serve the state by implementing policies and practices outlined by their ministry and the hegemonic discourses of Eurocentric capitalist livestock development. On the other hand, they are subject to the political ideology of the nation-state and its promotion of a Bhutanese national identity based on the religious ethics of Buddhism, which also represents a hegemonic discourse and an alternative form of one-worlding.

In this section, I draw on ethnographic research to show how dominant and competing discourses on GNH, livestock development, Buddhist ethics, and Bhutanese national identity impact Bhutan's veterinary regimes. Community resistance to the rising rate of animal killing takes several forms, the most visible being the meat ban dates, *tshethar* practice, and anti-slaughter protests. This resistance directly impacts veterinary regimes reshaping them to a particular Bhutanese version. Tensions emerge when these two single-optic views engage in zones of contestation and negotiation, often over animal ontologies and veterinary livestock development.

The Meat Ban- The Middle Way?

I think if a poll on the world's biggest hypocrites was taken, then we Bhutanese would feature somewhere at the top. I say this because of our senseless policy of meat bans during the so-called 'holy months' and our general attitude to meat (Tashi 2015).

In 2001, the DoL amended its Livestock Act to introduce regulations prohibiting animal slaughter, meat import, and sales on certain days and months corresponding to auspicious dates in the Buddhist calendar. These included the first and fourth months of the Bhutanese calendar, the 8th, 15th, and 30th of the remaining months, and other scattered dates. This became known as the 'meat ban' on dates associated with the Buddha and other Buddhist saints like Guru Rinpoche. Banning the import and

sale of meat on these multiplying days is believed to improve Bhutan's collective or national karma through the Economy of Karma calculations.

During the meat ban dates, meat shops are closed, supermarkets are prohibited from selling meat, and no meat is imported from India or from animals slaughtered inside Bhutan. BAFRA monitors the shops and the border for illegal imports and sales. Implementing the meat ban may have been an effort to demonstrate models of good citizenship and placate the clergy. It could also be understood as a form of ontological resistance to that promoted in animal production. Miyamoto, Magnusson and Korom (2021, p.129) suggest that when Buddhist practice and doctrine affect the state and its legal systems, like the *tshethar* and meat ban regulations, it fosters a "homogenous sense of national identity that is simultaneously both ethnic and religious." It is another example of the inability of Eurocentric veterinary regimes operating in a Buddhist Kingdom to fully meet the needs of the community. Meat ban amendments to the livestock regulations became a particularly Bhutanese expression of animal husbandry policy and veterinary regimes.

Despite the meat bans, the Bhutanese found ways to continue consuming meat. They stockpiled it in fridges and freezers in the days and months leading up to the ban dates. In fact, department statistics indicate that more than twice the usual amount of meat was sold before the ban month (Tashi 2015), resulting in an overall increase in the number of animals slaughtered compared to what would have occurred without the ban dates. "Before the meat ban months, all villagers from eleven districts line up at the meat shop. Indian's hike up the price, but we Bhutanese don't care. They fight over the meat, it is crazy," said Dorji, a livestock officer working in the border towns.

At first glance, this seems contrary to the anti-slaughter objectives of Buddhist narratives, paradoxically increasing killing by creating a vacuum in the market. When I asked Lama Kunzang about this, he presented the situation framed as a karmic calculation:

Even if more animals are killed, they are not killed on the auspicious days. If they were killed during *Saga Dawa*,⁷⁰ for example, there would be thousands or

⁷⁰ An auspicious month in the Vajrayana Buddhist calendar celebrating the birth, enlightenment, and death of the Buddha.

millions times more karma from killing in this holy month. So, we are protecting Bhutan's future by reducing the collective karma in our country.

The Identity Politics, Ethics, and Welfare of Slaughter

As a result, most of Bhutan's meat is still imported from India, which increases the rupee deficit. This is not a recent situation, but it has grown exponentially with demand. Older Bhutanese recollect travelling to Kalimpong in India when they were younger, to procure meat for the family's annual rituals. The meat is now produced in illegal Indian slaughter grounds near Bhutan's southern border, hastily formed in forests and other hidden areas. Indian animals from West Bengal and neighbouring states are taken long distances, often on foot, to these private slaughter grounds. Bhutanese animals also find their way here, according to a livestock officer from a border town, "there are lots of traders here in the border areas. They fill up trucks with unproductive animals and drive across to India where the animals are slaughtered. Then they bring the meat back to sell it here."

As veterinary professionals trained in animal welfare science, welfare is part of a veterinarian's duty. My colleagues in the DoL and BAFRA were also very concerned about the lack of animal welfare and oversight in these illegal slaughter grounds that lack procedures, monitoring, or hygiene practices. Animal welfare practices associated with modern humane slaughter are similarly lacking, such as stunning, which renders animals unconscious before they are killed.

Once slaughtered, the meat is loaded into meat trucks and driven across the border, where BAFRA inspectors must check it for health and hygiene. Not all meat is caught in the BAFRA net. Some meat vendors might elude the inspections, and many private citizens also cross the border to buy cheaper meat in bulk. "I think the national meat import is double," explained the same border town livestock officer. "People from the border areas drive into India to buy their household meat here."

Another important aspect of a veterinarian's education and duty in state veterinary services, like Bhutan, is veterinary public health. Poor hygiene, meat contamination, and inferior meat quality pose health risks to humans, such as tuberculosis, food poisoning, and parasites. Veterinarians are trained to ensure that meat processing facilities meet minimum standards, and that modern, hygienic, humane slaughter systems are put in place. But any attempts to establish official,

regulated slaughterhouses were blocked by national religious sentiment and the monastic body.

Thinlay, a senior colleague at the DoL headquarters neatly summarised the unique dilemma DoL personnel encounter.

When I am at work, I must follow my duty to my King, government, and country. I am employed and paid by my government, so I have a responsibility to do my job well. That means helping my country to reach food self-sufficiency. I try to separate my work and personal life, though. When I am at home, I can follow my Buddhist practice and pray for those sentient beings. I don't feel bad towards the lamas who criticise us, their job is to teach Dharma. Our job is to feed people and follow our government's policy.

Other department staff held divergent views. "The religious body should do their own work, and let us do ours," exclaimed Tsering, a district livestock officer in a northern, primarily Buddhist area. "They shouldn't consume meat if they are preaching no killing. As it is, if we don't offer meat at *lochod* [*lo mchod*, annual rituals], the monks won't come back next year!"⁷¹ He continued to describe his perspective on Bhutan's meat paradox. Tsering spoke of the last decade's increase in unproductive abandoned livestock wandering the streets and forests because farmers are afraid to sell them in case they are killed.

"Before the religious influence, every family kept one to two pigs for *lochod*. This has stopped now. Also, farmers are afraid they will be caught if selling animals for slaughter. That's why many farmers keep unproductive stock in their herds, sometimes up to 40% of the herd is unproductive, but it costs farmers to keep them. They consider it as *tshethar*. But then the productivity and profit for the farmer is reduced. There are just too many animals because farmers won't kill them or sell." Thinlay estimated that only 10% of the farmers in his district will sell cattle to a local trader for slaughter.

Thinlay had also analysed the DoL activities in this context and offered his interpretation:

The department hasn't thought through the long-term solution. They are only trying to educate to cull. But it's not working. They have to think of another strategy. Also, these megafarms will price out local farmers. They only think of

⁷¹ *Lochod* is the annual house and community rituals each family must perform. It is an important part of Bhutanese culture and social cohesion. See Ulrike Čokl's (2018, 2023) work for more information.

the rupee crunch, not long-term sustainability. Meat production is sensitive here. We must find a balance between compassion and production. It is difficult, but somehow we have to do it. I don't endorse these large-scale industrial farming, megafarms. We should just produce what we need locally. Many farmers are willing to do this. It's better if each house produces what they need.

In a contrasting viewpoint, Dorji supported megafarms. He was a livestock officer from a southern border area where megafarms and intensive farming are promoted and socially accepted. Dorji described the changing village demographics brought on by education and development that contribute to declining food production. Educated youth don't return to farms in his area, he said. They move to Thimphu searching for employment, causing a labour drain in rural areas and a different type of meat paradox.

"Our meat consumption is increasing the more people urbanise, but there is less labour to farm and produce meat, and more elderly on their own. We have a dependency on India for food now," Dorji continued.

"Therefore, we strategically target these southern areas here because there is no religious objection to megafarms and killing. Also, chickens, fish, pigs and goats are killed daily on local farms everywhere and we don't hear any objection to that," he shrugged, looking slightly frustrated.

"When I go to my village in the north, I can only talk about dairy. I can't speak of pigs, chickens and killing as they will object because of religious sentiment. So, I have to speak strategically depending on the location and religion."

Dorji had strong opinions about the monastic body and religious sentiments. "The religious body shouldn't interfere in government and policy. We are working for the government and have to do our duty," he explained.

"If we are doing *dikpa*, then it is the religious body's job to eliminate our *dikpa* through prayers, *rimdro*, and mantras. They are living in a comfortable, nice house, so this is their job," he argued, animated by his convictions.

"I am Buddhist and vegetarian, but I think the government should take charge of slaughter. Our economy is down and we have a rupee crunch. If we culled every unproductive animal, we could feed everyone," Dorji continued. He described the way animals are currently slaughtered on the farm or in secret.

"It's cruel, its torture. We need to look at the welfare, not just saving lives," he sadly shook his head. Animal welfare around slaughter practices in Bhutan is marginal, with only 17% of farms using pre-slaughter stunning to minimise pain and

distress, and most techniques used were strangulation, stabbing pigs in the chest or cutting cows throats to bleed out (Dorjee et al. 2025). Dorji then described the complex socio-political environment in Bhutan.

“Bhutan is a democracy, but politicians don’t want to go against the religious body or support killing. We can’t have economic development without livestock development and killing,” Dorji concluded.

DoL personnel like Dorji and Thinlay have to balance competing demands as diligent and productive government employees while also aligning with a Buddhist national identity and its ethical prohibitions against killing. They hold and move fluidly between both views, modifying and moulding situationally to a hybrid identity, employing animal ontologies at times bioveterinary or Bhutanese, or both. As Dorji and other veterinarians have said, when they are in their villages, they don’t mention livestock production work for fear of condemnation. But in the office, productivity targets are celebrated and endorsed.

Veterinary regimes have often tried to promote the multiple benefits of a modern slaughterhouse for both animals and the meat-eating public, but with limited success. This has been included in plans to expand intensive livestock farming, megafarms, and to repurpose existing facilities that are currently unused.

Community religious objections blocked these intermittent attempts to improve the slaughter situation. The most prominent and contentious of these was the Samrang megafarm projects with its meat processing unit in Samdrup Jongkhar (Zangmo 2015, Dema 2017, Wangchuk 2017). This megafarm, developed by the DoL with funding from the Government of India, occupied 800 acres with plans for a fishery, piggery, heifer farm, buffalo farm, broiler farm and a goat farm.

A slaughter facility was also rumoured to be planned for Serbitang, near Thimphu, in 2015. Many community leaders and organisations, including JAST, Lama Kunzang, the Je Khenpo, and even international animal welfare groups like the Brigitte Bardot Foundation led the protest, which raged in the media, social media and in parliament.⁷² The Druk Chirwang Tshogpa, a political party at the time, vocally

⁷² Official letters were sent to the Prime Minister and the Minister of Agriculture and Forests.

objected to what they claimed were ministry plans to establish this rumoured slaughterhouse.

The discourses in the media neatly summed up the links that, in the public imagination, connect Buddhism to anti-slaughter, to GNH, to a Buddhist form of Bhutanese national identity that doesn't kill animals (The Bhutanese 2015). The Druk Chirwang Tshogpa party claimed Buddhist values underpin GNH, which aims to balance material development and spiritual wellbeing. They then associated Bhutan's values and principles with Buddhist concepts of compassion for all sentient beings and interdependence.

In this context, the PDP government's plan to start slaughterhouses in the country is a massive blow to the noble principles that have shaped and [molded] our nation. The government's plan has shocked and deeply distressed the people of Bhutan (The Bhutanese 2015).

National Bhutanese newspaper headlines like the following examples summarise the heated public debate about animal slaughter and slaughterhouses: "The meaty slaughterhouse debate" (Dema 2016), "DCT says any plan to start slaughterhouse is a slap on GNH" (The Bhutanese 2015), "No slaughterhouse, govt. clarifies" (Dema 2015), and "Mega farm is not a slaughterhouse: agriculture minister" (Dema 2017). Miyamoto, Magnusson and Korom (2021, p.137) summarised this controversy more extensively, where the prime minister rapidly changed discourses about a slaughterhouse and megafarms as emotional public sentiment to the plans turned against the ministry. The debate over these DoL projects raged until 2017 when it escalated to a parliamentary debate. The DoL department heads, directors, and ministerial leaders were called to defend their projects. The Minister of Agriculture and Forests demonstrated his frustration when he said that he would be very happy if the population decided to become vegetarian and didn't need meat. "We are not so interested to do this job. We are doing it because it is our responsibility" (Lyonpo Yeshey Penjor in Dema 2017).

Another earlier project of the DoL was similarly affected by public resistance. It did not involve a slaughterhouse as such but used a facility as a staging location for slaughter. In 2005, the DoL established a bull rearing facility where farmers could send unwanted bulls (Samdup et al. 2014, p.12). They aimed to depopulate livestock and reduce grazing pressures in the villages by removing non-productive animals (Miyamoto 2015). Community pressure prevented the farmers from slaughtering

their own bulls and other unproductive animals, leading to a gradual increase in their numbers. The DoL facility could hold 70 unproductive bulls at a time, from which butchers would procure and slaughter them inside Bhutan. This project continued for five years before closing in 2010 due to public resentment to slaughter (Samdup et al. 2014).

Many of my colleagues expressed frustration over the impossible task of achieving their production goals while balancing public opinion.

“Bhutanese want to eat, but they don’t want to kill. How do they expect us to ensure their meat is safe if they won’t let us control the slaughter,” explained one frustrated colleague. “Then they complain to us when there is no meat at market, or the meat is spoiled,” she continued. While veterinary personnel are directly affected by this contradiction, they are not the only ones who recognise it. There is ongoing, and extensive public debate on the issue, as Bhutan’s media reported regularly (Choki 2022, Kuensel Online 2023, Tashi 2015). As a result, animals are still killed for meat in Bhutan despite public narratives of protest and distance from the act. They are simply not killed in state-sanctioned modern slaughterhouses.

The Karma of Killing at a Distance

Bhutanese facilitate their meat habits when veils of concealment and anonymity obscure killing, a hidden aspect of animal farming. While most meat is imported from India, up to 42% of chicken meat, 83% of sheep meat, 20% of pork, and 17% of the beef consumed is slaughtered within the country (RNRSCS 2015, p.38). A privately owned slaughterhouse was quietly opened in the early 2000s in Tsirang, central Bhutan, and slaughters local cattle. Public protests through the media and political bodies have failed to shut it down, and regular BAFRA inspections support its continuation (Dema 2020). All other animals are killed locally in secretive or concealed acts by farmers, herders, or others employed as slaughtermen. However, when the state veterinary regimes transgress the “nation-making project choreographed by the ruling élite” (Miyamoto et al. 2021, pp.131–135) by planning institutionalised acts of killing in a modern, hygienic, humane slaughterhouse, there is extensive public outcry.

While the collective or national karma discourses and debates over Bhutan’s national identity were used to stop the DoL’s humane slaughterhouse plans, expelling much of Bhutan’s killing to India also helped conceal or hide the act. When killing is

performed by the symbolic non-Bhutanese other, it facilitates a more spiritually sanitised meat for consumption.

Interestingly, minimising the slaughtering of livestock in Bhutan and expanding meat imports from India was legitimised as minimising sin. This, however, is nothing more than the externalisation or the outsourcing of sin, enabling the deepening of market dependence and lowering food security (Kobayashi 2020).

In Bhutan, the slaughterers are usually non-Bhutanese outsiders, such as Tibetan refugees, Muslims, Indian migrant workers, or unemployed Bhutanese from other areas, a symbolic ‘other’.⁷³ Farmers from non-Buddhist cultures (Nepali Hindu and Christian) are also ‘othered’ in Bhutan.⁷⁴ As they face fewer religious and cultural prohibitions on slaughtering, the DoL often targets their livestock development efforts in *Lhotshampa* areas, like intensive industrialised animal farms and megafarms. These intensive farms produce large numbers of animals, especially smaller animals like chickens and fish, which are typically killed onsite. The byproducts of the animal production industry are also processed locally. These include male chicks killed at birth, older chickens whose egg productivity has declined, male cattle, and unproductive dairy cows. This is not unique to Bhutan; it occurs in animal production farms globally. However, there is very little public discourse about these mass killings in Bhutan.

Bhutan engages in “hidden transcripts of concealment and obscurity” that Miyamoto et al. (2021, p.138) described when discussing those anonymous Bhutanese individuals who secretly slaughter animals. ‘Meat processing unit’ is another term often found in reports about intensive animal agriculture like megafarms, as is ‘harvest’ when describing fish farms. Listing production targets in terms of kilograms or tons of meat and litres of milk removes the association with the animal that died to produce those products from its body. Although these animal

⁷³ Bhutanese pastoral slaughter practices and cultural strategies facilitating this process have been described by other authors, for example, Miyamoto et al. (2021, pp.131–135) and Dorjee et.al. (2025).

⁷⁴ Research from other areas has drawn comparisons between the ‘othering’ of animals and humans as tools of settler colonialism, nationalism, identity politics, systemic violence, and patriarchal capitalism, marginalising vulnerable communities and exploiting their labour (Pachirat 2011, Kim 2015, Doron 2021, 2023, Narayanan 2018, 2023a). A critical analysis of this situation in Bhutan is warranted.

production terms are not unique to Bhutan, they help conceal and distance the consumer from the realities of animal utilisation and suffering.

In addition to concealment and distance, several of my respondents suggested an alternative driver for why Bhutanese are consuming more meat. Some farmers and herders reported that their urban relatives requested them to send meat from their herds. It was also noted that the demand increased the longer their relatives lived away from their villages.

“Ever since Pema moved to Thimphu, he forgot we have to kill these animals to send him the meat he craves,” one herder remarked. “They forget the animals. Don’t know them like we do, so it makes it easier to eat more meat,” he continued.

The discussions continued, suggesting urban dwellers had become distanced from the realities of animal rearing and slaughter. They lost their sensitivity to the suffering of the animals and to the herders who must kill to produce the meat their relatives consume.

“We know the yak since birth. We have names for them, as if family,” another remarked. “They only see the meat on their plate, not the animal who died to give them that meat. We see that, not them. We have to do the killing, a *dikpa*,” he continued, neatly encapsulating the multiple designations of animals and their sometimes-contested ontologies. In this case, one as a sentient being measured in individual lives and another as a unit of production measured in kilograms of meat.

The herder’s observations are supported by research showing Bhutan’s urbanites consume more than double the amount of meat (77%) as rural people (33%), reflecting a wealth and resource disparity (Dawa 2014). This disparity could be attributed to several factors, including the availability of meat shops and higher incomes in urban areas. While Bhutanese research on this topic is lacking, global studies have shown that the main drivers of increased meat consumption are income per capita and the rate of urbanisation (Milford et al. 2019). However, in Buddhist communities, soteriological arguments may support another discourse that facilitates meat eating.

“The animal was not killed by us, and we did not ask the slaughterers to kill that animal. That’s why there is no sin,” rationalised one Thimphu shopkeeper. This is one iteration of a common Buddhist argument based on the three kinds of pure meat the Buddha allowed in monastic rules. Monastics, who at the time begged for their daily

meal, could only eat meat when they hadn't seen, heard, or suspected that the animal was killed for them. That is, as the anonymity of the slaughter and the slaughterer increases, the psychological barrier to eating meat decreases (Miyamoto et al. 2021, p.137). However, many past and present Buddhist teachers advocate that a strict vegetarian or vegan diet is the only correct interpretation of Buddhist doctrine, especially in the modern industrialised animal production industry.⁷⁵

Is Vegetarianism the Answer to the Buddhist Meat Paradox?

"The reality is people are against slaughterhouses, but they love meat and this is where the problem lies," said the Agriculture and Forests minister, Lyonpo Yeshey Penjor, urging the monastic body to discourage people from eating meat (Dema 2015).

The Je Khenpo, Lama Kunzang, the Minister for Agriculture and Forests, and other political, spiritual, and community leaders emphasised that vegetarian awareness campaigns might solve the meat paradox.

"What we must do is convince people to renounce their meat eating, and the meat ban days help promote this idea. Eventually, the people will find they don't need as much meat," explained Lama Kunzang. He continued listing the current JAST activities he was arranging.

"We are travelling around the country on a nationwide vegetarian campaign. We show everyone film footage from inside slaughterhouses. Bhutanese are, first of all, Buddhists," he said, emphasising the connection between Buddhist culture and compassion for animals.

"Once they see what they are doing when they eat meat and how much suffering the animals have, they will understand."

Many JAST members and volunteers accompanied Lama Kunzang on this tour, where they presented day-long talks, videos, and theatre performances to communities, schools, and monasteries. These and other JAST members are young, technically savvy, proactive campaigners who follow Lama Kunzang diligently. They embrace social media and modern media broadcasting methods. Their YouTube channel features many professionally produced short documentaries on Lama

⁷⁵ For example: Karmapa (2015), Gaerrang (2016), Padmakara (2008), Barstow (2017), Stewart (2015).

Kunzang's and JAST activities. They directly link saving animals with preserving the nation, that is, the Dharma kingdom. Continually repeating the phrase 'the dharma kingdom' provides another example of religious nationalism. By associating *tshethar*, anti-slaughter, and vegetarianism with this dharma kingdom, they frame these activities as critical components of Bhutanese national identity, further emphasising their religious nationalism. They are directly opposed to bioveterinary development that undermines this national Buddhist identity, such as intensifying livestock production. As an example of this rhetoric, the following caption came from a JAST YouTube video. It describes a video that documents cattle rustling in Bhutan, a growing issue where cattle are stolen and transported illegally into India for slaughter.



Plate 23- Lama Kunzang Dorjee talking to school children during the Jangsa Animal Saving Trust national vegetarian awareness campaign.

In the long run, as instructed by His Holiness the 70th Kyabje Je Khenpo and Lama Kunzang Dorjee Rinpoche - founder of Jangsa, the most efficacious way to stop such cases [cattle theft and slaughter] was for all Bhutanese to adopt a vegetarian diet or to eat less meat.

This is in keeping with the compassionate core and non-harming principles of a Dharma Kingdom - that is currently under attack by the dark consumerist and overwhelming materialistic forces of the contemporary times.

Save our animals.

Save our Dharma Kingdom (JAST 2023).

The JAST national vegetarian tour was greeted with mixed feelings. I accompanied them in eastern Bhutan, where the local schools had brought their students together for the day. Parents and community members were also watching, taking advantage of the social opportunities that the gathering provided. Many were grateful to have an audience with a Buddhist teacher of high status, Lama Kunzang, who had come to their town. Others were concerned about the impact of viewing such graphic slaughterhouse violence on the younger students. Towards the end of the day, Lama Kunzang made a public call for attendees to take a dharma vow to abstain from meat for a period that ranged from once a week to lifelong. Many excited and emotional students were caught up in the moment, with several taking lifelong vows.



Plate 24- Students signing the vegetarian pledge during the Jangsa Animal Saving Trust national vegetarian awareness campaign.

A teacher near me said she had seen such vows being taken before. “They don’t last long when the students get home,” she explained. “Either their parents don’t agree, or won’t prepare separate meals, or they just leave the meat out and don’t find alternate ingredients and the students get sick.” She mentioned this concern, which

other members of the DoL had shared with me. “If JAST are wanting real change,” she said, “they need to stay here longer and teach the parents and children about nutrition, protein, and how to have a balanced diet for growing children.”

Malnutrition, especially in children, remains an emotive topic in Bhutan. Studies show that 21% of rural households are affected by poverty, compared to 1.7% of urban households (Wangdi 2010, p.76). This poverty is one of the underlying causes of malnutrition, often stemming from an unbalanced diet. Therefore, as a key objective of the state, the GNHC and its development plans tasked the DoL with food security projects in rural areas to increase animal-based protein intake, such as dairy, eggs, and meat, as a means to lift rural communities out of poverty and malnutrition (Wangdi 2010, p.77). However, despite the DoL’s programs, and vegetarian campaigns like the JAST national tour, Bhutan’s meat imports and consumption continue to rise.⁷⁶

Conclusion

Bhutan has rapidly transitioned from small village farms with the occasional slaughter towards larger, industrial, intensive farms that sell their ‘harvest’ to meat shops. By further removing themselves from the whole process, the urban consumer is protected from the un-Bhutanese activities of animal killing and violating the Buddhist three-fold meat purity doctrine. They do this via concealing, obscuring, and externalising slaughter as the ethnography in this chapter analysed. This has actually increased meat consumption. The increase, in turn, drives more *tshethar* activities and anti-slaughter protests, resulting in Bhutan’s meat paradox.

These anti-killing narratives apply to other animals closely associated with humans, especially dogs. The example of stray dog killing for population and rabies control exemplifies similar hegemonic discourses at work. However, instead of food security, the bioveterinary approach follows international veterinary public health protocols to kill infected and in-contact dogs. Community resistance to both dog and livestock killing is driven by a competing, but alternative hegemony that functions as a one-worlding process in Bhutan’s eco-social environment— Buddhist ethics,

⁷⁶ JAST is just one organisation promoting a vegetarian and vegan diet. Another is Jangsem Monday, part of the global Meatless Monday movement, and others.

religious nationalism, and *tshether*. These take the form of vegetarian and anti-slaughter movements, and meat ban days. I have demonstrated how these religious and cultural practices have been veterinated through inclusion in the state's veterinary legislation, acts, and policy documents. They are now subject to biocontrol and biopower through the state's veterinary regimes. These veterinary regimes are sandwiched between state directives and community resistance, having to negotiate the tension over contested claims to animals' bodies, lives and afterlives.

Livestock development in Bhutan is not a diametrically opposed relationship between the state and the local recipients of development. It intersects with multiple actors and discourses where it is formed and contested by different sections of society. Bhutan's veterinary livestock development process exhibits similarities to what Kabzung Gaerrang observed in Tibet, where "multiple agents with different interests and cultural agendas vigorously debate their visions of development in contemporary [Tibet] through the question of slaughter renunciation" (Gaerrang 2015, p.930). Through the ethnography in this chapter, I have analysed several of these agents and their agendas, which could be framed as intersecting and contested one-worlds. Due to their hegemonic status in public discourse, these main debates form a single-optic focus, leaving no room for alternative proposals. As such, Bhutan's pluriverse of animal ontologies are in some ways sidelined and marginalised by the most vocal groups.

These agents and debates affect how Bhutan's veterinary regimes respond to geopolitical concerns regarding rupee deficits, trade with India, growth, affluence, food security, and self-sufficiency. Religious and cultural concerns are challenging to balance alongside animal production and conservation. As a result, the veterinary personnel are equally praised and criticised for their efforts to achieve this balance. Personnel in the DoL and BAFRA must simultaneously embody competing versions of Bhutanese national identities. That of the good government employee serving their King and country, and that of the dedicated Bhutanese citizen complying with Buddhism's ethical and moral discourse. This problem is unique to these state departments due to their work promoting animal production and killing in a democratic Buddhist kingdom. The next chapter continues to explore these themes, focusing specifically on the network of veterinary regimes, livestock development, and the Buddhist animal liberation practice of *tshethar*.

Chapter Four- Animal Release- a Buddhist Antidote to Killing

“The souls of all sentient beings are interwoven through numerous births and rebirths in the samsaric world. We should show all animals gratitude and respect through compassion and sympathy” (Lama Kunzang Dorjee in Tsem Rinpoche 2011).

This chapter uses ethnographic vignettes of the impact on state veterinary regimes of anti-slaughter and Buddhist animal liberation activities to illustrate the internal and external conflicts faced over animal killing. These animal liberation activities and anti-slaughter movements can be framed as a Buddhist one-worlding process. They are also understood as ontological resistance to the other, more standard one-world version of bioveterinary livestock development. These narratives reveal key dilemmas that arise when Buddhist animal ontologies intersect with Eurocentric bioveterinary animal ontologies. Community-led resistance to DoL’s promotion of intensive animal agriculture shows how conflict can result from competing animal ontologies. These tensions illustrate how development and society are reshaping Bhutan’s veterinary regimes and how, in turn, these regimes are veterinising society, transforming animal bodies, human-animal relationships, market economies, the environment, and Bhutanese socialscapes.

Ethnographic examples of animal release or *tshethar*, a Buddhist religious practice, are analysed in this chapter using the Economy of Karma model in the context of anti-slaughter narratives. The Economy of Karma calculations expand to include the *gewa* associated with saving lives. I propose that the state’s bio-surveillance and biocontrol of this religious practice resulted from a complex meshwork of forces shaping the bioveterinary regime's animal ontologies, and that anti-slaughter and *tshethar* could be interpreted as ontological resistance.

Biocontrol and *Tshethar*

Aum Tsedrum was in a state of despair.⁷⁷ “They want us to buy the bullocks tomorrow”, she cried. “But we don’t have the money yet!” She was referring to local livestock traders selling the large bovines for slaughter. As a well-known and

⁷⁷ (*am*- honorific term for a woman)

influential member of JAST, Bhutan's most prolific *tsokpa* (tshogs pa- community organisation) devoted to *tshethar*, Aum Tsedrum was often targeted with phone calls like this. "They are blackmailing us, giving a high rate because they know we will pay to save the animal's lives", she continued. She began a series of phone calls to supporters and religious leaders to find the required funds before the deadline, or the death line in this case.

Three days later, Dilgo Kyentse Yangsi Rinpoche arrived and along with Lama Kunzang and their monks, settled into their rituals while the hum of their chants filled the air. Five newly purchased bullocks, the subject of these *tshethar* prayers and rituals, were tethered in front of them in Aum Tsedrum's grassy backyard. Volunteers from JAST hovered around, keeping the lucky animals from eating Aum Tsedrum's prized flowers. In long, intricately woven *kiras*, Bhutanese women served butter tea and snacks to the monastics while a handful of *tshethar* donors joined in chanting mantras, blessing the bovines. With a final clang of cymbals and piercing trumpet sounds, the ceremony was suddenly over. Yangsi Rinpoche blessed the participants of both species with water from his ritual vase and handed red braided threads from his small ceremonial table to the more nimble and strong volunteers. These young men tied the red threads to the ears of the newly liberated animals, signifying they were not to be captured, killed, or used for production purposes from now on. They then loaded the restless bullocks onto trucks to transport them to their new home at a sanctuary halfway across Bhutan.

Tshethar, the ritual of freeing lives, is a common practice across Buddhist Asia.⁷⁸ This practice has been recorded in the literature and performed across Asia for centuries, and also now by Buddhist students globally. David Holler (2002, pp.208–213) neatly summarises the history and textual origins of this group of Buddhist practices, focusing on the Tibetan context, both in texts and contemporary practice. *Tshethar* is an umbrella term for all animal release or liberation practices, but several distinct sub-practices exist (Holler 2002, p.208, Tan 2016, pp.4–5). These include purchasing an animal destined for slaughter and freeing it; liberating one's animals

⁷⁸ For a comprehensive analysis of what 'life' means in this context, see Gillian Tan (2016, pp.7–8)

that are destined for slaughter; dedicating one's animals to local deities, freeing them from domestic duties and eventual slaughter; and as a substitute for animal sacrifice.



Plate 25- Dilgo Kyentse Yangsi Rinpoche leading *Tshethar* rituals with Jangsa Animal Saving Trust, Thimphu.

Motivations for *tshethar* vary from gaining *gewa* or positive karma, acting out of compassion, a long-life practice for oneself or another to avert sickness and premature death, propitiating a local deity, and accumulating wealth. The standard Buddhist soteriological understanding is that by extending an animal's lifespan, one accumulates sufficient similar merit to prolong one's own life, thereby avoiding obstacles such as sickness and accidents. Prescriptions for *tshethar* as a medical treatment can also be found in traditional Tibetan medical texts (Schuetze 2012), highlighting the personal health and longevity benefits that can be achieved.

Tshethar is also performed to model good Bhutanese citizenship and a distinct national identity as a manifestation of religious nationalism. Miyamoto et al. (2021, pp.126–127) argue that through “a political turn in nation-making, where Buddhist doctrine is promoted as the unifying principle of modern Bhutanese national identity”, *tshethar* is a “conspicuous example of how religious doctrine serves as a framework for the political ideology of the nation state and for the construction of national identity”. Together with GNH, these, in turn, influence its government and legislative systems. The nationalist movement functions as a one-worlding force, homogenising human-animal relationships within the framework of Buddhist ethics and identity. Several authors have recorded and analysed the Bhutanese practice of

tshethar from different disciplinary perspectives (Chophel et al. 2012, Gohain 2023, Miyamoto et al. 2021, Tshewang et al. 2021b). I am focusing on how this religious and cultural practice has impacted Bhutan's veterinary regimes.

"When I was young, we ate less meat. Not many animals were killed for meat, and so we had no need for much *tshethar*," reflected Aum Dolkar, a senior octogenarian member of the *tshethar* group. "Now we have to do more and more [*tshethar*] because people are eating so much meat. It is not our tradition, our Bhutanese culture to kill so many animals," she continued. Aum Dolkar described slaughter as anti-Bhutanese and *tshethar* as good Bhutanese conduct. Like her, other *tshethar tsokpa* members reported that the increase in Bhutanese meat consumption, with its associated animal production and slaughter, has led to a recent rapid rise in *tshethar tsokpas* and activities.

Tshethar's popularity has created complications for Bhutanese state veterinary regimes, the peak bodies responsible for animal health and disease control. Despite good intentions, animal release rituals can be harmful in some situations, affecting not only the animals but also the humans involved, the environment, and potentially spreading diseases and invasive species (Awoyemi et al. 2016, Everard et al. 2019, Liu et al. 2012, Smyer Yü 2023). Globally, individuals or groups release livestock, chickens, fish, wild birds, crabs, lobsters, turtles, and even insects and worms. Bhutanese, however, mainly release chickens, fish, goats, sheep, cattle, and yaks. Chickens and fish are sometimes purchased from wet markets over the Indian border and transported back to Bhutan for release. Larger livestock are typically purchased from farmers, herders, slaughtermen, or traders. After being blessed, *tshethar tsokpas* may transport the livestock over long distances across Bhutan to release them into forests or rangelands, where they are expected to fend for themselves. Some are housed in animal sanctuaries or pasturelands with designated caretakers. Individual practitioners might purchase smaller numbers or just a single animal to keep at home or with their herds.

The recent surge in *tshethar* activities means that problems associated with relocating large numbers of animals to new areas has become hard to ignore. Importing live animals from India spreads diseases to both humans and animals, and is illegal without the proper permits and health inspections at the border. Transporting and releasing livestock over long distances into forests or rangelands

has caused conflict with local herders and farmers in those areas (Nima 2021). The sudden arrival of new livestock has increased pressure on forest resources, disrupted ecosystems, often provided an easy meal for predators, and heightened human-animal conflicts when hungry livestock raid village crops (Yuden 2020b). There were also welfare concerns when released domesticated animals were not provided with safe transport, food, water, and shelter (BAFRA 2023). These issues all fall under the responsibility of Bhutan's veterinary regimes.

I discussed these concerns with a revered high-ranking Vajrayana Buddhist monk, Dilgo Khyentse Yangsi Rinpoche, as we sat on cushions in Rinpoche's Bhutanese audience room. Rinpoche often performed *tshethar* rituals, sometimes collaborating with JAST. He was renowned throughout Bhutan as a great master who consistently engaged in these acts of compassion. His authority extended across Bhutan and the broader Vajrayana cultural areas. He was also renowned globally, and his activities were widely publicised in international Buddhist circles. The *tshethar* rituals, an integral part of his role as a Buddhist leader, were profoundly symbolic and imbued with spiritual and moral authority. This authority transcended borders—international students often funded the *tshethar* rituals. While interacting in these Buddhist circles, I often heard criticism of the DoL's livestock production programs.

As a veterinarian who could see both Buddhist and Euro-American veterinary concepts of welfare, I explained to Rinpoche how the DoL understood the veterinary version of welfare. I stated there were issues with releasing *tshethar* livestock, domesticated animals, into forests to fend for themselves. Rinpoche became quite stern with me and said, "If you were on death row, wouldn't you wish for just one more day of life? Wouldn't you cling to your life as the most precious thing you possess? Just like that, these mother-sentient beings treasure their life as precious. They do not want to die. So even if they are in the forests, it is better for them than being dead." He further summarised the future life benefits for the *tshethar* animals who had longer lives and were blessed by the *tshethar* rituals, providing opportunities to purify their negative karma and contribute to future life welfare. He didn't address the DoL's animal welfare concerns in this life, suggesting instead that future life welfare is more important.

For the reasons discussed earlier, government agencies such as the DoL and BAFRA have criticised the unregulated and unmanaged practice of *tshethar*.

Consequently, through its veterinary regimes, the state conducted stakeholder workshops and drafted specialised rules, regulations, and protocols to govern and standardise *tshethar* (BAFRA 2021). It also required that *tshethar tsokpas* obtain specialised livestock permits to oversee and manage the transport of *tshethar* animals within the country. *Tshethar* organisations must also register as charitable organisations with the RGoB and be subject to governmental oversight, auditing, and monitoring. This scenario is unique to Bhutan, where religious practices and hegemonic Buddhist discourses have impacted veterinary policy and regulations. The practices are subsequently regulated through veterinary biocontrol.

Biopower- *Tshethar*, Chickens and Bird Flu

State veterinary regimes have transformed, or veterinised society, through processes of veterinary biocontrol and biopower, like the *tshethar* example above. In a related veterinary example, Bhutan's chicken breeds, eggs and chicken *tsethar* are the result, and also the cause, of a network of interrelated processes and one-worlding forces.

“We have the *tshethar tsokpas* to blame and to thank for becoming self-sufficient in eggs, actually”, a veterinary colleague explained. “While trying to save animals’ lives, they caused many of Bhutan’s backyard chickens to be killed to stop the infection spreading”, she shook her head, contemplating the irony. Like her, many veterinarians believed that the highly pathogenic Avian Influenza virus was transported from India into Bhutan with Indian chickens smuggled for *tshethar* rituals.

“Many people would drive across the border and buy chickens and fish from the market. They hid them in their car, brought them back to Bhutan and released them locally. That is how we tracked the first bird flu case to Chukka, near the highway from India”, she continued. This conversation was introducing the complexity and circularity of animal health ecologies at the intersection of society, religion, and veterinary regimes.

Avian influenza is a highly pathogenic zoonotic disease and a threat to human life. Therefore, following state and international protocols of biocontrol, all sick birds, as well as thousands of in-contact poultry, were killed (Marinova-Petkova et al. 2016, p.2137). This chain of events, the rapid slaughter of a majority of Bhutan’s domestic

poultry, many of whom were indigenous breeds, provided an opportunity to repopulate with more highly producing commercial strains. In doing so, the DoL changed chicken bodies to a new 'improved' model.

My DoL colleagues took pride in their poultry and egg production achievements. During the bird flu outbreak, the state temporarily banned the import of poultry and eggs from India. However, the public demand for eggs continued to grow. The outbreak facilitated the political will, support and resources to rapidly accelerate the egg production programs, achieving 100% self-sufficiency in egg production by 2012. Eggs were no longer imported, relieving pressure on the rupee deficit, and enough were produced within the country, relieving pressure on market economies. The DoL personnel seemed relieved they could achieve state-mandated self-sufficiency in at least one aspect of their work in animal production.

Over the last few decades, successive stages of poultry improvement programs were implemented to increase chicken meat and egg production. Poultry were part of the move towards intensifying industrial animal farming methods, aiming to increase domestic food production (Samdup et al. 2013). The DoL imported and bred higher-producing exotic chicken breeds from other countries. The goal was to transition from backyard, subsistence, free-ranging, native poultry flocks to intensive, enclosed, exotic chicken breeds with higher productivity, which were supplementary fed. The population of these 'improved' chickens, as they are often labelled, rose by 235% between 2005 and 2009, competing with the native village chickens (Tamang 2011, p.14).

Villagers, however, mostly still preferred indigenous chicken breeds in small backyard systems. These birds were more culturally accepted for use in rituals, such as the annual house rituals (*lochod*), considered more nutritious, especially for pregnant women recovering from childbirth, and were easier to rear (Dorji & Dorji 2015, Gyeltshen et al. 2012, pp.133–134).⁷⁹ The local breeds were also better adapted to the environment, could range freely, and scavenge for feed.

Despite this preference, the DoL drove a progressive uptake of commercial, intensive poultry farms for egg and meat production, providing incentives for farmers

⁷⁹ This preference has also been noted in India where similar trends of industrial poultry farming have been seen (Doron 2023).

who adopted these introduced breeds and housing systems. The imported 'improved' breeds were less adaptable to Bhutan's environment and were unsuitable for traditional farming systems in extensive environments. They did not readily survive wandering around the village and forests by themselves, unlike indigenous breeds, and required housing and supplementary feeding, thereby tying farmers into a capitalist economy, similarly to the cows described in Chapter Two. The result was a decline in indigenous poultry (Wangmo 2022), just like the indigenous cattle breeds are declining due to DoL and Forestry policies and development programs, outlined in Chapter Two.

Introduced poultry breeds may have higher production rates, but Bhutan's indigenous breeds are more adaptable to climate change, the most recent and urgent environmental crisis. Changing climates are identified as one of the key upcoming challenges to the resilience of Bhutan's smallholder farmers. With a new awareness of the changing Himalayan climate and after observing the declining numbers of indigenous breeds in the early 2000s, Bhutan's veterinary regime became concerned. As a result, efforts to conserve these valuable Bhutanese genetic resources began. The goal of increasing production and profitability was now tempered by the need to address future challenges, such as climate change and global disruptions to the animal feed supply chain. In a policy flip, some farmers were encouraged to return to rearing traditional breeds (Tenzin et al. 2023), and the DoL launched a native poultry breeding and conservation program in 2018 (Namgyal 2020).

Veterinary policies and practices regarding chickens have therefore undergone several changes over the last four decades. This was initially in response to the need to increase domestic food production and security. Then, the zoonotic risk of avian influenza threatened human health and food security and was complicated by religious practices like *tshethar*. The policies changed again in response to changing climates, threatening human food security anew. Therefore, over a few short years, Bhutan's veterinary regimes responded to a complex network of events that affected animal, human and environmental health. Hegemonic discourses of Eurocentric bioveterinary science form state livestock development, food security, and zoonotic disease control policies in Bhutan. These are not static, however, and need to respond to new and emerging eco-social factors, like climate change, as well as Buddhist one-worlding power.

These entanglements exemplify how Bhutan's unique veterinary regimes have adapted due to the dense network of intersubjectivity in this Himalayan Buddhist kingdom. They also demonstrate the effect of veterinary regime's biopower on animal bodies and farmers' lives.

State veterinary regimes of biopower have transformed Bhutanese animal bodies. They have also transformed farmers' relationships with those animals, daily village routines, traditional farming systems and their use of the natural environment. This veterinisation is evident in most species involved with Bhutan's animal farming systems.

Lama Kunzang and Pig *Tshethar*

Backyard and commercial pig rearing and anti-slaughter are another example of the impact of Bhutan's culture and religion on veterinary regimes.

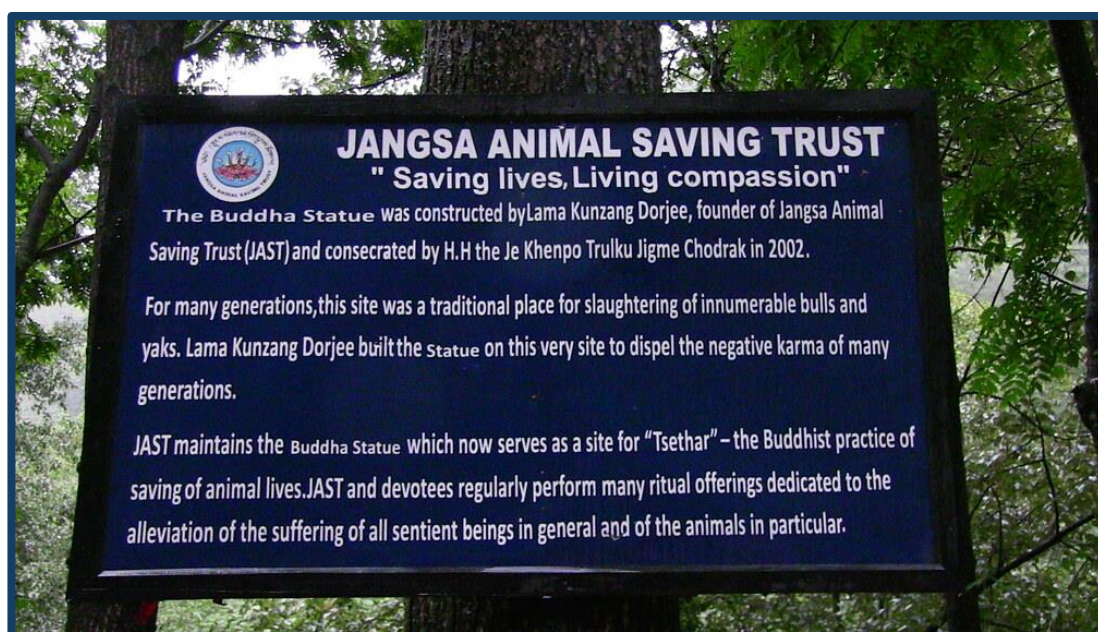


Plate 26- Jangsa sign near the Buddha statue constructed on top of the old slaughter grounds.

Lama Kunzang proudly showed us the large Buddha statue he constructed in 2002 at the site of an old slaughter ground. This small, damp clearing in the jungle had witnessed the slaughter of thousands of animals that went to feed the Bhutanese appetite for meat. This was one of his first victories over the increasing meat-eating habits in his country. "By erecting this statue and holding regular pujas here, we are working to reduce the negative karma of those who slaughtered animals. And those who bought the meat and ate it. And to create positive karma for the poor frightened

animals who were slaughtered in this place, and blessings for all animals everywhere”, he explained. “It is also a reminder for everyone driving past this place that they shouldn’t kill animals or eat meat.”

The events at Lama Kunzang’s monastery in Kalimpong that led him to form the Jangsa Animal Saving Trust (JAST) have been recorded elsewhere. It is almost mythologised in its retelling across Bhutan and internationally (Miyamoto et al. 2021, pp.123–125, Thinley 2012, Tsem Rinpoche 2011). His tale is reminiscent of *namtar* (*rnam thar*, hagiographies), Tibetan enlightenment parables, or the *Jātaka* tales that include the good deeds of animal liberation or animal rescue in the lives of the Buddha. Lama Kunzang related the episode to me:

Five bulls escaped the slaughterhouse in Kalimpong and sought safety in my monastery. They were captured by the slaughtermen but escaped three times again, seeking refuge at the *gonpa*. The poor bulls knew they were to be killed and were afraid for their lives. With tears in their eyes, they refused food and drink until I bought them from their captors. They knew of the Buddha Dharma from past lives and that the *gonpa* was where they would find safety. How could I not have pity for them in their torment?

Along with *tshethar*, JAST also campaigns vigorously to promote vegetarianism, runs an animal shelter in Thimphu, a mobile animal ambulance, assists the DoL in dog desexing drives, runs a large shelter for stray dogs, 23 *tshethar* animal compounds across the country, and campaigns for the improved lives of animals in Bhutan on many issues. Letters from Bhutan’s highest spiritual authority, the Je Khenpo, and Bhutan’s Queen Mother validated the events, provided support, and increased the social capital of Lama Kunzang’s activities and his organisation (Tsem Rinpoche 2011).

Lama Kunzang and Bhutan’s Je Khenpo, his relative, have often collaborated to promote vegetarianism and reduce animal slaughter, ritual sacrifice, and other animal-killing activities in the region. These two monastics hold much social capital and religious power in Bhutan, together broadcasting the dominant discourse of Buddhist animal ontologies. Their activities have effectively changed how animals are treated in Bhutan and impacted Bhutan’s veterinary regimes due to the state’s role in animal husbandry.

Lama Kunzang showed me the rescued pigs in their pens at the JAST shelter near Thimphu. The large animals snuffled and grunted as they ate. Their soft snouts poked

through the bamboo struts of their pens, looking for more of the tasty vegetable treats we were feeding them. Lama Kunzang and JAST care for many pigs like these nationwide, donated as *tshethar* animals by local families. Bhutanese traditionally reared two to three backyard pigs per household to slaughter for their annual house blessing rituals. During the annual rituals, many neighbours, family and friends visit the house where monastics and spiritual practitioners conduct ceremonies to bring good health, prosperity and harmony to the household (including animals) and local spirits. The best food and drink, traditionally including meat and pork, should be offered to those conducting the ceremonies and visitors. As Lama Kunzang and the Je Khenpo travelled the country, teaching villagers and farmers about the dire karmic and future life consequences of animal slaughter, many renounced their pig-rearing activities. Lama Kunzang proudly stated that he had helped stop backyard pig farming in the country.



Plate 27- Tsethar pig at Jangsa animal shelter enjoying a pat.

Ironically, these spiritual leaders' pig liberation activities were part of a collection of modern changes that contributed to the DoL increasing intensive pig farming ventures within Bhutan. "We tried to follow Je Khenpo's advice. We turned vegetarian and no longer offered meat at our *lochod* (annual house rituals). But when people heard there was no meat, they didn't come!" lamented Dolkar, a villager from western

Bhutan. “So the next year we served meat again and everyone turned up.” I heard versions of this story several times. The social cohesion of *lochod* and other similar cultural practices is challenged when society fails to attend, driving a return to the previous meat-based menus. Government statistics show an annual increase in pork and other meat production since JAST and the Je Khenpo began their campaigns (see . The increasing demand for pig meat and the lack of backyard pig production led to a demand in the market that the DoL was under pressure to alleviate. In response, they planned to establish megafarms and to increase the number of small commercial pig farmers.

The DoL therefore walks a delicate balance between the demands placed on society by the religious authorities (reducing animal consumption and stopping slaughter) and the state’s demands (increasing animal production and reducing meat imports from India).

The Minister for Agriculture and Forests, Lyonpo Yeshe Dorji, expressed frustration over the public’s expectations that the DoL accomplish both contradictory objectives simultaneously. He represented his ministry in parliament and the media regarding this complicated situation. He often told the media that he would be very happy if Bhutan’s people said they would stop eating meat. “The reality is that people are against slaughterhouses, but they love meat and this is where the problem lies” (Lyonpo Yeshe Dorji in Dema 2016).

In pursuing its state-mandated programs to increase domestic animal production, the DoL provides incentives, start-up funds, equipment, feed, and seed stock (young animals) to farmers interested in developing animal farms. In the case of pigs, these are usually structured as more modern, intensive pig production units. Many Bhutanese took advantage of these development initiatives, especially those from lower socio-economic demographics or those who cannot utilise other income streams like government employment and tourism. Hindu and Christian communities were often more ready to undertake intensive farming and animal killing. Unlike their Buddhist neighbours, they did not face religious obstacles to these professions. This led the DoL to promote intensive animal farming in these communities more often due to the greater uptake. However, some Buddhist communities did start, and then subsequently reject, pig farming due to the physical and spiritual polluting effects. Trashigang in northeastern Bhutan was one of these.

Trashigang is an area of Buddhist pilgrimage containing many sacred sites, temples and religious relics. In the early 2000s, the DoL assisted in implementing several pig farms in the area with local farmers. After a few years, these farmers closed, selling their pigs to *tshethar* groups, Lama Kunzang, or the market. Complaints from the community about the effluent and pollution were among the reasons. Spiritual pollution, with the resultant pressure from community and religious leaders, was the other reason. Local leaders informed me that they had held several meetings of the local government regarding the issue. They decided that, as Trashigang was an important Buddhist region, pig farming was inconsistent with this, and they asked the farmers to stop. Messages of support and financial assistance from JAST, the Je Khenpo and other religious leaders helped convince the farmers to change (Administrator 2011). Some became vegetarians, and one couple were employed to manage a *tshethar* pig shelter. Several community members emphasised Trashigang's Buddhist identity and their Buddhist national identity to me by retelling this story of the religious rejection of pig farming. They demonstrated their good Bhutanese citizenship by adhering to the moral framework of Bhutan's nation-making Buddhist practices.

Conclusion

The examples of Bhutan's state veterinary regimes described in this chapter demonstrate a unique veterinary identity that has responded to the transformative pressures of Bhutan's culture and religions. Here, rapid progress towards the development goals in food security and self-sufficiency clashes with Buddhist practices of *tshethar* and anti-slaughter movements. Bhutan's veterinary regimes transformed in response to these recent projects of religious nationalism that promote Buddhist non-violence as central to Bhutanese national identity and good citizenship.

The Economy of Karma calculations now include the *gewa* associated with saving lives. The ongoing Buddhification of Bhutan has strengthened Buddhist anti-slaughter narratives, affecting the country's veterinary regimes. The state's bio-surveillance and biocontrol of *tshethar* practice eventuated through a meshwork of these one-worlding forces. Veterinary regimes have incorporated *tshethar* into their rules and

policies, regulating and veterinising this area of Bhutanese spiritual and social worlds.

Bhutan's march towards the future has created a meshwork of material and spiritual changes, of cause and effect, that result in unpredictable outcomes for animals. Some factors increase meat consumption and animal slaughter, driving the DoL to programs that increase animal production in the model in which they have been trained. Other factors resist animal killing, the Buddhification and national identity politics driving more *tshethar* activities in response to this increased consumption and killing. Geo-temporal variations demonstrate this is not a consistent process, and as Chapter One described, the proportion of 'improved' livestock breeds and intensive systems of dairy and poultry farming is increasing.

Public debates about slaughter for meat dominate public discourse, forming a single-optic focus. They could also be interpreted as ontological resistance to the one-worlding of Eurocentric animal production. Public debate about killing dogs for population and rabies control resulted in similar protests. However, the silence on other, more hidden forms of mass animal killing is notable. Activities that protect against threats to human life, like the extensive chicken 'depopulation' that occurred after the avian influenza outbreak, are hidden in public discourse. The terminology usually applied to such programs, like culling, depopulation and biocontrol, is less inflammatory to Buddhist sensibilities than the language of killing or slaughter. It also serves to sanitise the act by making it sound more clinical or scientific.

The Buddhist rejection of killing is driving the current 'single-focus point' of public discourse in relation to animals. It is intertwined with concepts of collective, or national karma, and GNH. Despite Buddhist narratives of kindness and compassion for all sentient beings, the length of an animal's life is prioritised over its quality, or animal welfare. This is why *tshethar* is promoted over humane slaughter practices. In contrast, anti-slaughter and *tshethar* programs complicate the professional roles and responsibilities of Bhutan's veterinary personnel, many of whom prioritise and value animal welfare and humane slaughter.

These two groups, in their campaigns for animal welfare (this life versus future lives), can sometimes struggle with each other's perspectives or find a middle ground. Their own belief "illuminates but also obscures", resulting in "a posture of mutual disavowal – an explicit dismissal of and denial of connection with the other form of

injustice being raised” (Kim 2015, p.19). While Bhutan’s animal landscapes provide a compact case study of these processes, similar events are reported across the Tibetan cultural area, and in related ways in India.⁸⁰ National identity politics, often associated with animals, and debates over animal ontologies are found globally. A close ethnographic reading of the field through veterinary anthropology and animal studies research can contribute to analysing these issues, ideally illuminating without obscuring, providing a multi-optic focus and pluriversal perspectives.



Plate 28- Pig Tsethar pens at Jangsa animal shelter.

⁸⁰ Some interesting scholarship is emerging from India in relation to the Indian nationalism movement, the sacred cow politics, and the industrialisation of animal agriculture (Doron 2023, Narayanan 2016, 2018, 2023b).

Part Two: More-Than-Human Health Networks

Part One of this thesis explored the tensions arising within the milieu of Bhutan's Buddhist culture, livestock development, and state veterinary regimes. In Part Two, I expand on these themes in relation to yaks and their herders in northwestern Bhutan's high-altitude pasturelands.⁸¹ Initially, Chapter Five builds on the processes discussed in Part One— namely human-animal relationships, animal ontologies, and negotiations around these, animal production, and slaughter. This issue is especially sensitive in a society that is becoming increasingly Buddhist, with its ethical norms and national identity politics fostering anti-slaughter views and Buddhist animal liberation practices.

Remote herder communities are affected by these cultural shifts despite their geographical isolation. New communication technologies have facilitated the spread of Buddhism and its ethical norms, resulting in heightened religiosity in these isolated communities. In Chapter Five I illustrate these processes and the accompanying decrease in yak slaughter, through evolving human-animal relationships, social religiosity, and improved economic prospects. Consequently, herders embrace capitalist development, but also subvert it in culturally appropriate, strategic, and pragmatic ways.

Chapters Six and Seven continue in these alpine rangelands, turning now to the unique kinship relationships that exist within this multi-species and more-than-human world. These relationships are negotiated, mediated and performed within herders' sacred environment through culturally situated and embodied ideologies and practices of health. Herders' plural animal health practices include state-provided bioveterinary medicine, ethno-veterinary medicine, physical therapies, and ritual health practices. These are described and analysed, revealing notions of environmental agency, relationality, and a mutuality of health relationships. Herders engage in a complex interplay of alternative modes of knowledge, techno-scientific veterinary programs, and localised practices that illuminate eco-social health beliefs.

⁸¹ As discussed in the Introductory Chapter, there are many different terms for yak in local herder dialects. These are listed in Appendix Two.

Herders' ongoing anti-slaughter negotiations, adaptations, and culturally embedded strategies of care demonstrate their resistance to and subversion of the singular worldview of bioveterinary science and livestock development.

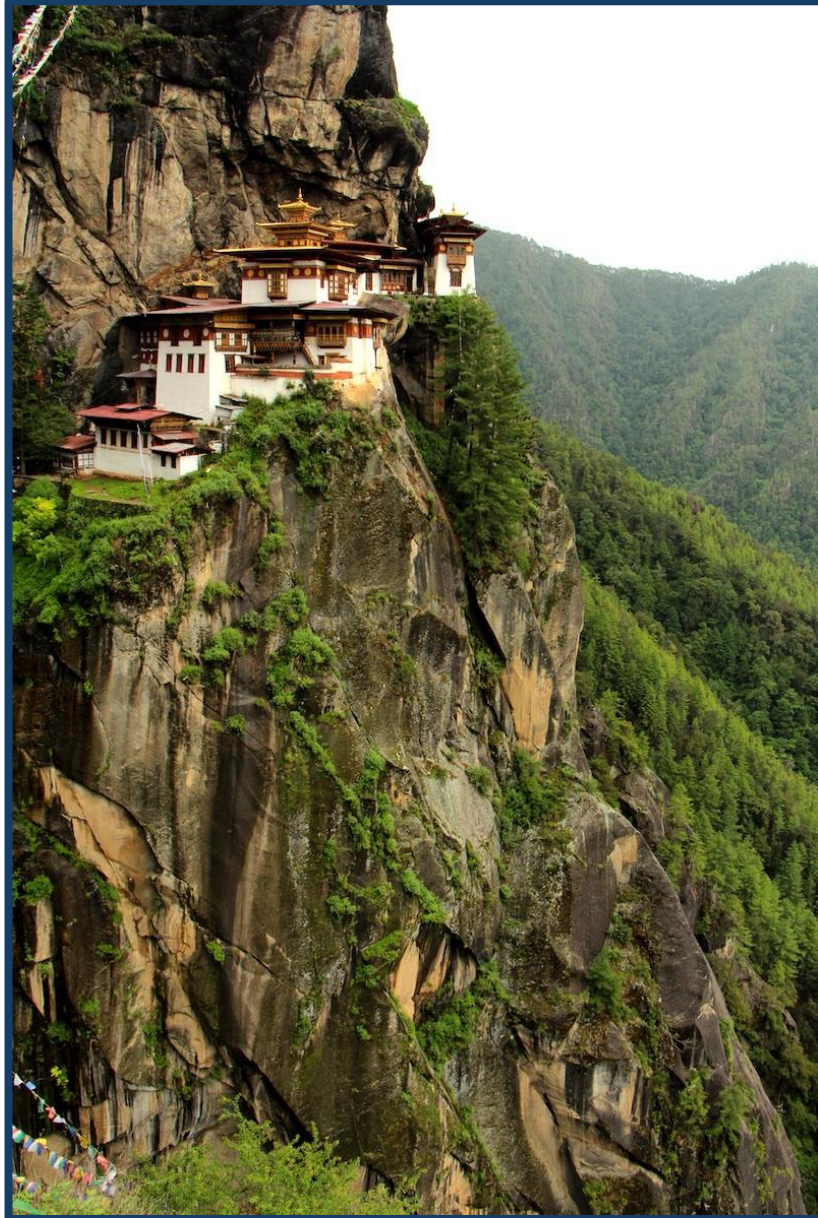


Plate 29- Paro Takstan: the Tiger, the Yogi and the Cave

Chapter Five- Contested Yak, Caterpillars, and the State

“You should stay in Dagala!” said Dawa, the DoL paravet helping me find a fieldwork location to research Bhutan’s yak herders’ traditional animal healing practices. “It is close to Thimphu, only a day’s walk, well, maybe two days for a *chillup* [*phyi glingpa*, foreigner]. We have good connections with the families. They also still make yak sacrifices to their livestock mountain deity, Aum Jomo”, he added. Going to Dagala sounded fabulous from the comfort of the Thimphu coffee shop, where we sipped our café lattes.

A few weeks later, I fondly thought about that comfortable dry cafe armchair as we walked up endless slopes to the Dagala plateau in torrential monsoon rain and mud. “It’s only a little further, Doctor-La,” Dawa encouraged me. The ponies I had hired to carry my belongings, camping gear, and food for a month effortlessly pushed past us while I stopped to take a deep breath. The blue-gumbooted, grinning, wiry Dagala men who owned the ponies strode up the hill as if it were flat ground and not a steep mountain path that rapidly rose over 1000m in elevation from the road where we had set out. They chatted, sang and laughed amongst themselves, spitting red *doma* juice over the bushes on the side of the track. They were enjoying the break from herding duties and the opportunity for cash income. They paused often, waiting for me to catch up while chewing dried yak cheese and eating their lunch of red rice and *ema datshi* from wooden bowls.⁸² The men had been collecting mushrooms from the forests by the trail for their dinner.⁸³

The clouds suddenly parted to reveal a spectacular landscape of ancient rhododendron and pine-forested hillsides below us. Their branches dripped with moss, and meadows were carpeted with soft ferns and dainty, colourful flowers. Clumps of waving purple irises crowded the banks of small streams that cut across the mountainside, newly engorged from the fresh rain. We were already above the

⁸² *Ema datshi* (*e ma dar tshi*, chilli cheese curry) is Bhutan’s national dish.

⁸³ This is matsutake mushroom land, the same mushroom as appears in Anna Tsing’s multi-sited ethnography, *The Mushroom at the End of the World* (2015), forming an coincidental intersection with my multi-sited ethnography of Bhutan’s veterinary regimes.

treeline. In the distance, I looked down to where the Thimphu and Paro valleys joined. I saw a plane circling to line up with the narrow Paro valley, making its final approach to the small international airport. I suddenly realised the aircraft was below us. I gasped in awe at how far we had risen from the valley since that morning. On the far side of that valley, snow-capped mountain ranges sparkled.



Plate 30- From Dagala across the Paro valley to Mount Jomolhari, Soe, Lingshi areas.

As we rested, Dawa pointed out the mountain's names and the deities that lived there on the border with Nepal and Tibet. At the time, I didn't realise I would have the opportunity to spend a few weeks with the yak herders scattered across those distant mountain slopes later that year. For now, I marvelled at the crisp view, experiencing a slight feeling of vertigo from the shimmering expanse of space in between me and the white jewelled horizon. Suddenly, the clouds rolled in again, blinding me to everything but the next few steps on the trail. I wearily resumed the slow upward plod, trying to keep my footing in the mud and stream crossings. I balanced an umbrella in one hand and a walking stick in the other, wondering why I ever thought Gore-Tex waterproof clothes would keep me dry in Bhutan's mountain monsoon, a vertical waterfall from the sky.

Dawa was one of many DoL paravets with whom I spent time. I came to Dagala with him and stayed because of his assistance and support. As a young paravet, Dawa enjoyed being in the mountains. He was often assigned on trips like this, accompanying me to my first field site and introducing me to the host family where I would stay. On this trip, Dawa carried a large backpack full of gifts for the host family and his veterinary supplies. He was to vaccinate Dagala's yaks against Foot and Mouth Disease (FMD)⁸⁴ while we moved between families and their herds.

We finally crested the last summit of our long day's trek. The grassy Dagala plateau, cut with small river valley systems, expanded to the horizon. Lakes glistened like amethysts in the distance, overshadowed by a crook-necked snowy mountain. "There she is," exclaimed Dawa. "That is Aum Jomo!" meaning the livestock deity who lives in the mountain and rules this land. "Now, look down there, Dr-La," he said, pointing to two long, low-set stone houses further down the valley from where we stood, still an alarming distance away. "That is Kinlay and Kardock's house. That is where we will stay. And that side of the valley is her family *tsamjo* (*rtsa jmo*, pastureland)," he finished. Despite my exhaustion, I appreciated the spectacular landscape that unrolled before me in emerald and blue, dotted with contrasting white and brown yak. I peered further up the valley and could see several other families' houses. We added a small stone to the cairn marking the path, muttered a prayer of thanks to the local deities for our safe arrival and stumbled on down the valley to my home for the next month.

In this chapter, I explore how herders from Western Bhutan, particularly the Dagala and Lingshi districts, negotiate and navigate the tensions of killing their livestock as Buddhists. I expand upon the cultural strategies that Buddhists use to navigate the cognitive dissonance experienced when they kill animals or eat meat discussed in Chapter Three and Four within the context of northwestern Bhutanese yak herders. Exploring herders' strategies to manoeuvre through the complexity of contested animal ontologies. In this process, herders continuously weigh the economics of this life versus future life benefits in terms of Economies of Karma. The ongoing Buddhification of Bhutan is increasing the permeation of Buddhist ethics and

⁸⁴ Foot and Mouth Disease, FMD, is an endemic, highly contagious viral disease of cloven-hooved animals worldwide. The DoL conducts extensive vaccination campaigns against FMD in Bhutan.

morality to the margins of society, like the high alpine rangelands. National identity politics and Buddhist anti-slaughter narratives similarly influence the herders with their single-optic views.

We Used to Kill Yak

“When we were young, we killed yak. Everyone did. Before, people were not aware of what is *gewa* and *dikpa* so they would kill animals,” explained Sonam, a Lingshi herder. “Now they know what is *dikpa* and *gewa* through Lam’s [*bla ma*-abbot, spiritual teacher] teachings, which they also hear on TV and radio. No one kills the yaks here anymore. Even if they want to kill the yak, no one is available to do that,” he finished.

Despite herders' complicated relationships with yaks, it is common knowledge that they do, or did, kill yaks. Variations in slaughter rates have occurred within the social context of increasing exposure to both market-based economies and Buddhist teachers and their rhetoric. Herding communities are rationalising decisions and economic priorities according to multiple logics, each of which is unique to that individual, but also connected to broader socio-economic and religious themes.⁸⁵ The DoL’s discourses promoting increased animal production that benefits the nation contradicts those of the anti-slaughter and *tshethar* movement that promote a Buddhist ethic-based national identity.

In recent years, due to the rising influence of the Buddhist clergy, fewer yaks are killed onsite, or at all. When sold for slaughter, more are sent to middlemen or meat shop owners for slaughter near the road heads or similar locations. It is also easier for a yak to walk to its death than for people to carry the yak meat to the waiting vehicle and market supply chain. When the yaks arrive at the road heads, there are no official yak slaughter locations or methods; they are often strangled or stabbed in the forest or other concealed locations. I was told many stories of yak slaughter like these that were concerning for Buddhist and bioveterinary welfare reasons. The herders

⁸⁵ Similar transitions have been reported in Tibet. See Kabzung Gaerrang (2011, 2015, 2017) and Gillian Tan (2017, 2018a, 2018b).

were also concerned, which perhaps in part, led to the first strategy they implemented.



Plate 31- A herder and her nor during the daily milking. The calf waits patiently.

Recently, herders have reduced the number of yaks they sell whenever possible. As marginal herders with low education and few resources, other opportunities for cash income are seldom available. Typically, yaks are sold yearly to cover expenses that support the whole herd, such as supplements and extra feed in winter. They are also sold to meet large or unexpected expenses like schooling and medical costs. However, DoL livestock records show yak production and sales are not increasing as the state planned. When the herders have other means to support themselves, they reduce or minimise the number they sell or stop selling completely. The plan to purposely minimise animal production to a minimal or no profit margin seems irrational in a Euro-capitalist economy. However, according to the Economy of Karma calculations, the reduced fiscal income directly leads to increased spiritual credits that will bring wealth in future lives. When a profit and loss balance sheet is extended over innumerable lifetimes, the decision to reduce killing now appears economically rational.

Lhakpa, a 63-year-old Lingshi woman explained, “Before, I used to sell yak because I faced difficulties in bringing up my children. Now the country is developing,

so I don't sell yak anymore. I get money for my daily expenses by selling *chugo* [yak cheese] and butter and charging the tourists for horses during trekking." Like Lhakpa, alternative income sources gave many herders the freedom to choose whether to continue selling livestock or not.

"I cry when the *nor* are taken away. The *nor* have tears in their eyes too. They cry out for me and their family as they are dragged away. It is too sad," said Aum Pema, with tears in her eyes at the memory. "But what else were we to do? Where else could we get money? Then Guru Rinpoche answered our prayers and provided *yartsa guenbub* [cordyceps]," she finished folding her hands into a prayer position, mumbling the Guru Rinpoche mantra to herself quietly. "Now, I am so relieved my *nor* can stay with me," she finished.

Lingshi herders are now allowed to collect and sell cordyceps and have also been collecting and selling medicinal herbs for decades. They also rent pack animals to tourists. These businesses generate significant income, making some families wealthy. Asha Lam, the monk at Lingshi Gonpa, has taken advantage of this fortuitous circumstance to extract Dharma vows from many local herders. They are not to sell any yaks for slaughter for five years. Many of the herders I interviewed were pleased they could accomplish this.

Other herders were less pleased. "It is all right for *Lam* sitting in his *gonpa*. He doesn't have to find money for his children, or to feed his *nor*," said another. "We herders have to sell yak, we have always done that. I know it is a *dikpa* and will harm my future lives. But when I am retired, I can go veg [vegetarian] and do *rimdro*. Then I can collect *gewa* for my next life," he finished, describing a lifestyle that herders often adopt when they retire. In fact, many of Bhutan's vegetarians are retirees who engage in spiritual practices (Lhamo 2011). Despite his challenging statement, DoL research shows the cultural pressure to stop killing yaks makes it difficult for herders to kill them (Wangmo & Norbu 2024).

Soe, a village in the valley near Lingshi, has fewer cordyceps and medicinal herbs, creating an interesting economic comparison with Lingshi. Herders from Soe have less economic flexibility to participate in a five-year vow like their Lingshi neighbours, so they relied more on yak sales for cash income. While I was in Soe, the council chairman was in negotiations with the DoL to establish a yak meat drying and packaging plant to enhance the marketability of yak meat for their community. It

would also prevent the need for a long journey by foot and hooves. When yaks from Soe are sold, they are herded down to Paro by a middleman, a long journey on foot, where they are slaughtered. The herders felt the yaks suffered a lot on the journey, and the middlemen reduced their profits. By killing and butchering them onsite, both the DoL and the chairman believed it would be more humane for the yaks, hygienic for those consuming the meat, and profitable for the herders. However, local religious objections to institutionalised killing meant the project never came to fruition.

Several intersecting factors of contemporary life have led to a decrease in yak sales and slaughter. The first is an increase in religiosity in remote regions. New communication technologies enabled the national Buddhist revival movement to spread by providing access to Buddhist teachings and teachers. More herders also travel to attend Buddhist events and talks, thanks to easier access as the national road network expands. In these ways, material development facilitates an increase in spiritual development. The religious nationalism movement spreads anti-slaughter narratives, preaching dire future life consequences. Pleading prior ignorance and a lack of alternative income strategies, many herders proudly announced their adherence to this new national identity, free from the stigma of killing. Mari Miyamoto (2015) noted that villagers in eastern Bhutan talk about practices of animal killing, as long as it was in the 'past', distancing themselves from practices contrary to Buddhist doctrine.

Phub Pem, a 48-year-old woman from Lingshi, recently stopped selling yak because she had enough income from cordyceps. She stated this was due to the Je Khenpo sending a *kasho* (bka shog- official decree) requesting Bhutanese to stop killing animals, and Asha Lam also advised against it. "Before we sold yak to Paro, we had no money and no choice but to sell them. It is a *dikpa*," she said, continuing with a frown. "The men would take the yak down themselves and exchange it for rice from people connected to the slaughterman. I was sad when selling the yak, as I raised them from small, like a child. But we had no choice. We had to sell every year, or we didn't get any money. We offered butter lamps at home for the *nor*; we couldn't do any bigger *gewas* at the big Gonpas. There is less *dikpa* now after not selling the yak; I am happier," Phub finished, sighing and picking up her prayer beads to chant.

Another Economy of Karma strategy is to perform spiritual practices dedicated to the yaks that are slaughtered. This is similar to the rabid dog euthanasia calculations I

described in Chapter Two. Several herders reported that they redirect part of the profit from selling the yaks to make offerings and light butter lamps at the *gonpa* for the future life benefit of those yaks. Kardok, from Dagala, said his family also sponsors spiritual practices such as *nyungney* (*snyung gnas*, purification practice),⁸⁶ and donates towards new *gonpa* buildings. This practice was also noted in eastern Bhutan (Miyamoto 2015). Along with the benefits to the yaks' future lives, this practice also mitigates the negative karma the herders believe they accumulate from selling the yaks. They are paying a form of interest on the profits they received from those yaks' lives to mitigate future life consequences of their lives.

Eating Meat with No Killing- a Meat Shangri-La?

The main problem with eating meat as a Buddhist is that animals are killed to produce it. If there were no killing, then there would be no problem. Lhakpa, Sonam, and several other herders I interviewed were vegetarian. “We do eat meat sometimes,” offered Lhakpa. “But from naturally dead animals. It is *dikpa* to eat meat because of the killing. But if we eat animals that died naturally, it is not *dikpa*. Asha Lam also eats the naturally dead meat.”

While driving back to Thimphu one afternoon, I saw a cow lying on the roadside at the base of a cliff. A couple was cutting the cow up and putting pieces into woven baskets and bags. I asked the vehicle driver what they were doing. “They are collecting the meat from the naturally dead animal,” he replied. “They can sell that meat for a good profit. Many people want to eat meat, but don’t want the *dikpa*. So, they prefer meat from animals that died naturally,” he concluded.

I often heard this phrase, ‘naturally dead meat’. Several herders mentioned that they dried meat from animals that died naturally and ate that instead of killing animals. Some people joked that a herder would call and tell people his yak was going to fall off a cliff next week and collect orders for naturally dead meat ahead of that unfortunate accident. One paravet even astutely wondered if herders were less interested in veterinary treatments for the yak because, if the yak died, they had a legitimate source of meat.

⁸⁶ *Nyungney* is a popular purification practice involving fasting, prostrating and praying to Chenrezig, the Buddha of compassion

The Ritual Economy of *Tshethar Karma*

Often herders prefer to sell to the *tshethar tsokpas* discussed in Chapter Four. “I don’t sell my yak for slaughter. If they are old, they stay in the herd and die of old age. Or I send them for *tshethar*,” said Sonam, a 58-year-old herder who earns income from collecting cordyceps in Lingshi. “The animals can’t speak, but they can see, think and have a mind like humans. I felt compassion for them.”

Dagala herders have to sell yaks for income more often, having no cordyceps or medical herb business to rely on, and less tourism. “I sell around three *nor* every year,” said Kardok. “When we kill for a living in a Buddhist country, it is a *dikpa*. But we have no other option. We cannot beg for our livelihood, so we have to sell, whether it is painful and a *dikpa* or not.” He continued, “when we sell to them [*tshethar tsokpa*], we get less, and it is hard to get the money. The *tsokpas* rely on getting donations. But when we sell, we aren’t looking at the profit, but with love and compassion for the animals. And it’s about the *leh* [*las*, karma].” He explained that they prefer to sell the yaks to *tshethar tsokpas* even though they receive a lower price than if they sold them for slaughter. In this case, Kardok’s karmic calculations involve a reduced profit in this life for an increased profit in the next life.

Another Soe herder, Dawa, explained that he performs animal saving himself, and doesn’t involve the organisations. “I was in Paro and saw five *nor* being sold to a slaughterman. I bought them and sent them back to the herds. I pay whatever they ask; somehow, I find the money. I asked my friends to keep them there as *tshethar*. I send money every year for them.”

Lhakpa, from Lingshi, had a similar story. “I do *tshethar*. I don’t sell the yaks down [to Paro for slaughter], I don’t kill them here. So, it is all like *tshethar*. I do not sell to any *tshethar tsokpa*, I just set them free in the forest, about three to four yaks each year. I make some prayers, tie a white *khartar* [kha tar- white scarf] on them and send them,” said Lhakpa, continuing. “When I was young, there was nothing much to eat, so we had to kill for meat. But now, since everything is available, I can release the yaks to the wild. The animals come back after *tshethar* about 4-5 times a month. I give them salt and send them back again,” she finished with a smile.



Plate 32- Kardock and Kinlay returning from the morning milking. They now have two hours of work to churn the milk to butter and make cheese.

Yak Versus Development

Herders have resisted state development efforts for similar reasons to those I described earlier: karmic calculations, Buddhist national identities, and compassion for their animal kin. They prioritise local ontologies in their pluriverses, despite what might be seen as efforts by the state to engage them in market economies. In neighbouring Tibet, yak herders fostered an alternative vision “based on their own understanding of the world and value system” that “contests and compromises capitalist development” as an alternate form of resistance to the colonising state (Gaerrang 2011, pp. 32, 41). The Bhutanese state, in contrast, sees its relationship with herders as benevolent and is mainly concerned with protecting their traditional lifestyles and herding lifeways. Several herders expressed gratitude to the King and state for providing permits to collect cordyceps, thus increasing their income and welfare, which provided opportunities to stop selling yak. They also generally have good relationships with the DoL’s paravets and veterinarians, relying on them for medicines, vaccinations, and other health care assistance where accessible.

The state gently encourages herders to increase production but respects their decision not to with good humour. This is reflected in the many publications that

resulted from DoL efforts to support their herding lifestyle.⁸⁷ This contrasts with transhumant cattle pastoralists, whom the state is actively discouraging from continuing their traditional herding practices and lifestyles. The additional support for yak herders may be political. Their remote borderland occupation indirectly guards Bhutan's northern border, forming a network of national border surveillance against intruders (Wangdi et al. 2023). Yaks and yak herding lifeways also serve to form Bhutan's cultural construction of Himalayan identity, the Shangri-la myth.



Plate 33- Butter churns, milk containers, stored cheese and other dairy in a Dagala house.

Most DoL personnel I worked with were respectful and admired herders' tenacity, resilience and rich culture. As fellow Bhutanese, they understood the contrast between Euro-American bioveterinary livestock production ontologies and the herders' pluriverse of high alpine more-than-human worlds. I believe my DoL colleagues understood the philosophical concept of the Economy of Karma, even though it was not discussed in these terms. This heuristic model is used here to understand how individuals and groups conceive of their relative economic and karmic calculations that drive rationales in decision-making. In this regard, many

⁸⁷ For example, Nedup (2020), Dorji et al. (2020), and Dorji et al. (2020).

herders opposed the vision of a purely capitalist modernity and the one-worlding of bioveterinary livestock development, prioritising future life wealth/ wellbeing over this life wealth/wellbeing. However, this is not a static situation. Ongoing development and engagement in religious ideology continue to inform herders' understandings of their animals in both ontologies.

Conclusion

Bhutan's material and spiritual changes have woven a meshwork of cause and effect that result in unpredictable outcomes for animals. Some factors promote yak sale and slaughter, while others restrict it. Modern communications technology, road networks, nation-state building, and identity politics facilitate the ongoing Buddhification of Bhutan. Tourism increases annually, bringing income from trekking groups. Residents have been permitted to collect and sell cordyceps since 2004, marking the most significant economic change to their lifeways. However, there are now more expenses, embedded in a cash economy where material goods like mobile phones, cars, and household items represent new costs, as does the demand for children's education. These are complicated by the urban migration of educated herders' children, challenging intergenerational succession, with more herders selling their herds to follow their children to a more comfortable life.⁸⁸

Bhutanese herders' understanding of their livestock has messy boundaries. Their pluriverse extends beyond a mere dualistic view of Buddhist ontologies on one side and Eurocentric ontologies on the other. In understanding local perceptions such as these, the concept of Indigenous knowledge has evolved, with some authors conceptualising it as a current, and a situated, practice that is continuously formed through lived experience.

I found Kabzung Gaerrang's (2017) model helpful, as it is similar to the context of Bhutan's herders and their negotiations. He challenged the concept that Indigenous knowledge exists separately from mainstream society. Gaerrang instead proposed a hybrid form of Indigenous knowledge, where different knowledge sources are integrated through herders' participation in mainstream society. He observed

⁸⁸ Even though Bhutanese public education is free, there are considerable expenses, including uniforms, school materials, boarding and food while away from home and other costs of urban life.

herders form this 'hybrid' relationship with their livestock while balancing these opposing forces, at times seeing them as sentient beings or as kin, and at other times as wealth, stock, or goods for sale. In understanding herder-yak relationships in Tibet, he suggests that "current understanding of yaks represents a hybrid knowledge that embraces elements of Tibetan Buddhist philosophy and mainstream market-driven rationales and calculations", as a continuous form of knowledge that incorporates old and new elements "in contradictory and combinative ways" (Gaerrang 2017, pp.527–528).

Similarly, Bhutanese herders are influenced by transnational political economies, engagement in market economies, and new eco-social networks such as the Buddhification of Bhutan's highlands. These 'hybrid' ontologies influence their engagement in livestock production and resistance to it through anti-slaughter movements and *tsethar*.

Their decision-making rationale can be conceptualised through the 'Economies of Karma' model, where they move fluidly between these ontologies, which are not strictly bounded or opposing. Herding communities enact multiple, sometimes contradictory beliefs and animal ontologies, demonstrating a pluriversality. The different ontologies mingle to form new assemblages and forms, continually evolving, resulting in "a pluriverse with more plurality" (Gamble 2022, p.5).

Herders' indigenous knowledge of their herds, health, healing, and healthcare practices is the subject of the following two chapters, where I continue to build an analysis of these human-animal relationships by focusing next on their multispecies and more-than-human relationships of health.

Chapter Six- Die a yak, born a herder. Die a herder, born a yak.

This chapter explores the ethnographic context of local animal health practices in two regions of western Bhutan's yak herders. These two field sites, Dagala and the area of Soe and Lingshi, are visible to each other in clear weather despite being many days' walk apart.⁸⁹ I outline the "participation of animals in meaning-making processes about notions such as life, health, birth, disease and death" (Broz et al. 2023, p.2). Human-animal, multispecies, and environmental relationships in Bhutan's high alpine landscapes are described, including the spiritual or sacred landscape in the highlands, where it pertains to animal health. I analyse how the herders' extended interspecies kinship networks are socially related, constituted, and re-constituted through health and healing activities and rituals. Understanding interspecies kinship networks here is crucial because it informs herders' healing concepts and practices in human and animal health in the alpine world.

I then present case studies on multispecies health networks and veterinary pluralism in the context of Bhutanese high alpine human-animal relationships of health. Bhutanese models of the physical and subtle body are described, where they are used in relation to animal bodies.⁹⁰ Herders' explanatory models for illness and healing are analysed in theory and through ethnographic examples. These models relate to the more-than-human world with which the herders and yaks interact. I demonstrate how herders' animal health practices constitute medical pluralism by utilising multiple healing modalities— state biomedicine, traditional ethnoveterinary medicine, alternative practices, and ritual healing. I conclude by arguing that veterinary plurality is an essential but overlooked aspect of veterinary anthropology.

⁸⁹ See the maps in the front matter page xvii for these field site locations.

⁹⁰ The term 'subtle body' has lately been subject to a large corpus of scholarship. For example, see Geoffrey Samuel and Jay Johnson's edited volume: *Religion and the Subtle Body in Asia and the West* (Samuel & Johnston 2013). Concepts of a subtle body are found in Asiatic spiritual and medical traditions, European esoterism (e.g. Theosophy), and many other traditions that see the mind and body as non-dual. A subtle body is generally described as the energetic, spiritual, or mystical aspect of the mind/body continuum. For example, the chakras and channels through which energies and substances travel throughout the body in Indic and Chinese medicine. These non-dual subtle body philosophies contrast with Cartesian mind-body dualism. However, scientists are now incorporating the subtle body idea in meditation research.

The second half of this chapter explores how Bhutanese herders maintain their yaks' health through ethnoveterinary knowledge and practices. I briefly describe the results of my national ethnoveterinary survey and the practices I observed in the field. The herder's knowledge and practices are analysed in the context of the extensive medicinal plants available in their locations and the encroachment of bioveterinary medicine. Bhutan's ethnoveterinary medicine is examined with respect to Bhutan's rapid development, urbanisation, and the increased reach of the DoL, resulting in the decline in EVM knowledge and practice.



Plate 34- A large, old yak surveys his herd in the morning sun in Dagala.

The Herders of Western Bhutan

Dagala's yak-herding families are in decline, as are transhumant pastoralists globally (Namgay et al. 2014). The Dagala plateau, also known as the Land of a 1000 Lakes, is accessed south of Thimphu, Bhutan's capital. It hosts 43 family groups in the summer, living in simple stone and wood-slatted buildings with hardened earth floors. They move here from their spring campsites. In autumn, each family departs to their ancestral grazing grounds across three different *dzongkhags*, living in yak hair tents. They then move to their winter pastures at lower altitudes, often on forested slopes, and live again in simple wood and stone buildings. They finish this cycle in the spring pastures, again living in yak hair tents, before repeating the annual migratory

pattern. The pastures in Dagala are not divided by fences or markings that I could discern, by centuries of inherited traditional knowledge and social practices negotiate and define their relationships with other families and their herds as they move through and within this sacred landscape.



Plate 35- Kinley allows the calf to suckle first before separating them and milking the mother.

I stayed with Kinlay Bhutia, her husband Kardock, their three children, and Kinlay's parents for one month in the summer of 2014 and again in 2015. I also visited their winter house several times, an hour's drive from Thimphu and a forty-minute walk up the mountain through the forest near Chamgang. Kinlay's mother, Aum Tsering, owns the land, herds and dwellings. Kardock is Kinlay's second husband. The first husband drank too much and wasn't a good worker. Since Dagala operates as a matrilineal society, the women eventually made him leave. Kinlay has three sons. The eldest from her first husband helps with herding work and childcare of the middle child, and the youngest son was born during my fieldwork time. Kinlay's parents live with them. Although, technically, the lands, herds, and houses are still her mother's property and Kinlay will eventually inherit them, Kinlay and Kardock increasingly take on more responsibility as the parents age. Kinlay's younger sister married a neighbour's son, and the sisters often visit each other during the summer season when their herding pastures are close. This sister could have stayed in the

matrilineal house with her new husband. However, she chose to live with her husband's family because they had no daughters. If she had stayed in her mother's house, she would have been secondary to her older sister, Kinlay.

Kinlay's family has a medium-sized area of summer grazing pasture, a herd of 80 yak, five ponies, and two dogs guard the property. These humans and animals form an extended family network that must attend to multi-species healthcare in the four seasonal grazing areas they move through each year. The family spend four months at their summer grazing land, where many of their annual and monthly health and well-being rituals occur. These rituals, the subject of Chapter Seven, are relatively expensive for this hard-working family. They have few possessions, carried from season to season on the backs of the ponies and several yaks, tied with the yak wool rope that Kinlay and Kardock expertly spin. Many other items are made from yak wool, including their heavy yak wool tents, storage sacks, raincoats, rugs, and thin sleeping mats. Yak dairy products, such as milk, butter, cheese, and yoghurt, feature prominently in their diet. Large slabs of yak cheese wrapped in leaves are offered to visitors as gifts. Dried yak meat hangs from rafters and nourishes human and canine bodies.⁹¹

Herders sell or trade yak dairy products for market items, such as rice, flour, vegetables, and other food and household goods. Cash can be earned from renting and guiding ponies, mules, and yaks to haul goods or supplies. Government departments, contractors, and tourists are their main cash customers. Some herders work in labouring jobs in the winter season when they are closer to road access. However, selling a yak for slaughter or *tshethar* is the easiest way to access fast cash to pay for more significant expenses, such as children's schooling, healthcare, building projects, or annual rituals.

The herders from my second field site, Soe and Lingshi, were more commonly employed to cart supplies than those from Dagala. These villages are along the route of the famous Snowman Trek, popular with international tourists, that connects high alpine areas across north-west Bhutan near the Tibetan border. This 24-day remote trek crosses ten mountain passes, each over 4,500m high. In 2014, I had the

⁹¹ See Appendix Two for herder terminology.

opportunity to accompany a group of DoL personnel walking to Soe and Lingshi to hold the inaugural *bjobkyi* (Bhutanese mastiff) show. The mastiffs were in decline, and at the request of the King, the DoL was tasked with finding the remaining good bloodlines, promoting their breeding, and establishing a mastiff breeding centre near Thimphu.



Plate 36- The author was a guest judge at the dog show along with DoL personnel.

This dog show was scheduled to coincide with the Jumolhari Mountain Festival, which featured traditional dancing, horse racing, snow leopard conservation activities, and other cultural events designed to attract tourists. Those tourists take two days to walk to Soe and another two days to Lingshi across high passes. I, however, had to keep up with my Bhutanese colleagues and walk at a local pace, reaching each village in a single, hard day's hike. Luckily, the villages here were more developed than in the Dagala area, and we slept in beds with slow-burning stoves to keep us warm at night. I was an honorary judge at the dog shows, awarding prizes. When the festival concluded, my colleagues returned on foot to the trailhead and Thimphu, while I remained with Nima, the area's paravet, to begin research.

I spent another three weeks in the Lingshi, Chubesa and Gangyul villages, interviewing herders and accompanying Nima during his work. This October, during the peak trekking season, yak caravans loaded with trekking gear passed by daily,

followed by a straggling line of weary trekkers and their encouraging guides. The pack yak handlers called friendly greetings to Nima and me as they passed, often stopping to talk to local herders they met on the way. Ponies had carried the equipment as far as Soe, but yaks continued after that point, more suited to the higher altitudes. Herders enjoy the extra income earned by renting ponies, mules, or yaks as pack animals, and some also worked as trekking assistants.



Plate 37- The winner of the Bhutanese mastiff dog show with the winning dog.

Government contract work is also available for those with spare animals and time, transporting building materials and supplies to the highlands. The government is expanding its support to these marginal areas, building BHU's, schools, RNR centres and other extension services to encourage herders to remain in the mountains and high alpine borderlands. As mentioned in the previous chapter, the herders are seen

as an informal border surveillance system, and additional income generation schemes are in place to encourage them to remain in the mountains and resist the temptation to urbanise in low-altitude towns. One such initiative was the collection and sale of traditional medicinal plants and cordyceps.



Plate 38- A train of pack yak move past us on the trail.

Bhutan's National Institute for Traditional Medicine (NITM) in Thimphu processes and produces traditional medicines to supply its large Thimphu clinic and a network of 81 traditional medicine units spread through BHUs nationwide. The demand for medical ingredients had rapidly increased from 7 tonnes in 2000 to 30 tonnes in 2016 (Tamang et al. 2024), and the limiting factor to further expansion is the supply of ingredients. In response to this need, the RGoB built a traditional medicine collection and drying plant in Lingshi. Even though Lingshi has supplied high-altitude medicinal plants for fifty years, the NITM increased the harvest by training more Lingshi residents to identify and collect the plants. This initiative increased herders' cash income from herb sales and from renting pack animals to transport the dried herbs to the road head. Despite this advantage, herders have a contested relationship with the trekking industry. The additional animal traffic created by tourism and these development projects strained alpine resources like grass and food supplies (Dorji et

al. 2022), and were a perceived source of spiritual pollution, or *drib* (*sgrib*, pollution, defilement, transgression).

Kinship Networks “Die a yak, born a herder. Die a herder, born a yak.”

I heard these two lines repeated often while living amongst the yak herders of western Bhutan. At first, I thought it referred the endless cycle of yak and herder birth and death, understood to occur through the innumerable rebirths sentient beings make in relation to each other as human, then animal, then human.⁹² The process of taking these relational rebirths is driven by entangled karmic interdependencies on the revolving wheel of samsara, transcending time and space.

Herders kill yaks, and when that herder dies, they are believed to be reborn as a yak. That yak is eventually killed by a herder, perhaps a previous family member, and the yak is reborn once again as a herder, and so on. This ongoing circle of interspecies cause and effect is often captured in Buddhist and Tibetan morality tales, where humans kill the animals who were their kin from past lives, often in comic scenarios. Then, those animals are reborn as kin to the humans who killed them, and so the cycle repeats itself. These narratives are used similarly by the Buddhist clergy in Bhutanese and Tibetan herding communities (Gaerrang 2017, p.529). I came to understand, however, that this phrase also referred to a deeper, more nuanced relationship than just cycles of reciprocal birth and death.

Herder-yak interspecies relatedness has evolved over centuries in a process that formed new environments and new pastoral ecosystems, thus allowing humans to occupy and survive in these harsh highlands. Donna Haraway’s (Haraway 2008) writings on interspecies entanglements in a more-than-human world apply equally well to this Himalayan environment. She points to Bruno Latour’s (1993) work, *We Have Never Been Modern*, to reflect that we have also never been human. The “subject-and object-shaping dance of encounters” of the “myriad of entangled, co-shaping

⁹² Samsara’s six realms of cyclic rebirths contain more realms and types of beings than only humans and animals. However, as embodied beings, humans and animals are the only beings we can easily see, communicate, and make physical contact with. Local spirits, deities, and other supernatural beings are considered to still abide within the six realms of samsara. Once a sentient being has become enlightened and attained Buddhahood, they exist in Buddha realms outside of this wheel of cyclical existence. However, they can choose to take birth within the wheel of samsara to benefit other sentient beings but do not suffer while in these temporary existences. We are believed to have innumerable rebirths in all six realms over endless time frames. I only list human and animal rebirths here to explain human-animal relationships within this context.

species” (Haraway 2008, pp.4–5) sees non-human yaks ‘become with’ their non-yak human other.

In the process of yaks ‘becoming with’ humans, kinship is created through different practical, social and spiritual processes. In addition to this kinship through rebirth, I observed other forms of interspecies kinship formation that I elaborate on in the coming sections. These include mutual nurturance, shared mutual substances, and sharing common illness aetiologies and healing practices.

One of the functions of herders’ daily life, nurturing, strengthens kin relationships. Herders often describe human-yak relatedness like that of parent and child (Miyamoto 2015, Gaerrang 2017, Wouters 2021). Herders nurture yak calves and their herds with an ongoing daily effort like that of a parent. Herders are nurtured by their yak in turn, through yak milk products, the most intimate maternal nurturance, and sometimes meat, the final bodily transfer of life. Radhika Govindrajan describes similar “bonds of kin rooted in mutual nurturance that took time and work,” in her ethnography of human-animal relatedness in an Indian Himalayan village (2018, p.12). Natasha Fijn describes interspecies herding relationships in Mongolia as ‘co-domestic’ co-existence based on care, nurturing and reciprocity. This involves “social adaption of the animals in association with human beings by means of mutual cross-species interaction and social engagement” (Fijn 2011, p.19). Jelle Wouters describes Lingshi herders as embodying a similar parental relationship of reciprocal nurturance. He observed a co-dependent relationship between yak and herders where the yak were “active, agential and responsive beings who were cultivating trans-species knots of their own” (Wouters 2021, p.31).

Radhika Govindrajan (2018, pp.12–13) describes another form of interspecies relatedness that is produced over time through “shared mutual substances” — by eating and drinking from the same sources, worshipping the same gods and being subject to them. In this study, I build on the work of these scholars and propose another form of kinship production. Herders and yaks are constitutionally related by their physical and subtle bodies comprising the same ‘stuff’. That is, they are formed from the same biophysical and energetic elements. These elements, whether molecular, karmic, energetic, or spiritual, can be influenced by the same forces that cause illness, whether in a human or animal body. Therefore, in the Bhutanese model, humans and animals are made from the same ‘stuff’ and, thus, share common illness

aetiologies and treatments. In this way, conceptions of interspecies kinship are reinforced by sharing mutual biophysical and energetic processes. Relatedness between herders and yaks is also constructed in activities and rituals of human and animal healthcare and healing, which I discuss next.

More-Than-Human Kinship

As natives to Bhutan, we all understand well that we live in a densely knit network of interrelations between humans, deities and the environment. This is the relational ontology of our homeland, which is based on the mutual dependence of the living, the spiritual and the physical earth. It also means that the formless deities are also environmental beings who live co-constitutively with humans (Choki 2021, pp.153–154).

Kinship networks extend beyond the interspecies human-animal realm to the more-than-human. A visitor might experience the Bhutanese alpine rangelands as vast and empty. However, the lands and spaces where the herders and their herds roam are densely populated with wildlife, microbes, and a thick maze of invisible or spiritual beings. Elizabeth Allison's work has eloquently described Bhutan's sacred natural sites, spiritual landscapes and cosmologies in relation to Bhutan's waste management, environmental conservation, natural resource management, and ethics of care (Allison 2015, 2016, 2017, 2019, 2023). Following her work, I use the term sacred landscapes to mean those natural and built features of the environment where numinous beings are said to inhabit. Furthermore, these places mediate the relationships between humans, spirits and environments through rituals and other practices.

Bhutan's numinous beings, or spirits, are deeply woven into the herders' spiritual beliefs and play a vital role in their illness narratives. Bhutanese spiritual life exists within a continuum that spans the Buddhist Himalayan and Tibetan cultural areas. These regions share cosmologies derived from the interaction between Vajrayana Buddhism and local folk spirituality. The spiritual realm, encompassing territorial deities and local spirits, constitutes a hierarchical pantheon that blends Buddhist, Indigenous and localised practices. It is often difficult to empirically distinguish between what are termed the 'Great Tradition' and the 'Little Tradition', as these binaries imply value judgements and hierarchies that do not hold up under

ethnographic scrutiny.⁹³ The principles and philosophies of Buddhism, and those of local traditions, have considerable overlap and interchangeability through centuries of syncretism, shaping the herders' spiritual worldview, daily rituals, and social structures.

As a result, each tradition's schema is not a separate, discrete, or independently operating force. Nonetheless, it would also be incorrect to collapse them into a single unified framework. Bhutanese generally know the difference between Buddhist and local spirits, each requiring separate health practices and practitioners with specialist knowledge of the different Buddhist and animistic cosmologies (Tae 2017, pp.9–10).

In many ways, this interspecies relational ontology exemplifies Buddhism's philosophy of dependent origination, highlighting the interdependence and dependently arising nature of all things and phenomena. Elizabeth Allison discusses dependent origination, where Bhutan's spiritual landscapes exist within a "relational ontology... that views all things as interdependent and mutually constitutive" (Allison 2017, p.204). She indicates that an awareness of this leads to a "moral value for nonhuman nature because humanity, as well as other beings, arises out of this web of mutuality. Indeed, the quality of this web of mutuality influences human health and well-being," (Allison 2017, pp.204–205).

I demonstrate that the sacred landscape, this 'web of mutuality', affects not only humans but also animal health and wellbeing, shaping local veterinary practices in Bhutan. Human-animal relatedness is, therefore, socially constituted and reconstituted "through constant transactions between beings and the landscapes they inhabit" (Govindrajan 2018, p.12). Chapter Seven focuses on these 'constant transactions' of animal or interspecies health and healing rituals, where I examine the sacred landscape in greater detail.

In the next section I discuss the explanatory models, from veterinary perspectives, and how Bhutan's medical plurality informs herders/ trans-species concepts of health and healing through ethnographic vignettes that therefore include spirit actors. In this next section, we explore the story of Pema, her livestock and her *lu*.

⁹³ As in CJ Fuller's *The Camphor Flame* (2018).

Naga, Karma or Neglect- Who Killed the Yaks?

Pema is a 32-year-old woman with two young children, living in Lingshi in a medium-sized house on the hillside above most of the buildings in the village. Usually, after milking the females in summer, she or a family member would take the yak out to graze during the day before locking the calves in nearby calf-holding pens at night. Pema's story is relevant to this research because she had terrible luck since her children were born, which was explained to me through three different explanatory models of illness causation. Her story provides a helpful example to explicate and contextualise local understandings of extended multispecies health networks of humans, animals, local spirits and the environment.

Pema's misfortunes began when her husband left her when the children were young. She has since lived alone with the children in her family's house. The children now attend the local primary school and are old enough to care for themselves outside of school. Pema doesn't have many extended family members nearby to help, and those who do live close quarrel with her. Pema's herd of 75 yaks gradually died over a two-year period, leaving only three remaining with her now. As a Lingshi resident, she has permits to harvest cordyceps to sell for cash, which is difficult work and long days in the mountains. Hence, she is away a lot in the summer.

Since 2004, local residents have been awarded permits to collect and sell the famous caterpillar fungus from the high mountains above Lingshi. Even then, they must sell the harvest to the government cooperative at a fixed price. As cordyceps is famously worth more per kilogram than gold, this income is far superior to other waged labour available to them. This is one of the few sites in Bhutan where they grow and is a lucrative cash business for these marginal herders. In large families, the younger, usually male members go into the mountains to collect cordyceps while the women, the very young and old, stay home to care for the herds and children. Pema didn't have family to help with her herds or children, so she left them alone when she went collecting in the mountains.

The circumstances that caused her yak to die were explained by Pema, the local monk, and the district paravet according to three different explanatory models of disease causation based on their individual worldviews., Pema told me that a *lu* (klu-subterranean serpent spirit), lived behind her house, which, she said, is common knowledge in the village. This *lu* lived in a large stone that was disturbed when the

house was repaired a few years back. Pema's *lu*, she said, caused her ongoing misfortunes and also sent sickness to her yak, who subsequently died with blisters on their skin. "That is the reason for my problems. Doing *luchod* was too late. The *lu* was already angry and would not be pacified by the offerings", she explained.⁹⁴

The subterranean serpent deity called a *lu* lives in underground homes, in rocks, trees and water.⁹⁵ Herders mention that *lu* are particular about cleanliness around their homes and become enraged when *drib*, pollution or contamination occurs near them. They are also harmed when trees are cut down, rocks are moved, or buildings are constructed on the spirit's body or home. When angered, injured or transgressed, *lu* inflict skin disease with blisters and ulcerations directed to the offender as retribution. They also cause deep pain in the limbs.

I next visited the head monk at the local monastery and asked him about Pema's story. He had a different and contextually relevant explanation. "It was her past life karma causing her misfortunes, her husband leaving, her family quarrelling, and the yak dying," he said. "But it is easier for her to blame the *lu* for the yak's loss. There was no point in upsetting her by talking about her bad karma," he concluded sadly, gently shaking his head. "She should sponsor *rimdro*, do *tshethar* and recite mantras to create *gewa*. But she won't change her mind about the *lu* as the cause of her obstacles," he added. "Even if it [the *gewa*] didn't change this life, she would be more content, and it would help her in future lives. Sometimes that is all we can do with this precious human life, create as much *gewa* as possible for our next life." He started chanting mantras while fingering his prayer beads and gazing out the window with a solemn expression on his face, perhaps contemplating humanity's folly from the confines of his lofty monastery.

I walked down the mountainside to the DoL office nearby and asked Nima if he had any records of why Pema's yaks died. "That happened before my time Dr-La. I think some of them got FMD," he replied. "With FMD, blisters on the feet and mouth

⁹⁴ *Luchod (klu mchod)* is a prescribed ritual where offerings and supplications are made to the *lu*. As vegetarians, they only accept white offerings like milk, butter, rice and smoke. Therefore, propitiation and healing rituals should include these types of offerings.

⁹⁵ *Lu* are found across Tibet (Kvaerne 2002, pp.197–198), in Bhutan (CBS 2004, Allison 2015, Tashi 2023), and known as, or related to, the *nāga* in Indian culture (Kvaerne 2002, p.197).

are very painful; they can't walk far or eat and slowly die from it. Others may have had GID or been killed by predators. I am not sure."

"One of Bhutan and Central Asia's prevalent yak illnesses is FMD, which has a distinctive pattern of blisters and ulcers on the affected animal's feet and mouth. *Lu* have often been blamed for FMD outbreaks because the blister patterns correspond to the type of lesions that *lu* cause. When livestock die from diseases like this, they are buried to remove the *drib* (pollution) from the sacred environment.

Nima added that he thought their neglect added to the problem. Pema was alone, didn't have help maintaining the herd and spent a lot of time away collecting cordyceps. "The yaks weren't taken to the proper pastures at the right time. They were left alone to wander," he continued. "They weren't given routine treatments like vaccinations, deworming, salt and oil supplements. They succumbed to predators, exposure and hunger, making them weak and more susceptible to the disease," Nima concluded.

"That is probably the real reason the yak died, even though I have no records," Nima finished, emphasising the social conditions that led to an increased susceptibility to infectious diseases.

"Nima, do you believe in *lu* and other spirits?" I asked. He replied that he believed in *lu* and thought the underground serpent spirit might have contributed, mainly because Pema may not have had the time or resources to conduct the proper rituals. "That would have kept the *lu* content from the beginning and prevented the obstacles that were sent to her and her herd," finished Nima, fluently swapping between explanatory models.

Pema's example oversimplifies complex socio-economic forces and diverse and overlapping explanatory health models used in this health network. As Nima observed, there are usually multiple aetiologies involved in the same patient, whether human or animal, and so multiple corresponding types of cures are typically employed. I used this example and separated the aetiologies for discussion and to tease out the illness pluralities that exist in the same animal patients.

The *lu*'s dislike of pollution and requirement of 'white offerings' suggest that notions of pollution, cleanliness, and respect for boundaries are not only human social concerns but extend, in this instance, to the relational ethics between humans and non-human spirit beings.

Explanatory Models and Plural Veterinary Regimes

Bhutanese cosmological models of the mind and body illustrate that it permeates all animate or sentient life forms similarly, whether they have a human or animal body or are non-corporeal (spiritual or supernatural beings). In addition, beings from all realms share a common feature—they possess a mind/*semchen* and a soul/*la (la)*. Bhutanese health aetiologies integrate aspects of subtle body models derived from Buddhist medicine and local traditions. This means the same karmic and spiritual causes of illness and harm can impact not only humans but also animals and spirits. Conversely, they can also be healed through the same spiritual practices. These spirit aetiologies in herders' illness narratives influence both humans and animals equally and explain why many health care rituals and practices are the same for humans and animals.

In the herders' worlds deities and spirits can be malevolent, causing ill fortune through harm, sickness, or death, or they can benefit the humans and animals within their territories. In such ways, the environment is imbued with agentive power that affects the physical landscape, animals, and humans equally. Natasha Fijn refers to this as “a healing and sentient landscape” (Fijn 2024, p.76).

In Bhutan's alpine rangelands, these spirit beings own the land that humans traverse and where they live as guests. Wildlife is considered the herds or livestock of territorial deities, *yul lha* (*yul lha*, deity of the local area),⁹⁶ and hunting and fishing are livestock theft, which can invoke the wrath of those gods. The highland inhabitants know they should avoid these activities in sacred areas unless they first request permission. Transgressions and *drib* easily anger the temperamental pantheon like the *lu*, who exact retribution. They must be regularly appeased to prevent or address the consequences of their vengeful wrath.

As a result, many Bhutanese illness narratives involve spirit harm, that is, the harm caused by malevolent spirits, ghosts, and other forces that exist within cosmologies of power relations.⁹⁷ Many Bhutanese use protective rituals, offerings,

⁹⁶ *Lha (lha)* is the term for deity or God.

⁹⁷ The term 'magic' or 'magico-religious' is often used in these contexts but this usage carries a long colonial history of 'othering' local practices and positioning them as irrational primitive or inferior. These terms don't map well onto Himalayan cultures and their health care ecologies.

and ‘exchanges’ to spiritual beings as forms of prevention or treatment (Tae 2017, pp.9–10). These spirits may exist outside of Buddhist cosmologies, instead deriving from local traditions or forms of animism.

Herders’ rituals benefit both humans and animals, strengthening their kinship bonds in alignment with the spiritual world of local herder cosmologies. Herders expend considerable energy and resources propitiating spirit beings to request blessings, protection, and fortune. They also appease the pantheon's worldly deities, whose wrath over transgressions can manifest as ill-fortune for humans, animals, and the environment. The rituals must be carried out according to the astrological calendar and the family’s relationship with different classes of beings. These practices are explored in more detail in Chapter Seven as examples of the highlanders’ preventative veterinary healthcare and animal healing practices.

Other Bhutanese explanatory models derived from Buddhist medicine, *Sowa Rigpa*, involve the ‘stuff’ of bodies, the cosmo-physical elements and different forms of energy that pervade human and animal bodies equally. In this way, theoretically, human and animal illness narratives are related through the physical body.⁹⁸ While this model is common in Bhutanese culture, being part of the state’s plural medical system, I did not encounter *Sowa Rigpa* narratives applied to animal healthcare.

However, other models of health and illness have been inculcated into herders’ vocabulary through the influence of biomedical categories and assumptions. Herders have increasing access to modern education and health services, communication technology, national and international media, and a rapidly developing society. Additionally, engagement with DoL personnel and education programs has also introduced and reinforced the hegemonic influence of bioveterinary ontologies in the highlands.

While herders understand the concept of viral and bacterial pathogens, there is considerable interplay with Buddhist and local illness aetiologies, resulting in plural

⁹⁸ The five cosmo-physical elements in Buddhist medicine, earth, water, fire, wind and space, comprise all material existence, including human and animal bodies. Illness arises from an imbalance in these elements and energies, and healing results from re-establishing an appropriate balance. Therefore, all embodied beings can suffer from the same illnesses and be cured through the same means. Buddhist medicine aims to bring these elements and energies into balance through diet, medicines, physical therapies, lifestyle, and spiritual practices.

models of disease causation that are used interchangeably. As each illness causation requires its own corresponding method to prevent or treat that illness, plural modes of healthcare are employed in human and animal health. Previous medical anthropology research in Tibetan cultural areas has overlooked the fact that animals are intimately involved and included in these interspecies networks of health and illness. This thesis contributes to that gap in the literature.

The next section describes the plural animal health care options available to the yak herders of western Bhutan. I also discuss the findings of my ethnoveterinary survey, specifically the practices of Bhutan's northwestern yak herders.

Bhutan's Traditional Veterinary Medicine

Traditional veterinary treatments can be divided into three main categories. The first is physical therapies, like fracture setting, moxibustion and surgery. Then, there are medicines made from plant, mineral, and animal ingredients. The final group is *rimdro* or rituals, which are commonly used by herders.

In this section I briefly describe some of the physical and medicinal practices I encountered while in the highlands. The rituals I observed are described in Chapter Seven. A more comprehensive account of Bhutanese medicinal practices, based on nearly 200 interviews conducted in 14 Bhutanese districts, is presented in Appendix Five. I did not endeavour to analyse the treatment's efficacy, but that would be a valuable project for future researchers.

Preventive Animal Health in a Himalayan Context

Many culturally encoded beliefs in traditional animal management systems embed practical information about animal health and disease prevention strategies in the particular locale from which the beliefs emerged. For example, these beliefs might dictate livestock movement patterns that ensure maximum nutrition and protection from environmental extremes. Some beliefs about the spiritual landscape cause herders to avoid areas known to belong to local spirits that cause spirit harm. These areas are often mountains, cliffs, and water bodies, inherently dangerous places inhabited by yak predators like snow leopards, bears, and tigers, and parasites, predators of a different kind. The following sections use ethnographic vignettes to demonstrate the common health care practices I observed.

Intimacies of Animal Care

Kardock expertly roped the large shaggy yak by her horns and drew the animal closer using a rope made of yak hair. Once within reach, he gripped the horns firmly and manipulated them with a twisting motion, like holding the handlebars of a bicycle. This manoeuvre gently twisted the neck sideways and backwards, guiding the yak to the ground and causing her to lie down on her side. Once the yak was grounded, Kardock twisted the head further, so the backward-facing horns poked into the ground. With his knees and body weight pressing into her neck, he kept her still. This was the 15th yak they had grounded this morning. The process was fast. The yaks had barely resisted, trusting the handling and human contact. They were more concerned about me, a stranger hovering around the activity with my video camera and notebook.

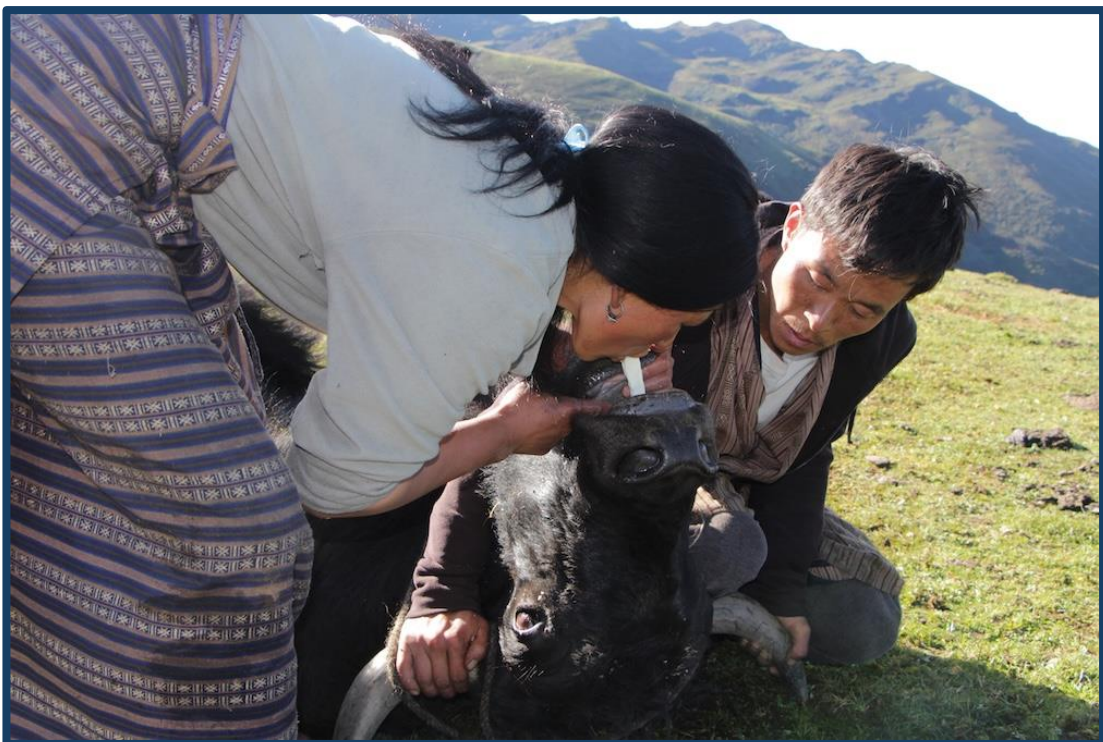


Plate 39- Kinley dosing salt and washing it down with milk from her mouth.

Kinley approached, her cheeks bulging with the fresh yak milk she had taken from an old Coke bottle. She held a large wooden bowl containing salt mixed with yak butter to form 10cm diameter soft yellow firm balls. After gently pushing her fingers into the yak's mouth, she rhythmically and firmly stroked the yak's tongue to stimulate its swallowing reflex. Then, she carefully pushed a large ball of the salty

butter mixture down the animal's throat. Her actions were deliberate and intimate, evoking a sense of maternal care. She leaned forward and dribbled the milk from her mouth into the yak's mouth to wash down the salt. It was a gesture that appeared both practical and deeply intimate, ensuring the butter was washed down and the yak didn't choke. This mouth-to-mouth feeding reminded me of the many Himalayan mothers I had seen feeding their young children like this, chewing food till it was soft and then transferring it directly from their mouth into their child's mouth. The maternal action is a very intimate process of nurturing bodies— sharing fluids, microbiomes, and genetic material, or 'shared mutual substances'. The mother-like physical and nutritional intimacies created kinship bonds between the human and non-human 'child' through the same performance of nurture.

Kinley remained bent over the yak throughout the process, massaging the yak's tongue and throat to encourage further swallowing. Once confident that the yak had swallowed all the mixture, she stepped back. Kardock released the horns, and the yak rose slowly, chewing as it regained its stance. Kardock's skilled handling of the yak and Kinley's intimate mouth-feeding demonstrated the deep bond of trust between the herders and yak, blending routine nutritional supplements with intimacies of care. This close interaction revealed the nuanced relationship between the herders and their yaks, where daily practices embody technical animal handling skills and nurturing. It illustrates the deeply embedded traditions of maternal intimacies of care and interdependence characterising the herders' livestock management methods.

"We do this every four weeks, Doctor-La," said Kinley. "We also give them mustard oil when they need it. The amount of milk increases after this, and we have to do it often during the summer to keep them healthy," she concluded. "We give them charcoal water sometimes if they have diarrhoea or look sick," Kinley added, referring to charcoal from the house fire that was ground to powder, mixed with water and poured into the same Coke bottle. The bottle of thick grey fluid is poured into the yak's mouth while the head is held up high to allow the fluid to run down the yak's throat and be swallowed. I observed similar herding strategies and health-maintaining supplements in the Soe and Lingshi areas. I also witnessed another aspect of the intimacies of care between herder women and their children, both human and yak babies, in Dagala and Lingshi districts.



Plate 40- Kardock dosing the yak with mustard oil.

Gangyul is a small village near the Tibetan border, a two hour walk from Lingshi. Accompanied by Nima, this area's paravet, I surveyed the herders in this region. Nima typically stayed with the same family here, who enjoyed the benefit and status of hosting a livestock officer despite the burden of housing and feeding him. By association, they also hosted me on this trip. As we prepared for dinner, I noticed the younger women in the family bundling their babies into warm coats before heading up to the pasture.

At the pasture, a bamboo fence enclosed the young yak calves, corralled there for the night. A small tent stood nearby, offering a place for the women to sleep under the stars. Curious, I asked, "Why are they going up there?"

"Well, Dr. La," Nima replied, "sometimes the bears come and eat the yak calves. They have to protect them."

I glanced at the women, none of whom seemed to weigh more than 50 kilograms, and wondered aloud, "How can these young women protect the calves from giant Himalayan black bears?"

"They bang pots, yell, shout, and shine torches to make as much disturbance as they can," Nima explained. "Sometimes it works, and the bears run away. But if the bears are very hungry, they just keep coming and take the calves they want. The

women can't do much else—they just have to stand there and watch. Snow leopards also steal the calves.”



Plate 41- The women's blue tent on the left and the yak calf enclosure on the right

This nightly routine sounded terrifying. I imagined waiting in a thin canvas tent with my babies, those in the tent with me and those corralled outside, listening for the sounds of an approaching hungry Himalayan black bear. On average, each family loses seven to eight yak a year from predation (Wangmo & Norbu 2024). I marvelled at the strength of these slight women who leave their human children in the tent and enact desperate attempts to protect their yak calves/children. This was not simply a routine daily act of care like milking or providing nutritional supplements. This was a deeply courageous blood and bone fight to the death. An act forged from interspecies kinship bonds rooted in entangled acts of protection and nurturing over time and through proximity to these daily labours. They were also guarding the family wealth, the *nor*, from economic loss, a significant concern in marginal communities here. These hybrid ontologies demonstrate the pluriversal worlds of herders and their yak, moving fluidly between designations in an evolving process.

Here, the human herder children grow surrounded by the yak calves, 'becoming with' each other from birth. They share maternal nurturing and protection from their human mother. They are nurtured by their yak mother, whose milk nourishes yak

and human children's bodies alike. These human children spend their early years in and around yak herds, yak milk, and sometimes yak meat. They are part yak, part human, having subsisted on yak products and being raised with symbiotic yak-human microbial worlds on and in them. Their relationships are embodied in the micro-environment of cells and substances.

Similarly, generations of close contact worldwide have co-constituted the human genetic makeup and immune systems with those of the animals and microbes living alongside us. These interconnected disease relationships illustrate our multi-species interdependence. We are "living and dying in knotted, mortal naturecultures and pastpresents," (Haraway 2010, p.55). This intimacy of infection, our shared microorganisms, and resistance to them, has fundamentally transformed humans and animals at the blood and DNA level.

I reflected on the phrase— die a herder, become a yak, die a yak, become a herder. I was starting to understand the nuanced layers of meaning in these simple words.

Curious, I asked, "Why don't they just let the calves roam around with their mothers at night?"

"Oh," Nima said with a smile, "then they would drink all the milk. They keep the calves away from their mothers overnight so there's milk to collect in the morning." Daily milking is part of the herder's early morning routines. Women mostly milk the females at dawn, but men help when needed. These yak mothers are hovering near the bamboo pen that contains their calves. One calf is let loose at a time with a rope strung around its neck. The calf runs to the bellowing mother and immediately starts roughly butting against her udder and teat, demanding food after the overnight fast. The herders allow the calf to suckle for a short time before dragging the calf away by the neck rope and tying the mother and calf together to a stake or a line of rope running along the ground and fixed at each end with stakes. The mother lovingly grooms her calf with her tongue, licking him from head to tail in a systematic wet massage, grooming him, imbuing him with her scent and DNA, re-establishing the maternal bond after the overnight separation.

The female herders squat beside the patient mother and milk her gently but rhythmically. Milk is collected in a bucket before being poured into canisters or large plastic containers that carried vegetable oil in their previous life. I once tried milking but was so ineffectual that my efforts caused the herder family to collapse in howls of

laughter that were heightened when the yak decided she didn't like me and tried to kick me in the head. "She isn't used to you," giggled Dolma, the young girl who was showing me how to milk. "Your hands are not herders' hands, you don't know how to touch her in the right way," she continued. "Here, like this," she expertly squirted milk into the bucket, the yak settled down with a grunt and returned to groom her calf. Once Dolma was finished milking, she released the mother and her calf, who began walking their familiar pathway out to the pastures for the day.



Plate 42- Yak calves tied in rows in a pen in Chamgang, Dagala herders' winter residence.

These narratives demonstrate a shared mutuality of precarious life in the mountains. Herders are closely attuned to the herd's needs and daily and seasonal routines. The shared vulnerabilities to harm from predators, weather, and supernatural beings combine with embodied acts of intimate care and attention to form entangled, interdependent, relatedness and kinship bonds between herders and yak.

Physical Therapies

Several physical therapies were used on yaks, horses, and mules, which are common to therapies found in the Himalayas, the Tibetan cultural areas, and Central Asia. In the interviews, herders mentioned bloodletting, moxibustion, surgery, and

bone setting or setting fractured limbs.⁹⁹ I, however, only observed them splinting fractured legs during my visits to Lingshi and Dagala, which are described below. This method is similar to treatments identified in other districts of Bhutan and from other Himalayan or Tibetan areas.

The limping yak's hind leg had a splint near the ankle. It was constructed from vertical slats of wood, resembling fence posts, bound together with rope and old, white *kartaks* (traditional scarves). Tenzin, one of the herders from Dagala, explained, "We make the splints when they break their legs. It's often quite successful, as long as there's enough food for the yak and we don't need to move too quickly. Although it works better in smaller animals like sheep."



Plate 43- A splint and bandage applied to a yak's broken leg.

However, Tenzin acknowledged the limitations. "Because they're so slow, they can't keep up with the herd to get out to the grazing pastures. Over time, they get thinner and thinner." He paused and added, "I'll draw you a picture of what it looks

⁹⁹ Bloodletting and moxibustion are common therapies in some Asian medical traditions. Bloodletting involves cutting tissue or a blood vessel, often large ones under the tongue, to release blood. Moxibustion is the application of heat to a therapeutic point on the body, ranging from indirect heat held near the body, to direct heat applied to the skin, creating a burn.

like.” Using a child’s notebook, he sketched flat wooden panels tied together with string, explaining that the wood is padded with soft material before being secured around the injured leg.

“This yak, though—she’s probably going to die,” Tenzin said with pragmatic resignation. “She is already too thin because she can’t walk far to eat good grass. We’re moving to our autumn pasture soon, and she won’t be able to keep up. She’ll be left behind, and eventually, she will die of hunger and thirst, or a wild animal will kill her.”

Tenzin further elaborated on the fracture treatment. “We also grind up *chu shing* bark and put it on the skin over the broken bone. It makes the fracture heal faster. My father showed me how to do this when I was a young boy.”¹⁰⁰

I asked if they did any other surgery or physical therapies. “Oh, when the *nor* have *goyum* we used to cut out the worm.¹⁰¹ Many herders used to know how to do this, but not anymore.” He proceeded to explain a technique that I have also seen in Tibet. “We find the swelling on the head, it is a soft area. We hold the yak down and cut into that soft area until we see inside the skull. There is usually a soft white sac bulging out,” he explained, referring to the tapeworm’s sac that has grown inside the brain. The larval stages of the gid tapeworm lodge in the brain and spine, forming cysts that create pressure on the brain. This causes neurological symptoms like turning in circles, blindness, and eventually death. Gid is a common problem all over the Tibetan plateau, including Bhutan. Dogs and their faeces are the vectors that spread the tapeworm. To prevent infection, the DoL conducts regular deworming campaigns of dogs and yaks, distributing deworming medication for both species. The DoL focus on preventative health because treatment is unsuccessful once the animals are infected. However, many yaks still die from it, especially the calves younger than three years old, who are more susceptible.

“You have to be very careful now,” Tenzin continued. “If you break the sac, the worms will spread in the brain, and you will never get them out. You have to carefully

¹⁰⁰ *Chu shing* is a tree that grows in lower altitude areas like Thimphu, or Chamgang, the herder’s winter home. They collect the bark in spring and keep it dried for when they need to use it. See Appendix Five for more details on medicinal ingredients.

¹⁰¹ *Goyum* (*go gyom*), refers to gid disease caused by the tapeworm, *Taenia multiceps* sp. The condition is also known as Coenurosis, and is common in yak, sheep and goats worldwide.

scoop it out, then burn the sac in the ground so it doesn't spread to other *nor*," he cautioned. "I have this tool that my father made," he pointed to a long-handled, thin, metallic, spoon-like instrument on the table. "This helps get the sac out," he concluded. Tenzin was among the few who reported a method for treating gid in yaks. Most herders accepted that affected animals would die, unsure of how to treat them.

DoL records for Dagala report only a 1.3% mortality rate for young yaks affected by gid. Dagala herders bring their herds down closer to the road heads in winter, providing greater access to DoL staff, dispensaries, and medicines, which may explain why their mortality rates are so low. However, the incidence is much higher in the Lingshi yaks, perhaps due to the increased distance from Thimphu and reduced access to DoL personnel and preventative deworming medicines. When paravets visit herders, they assist in deworming the animals and continuing awareness campaigns about these forms of prevention. Department research shows that despite herders' understanding that they should deworm the animals six times a year, most herders only deworm them once yearly (Wangdi & Wangchuk 2021). The authors suggest this was due to the herders' remoteness and the lack of coordination between development agencies. As a result, they calculated that up to 31% of yaks under three years old die annually in the Laya region. I presume similar mortality rates are present in the nearby Lingshi area.

These accounts of fracture and gid treatment illustrate how local and biomedical knowledge systems intersect in yak health management. It reveals how remoteness, infrastructural access, and embodied expertise shape both treatment practices and health outcomes. Such considerations remind us of the entanglements between care, veterinary intervention and socio-ecological relations amongst herders.

Ethnoveterinary Medicines

"Yak are strong and healthy because they eat medicinal plants every day when they graze," said Doma, a Lingshi herder. She was referring to the high-altitude medicinal plants that grow in Bhutan's alpine meadows. I had also heard several times that yak milk, cheese and meat contained health properties due to the medicinal plants they ate. "Do you give them special medicines when they are sick?" I asked. "No, Doctor. We don't know which ones to use. And if we did, imagine how long it would take to collect enough for a yak?" she giggled in reply.



Plate 44- Yak grazing meadows rich in medicinal plants in front of Mount Jomolhari.

We were in Lingshi, sipping tea at Doma's house while I interviewed her. I knew that Lingshi herders collected and sold medicinal plants and had been doing so for at least 48 years. More than 53 species of medicinal plants growing in Lingshi were used by Bhutan's Institute of Traditional Medicine, but only 16 species are collected routinely (Lahey & Dorji 2016). The training on plant identification, harvesting, drying, and transport of these plants had not translated to using the plants for themselves or for their livestock. "We don't know how to use them," explained Doma. "If we are sick, we do *mo thab* [mo thab- divination], *tsip thab* [rtsi btab- astrology], and *rimdro* [rim gro- rituals]. Or we go to the BHU [Basic Health Unit] and see the nurse. If we go down [Paro or Thimphu], we get medicines from the *Drungtso* [traditional medicine doctor]," she sighed, reflecting on their options for treating illness. "The same for the *nor*, we first do *mo thab*, *tsib thab*, and *rimdro*. If the *nor*

don't get better, next we see the paravet for medicine. If he isn't here, what can we do? The nor either recovers or dies, it is his *leh*," she shrugged pragmatically.

This was a common theme of the interviews in both field sites. The herders would seek a practitioner of divination and astrology or perform it themselves. They then follow the prescription for which ritual is needed. This was often done first before seeking the DoL personnel. However, other herders went straight to the DoL for biomedicines if they were within easy reach before performing rituals. There seemed to be no preference or continuity in their treatment choice. It also depended on the distance to the DoL dispensary and whether any personnel were on duty at the time. The difficulty in accessing DoL services was documented in a recent survey of western Bhutan's yak herders who reported that 41% never received livestock extension services, and 53% sought them when required (Dorji et al. 2022, p.473).



Plate 45- EVM Survey identifying plants from Bhutanese medical plant guides.

An ethnobotanical survey in 2016 identified 100 medicinal plants growing in the Dagala area and proposed establishing a harvesting and drying plant, similar to the one in Lingshi (Wangchuk et al. 2016). These researchers reported that Dagala herders knew little about the medicinal plants growing around them. In my

experience, however, the herders knew of many medicinal plants and would regularly point them out to me or bring me samples. They were also aware of which plants the livestock would eat when they were ill and what plants corresponded to what type of illness.¹⁰² Additionally, Dagala and Lingshi region's herders told me of 14 medicinal ingredients they knew were used to treat animals, nine of which were plants. Another recent publication reports that of the yak herders from western Bhutan that they surveyed, no one used EVM (Dorji et al. 2022, p.474).



Plate 46- The Forestry department assisting in plant identification.

The difference in EVM knowledge reported may say more about the construction, classification and authority to knowledge, which is tied to power relationships, than the absence of information. What people know, and what they say they know, are not always the same thing. Herder's knowledge may be in forms that aren't easily classified in questionnaires. This is where ethnography, participant observation and

¹⁰² Zoopharmacognosy refers to the behaviour of non-human animals who treat themselves by eating or applying plant, insect or soil-based substances. It is reported in a wide variety of mammals, birds, reptiles and insects.

open-ended interviews may reveal deeper, more nuanced layers of Indigenous knowledge.

In my own EVM survey across 14 districts of Bhutan, I recorded over 300 ethnoveterinary ingredients known to Bhutanese animal agriculturists and healers. The preliminary results of the northern Bhutan survey, including eastern and western Bhutan, have reported 69 EVM ingredients. I have identified the scientific names in all but 14 of those. From southern Bhutan, I recorded 277 medical ingredients known to be used on animals and identified the scientific names in all but 46. As this chapter focuses on the EVM of Bhutan's northwestern yak herders, I summarise that area's EVM here. I include the preliminary results of north and south Bhutan in Appendix Five.



Plate 47- Most of Bhutan's EVM knowledge resides with the older generation, signalling its precarity.

The medicinal plant most frequently mentioned in the northern Bhutan EVM survey was *bong nak* (*Aconitum laciniatum*) and *bong karp* (*Aconitum orochryseum*), two flower colour variations of the aconite plant (Wangchuk, Samten, & Ugyen 2009, pp.23–24). This is an essential ingredient in Bhutanese *Sowa Rigpa*, Traditional Tibetan Medicine, Traditional Chinese medicine, and many local Asian medical traditions. Varieties of aconite are found worldwide, known as wolfsbane and monkshood in Europe. There are many species of *Aconitum* in Asia, and they are

heavily researched for their medicinal properties. In Bhutan, *bong nak* and *bong karp* are used in humans for gout, chronic infection, leprosy, bone disease, intestinal parasites, snake bites, the common cold, gall bladder disorders, and dysentery (Wangchuk, Samten, & Ugyen 2009, pp.23–24). Dagala herders also treat human patients for coughs, colds, stomach pain, headaches, and body pain with aconite.

Aconite is collected near Dagala at Gathe-la from September to November. Herders harvest the root when the aerial part has died. It is prepared as a medicine by crushing a three-centimetre-long piece of the root and soaking it in water to make a red solution. They treat yak wounds by washing the wound with the solution. Yak poisoning or diarrhoea is treated by feeding the yak one litre of the soaked solution daily for three days. They warned me not to handle the root with my bare hands as it is very poisonous and can cause heart failure and death in people. In fact, aconite has been used to poison people maliciously. Several Bhutanese were accidentally poisoned by it through its use in traditional medicines, causing heart failure (Tshering et al. 2018). The herders said they must take great care with the dosages to avoid killing the yak.



Plate 48- A Lingshi herder collects, prepares, and dries herbs for the Institute of Traditional Medicine.

Bhutan's neighbours, India and China, boast some of the world's oldest traditions of EVM, tracing back millennia. In Tibet on Bhutan's northern border, I recorded

numerous textual sources on Tibetan EVM and recorded existing practices in Amdo, Qinghai, China, which are described in Appendix Six. EVM in Nepal, Sikkim, and Arunachal Pradesh is well documented, including practices involving yaks (Singh 2009, Maiti et al. 2013, Acharya & Kaphle 2015).

Western alpine Bhutan, however, reports less than average EVM practices compared to similar geographies and species. Despite knowing many medicinal herbs, herders' ethnoveterinary knowledge and practices were scanty. Their primary approach to preventative healthcare and healing involves ritual practices. This could be considered as simply a restriction in available medicines for a yak's large body. Collecting enough plant-based medicines to treat the yak requires extensive labour. Yak's strength and lethal horns also require expertise and labour to restrain and treat them. Treating a horse or goat with EVM is much easier and safer for the one applying that treatment. In addition, yaks range across large tracts of pastureland, often unaccompanied. They must be herded into a centralised area before treatments can be administered. In contrast, my surveys of Bhutan's mid and lower altitudes, where smaller animals are farmed, reported over 270 medical ingredients used on animals.

When I asked one traditional doctor if they had heard of treating animals with *Sowa Rigpa*, she replied that she had not. Like Doma, this doctor said, "We struggle to keep up with the demand for our human patients. We do not have the capacity to treat animals as well," she emphasised.¹⁰³

"In the old days, we would go out and collect the medicines ourselves. It was hard work, walking for days up into the high mountains. Then harvesting, drying and processing took a long time as well," the doctor continued. "Now we buy many of the ingredients, so it is easier. Medicine is precious. We must keep it for Bhutan's people," she finished.

Ethnoveterinary Futures

Bhutan contains an extensive pharmacopeia of ethnobotanicals used in human and animal healthcare. Dr Phub Dorji from the College of Renewable and Natural Resources has driven EVM research in Bhutan. He recorded 56 EVM plant species and

¹⁰³ This observation is supported by reports from Bhutan's Institute of Traditional Medicine.

their usages (Dorji 2007), while his students also identified 29 ingredients from Wangdu district (Cheda 2006) and 33 from Punakha district (Sonam 2010). Another survey of Bumthang district documented 33 ingredients (Dorji & Tshering 1999). Dr Dorji's early efforts to archive Bhutan's EVM knowledge and practices must be honoured and acknowledged as critical to preserving Bhutan's cultural and material heritage.

The wider Himalayan environment boasts a rich biodiversity, comprising more than 8,000 plant species, with 1,748 known for their medicinal properties (Joshi et al. 2016). Recent reports on Bhutan's ethnopharmacy have documented 660 medicinal plants, of which the Institute of Traditional Medicine regularly uses 229 in its medicine production (Wangchuk 2022, p.9).

Despite this extensive material heritage, Bhutan's EVM knowledge is rapidly disappearing. This is primarily due to a failure in intergenerational knowledge transmission. Older animal healers, like an octogenarian I interviewed in Tsirang, complain that young people want to move to Thimphu and apply for government jobs. They don't want to trek through the jungle looking for seasonal and rare plants.



Plate 49- Interviewing an octogenarian herder about his EVM knowledge.

Dr Dorji’s work and that of his students described similar risks— “the practice and knowledge is at the juncture of extinction” (Cheda 2006, p.2) and “most knowledge of the ethnoveterinary medicine resided with elderly community members and disappeared as they die” (Sonam 2010, p.4). Many of the healers, herbalists and bone setters I interviewed were in an older demographic. They all repeated the same chant—no one is willing to apprentice to them, and they fear that their knowledge and skills will die with them. It is possible that within 20 years, very few traditional veterinary practitioners and their knowledge will be left in Bhutan.¹⁰⁴



Plate 50- Another healer from the older generation.

¹⁰⁴ This complex of socio-economic factors causing a decline of EVM has been reported since the 1980s in many continents, not just Asia (McCorkle 1986, McCorkle & Mathias-Mundy 1992).

Another paradoxical reason for this decline is the national availability of the state veterinary regime's bioveterinary pharmacies. Many farmers report that even though they know of EVM treatments, it is easier to call the paravet to treat sick livestock and use a packet of ready-made powdered medicine. These are easier to access, prepare and use compared with the labours of traditional medicine. However, in some remote Bhutanese areas, EVM is still relied on where DoL facilities are less accessible. This will change as Bhutan's road network expands, and new areas will come within reach of state bioveterinary services.

Apart from Dr Phub Dorji, other DoL personnel expressed an interest in manufacturing Bhutanese EVM for domestic use. This could reflect the popularity of the National Institute of Traditional Medicine, which has successfully promoted its indigenous Buddhist medicine, *Sowa Rigpa*, as part of the Bhutanese national identity. The Institute and its national system of clinics are still very popular with Bhutanese patients, who have the choice of both biomedicine and *Sowa Rigpa*, in Bhutan's plural medical system.

Developing Bhutanese traditional veterinary medicines could similarly conform with national identity politics and state narratives of cultural preservation, sovereignty and self-sufficiency. This aligns with the larger national politics of GNH, knowledge, identity and public health. India and China's thriving contemporary EVM industries are good examples of the economic potential of Bhutan's EVM domestically and for export. EVMs reduce the public health problem of antimicrobial overuse and support rural and regional animal agriculturalists' access to culturally acceptable, sustainable, low-cost medicines. And finally, preserving and implementing EVM contributes to Bhutan's GNH goals of sustainable development and preserving cultural heritage.

Conclusion

The human-animal relationship is framed here within the ethnographic context as an extended interspecies kinship network. I have outlined different ways in which kinship networks are developed between yaks and herders. These included mutual nurturing, mutual shared substances, for example drinking the same water and being subject to the same deities and sharing common illness narratives and healing practices. I proposed another form of kinship production, being made of the same

elements - molecular, energetic, karmic and spiritual and therefore having the same influence from the same illness aetiologies. These relationships and their connection to sacred landscapes contribute to components of herders' illness narratives and their explanatory models for illness and healing.

Herders navigate a healthcare ecosystem that includes medical plurality for themselves and veterinary plurality for their animals. The practices and practitioners often overlap because each species is subject to the same explanatory models for illness. They share interspecies explanatory models of health and illness, as well as similar modes of healing. I presented ethnographic examples from both field sites to illustrate the complexities of these relationships and the ways herders understand their interspecies health matrices and models of illness causation.

These explanatory models also include concepts of relational more-than-human health assemblages. Aetiologies of illness result from interactions with the sacred landscape, deities, and other spirits that cause harm, as well as the Buddhist concept of karma.

These practices and rituals can represent culturally encoded Indigenous knowledge that generations of herders have developed and passed down, leading to more effective methods for managing both their herds and health. Often, these practices uncover health benefits that can be analysed and implemented more broadly.¹⁰⁵ The second reason for engaging with illness narratives is that they influence herders' decision-making behaviour in their search for therapies. Often, bioveterinary campaigns miss their intended targets by disregarding illness narratives. Gid prevention programs and Pema's dying yaks illustrate this point. The third advantage is that by interrogating human-animal and more-than-human health assemblages, a deeper and more nuanced understanding of society's relationship to health is uncovered.

In this chapter, I provided examples of Bhutan's EVM knowledge and practices, which are declining in Bhutan, as they are globally. The state's increased reach is delivering bioveterinary medicines to new areas each year, including vaccination and deworming programs of preventative healthcare. These expansions and programs

¹⁰⁵ See the Introduction to Martin, Mathius and McCorkle's annotated bibliography of Ethnoveterinary Medicine for several examples of this (Martin et al. 2001, pp.16-17).

bring bioveterinary advantages to new animals and farmers but are a factor in EVM's decline. The DoL acknowledges the importance of documenting EVM in the face of this decline. Despite their bioveterinary science training, many DoL personnel are interested in manufacturing Bhutanese ethnoveterinary medicines for domestic use.

In the next chapter, I expand upon the herders' interspecies health networks by extending the field to include more-than-human assemblages.

Chapter Seven- More-Than-Human Healing in a Sacred Landscape

These more-than-human worlds, comprising Bhutanese spirits and other non-corporeal beings that influence and inform animal health and healing, are the subject of this chapter. I expand on the explanatory models of health and plural veterinary practices described in the last chapter, focusing on spirit harm in this chapter. The sacred landscape is entangled in Bhutan's multispecies health networks, where states of health and illness are attributed to those non-corporeal actors. These deities and spirits are credited with significant agency in a 'web of mutuality'. I demonstrate how the "quality of this web of mutuality influences human health and well-being" (Allison 2017, p.205), and the health of the other-than-human inhabitants and the environment, which is relevant to this thesis. I analyse how the Dagala human community actively manipulates this web through specific rituals and practices that they collectively endorse and perform.

Spirit harm as a condition is analysed in greater detail, teasing out different aetiologies of nefarious spirits that cause illness or problems in animals. Although the interaction between numinous spirits and deities on human health and wellbeing has been well reported by others in Bhutan and across the Tibetan cultural area; their impact on animals has been largely overlooked. I therefore confine my ethnography to how these well-documented concepts are understood and utilised in the wider herder-livestock health relationship and in ritual health and healing practices for animals.

The chapter begins by summarising the specific numinous spirits and deities active in the field. I outline the diagnostic methods used to determine the cause of the problem: divination and astrology. The diagnostics usually result in a treatment prescription that varies from specific spiritual practices to more routine ones.

As such, some rituals are performed to treat an illness or calamity. Some are performed routinely as a form of preventive medicine, to maintain balance in the health ecosystem for human and animal benefit. Other practices aim to preserve health and well-being, collectively benefiting humans, animals, spirits, and environments.

In this chapter I describe the most common rituals I observed in the region, including the last yak sacrifice in 2014.

The Arts of Noticing

To learn anything we must revitalize arts of noticing and include ethnography and natural history (Tsing 2015, p.38).

During my first week in Dagala, Aum Tsering guided me through Dagala's valley, past neighbours' herds and houses, toward Aum Jomo's mountain citadel. As we walked along the mountain slopes and through verdant summer pastures, Aum Tsering's relationship with this sacred, multispecies, and more-than-human landscape gradually revealed itself. She carefully navigated around wary herds of yaks, large mastiffs guarding their homes and herds, and treacherous sites like cliffs, bogs, and water courses— places inhabited by malevolent spirits. Aum greeted the families we passed and the deities and spirits who were their neighbours. We stopped at her daughter's house to rest, sipping butter tea and eating snacks of roasted puffed rice and sweet biscuits. Aum Tsering continued narrating stories, oral histories, and folk tales, grounding me in the sacred landscape, Dagala's animals, family lineages, deities, and spirits who resided here. When our journey resumed, new stories emerged at each turn of the path. As new features of the landscape came into view, Aum recited songs, poems, and morality tales that involved the lakes, boulders, mountains, and landscapes that had not been obvious to me until now.

While we walked over the mountain pass to the next valley, I was reminded of Anna Tsing's "arts of noticing" (2015, pp.17–25). Through Aum Tsering's eyes, I noticed "the divergent, layered, and conjoined projects that make up worlds" (Tsing 2015, p.22). Rather than attempting to fit Aum Tsering's worldview into my framework of understanding and social science theories, I tried to reshape my perspective to see her worlds. Aum Tsering's storied journey wove a web, each strand representing a relational world intertwined with other strands/worlds. She negotiated our safe passage through this densely inhabited place/time, her world-making activities continuing as the path receded beneath our feet. Aum muttered prayers and obeisances to local spirits, added stones to cairns, and avoided the *lu* in their abodes and the yaks in theirs. We carefully skirted the edges of lakes where *tsomen* (*mtsho sman mo*, female water spirit/deity of the lake) lived, with genuine

concern not to disturb them through material and spiritual pollution. Prayer flags were hung, and offerings were made to Aum Jomo to placate this jealous female deity and seek permission to cross the pass beside her mountain, her territory. Aum Tsering also chanted mantras to Buddhist deities like Dolma, Chenrezig, and Guru Rinpoche, between her offerings to the other local, lesser, worldly deities.

Aum Tsering introduced me to Dagala's human, animal, and spiritual beings. These beings are interdependent and mutually constitutive, inhabiting a relational ontology (Allison 2017, p.204) whose complexity can be challenging for newcomers to grasp. Despite lacking a physical form, spirits and deities are agential beings that shape the landscape and influence human and animal health. They co-inhabit and 'co-become' with the embodied beings in the 'conjoined project' that transforms this world into a sacred landscape.

When moving through Dagala, the landscape is defined by physical representations of the sacred. Stupas, temples, prayer flags, cairns, prayer wheels, and other material constructions are tangible aspects of Dagala's spirit worlds. It is through these materialities that relationships with spirit beings are negotiated as sites of mediation. The sacred and spiritual realms also emerge in intangible forms, such as conversations, songs, poetry, art, music, and prayers. Once the 'arts of noticing' are cultivated, the sacred environment and spiritual worlds saturate the environment.

I was also introduced to the centrality of the sacred environment during my ethno-veterinary surveys across Bhutan. Almost every respondent had utilised ritual health and healing practices for animals, mediating relationships with local and regional spirits in relational health networks. They often attended to rituals before seeking assistance from DoL personnel. Additionally, many used rituals in conjunction with, or after, treatments from the state's bioveterinary services. Rituals became a standard part of my conversations with herders and animal agriculturalists, who drew on their own culturally specific therapeutic models and localised practices in conjunction with bioveterinary medicines.

From the multiple deities and rituals documented in Bhutan, those most commonly associated with animal health and healing are analysed here. The first is *luchod*, which I introduced in the last chapter. The next ritual is *lochod*, each family's annual house rituals. *Lochod* enhances harmonious relations with deities and

humans, renews relationships with those familial spirits, and increases the vital forces, health and wellbeing of the extended more-than-human world. During *lochod*, another ritual is conducted called *tensur*, where specific animals are offered to be the mount for each family's familial and local deities and spirits. This animal is offered as a reciprocal exchange where material and health benefits are expected for the family and their animals in return.



Plate 51- Aum Tsering, Kinlay and Kardock's summer pastures and residence in Dagala.

The final practice I describe in this chapter is a yak sacrifice to the local livestock deity. Although animal sacrifice rituals have been reported in Buddhist communities for centuries, appearing in histories, texts, and contemporary scholars' work (Feddema 1995, Chapple 2008, Erschbamer 2019), the ritual's association with animal health care has been underreported or ignored. I include this ritual here as it illuminates a more nuanced account of health-relatedness and explanatory models of illness. I recorded and interpreted Bhutan's last yak sacrifice in 2014 as a form of multispecies preventative health care. Herders believed the ritual was necessary to mediate the social and familial reciprocal relationship and responsibility to their livestock deity. They had experienced serious consequences when they tried to stop the sacrifice in the past, supporting narratives of mutuality and interdependence. The

yak sacrifice maintained balance and harmonious relations with the deity, improving the health and well-being of humans, animals, deities and environments.

Following the initial people/ place/ deity taming efforts of Padmasambhava in the 8th – 9th centuries, the next step in taming new areas focused on eliminating animal sacrifice, converting the rituals to white offerings, and absorbing these local spirits into the Buddhist cosmology (Erschbamer 2019, Miyamoto et al. 2021, Mumford 1989, Balikci 2008). Dagala's livestock deity finally succumbed to this type of Buddhicisation in 2015, when Bhutan's highest spiritual leader, the Je Khenpo, interceded using methods similar to his predecessors. Aum Jomo was then incorporated into the Buddhist pantheon, ending her *marchod* (*dmar mchod*, red offering) ways.¹⁰⁶

The Sacred Landscape

The malevolent spirits are not only acknowledged but held in awe and placatory rites have to be performed for them (Choden 2009, p.2).

Looking across the seemingly sparse alpine environment of Dagala's Labatama valley, I have to remind myself that it is crowded with thousands of yaks, horses, dogs, cats, and wildlife. Additionally, hundreds of spirits like *lu*, *tsen*, *dün* (*gdon*, malevolent spirit), *tsomen*, *yul lha*, *nor lha* (*nor lha*, livestock deity), *lhamo* (*lha mo*, goddess, female deity), *srin* (*srin po*, a class of demon), *gyalpo* (*rgyal po*, a class of spirit), and others are said to inhabit this land. This does not include the higher Buddhist deities, dakinis, and the innumerable Buddhas. In early research efforts, Dasho Karma Ura (2001) reported over 200 Bhutanese deities. Since then, he has reported on many more (Ura 2023a, 2023c), as have other scholars.¹⁰⁷ Despite their multitude and variety, some common traits have been identified across the Himalayas, Tibetan cultural areas, and within Bhutan. I will describe the most common autochthonous spirits mentioned in my field sites, particularly in their relation to animals and animal health.

¹⁰⁶ *Marchod* implies animal sacrifice.

¹⁰⁷ For examples, see Choden (2009), Dema (2021), Tashi (2023), Allison (2015, 2019), Pommaret (1996, 2010, 2004), Schrempf (2015a), and Huber (2020).

These volatile deities are known generically as worldly deities, describing their unenlightened state. Dharma protector deities are those ‘tamed’ and bound by oaths to Buddhist masters. Their fickle nature and powerful tempers are well reported elsewhere, and rituals to please and appease them are essential to Bhutanese spiritual life.¹⁰⁸ Harmonious relations with the numinous beings, when properly maintained through rituals and observances, produce wealth, health, and material prosperity. If the relationship is damaged or the deity is harmed, practices aimed at appeasing them seek to avoid the misfortunes the deities may inflict as retribution. Once the afflictions are manifest, practices are also offered in the hope that the deity will withdraw the malady and misfortune.

Dagala’s livestock deity, Aum Jomo is one of many more minor local protector goddesses who had escaped the attention of Padmasambhava and subsequent Buddhist practitioners. The process of Buddhicising Bhutan has yet to incorporate all regional and local deities into its pantheon and cosmology, and Aum Jomo was not yet bound by Buddhist oaths in 2014. Aum Jomo is a *nor lha* and a *yul lha*. She is also the *kye lha* (*skye lha*, birth deity) of the Dagala inhabitants born here, serving as their protector deity.¹⁰⁹ If one is born in the same place as one lives, then the *yul lha* and *kye lha* will be the same (Pommaret 2004). Her title *Aum* (*am*, honorific female), or *Ama* (*ama*, mother), invokes bonds of kinship with the local multi-species residents of her domain.¹¹⁰ Aum Jomo is also one of the many deities that required an animal sacrifice as part of their propitiation, leading local herders to believe her rituals were *Bön*, not Buddhist.

Yul lha, *kye lha*, *nor lha* and other protector deities live high in the mountains as “immortal owners or landlords, while successive generations of communities are ephemeral [sic] travellers passing through their territory,” (Ura 2001, p.1). *Tsen*, another of these high dwelling protector deities, are fierce local spirits living in lofty areas like cliffs, mountain passes, and rocky outcrops.

¹⁰⁸ As also reported by Ura (2001, 2023c), Choden (2009), Allison (2015), Čokl (2023), and Pommaret (2010).

¹⁰⁹ State maternal health policy encourages women to move closer to Thimphu in the last months of their pregnancy and have hospital births. Due to this, many children are born in Thimphu and their *kye lha* are the Thimphu deities, not Aum Jomo.

¹¹⁰ This familial relationship has also been reported in male *yul lha*, whose title begins with *ap* (father).

Spirits who live in low places, deities of the land include the *lu* that I described in the last chapter, who reside underground, in water, rocks or trees. *Tsomen* live in lakes, slow-moving water and marshy areas. A type of demon, *düd* (*bdud*, demon), is found in low-lying places like rivers, gorges, and deep valleys (Tashi 2023). *Düd* can cause stomach-ache and diarrhoea in humans and *nor*. Then, there are household deities, for example, *thab lha* (*thab lha*, the stove deity), *go lha* (*sgo lha*, door deity) and *gung lha* (*gung lha*, ceiling deity).¹¹¹

The total of these, and many more, local spirits and deities require a rotation of rituals designed to maintain a ‘cosmic balance’, harmonic relations, reciprocity and neighbourly relations. In addition to warding off illness and harm, the deities’ reciprocity can bring prosperity to the community and family if they are pleased. *Nor lha* in particular are worshipped, reflecting livestock’s importance as symbols of wealth in rural Bhutan (Pommaret 2010). In addition to these routine rituals that maintain harmonious reciprocal rituals of exchange, additional practices are performed in response to an illness, accident or other sign of misfortune.

Spiritual and Material Pollution

In the past, the Lingzhips would strictly abide by the prohibitions and requirements set by the deities to avoid natural calamities in their village, and a major part of such norms included not harming the environment (Choki 2021, p.165).

These spirits share a common susceptibility to *drib*, and their dislike of it has consequences on two levels. The spirits could withdraw their blessings from people and communities, leading to misfortune, illness, and reduced prosperity. They might also exact revenge on those who defile and pollute the land, water, forests, and air, personified by “storms of epidemics... and snare[s] of diseases” (Ura 2001, p.5). Pollution or defilement takes many material and spiritual forms, including littering, faeces and urine from livestock, horses and humans, female menstrual fluids, pungent foods, and dirty smoke (burning pungent foods like chillis, and burning dead bodies).

¹¹¹ There are many other classes of spirits, and local variations, associated with health in Bhutan, for example, *shi dre*, *gson dre*, and *rgyal po*. However, these did not feature prominently in animal health narratives so are not included here. For more information on these and other spirits, I refer the reader to the literature cited at the start of this section.

“If we don’t do those things [rituals], then it will harm our animals, and it leads to [the] death of animals. Even if we do it, if we do it untidily [*drib*] then [it] also harms our animals,” warned Tshechu, a 53-year-old Dagala herder, referring to the spiritual pollution of incorrect ritual delivery. Herders referenced other forms of spiritual *drib*, such as ignorance of, or not complying with, the taboos and rules of the deities’ lands, not following the correct timing and manner of rituals and offerings, trespassing on a deity’s territory without seeking permission, and association with childbirth, sex, and death. These rules and taboos apply equally to humans, animals, residents and outsiders visiting the area.¹¹²

Lingshi herders described recent material and economic changes of development, tourism, and the medicinal herb industry, as having caused imbalance and spirit harm. “The *yul lha, tsen, lu* and *dūd* are upset that their home is being polluted [*drib*] with all this extra rubbish, urine and faeces from the trekking groups and their pack animals. And from female menstruation,” a Soe herder explained to me. The famous Snow Man trek runs through this area, annually bringing thousands of extra people, livestock, pack animals, and even dogs. Many herders complained that it reduced pasture capacity and increased pollution due to thousands of transient humans and animals eating, trampling, and defecating. Moreover, these transients are not maintaining proper relations and harmony with local deities. Some suggested the area had experienced heavier winter snows, livestock predation, illness, and human and animal deaths, attributed to the deities’ displeasure.

Most of these outsiders are not aware of the cosmological landscape and the presence and personalities of distinctive deities, including related prohibitions and taboos ... in terms of maintaining a cosmic balance, this is problematic, and that many Lingzhips directly or indirectly explain the deities’ anger as, in part, caused by outsiders not following prescribed rules and restrictions (Choki 2021, p.162).

In the years following my fieldwork, Kinlay Choki (Choki 2021) problematised *drib* in Lingshi, describing tensions between material and spiritual relationships with the environment. She also noted community narratives of increasing *drib* in many arenas, like I described above. The significant gains in herders’ material wealth from

¹¹² See Kalzang Tashi’s (2021) article for a more detailed treatment of concepts of pollution and defilement in Bhutan.

cordyceps collection resulted in rapid social and economic transformations. Newer and larger houses were built, increasing digging activities and tree felling, disturbing the deities' homes and lands. The ongoing disturbance of cordyceps collection sites and the animals and people used to move the product to market also caused *drib*. She argues this was changing herders' relationship with the environment from harmonious interdependence and balance to one of resource extraction. The preoccupation with cordyceps also caused a decline in community cultural and ritual activities. Lingshi narratives posit that the cumulative increase in *drib* angered the deities, who blamed people for not preserving the environment and their mutual relationships as expected. Therefore, the deities caused environmental changes (those that scientists label climate change) and sent retribution to people and livestock. This narrative exemplifies the consequences of *drib* and of failing to maintain proper relationships in this world of relational interdependence.

In contrast, more-than-human relationships are still prioritised over material gains in certain circumstances. Trekking tourism is a major contributor to the Soe and Lingshi economy. *Yul lha, tsen*, and other high-dwelling powerful spirits were usually left undisturbed to protect them from *drib* and ensure the safety of their multi-species tenants. However, after experiments in mountaineering tourism angered these powerful deities, herders experienced the harsh consequences of spirit harm that affected *nor* and the community. Several herders told me that as a result, their representatives petitioned the state, which then revoked further mountaineering activities out of deference to the deities' needs. Elizabeth Allison (2019) reports similar mediations between human activities, development projects, and sacred features of the landscape. Development and building projects were frequently delayed or cancelled to avoid disturbing and harming spirits or deities. The deities' well-being and relational harmony with the community were prioritised in both examples over material development and tourist income.

Another interpretation of pollution or *drib* may be related to multi-species health consequences and cultural changes that have material outcomes. For example, large movements of animals into new areas are a potential vector for disease spread. Stray dogs followed the tourist caravans, eating scraps and potentially bringing parasites like gid, roundworm, and other diseases like rabies. Furthermore, concepts of pollution attributed to outsiders, expressed as ignoring the deities' taboos and

observances, may reference cultural erosion from outside influence, undermining community lifeways and cohesion. This is certainly a threat in remote communities where cultural adherence and collaboration are essential for survival.



Plate 52- Trekker's camp, Jomolhari base camp.

Ideally, *drib* is prevented by maintaining the proper reciprocal relationships in 'cosmic balance' through the timely observance of rituals, taboos, and community participation (Čokl 2018, 2023). However, if it is believed that *drib* causes spirit harm and the deities' retribution is felt, then specific healing practices are required.

Ritual Healing

Making the Diagnosis- *Mo thab, Tsip thab*

"I searched for hours, but my *nor* were gone, and a thick fog came," explained Pema. "So, I consulted the *mopa* [*mo pa*- divination practitioner]. He told me which side of the mountain to look, and I would find them in a group under some small trees on the south side of the slope." His face lit up brightly, remembering the event. "And then we went to that place, and the *nor* were there!" Pema finished, widening his

arms and lifting his shoulders as if puzzled by the accuracy, but not surprised at the same time.

Nearly all the herders I interviewed had used *mo thab*, *tsip thab* (*mo btab*, divination; *rtsi btab*, conducting an astrology reading) to diagnose the cause of their livestock's sickness, infertility, or reduced productivity at some point. They also used it to find lost livestock in the mountains, like Pema had.

Within the cosmology of these more-than-human health assemblages, Bhutanese utilise the services of specialist diagnosticians to determine the cause, or aetiology, of the current misfortune, including their yaks' illness, injury, or loss. Most herders I interviewed had used the services of a *tsip* (*rtsip*, astrologer) and arranged a *mo thab* from a *mopa*. Commonly expressed as *mo thab*, *tsip thab*, it can be performed by monastics, lay practitioners, and trained astrologers.

Astrology and divination are deeply embedded in Bhutanese society. The central monastic body oversees formal astrological training, and astrologers are respected figures. Some apprentice to a teacher as an alternative pathway to institutional education. Astrology and divination are routinely performed for individuals, families, and communities to identify auspicious days for travel, events, annual household rituals, and agricultural cycles. They are also used for health concerns and spiritual protection. *Mo thab* can be performed using *sho* (*shag mo*, dice), *tren mo* (*tren mo*, mala beads), and *melong mo* (*melong mo*, mirrors). *Bönpos* (*bon po*, practitioners of the *Bön* tradition) can also employ special powers of clairvoyance in visions, dreams, and omens (Tashi 2023, p.74). Some renowned *mopas* and *tsips* are dedicated Buddhist practitioners, requiring a stable mind and a strong connection to Buddhist deities to achieve the most accurate results.

A diagnosis produced by *mo thab*, *tsip thab* usually indicates a type of spirit harm, frequently caused by a *dün*, *lu*, or *düd*, although there are many other spirits to choose from. When the appropriate rituals were prescribed, they were only sometimes effective.

Kardock, from Dagala, explained how he would notice a change in his yaks' appearance, their movement, or a reduction in their milk, and arrange a *mo thab*, *tsip thab*. If a *dün* illness is diagnosed, he performs the ritual *dünchod* (*bdud mchod*, ritual to placate the *dün*). He offers food and drink in a ladle or cup to the *dün*, like sweet buckwheat flour, tea, and rice. This mixture is poured over the affected animal while

saying words like, “Drink this, eat this, now go away and leave this animal.” He then throws the remaining amount toward where the *dün* should live.

Flour and dairy are also burnt on a fire to make a *sür* (*gsur*, burnt food) offering. “It helps a lot, Dr-La. After we do the *dünchod* and *sür*, they improve. Sometimes they don’t, though, then we ask for help from the livestock officers as it must be due to some disease instead,” he explained, moving seamlessly between explanatory models for yak illness, embracing a plurality of aetiologies and treatments. This plurality of illness narratives and treatments was a constant theme in this research. It was rare to encounter someone who hadn’t used rituals to treat their animals. They differed in whether they first sought a ritual or the livestock department’s bioveterinary services.



Plate 53- Ap Pema, consulting his divination text.

While in Gangyul near Lingshi, I visited a famous *mopa*, Ap Pema, whom many herders consulted for their livestock issues. He had trained as an apprentice many decades ago and was now a senior, experienced astrologer, Buddhist practitioner, and divinator. He lived in a large, affluent house on the hillside, just above the village. As we sat in his altar room, he leafed through his ritual text and prepared his instruments. He began by chanting Buddhist prayers and meditating, making supplications to his *yidam* (*yi dam*, meditational deity). The *mopa* then rolled the dice,

and using the resulting number, along with the birth year and other details of the person seeking an answer, he referred to the astrology text and performed a complex series of calculations. When the result came, a diagnosis was given, along with a 'prescription' for the treatment; in this case, sponsoring certain rituals at a Buddhist nunnery near Thimphu.

Some herders have developed skills in divination and perform them for family and friends. However, most seek assistance from a local *mopa* or *tsip* like Ap Pema, or a Buddhist practitioner and astrologer. Buddhist *mopa* and *tsip* usually prescribe Buddhist rituals as the treatment or antidote, at a temple, monastic institution, or home. Lay *mopa* and *tsip* may refer the supplicant to local community rituals for non-Buddhist deities, like Kardok and the *dūd* I described above. My surveys indicated that many herders prefer this approach before calling the paravets for help. However, this may also reflect geographic accessibility. The paravets and DoL dispensaries are often far away or inaccessible for some of the year.

Luck, Prosperity and Wind Horses

Tshechu, a 53-year-old male herder from Dagala, said he is afraid of *lu*. "We have *lu* everywhere, but I don't know all their names. I have never seen one, or had dreams of them," he said. "We are afraid of *lu*, more than of Aum Jomo or *tsen*. We have to be careful of *lu*; if we do something wrong, they immediately start harming us. It is very difficult to recognise them," Tshechu continued, looking over his shoulder as if one was there now.

"They affect the *nor* and people in the same way, the wounds they send are very hard to heal. But they never harm horses or dogs, I don't know why that is." Regarding treatments, he performs the same *luchod* offerings for *nor* as he does for people. "We also have a *pecha* [dpe cha, Buddhist ritual text] dedicated to them called *Lu Pangko*, so we have to read it," Tshechu explained.

Tshechu then introduced the concept of *wangtang* (*dbang thang*, field of fortune, luck, prosperity) and *lungta* (*rlung rta*, wind horse, wish-fulfilling power, wellbeing) to explain why some individuals succumb to spirit harm and others don't. And why some are affected earlier than others. For example, a yak may get sick before a human, or vice versa. *Wangtang* and *lungta* are pan-Himalayan concepts, the meanings of which Kelzang Tashi (2023) described based on his research in a central Bhutanese village. Tashi suggested *wangtang* and *lungta* are tied to other life

elements or life forces that operate as vital energies. The state of one's *wangtang lungta* is the main factor governing whether, and to what degree, malicious spirits can cause harm or illness. Tshechu expanded on this, "if people have good *wangtang lungta*, the *lu* affects the *nor*. If the *nor* have more, people are affected first."

Like Tshechu, other Dagala herders described animals as also possessing these vital forces, explaining how yaks can be affected by the *lu*. Due to this shared 'stuff' of bodies, the same rituals and practices are used to benefit humans and non-human animals alike. Similarly, certain rituals and practices increase one's *wangtang* and *lungta*, thereby increasing resistance to spirit harm, illness and misfortune. One of these activities is raising prayer flags, some of which have images of auspicious horses on them, linking the words *lung* (*rlung*, wind) and *ta* (*rta*, horse). Other strategies involve Buddhist activities like chanting mantras, performing *tshethar*, long life practices and blessings, sponsoring Buddhist people and places, circumambulating auspicious objects, and reading spiritual texts.

The herder's annual house rituals, *lochod*, also increase the vital force of the extended family network of humans and animals, and maintain *thünlam* with neighbours and local deities. Lhakpa, an 80-year-old herder, expanded on this concept and the consequences of ignoring the annual rituals. "My animals were becoming weak, even with good food and management. They weren't producing much milk. I asked the *phawo* [*dpa'po*, male spirit medium, shaman] about it. He said it's because I didn't do *lochod*. He wouldn't do any healing rituals. He said I need to do *lochod* first, then the *wangtang lungta* will increase and the problems will disappear."¹¹³

Luchod- Serpent Sociality

Lu are the subterranean serpent deities I introduced in Chapter Six, which are particularly affected by pollution (*drib*) and damage to their homes and bodies. The *lu*, their history, preferences and dislikes, cosmology, and the associated rituals across

¹¹³ *Phawo* and *Phamo* (*bpa' mo*- female spirit medium, shaman) are mediums and healers in Bhutan. See Tandin Dorji's (2007) article.

Asia have been documented elsewhere.¹¹⁴ I focus here on their association with livestock health and illness.

In Dagala, just beside my tent and near Aum Tsering's house, stands a large, dark grey, round rock protruding 120cm from the ground and about three meters around the base. This rock is particularly significant because a *lu* lives here. I awoke one morning to the smell of smoke and the sound of chanting. As I peeked outside the tent, I saw Aum Tsering, followed by her grandchildren. She was holding a wooden bowl and a large wooden spoon. A small fire of juniper branches produced fragrant white smoke.



Plate 54- Aum Tsering offering Karchod to the *lu*.

"I am offering a *luchod*," she said between her mutters. The children piped up then, excited to explain this to the strange *chillup* who preferred sleeping in a cold tent to their warm stone house.

"The *lu* gets upset because we live so close," said Tenzin, the oldest. "Our *drib* hurts them, so we have to feed them to make them happy, and say sorry for being here," he continued. "Then we won't get sick, or the *nor*."

¹¹⁴ For example: Mumford (1989), Vargas-O'Bryan (2011)

“If we make them happy, they will make us rich,” said Doma, Kinlay’s daughter. She was referring to the belief that *lu* possess underground treasure houses, and when pleased, will share their abundance with the communities who propitiate them. Aum Tsering corrected the children, saying, “It is not just that. We must respect them, give them food, ask permission to be in their lands, keep their homes clean, and they return strength and wealth to us.”

Aum Tsering was burning *sang* (*bsang*, incense) made from juniper branches as a *lha sang* (*lha bsangs*, smoke offering, purification) for the area. She believed the white smoke was a favoured substance, which could be carried down to the *lu*’s dwellings. These vegetarian, exceptionally clean deities only accept ‘white’ offerings, or *karchod* (*dkar mchod*, white colour food offerings, no animal sacrifice).¹¹⁵ Next, Aum Tsering carried the large wooden bowl filled with fresh milk, butter chunks and white rice as she circled the rock. She offered obeisances to the *lu* and sprinkled the rock with the milk/rice/butter food offering. In return for this offering, Aum communicated her requests: healthy *nor*, more milk, a healthy family, and more wealth.

Aum Tsering performs these monthly *luchod* to placate the *lu*, maintain harmonious *thünlam* between the two, and ensure the health and productivity of the *nor*. “Before, I neglected this *lu* and many *nor* died,” she explained while we had tea over breakfast by the fire. “Since I have done these *luchod*, no more *nor* died from *lunad* (*klu nad*, illness caused by a *lu*),” she paused for a sip of tea. “Their milk increased as well. This is the *lu* sharing their wealth with us,” she concluded.

I saw a look pass between Kinlay and Dawa, Dagala’s livestock officer, who was accompanying me that week. It wasn’t until the following morning that I understood what that look meant. Dawa and I followed Kinley and Kardock to the herds on the nearby hilltop at dawn for the morning milking. Unlike other mornings, the calves were not permitted to wander away with their mothers after milking. Instead, Kardock skilfully roped each yak in turn, holding them by the horns. He also roped the testy male yaks, who were not as accustomed to human handling as the female milking yaks. He sometimes needed to ‘down’ the larger yak for safety in an expert technique that forces them to lay on the ground. Then Dawa performed a remarkable

¹¹⁵ White offerings, *karchod*, are usually white coloured vegetarian items like milk, butter, cheese, white smoke.

light-footed dance, swirling in towards the yak's rump and jabbing them with his multi-dose FMD vaccination gun. Following the injection, he quickly swirled out and away before the angry yak could break out of Kardock's grip, aiming to return the jab by goring Dawa with their horns.

After two sweaty hours of this hard work, we sat drinking tea again. Dawa and Kinley explained that since the DoL FMD vaccination program began, they have seen very little FMD in the area. This biotechnology and biocontrol of veterinary technoscience has reduced deaths from FMD. "*Ama-la* thinks her *luchod* is the reason, though," smiled Kinley. "Maybe it is? How can we tell?" she shrugged pragmatically. She continued to chat about changes they have seen since the increase in DoL paravet activity in Dagala, and in their winter home, Chamgang.



Plate 55- Yak vaccination day, Dagala.

"We also have less gid. We had lots of young yaks dying from it," Kinley sighed. "But now the livestock officer helps us give the medicine to the dogs, and the *nor* to prevent it." She was referring to the deworming campaign to control gid in yak herds, where the dog is the vector for this brain tapeworm.

"They also do the family planning operation on the *kyi*," Kardock interrupted. "After that, we don't have too many running around here," added Kinley. "It is better." Although the national dog desexing and anti-rabies program only allows

veterinarians to sterilise dogs surgically, they seldom venture to remote areas like Dagala. Older, experienced paravets like Dawa still perform the surgeries here, a service frequently requested by the community.

Stan Mumford (1989, pp.94–95) suggests the *lu* relationship is a pre-karmic model of reciprocal retribution. Humans harm the *lu*, which results in the *lu* harming humans. *Lu* require an apology, payment, and renegotiation of the arrangement to maintain balance in reciprocal harmony. He described the *luchod* ritual as a mutual exchange of healing, where the *lu* are healed of injuries to their body and homes, and humans are healed from illness caused by the *lu*'s retribution. I propose that livestock are an important addition to this health reciprocity and argue that they are an essential, if overlooked, aspect of the more-than-human health assemblage.

The next section briefly describes the rituals that involved livestock. They focus on improving *thünlam* with numinous spirits, increasing the collective human and livestock vital force and hence the resistance to spirit harm. They promote health and prosperity, and reverse spirit harm once it takes hold.

Lochod and Tensur

The annual rituals (*lochod*) at Kinley and Kardock's summer house were entering their second day. The *chosp* (*chosp*, lay or ordained religious practitioner), Lopen Dawa Penjor,¹¹⁶ and his assistant arrived yesterday. They had sculpted several *torma* (*gtor ma*- dough made of butter and flour for rituals), one for each deity with which the family has a relationship, including Aum Jomo.¹¹⁷ While preparing the *torma*, Lopen Dawa recounted his history and insights regarding the *lochod* practices he was about to perform. If the *lochod* is performed on time, blessings, health and abundance result. If they are not on time or ignored, many catastrophes occur, including sickness, death, and *bar chad* (*bar chad*, obstacles) for humans, and sickness and declining production for the animals. He explained that Padmasambhava established

¹¹⁶ Lopen Dawa Penjor is Dagala's ritual specialist. He recited five generations of fore-fathers who were practitioners. They handed down their oral lineages, practices, and handwritten *pecha* to him. He also performs other rituals when required, like *dünchod*, *luchod* and other practices that mediate a harmonic balance with the numinous inhabitants of the sacred landscape.

¹¹⁷ Other familial deities mentioned in the *pecha* include Mansey, Tsheringma, Gyenyen, Gomo, Dunkar-tsen, Jilly-tsen, Zhida, Karpo Dendue, *tsen-du*, and *dün-du*.

these rituals to protect people and animals from the harm inflicted by unruly deities and spirits. Four offering rituals from that time continue to be practised today.

*Chos-su (Bj)*¹¹⁸ is performed for humans, and the *tormas* represent the familial deities listed in the *pecha*. The other three rituals they are doing today are for animals, each having a separate text and *torma*. *Karpo dündu (Bj)* propitiates *gyalpo* and helps increase livestock fertility and production. *Tsendu* and *dündu* are performed to create peace and harmony, *thünlam*, with the multi-species and other-than-human inhabitants, particularly *dün*, *tse*n, livestock, and humans. In addition, effigies of people and animals, made as *torma*, are included as a *lutor (glud gtor*, ransom), which commonly occurs across Bhutan and the Tibetan cultural area.



Plate 56- The lochod altar.

The makeshift altar in the back room of the house groaned with *tormas*, photos of deities and revered Buddhist leaders like the Je Khenpo and the Dalai Lama, candles, plastic containers of oil, stacks of yak cheese, meat, and butter, packets of sweet biscuits, fruit, and bottles of whisky. The *chosp* emphasised that the meat should be brought from the shop or from an animal that died of natural causes. This collected

¹¹⁸ The herders called their rituals *chos-su*, *karpo dün-du*, *tse*n-du, and *dün-du*.

offering, or *tsok* (*tshogs*, food offerings for the altar), was reminiscent of many Buddhist ceremonies and practices I had attended across the Himalayas.

Once everything was in place, we all stomped outside and then, in a hierarchical procession, entered the house in order of status, being bathed in *sang*, the purifying smoke. The *chosp* then called out the deities by name, inviting them to the ceremony, while we prostrated to the altar. The smells of the cooking fire filled the air, tea simmered in a pot on the hearth, and Kinlay and Aum Tsering returned to prepare refreshments and food for the ritual master, his assistant, and the guests who came in an ongoing stream.¹¹⁹



Plate 57- The *lochod lutor*.

After an hour of chanting and reciting from the old handwritten *pecha*, the *chosp* and his assistant walked up the hill to the herd to begin the *semchenchod* (*sems chan*

¹¹⁹ Ulrike Čokl's (2023) research on *lochod* in central Bhutan describes many similarities to the *lochod* I witnessed in Dagala and Chamgang, the herders' winter residence. The ceremony, altar, deities, *chosp*, *torma*, *pecha*, and rituals were the same in both residences. The winter house was much closer to the road and town, resulting in four monastics and many more guests attending.

mchod), ¹²⁰ a part of the *lochod*. This is performed to benefit all animals in the area. I was told that the livestock's *wangtang lungta* and milk production and fertility increase afterwards. They started a small fire beside the yak herd and milking yards, piling green juniper branches on top to create a white, fragrant smoke. This *sang* cleansed and purified the environment and livestock. Importantly, it purified the deity's land, returning it to its original state. They picked up their small *damaru* (*da ma ru*, double-sided drum) and *drilbu* (*dril bu*, hand bell), continuing the chanting and prayers of the morning, this time walking around and through the yak herd. They were supplicating Buddhas and other classes of beings in the Buddhist pantheon, the regional *yul lha*, *nor lha*, family birth deities (*kye lha*), and local spirits like *lu*, *gyalpo* and *dün*. They asked for forgiveness for the *drib* the multi-species family and community collectively created, and any harm this caused to the numinous spirits. They beseeched the gathered spirits to bless the *nor* with *wangtang lungta*, health, fertility and productivity.

Then the practitioners and family walked back down the hill, past the family house to the rock home of the closest *lu*. In a more flamboyant and noisy ceremony than Aum Tsering's monthly offerings, these ritual practitioners propitiated the *lu* by walking around the rock several times. They sprinkled blessed water from the *bumpa* (*bum pa*, offering vase), offered *sang* and apologised on behalf of the family and herd for any transgressions or harm the serpent spirit had experienced. In a final clash of drums and ringing of bells, they concluded this section of the *lochod* and went back indoors for a tea break.

When I arrived for breakfast, Kardock finished making the tassels of white yak wool with a red centre (*tenzhu darphi* Bj), dyed with red pigment from a local plant. He and Kinlay had deftly spun yak wool into long, thin, strong ropes yesterday. These red and white tassels, or pom poms, were needed for the next stage of the *lochod*, the *tensur tsulni* (Bj) offering. For now, they would sit on the altar to be blessed. While they drank tea, Kardock and Kinlay described the *Tensur* ritual that they were preparing to do after breakfast.

¹²⁰ To recap, *semchen* means one who possesses a mind. All beings within samsara have a mind, however, colloquially and in ritual texts it refers to animals.



Plate 58- Lopen Dawa Penjor purifying the yak enclosures at Chamgang, during winter Lochod.

Tensur serves to mediate and maintain *thünlam* in Dagala's health assemblages and is another part of the *lochod* rituals. When the 'cosmic harmony' is balanced through *thünlam*, humans, animals, the environment, and spirits thrive. The *tensur* ritual is another form of reciprocity, offering a sanctified animal to each deity for them to ride. Every family has hereditary relationships with one to fourteen local and regional deities inherited from their forebearers, including *nor lha*, like Aum Jomo, *kye lha*, *tsen*, and others. The sacred animal's gender, colour, and age are chosen to match each deity's preference. After sanctification, the yaks continue to live within the herd but will not be sold for slaughter, killed, or used for any other purposes. If it happens to die, another one is chosen to take its place. The ceremony is repeated yearly, with either the same or a new yak.¹²¹

When we walked back up the hill after breakfast, there was an air of excitement. The four selected yaks were roped and tied to a stake. Kardock carried the tassels,

¹²¹ These sacred animals and the consecration ceremony share many features with those recorded across Central Asia (Mumford 1989, Fijn 2011, Govindrajan 2018, Buffetrille 2019, Erschbamer 2019).

while Kinley carried the same wooden bowl and large wooden spoon that Aum Tsering used for the *luchod*. The bowl was filled with milk, butter, white rice, and fermented alcohol, and butter was dabbed on the bowl's rim and spoon.



Plate 59- Pouring the milk/ butter offering on the sacred animal.

Kinley quietly spoke words of propitiation, the *Jomo Sulni* (Bj) to the first deity, Aum Jomo, whose yak should be female with a white forehead. She then helped Kardock with the ear piercing. The string was threaded into a large needle like those used for leatherwork. They grabbed the yak's ear, and Kardock pierced it quickly, pulling the thread through and tying it back on itself so the red and white tassel was nestled in the front of the yak's ear. He then tied red dyed wool onto the top of the yak's swishing tail and the neck. Kinley poured the milk/butter mix across the yak's back while both of them mumbled further prayers of offering, calling the deity to accept their gift.

The most critical moment had arrived, for if the yak shook her body, it was a sign that Aum Jomo had accepted their offering.¹²² If there was no shaking, the deity was

¹²² The symbolism of the animal shaking its body to represent the deity accepting the offering is found in similar sacred animal rituals (Fijn 2011) and sacrifices (Govindrajan 2018). I also noted this feature during the yak sacrifice to Aum Jomo, described in the next section.

not pleased. The first yak shook quickly, so they released her with a sigh of relief. The second yak was a male with a white forehead, offered to the deity Gesan. His ornaments consisted of red tassels on the neck and tail. The next female yak also had a white forehead and was the mount of Tseringma, again with red tassels on the neck and tail. Everything was going well so far.

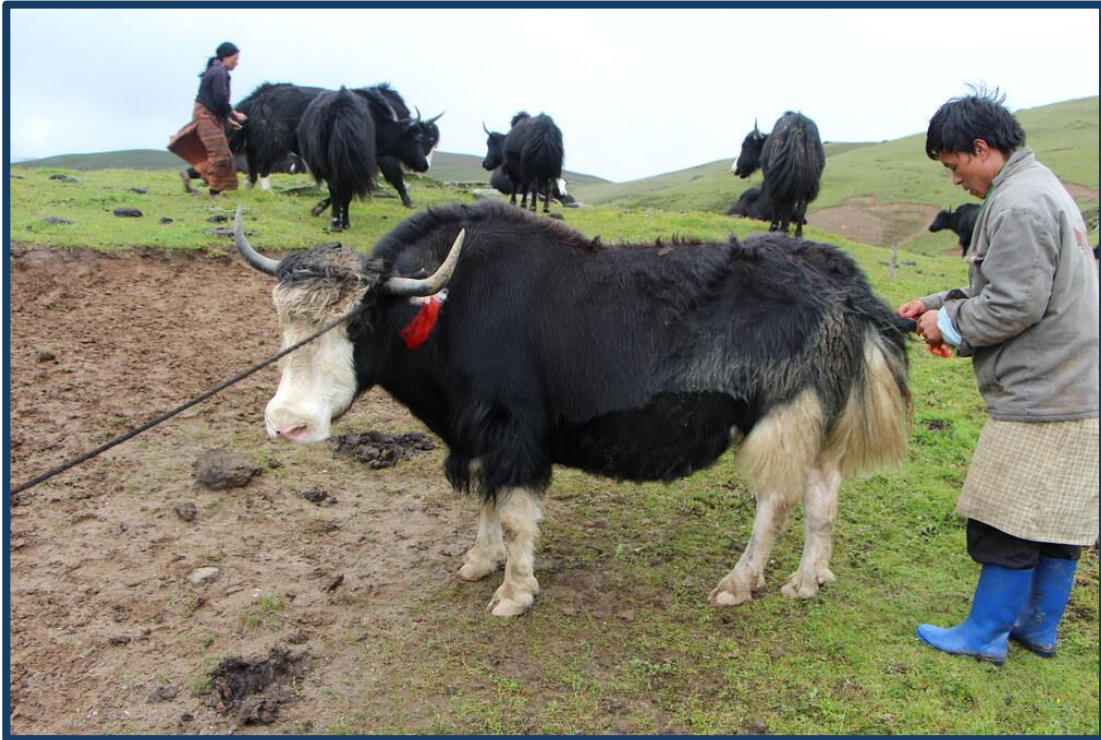


Plate 60- Attaching the *tenzhu darphi* to Aum Jomos *tensur tsulni* yak.

The final yak was a big black male described as the *zholi* (Bj) or father of all yaks. This yak was intended for the deity Gom-ba, and had similar tassels to Aum Jomo's ride, red and white on the ear, red on the neck and tail. After consecration, this yak's wool should never be cut, and he should not be used to carry loads. Gom-ba's *zholi* did not shake despite repeated attempts at offering prayers and pouring milk across his back. Finally, with much head scratching and worried muttering, Kinlay and Kardock gave up. Then, just as the yak walked away, he finally shook his body, leading Kardock to holler a yodel of relief.

Kinlay and Kardock's concern that they had displeased the deity was no minor worry. Without the carefully balanced *thünlam*, the extended families' *wangtang lungta* would decline, they would be more susceptible to spirit harm, and the deity would send retribution. They could expect health problems in the herd, poor fertility, reduced milk production, and yaks killed by the wildlife the deity sent. This was in

addition to the human family's health and wealth misfortunes. The well-being of the whole more-than-human world was jeopardised, reflecting the relational interdependencies and shared kinship in these alpine health assemblages.

Aum Jomo- the Vegetarian Livestock Goddess

Origins and Personality

Panting, I struggled to the top of the ridge and looked across another green valley. We had walked since early morning, crossing the pass beside Aum Jomo's mountain citadel (4500m altitude) and descending the other side. This was my first week in Dagala, and I wasn't yet used to the altitude and challenging walking pace.

"See there, Dr-La? That small hut at the end of the valley? That is the place they will offer the *marchod*, where it was done since our ancestors' time," pointed Aum Tsering. I could make out a small stone hut and see smoke spiralling up from the shadows of the hill. Suddenly, a loud whoop rang out, and successive shouts rang across the space between us, a melodic Himalayan herder yodel. "Aahh, they must have cut him," Aum Tsering mused. She was referring to cutting the yak's throat to drain the blood, offering the life/ food to Aum Jomo, the *nor lha* who spends her summers in the mountain to our backs. We walked faster after that, the easier downhill terrain pushing us towards the ritual space.

As we walked, Aum Tsering continued describing Aum Jomo's nature, desires, dislikes, and relations with other spirits/ deities and local people. Over the next year, I learned more about this jealous, mountain deity and the socio-political nature of the sacrifice made to her. Interviews with many informants gradually constructed a narrative of Aum Jomo, or Aum Jomo Dagam, which is summarised here. These informants included Dagala herders, the participants at the sacrifice, the *chosp* who coordinated the proceedings, Dagala's *Gup* and Chezhi Lam, the head monastic of the nearby Chezhi Gonpa, who was the Buddhist leader responsible for this region. It should be noted that the Aum/ Ama Jomo/ Jomo Rimantin from eastern Bhutan seems to be a different deity. However, some informants thought she might be a relative.¹²³

¹²³ See the following works for more on eastern Bhutan's Aum Jomo Rimantin (Dorji 2003, Wangchuk, Dhammasaccakarn, & Tepsing 2013, Karst 2017).

As Chezhi Lam summarised:

Aum Jomo is the main god of animals here. We have to do *marchod* for those *Bön* gods, or they get angry. People used to do *marchod* everywhere in Bhutan. Now we have already abolished *marchod* in our country, except for Dagala. It is far from the road, so the great lamas won't come here.



Plate 61- Aum Tsering. Labatama Valley is behind her. The pointed peak on the horizon is Aum Jomo's citadel.

Aum Jomo Dagam spends the summer in her citadel overlooking Dagala's Labatama valley and moves to the warmer Dagana in winter. She is related to nearby mountain deities and the multi-species inhabitants of the Dagala region. Several versions of her familial relations and origin tale circulate. In one, she was married to another mountain deity, Jitchu Draké, until her sister, Jomolhari, stole Jitchu Draké from her.¹²⁴ The sisters quarrelled before the lovers fled towards Bhutan's northern border. Jomolhari and Jitchu Draké now live in adjacent mountains in the ranges bordering Tibet and are the local deities of Paro, Soe and Lingshi. In another story, she is the oldest of three sisters (Jomolhari and Jom Damling) and one brother (Jitchu Draké). Yet another explains her bare slopes. A long time ago, Aum Jomo's citadel was covered in snow. Then her sister, Jomolhari, stole Aum Jomo's treasure from the lake

¹²⁴ Dorji Penjore described Jomolhari and Jitchu Draké as Aum Jomo's sister and brother. He references a textual source that suggests Aum Jomo is coupled with Chakutsen, a *tšen* from Genyekha village (Penjore 2003, p.23).

in her lap (at the base of her mountain) and sold it in Tibet. Aum Jomo was so angry she threw her snow and glaciers over her sister, which is why Jomolhari is covered year-round, and Aum Jomo's Dagala mountain is bare.

Another version tells of seven siblings, including Jom Lem, Jom Nga Sum, Jom Dagam, Jom Damling, and the Jomo in eastern Bhutan is a relative. Two narratives describe her coming from Tibet, and after she and others were 'tamed' by Milarepa, they were each given an area to protect and *nor* to guard, which is why she is a *nor lha*. One senior herder thought she was a reincarnation of Tsheringma, Palden Lhamo and Mahakali, here to subdue local demons and protect Buddhism.

Despite these variations in origin stories and familial relations, there are common themes of personality, likes and dislikes. Aum Jomo is single (some described her as a spinster), jealous of other women, and dislikes monastics and people in saffron robes. Many warned me to take care when entering her area, as she controls the weather and can quickly bring clouds and rain, causing people to become lost or injured. Heavy rain and bad weather ensue if a monastic or female official comes near her lakes (at the base of her citadel). In contrast, if male officials or handsome men visit, it is clear and sunny, signifying her approval. When pleased, she protects and ensures good health in the livestock and people under her domain, her multi-species tenants. She can increase milk production, fertility, wealth and fortunes.

In the 1990s, the Dagala community considered complying with the growing narratives of a Buddhist national identity and stopping animal sacrifice. A community meeting voted successfully to pass that proposal, and the following year, the sacrifice was replaced with an offering of food and white substances, or *karchod*. Dagala's *Gup* explained their rationale:

Now our country is known as a Buddhist country, but we have both religions, Buddhism and *Bön*. The *Bön* religion has been stopped in many villages but still there are some villages in remote areas still following [the] *Bönchod*. Being a Buddhist country, it is very bad to see killing and doing offering to [a] *Bön* God. So, in order to be a real Buddhist, we have to change the system of offering to the *Bön* deity.

The year after this new *karchod*, many calamities struck. Three women died suddenly, and many others became ill. The gendered deaths were tied to Aum Jomo's jealous dislike of women. The yaks' milk production waned or dried up. Many *nor* were killed by wildlife like wild dogs, tigers, and bears. "The predators even came

inside the bamboo fence where we keep the young *nor*. Also, that scar on Aum Jomo's citadel happened that year," said the *Gup*, pointing to a landslide that scarred the steep terrain of her southern face. In response to these misfortunes, the community arranged several *mo thab, tsip thab*, which revealed that Aum Jomo's displeasure was the cause. "We went back to the *marchod* after that, and everything went back to normal," finished the *Gup*.

The *Gup* and others used the term *bönchod* (*bon chos*, ceremony or ritual to a Bön deity) in relation to deities and rituals associated with animal sacrifice. I heard similar expressions from other herders, Buddhist practitioners, and government staff. 'Bönchod' had no fixed and consistent meaning, sometimes understood as propitiating local worldly deities and numinous spirits or other practices that were not considered Buddhist. However, according to most of my informants, the presence of *marchod* or killing may be a defining factor in assigning a practice as *Bönchod*.¹²⁵

Bodies, Blood and Bones- A Feast for a Goddess

As Aum Tsering and I arrived at the sacrifice place, several men were butchering and skinning the recently deceased yak. The families took turns supplying the yak, who should be a three-year-old male with a white mark on his forehead. He was brought here early that morning and purified with *sang*. Water was poured over the yak's back until he shivered, a sign that Aum Jomo had come and accepted the offering. Then the throat was cut, the blood collected, and the butchering commenced. The loud twack, twack of the long knives striking the chopping block continued for another half hour as the butchers gradually chopped up the carcass.

Around twenty-five men attended that day, from Drungdo and Wongdro *chiwogs* (*spyi 'og*, small administrative zone), aged twenty to fifty. Each family sent at least one person to and contributed the previous day's collection of cheese, milk, and butter from their family stores. Women are permitted, but usually kept away, knowing of Aum Jomo's dislike. This sacrifice was planned annually on the 5th or 11th day of the sixth month of the Bhutanese calendar "since ancient times". The men were wearing the ubiquitous blue gum boots favoured by Bhutanese highlanders. Their traditional

¹²⁵ Francios Pommaret (2014) treats the issue of *Bönchod* in the Bhutanese context, suggesting these are a corpus of rituals and beliefs that are separate from Buddhism, and may have their roots in pre-Buddhist beliefs. I do not intend an in-depth analysis of *Bön* or *Bönchod* here. I note my respondents use of the word only.

Bhutanese *gho* was covered in cheap warm jackets and fake waterproof trekking outerwear bought from the Bangladeshi market in Thimphu. Several wore a *charkab* (Bj), a thick, yak wool, patterned, hand-woven piece of cloth that functioned as a raincoat.

By now, they had cut the head free from the neck and placed it on the open-air stone altar just above them and facing Aum Jomo across the valley. The yak's front leg, two ribs and genitals soon joined the head. A ten-litre plastic bottle overflowed with fresh blood. The rest of the body was hacked up and stuffed into sacks. The organs and meat were carried inside a nearby stone hut, where the men cut them into cubes, throwing them into a sizable metal pot of boiling water. At least six men bustled in and out of this small kitchen, preparing tea in a metal pot on an open fire beside the pot of meat that quickly filled as the chopping continued. The senior herder conducting the rituals, Ap Rinzin, was moulding several *torma* on a tray.



Plate 62- Chopping up the yak, preparing Aum Jomo's offering.

"We are all Buddhists and do Buddhist *rimdro* at our home. But we only do this *Bönchod* for Aum Jomo," said Ap Rinzin, today's *chosp*. "We do not want to do this thing [sacrifice], but we have no choice," he said "When we stopped before, many,

many more *nor* died, so we feel it is better that one dies to save all the others. Now I do it for the well-being of the *nor*.” He explained the ritual while he shaped the *tormas* from rice and wheat flour. He started conducting it five years ago when the previous *chosp* stopped coming up to the high camps. Having no training, this new *chosp* relied on his memory of those past sacrifices to propitiate Aum Jomo.



Plate 63- The altar prepared with offerings.

Once completed, the tray of *torma* was carefully carried to the stone altar nearby. The three larger *tormas* represented Aum Jomo, with her two husbands, Ap Nithup on her left and Jitchu Draké on her right. Seven smaller *tormas* represented the seven times they offered the cooked meat during the proceedings at the altar and two round flat *tormas* were for the *tsok*. The *tsok* offering consisted of two parts. The sacrificed animal and his body parts were one; the other was fruit, biscuits, *torma*, and the dairy products brought by the attendees. The yak’s uncooked heart, fresh organs, and meat cubes were placed on the large, clean leaves of the *Chukar methok* plant.¹²⁶ These leaves were collected from the base of Aum Jomo’s home that morning. Sweet

¹²⁶ *Chukar methok* (*Rheum nobile*) is a rare, high altitude, medicinal plant that grows between 4000-4800m in Himalayan alpine areas. This giant rhubarb species reaches its 1-2m height from July to August.

biscuits, fruit, cheese, butter, milk, and dried meat were added around the yak's head, front right leg, and genitals already on the open-air mountain altar. Once the accumulated offerings were ready, all the participants prostrated to Aum Jomo on her mountain. Then they prostrated to the altar.



Plate 64- Prostrating and then offering money to the altar.

The sizable scalding pot of cooked meat soup was carried from the small hut and placed next to the altar. The *chosp* continued to recite what he could remember, inviting Aum Jomo to come and enjoy the food, asking for her blessing for the coming year, and apologising for the *drib* and transgressions they and any others had caused. Then everyone scrambled to their feet and squatted in front of the altar while another attendee picked up a large spoonful of meat soup and, citing ritual words, flung it down the slopes in Aum Jomo's direction. The men scrambled down the hill in a crab-like posture, looking for the cooked meat chunks while cawing, pretending to be crows. This was repeated seven times. This silly but fun activity was previously for the children's entertainment. However, the children are all in school in the lowlands now, so the adults take their place. This marked the end of the proceedings, and we

again sat drinking tea from the giant pot and eating the *tsok*, the altar offerings that were now blessed.



Plate 65- Taking the head home.

“I will take all the cheese and butter home,” said the *chosp*. “The *nor*’s owner will take the head home. The remainder will be divided among everyone here.” Then they hoisted a small flagpole made from *dungshing* (*thangshing*, fir pine) with a fresh coloured fabric flag, attaching it to the altar. “I hope you can tell the people about us,” the *chosp* said as we parted. “I am telling you everything so you can tell them we are good people, we only do *marchod* if it is absolutely necessary, and our health is affected. We don’t want to kill any *nor* actually.”

I asked Ap Rinzin about the kasho the Je Khenpo distributed, asking Bhutanese not to kill or sacrifice animals. He replied, “The Lamas want us to stop this because they think the *marchod* is *lesag* [*las bsag*, accumulate negative karmic imprints]. But according to our ancestors, there is no *dikpa* when we kill this yak. Aum Jomo takes the *dikpa*.” He then referred back to the time they tried to stop the sacrifice, and the disgruntled goddess retaliated, “whatever the Lamas order, the consequences of not doing *marchod* are born by the herders, not them. The families living near this place are affected, their *nor* suffer. We have no intention to kill, but when these problems come, we have to,” he concluded with a shrug.

“Now we eat lunch and go home,” said Aum Tsering, calling me to sit with her on a strip of plastic by the altar. “See, Aum Jomo is pleased with the *marchod*,” she pointed at the peak, which was clear and sunny, unobscured by clouds. “When she is happy, the weather there is good,” she concluded.

Becoming a Buddhist Vegetarian

As expected, there were no major yak deaths in the year following this sacrificial rite to the livestock deity. Milk production was good, and people were relatively healthy and happy. So, I was surprised to learn that in 2015, the community would stop the sacrifice again. Dagala’s *Gup* had initiated the change, along with Chezhi Lam, who was responsible for the Dagala region.

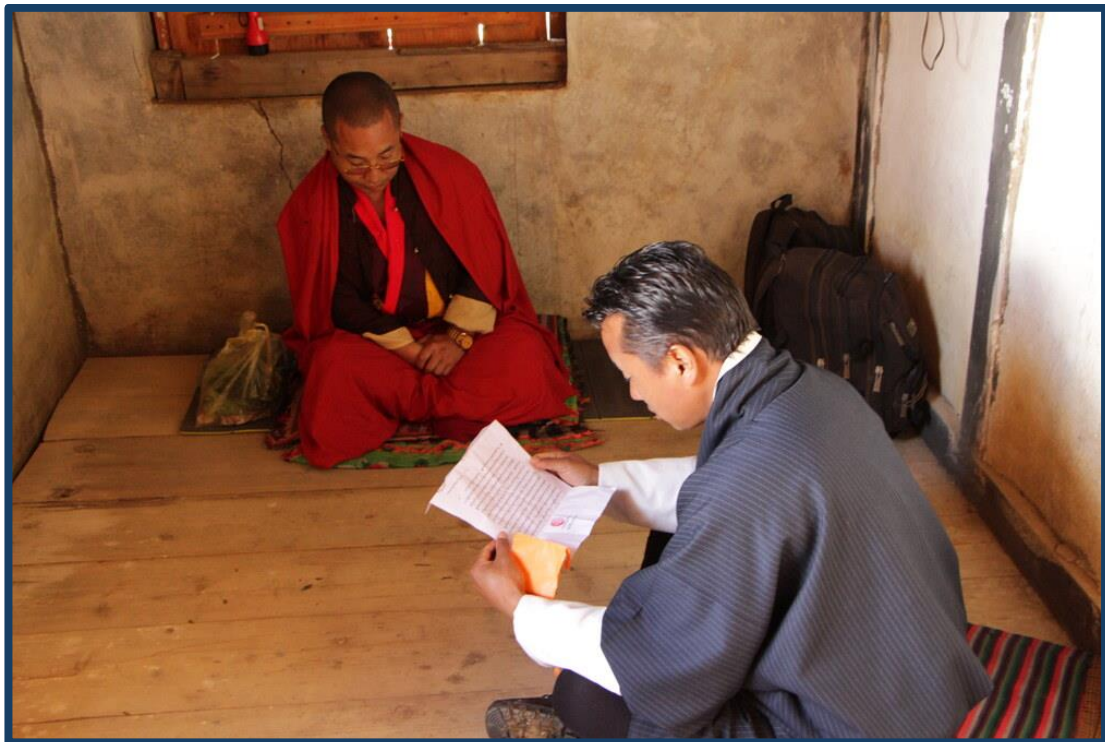


Plate 66- Chezhi Lam and Dagala’s *Gup* read the *kasho* from Je Khenpo.

“This time we asked Chezhi Lam, Dorji Lopen, and Je Khenpo for help.¹²⁷ We have to do it properly so it doesn’t cause harm. Je Khenpo investigated and did *mothab*,

¹²⁷ The Dorji Lopen is the chief of the five Lopen Lhengye, religious leaders and members of Bhutan’s Supreme Sangha Council, with ranks equivalent to a government minister. They assist the Je Khenpo in running the Zhung Dratshang, Bhutan’s Central Monastic Body. The Dorji Lopen normally succeed to the throne of the Je Khenpo when it becomes vacant. The Dorji Lopen and the Je Khenpo are Bhutan’s ultimate spiritual leaders, holding great authority.

then issued a *kasho*, which Chezhi Lam will read to everyone today at the *wang* [*dbang*- Buddhist blessing, empowerment ceremony],” the *Gup* continued.

“Actually, Aum Jomo is not a very big, strong deity. The biggest deities stopped taking *marchod* and didn’t hurt anyone, so I think Aum Jomo will also accept *karchod* this time,” added Chezhi Lam. “This time, everyone is prepared. We will ask her nicely and influence her, then she will understand and accept our request. We will do it nicely with prayer flags, incense, and a big *rimdro*,” finished Chezhi Lam.



Plate 67- The *Gup* passing around Je Khenpo’s *kacho* and discussing its contents with Dagala residents.

Throughout the day-long *wang* at a sacred *chorten* (*mchod rten*, stupa) on a windswept hillside in Dagala, dozens of families attended, dressed in their finest. Aum Jomo’s citadel could be seen on the far horizon with lines of rolling green yak-studded hills in between. The monastics conducted the Buddhist ceremony inside the small stone hut while the Dagala community sang, drank, ate and danced in the summer meadow grass. There were gambling games with *sho* (*sho*, dice) for the married men and quiet flirtations between unmarried young people. Finally, Chezhi Lam and his monks emerged with their drums, cymbals and trumpets, clearing a path for the

Lam's procession through the picnicking families, many of whom were slightly unsteady from the home-made *ara* (*a rag*, alcohol, distilled white spirits) by then.

Chezhi Lam addressed the assembled congregation, with the *Gup* standing by his side. He read the *kasho* from the Je Khenpo, informing the crowd that Je Khenpo had met with Aum Jomo in a dream. He continued, saying that Aum Jomo had declared her wish to become a Buddhist and a vegetarian, saying she had never liked meat in the first place. He then advised that from this year onwards, the monastics will come up to Dagala and perform the *karchod* offering to Aum Jomo, thereby taking on the responsibility to maintain *thünlam* and appease the deity. In that way, no harm will come to Dagala's multi-species inhabitants. He ended by saying that they need not fear Aum Jomo's wrath and take up *marchod* again.

And just like that, the wrathful, jealous, carnivorous and capricious livestock deity became a pacified vegetarian Buddhist.



Plate 68- Chezhi Lam and his monks offer the new *karchod* to Aum Jomo after reading the *Kasho* from Je Khenpo.

Conclusion

This ethnography illuminates the plural worlds of Bhutan's herders in their health relationships within multi-species and more-than-human worlds. It expands on concepts of human-animal kinship, where herder-yak-deity kinship is constituted and

reproduced through illness and healing narratives of mutuality and interdependence. Their shared fragility to the subtle forces of *wangtang* and *lungta* creates mutual health pathways and susceptibilities, leading to similar ritual methods that benefit humans and animals alike.

Narratives of health reciprocity entangle herders, yaks and numinous beings in culturally specific rituals of healing and mutual exchange. Despite decades of biomedical and bioveterinary encounters, herders resist and persist in their personal, cultural and spiritual perceptions and practices. They demonstrate a medical and veterinary plurality deeply embedded in their alpine environment's landscape and cosmological models. Pragmatic adaptations to new economic pathways and the increasing reach of state bioveterinary medicine have somewhat eroded these lifeways and beliefs. Additionally, Buddhism's one-worlding, colonising, marginalising and homogenising efforts further erode ancient practices and rituals, confining Aum Jomo to new designations and diets in a Buddhist cosmology. We see this in the evolution of Aum Jomo from a carnivorous, capricious deity to a tamed, vegetarian member of the Buddhist pantheon. Economies of Karma factor into the decision to cease animal sacrifice, balancing the identity politics and moral dictates of the central monastic body with the need to maintain *thünlam* with local spirits and avoid future animal and human deaths from their disgruntled deity. As Tandin Dorji (2002, p.191) observed, "one still laments the disintegration of the traces of the cultural folklore it [animal sacrifice] contained."

In addition to its spiritual and health role, Ura (2001) suggested that animal sacrifice served a more practical function by improving livestock breeds. Sacrificial rituals result in the culling of lesser-quality and excess male animals. He also suggests that breeds were improved by keeping the most desirable animals as *tensur* (rides) for deities. Despite these genetic benefits, the animal health and healing rituals described in this chapter feature prominently in the herders' explanatory models of health and healing.

Herders integrate more-than-human cosmologies, ethnoveterinary medicine, and bioveterinary interventions to maintain harmony in their multi-species relationships of health. These pluriverses of animal and health ontologies represent a veterinary plurality. They also demonstrate a deep, nuanced understanding of the health implications for humans, animals, and the environment when longstanding practices

that maintain balance and harmony are disrupted. In this way, these ritual practices that maintain or restore *thünlam* in the more-than-human world could be interpreted as a culturally embedded conception of the relational and interdependent health of environments, humans and animals.



Plate 69- Mount Jomolhari.



Plate 70- Blue Sheep in the mountains above Lingshi.

Conclusion

This thesis set out to examine how Bhutan's veterinary and local animal healthcare and animal production practices function within the eco-social environment of this Himalayan Buddhist Kingdom. It explored contemporary human-animal relationships of health through a rich ethnography to offer a grounded contribution to the emerging field of veterinary anthropology in the Himalayan region.

The field of veterinary anthropology has seen very little work published from South and Central Asia, and none from the Tibetan cultural area, apart from ethnoveterinary research. To my knowledge, this is the first Bhutanese research in veterinary anthropology, or from the veterinary humanities. Scholarship on trans-cultural attitudes towards animals and relationships of health has also been slow to emerge. This research contributes to both areas and to ongoing theoretical developments in veterinary anthropology, animal studies, and more-than-human relationships of health.

In presenting this ethnographic research, I demonstrated how two hegemonic, single-optic focus points, with their different animal ontologies, dominate public discourse on animals and animal agriculture. These one-worlding forces move Bhutan towards homogenised socio-ecologies of Buddhism, and of Eurocentric animal agriculture. They also effectively marginalise or silence multi-optic or pluriversal perspectives.

Bhutan's state veterinarians, trained in bioveterinary science and industrial livestock development paradigms, navigate ethical tensions around animal production and slaughter in their Buddhist society, which frames such activities as morally problematic. I analysed how these Buddhist ethical frameworks and associated national identity politics, expressed through community religious practices like *tshethar* and anti-slaughter movements, resist or reshape state veterinary development agendas. These forces also impact veterinary public health programs involving dogs and rabies control.

Bhutan's veterinary livestock development activities reveal a complex relationship with GNH discourses and policy that is largely invisible or overlooked in departmental and academic discussions. There is also virtual silence in scholarship

and public discourse on “the multiple, intersecting impacts of commercial livestock farming on social, ecological, and animal wellbeing” (Srinivasan 2023, p.776), except for a few commentators, such as Dasho Karma Ura.

Short-term economic advancement and fortress conservation policy regarding livestock, rural economies, and trans-national economies dominate GNH submission and funding priorities. I argued that the bioveterinary development agenda towards Eurocentric livestock breeds and farming systems may be misaligned with the sustainable development agenda of GNH, and even contrary to GNH’s pillars of environmental and cultural preservation.

A decolonial approach to livestock development and animal agriculture may enable Bhutan to envision a truly sustainable future, where Indigenous ontologies, breeds, and sustainable farming practices flourish. Bhutan is already a world leader in promoting GNH and sustainable development alternatives. The state veterinary regimes have a unique opportunity to conceptualise a new paradigm for the future. One that may avoid the environmental and health dangers of industrialised animal agriculture and future-proof Bhutan against changing climates and a dependency on transnational trade. It could also contribute to the Gross National Happiness of Bhutan’s other sentient beings, her animals.

In this veterinary anthropology study, the impact of state bioveterinary regimes on Bhutan’s society became clear, where the ‘veterinisation’ of Bhutan has been occurring for decades and is accelerating. Biocontrol, bioregulation and techno-scientific advances are altering animals’ bodies, habitats and lives, Bhutan’s environments, and Bhutanese socialscapes. The process is bi-directional, however, and Bhutan’s veterinary regimes have had to adapt to social pressures and transform policy, programs, and identities in response to the eco-social factors I have discussed. As a result, Bhutan’s veterinary regimes, their veterinary practices and identities, have diverged from those of the countries where they trained, India and often Australia.

The second half of this ethnography approached health as a relational and more-than-human phenomenon, attending not only to human experiences but also to the roles, agencies, and vulnerabilities of animals, microbes, spirits, and environments. I analysed how alpine yak-herding communities, within their cosmologies and multispecies relationships, manage their health assemblages. Herders’ sacred

landscape, its 'web of mutuality' is negotiated through activities and rituals to maintain *thünlam*, harmony with the numinous beings of their world. They are also influenced by broader social and economic forces, resulting in hybrid animal ontologies that shape their engagement in livestock production. Their pluriverse encompasses more nuance than a mere binary of Buddhist and Eurocentric bioveterinary animal ontologies.

To maintain the health and productivity of their herds, they utilise state veterinary medicines, ethnoveterinary medicine, and ritual practices, demonstrating veterinary pluralism. The explanatory models of illness and health practices I recorded demonstrate that animals are included within health narratives, individual rituals, and communal practices commonly recognised and reported in Bhutan and across the Tibetan cultural area. *Lu*, *luchod*, and the annual house rituals, *lochod*, are brief examples. However, I anticipate that many more will be reported now that the 'animal turn' and veterinary anthropology are finding their way to Asia.

Throughout this thesis, I used the heuristic model, the Economy of Karma to analyse decision-making in animal agriculture and other activities related to Bhutan's more-than-human beings. In this Vajrayana Buddhist socio-ecological context, the economic rationalities of the Bhutanese state, veterinarians, pet owners, religious practitioners, herders, and animal farmers may be inscrutable when framed in simple economic terms. However, when the scale extends chronologically to multiple lifetimes and involves intangible forces such as dependent origination and karma, the Economy of Karma analyses how activities are based on a multi-life profit and loss calculation.

This research has also contributed to other academic fields, such as ethnoveterinary medicine and Tibetan studies. I produced a lexicon of herder vocabulary in the *Bjobke* dialect of western Bhutan that may be useful to future researchers, veterinary personnel, and linguists.

Building on earlier Bhutanese academic endeavours to document Bhutan's ethnoveterinary practices, I recorded over 300 EVM ingredients and their uses from 14 districts in Bhutan. This work was a research priority for the DoL and is tabulated in Appendix Five. My research uncovered a rich tradition and practice. Unfortunately, this knowledge will be lost very soon, which should foster a sense of urgency for state departments and researchers to archive this traditional knowledge for the future. I

hope my work can stand as a foundation that others will build on and extensively archive more of Bhutan's material and cultural heritage, such as EVM.

On a pragmatic note, Bhutan has an opportunity to develop and produce its own effective, organic, carbon-neutral, and culturally appropriate veterinary medications for domestic use and international export. State veterinary services can emulate Bhutan's plural human health services and develop a parallel program of traditional veterinary medicine, or a *semchen Sowa Rigpa*. This would align well with Bhutan's national identity politics and state narratives of cultural preservation, sovereignty and self-sufficiency. It also serves Bhutan's broader national narratives and goals of sustainable development through the GNH framework.

In the adjacent field of Tibetan veterinary history and EVM, I created a bibliography of Tibetan language animal health care texts, demonstrating the work I had done to collect these resources. As I discuss in Appendix Six, I obtained copies of 44 veterinary and 22 animal husbandry texts. These are available to future researchers of Tibetan history, textual studies, and EVM. Undoubtedly, many more texts exist, providing much scope for future work.

I have contributed to the field with these research outputs, which are documented in the appendices. Additionally, in the field of animal studies and veterinary anthropology, I analysed multi-species and more-than human relationships of health in this Himalayan Vajrayana Kingdom, providing fresh trans-cultural perspectives to these disciplines. These under-explored concepts were explored through a rich ethnography of Bhutan's Himalayan cosmologies. Explanatory models of illness, health narratives, and veterinary plurality have received little attention in veterinary anthropology to date. I propose that this work might enliven conversations surrounding these concepts in animal health practices and veterinary anthropology.

In contributing to work on Himalayan cosmologies and relationships of health, I have shown how animals are an integral feature of these multispecies and more-than-human health ecologies. I documented several rituals, including what I believe to be the last yak sacrifice (*marchod*) in Bhutan, and the first successful non-sacrificial ritual (*karchod*) to Aum Jomo. Beyond adding another example of the syncretic absorption of another local deity and ritual into the Buddhist pantheon, this work explores the concept of Buddhification, or the one-worlding of Bhutan to a single, unified spirituality.

I also probed kinship bonds, suggesting that the ‘stuff’ of kinship binds humans and animals by not only being subject to the same deity, but also subject to the same cosmo-physical forces, such as deity retribution and the vital forces, *wangtang lungta*. The inclusion of animals into these relational health meshworks warrants further attention given the centrality of animals to Bhutanese lives.

In addition, I proposed and demonstrated the heuristic model, the Economy of Karma, as an analytic tool to understand economic rationalities and decision-making concerning animals. I argue that when future life economic and social outcomes and welfare are factored into a temporality of endless lifetimes, practices like the meat ban days, merit-making activities on behalf of animals, and *tsethar* can be interpreted and understood. In this sense, I analysed trans-cultural perspectives of animal welfare, demonstrating the tension between ‘this life’ welfare and ‘future life’ welfare that sometimes complicates veterinarians’ work, particularly regarding euthanasia. I propose the Economy of Karma may be helpful in other disciplines, like environmental and political studies and the wider social sciences.

Alongside my colleagues in India and elsewhere, who have drawn attention to the need to decolonise animal agriculture and bioveterinary science, I join their calls to identify and reconfigure the multiple ways colonialism and imperialism have shaped our contemporary world. In particular, the systemic epistemic harm it has brought to animals’ bodies, lives, and well-being. A decolonial approach to veterinary activities, bioveterinary livestock development, and the effects of veterinasation on society would enhance our world in innumerable ways.

Veterinary Anthropology Futures

I have argued that veterinary anthropology should adopt a more geographically and culturally expansive approach. I have contributed to this aim by evaluating Bhutan’s livestock development through locally grounded cosmologies, multispecies worlds and more-than-human relationships of health. This decolonial approach encourages an imaginative reconstituting of the world. It no longer assumes that bioveterinary industrial livestock development is a universal truth, enabling the ontological freedom to envision multiple alternative futures of human-animal sustainable development for Bhutan. As the discipline is relatively young, it has the

opportunity to leapfrog decades of debate on the problem and embrace a decolonial approach.

Looking more broadly, veterinary anthropology has the potential to enrich the fields of anthropology, animal studies, and veterinary science. In moving beyond the anthropomorphic limitations of previous academia, it expands the gaze to include the animal, the microbe, the environment, and spirits or other beings. In scope, veterinary anthropology could reflexively examine formally trained practitioners within one's culture, such as Australian veterinarians in private clinics or veterinary universities. The discipline can also situate informal veterinary beliefs and practices, both locally and globally, ranging from holistic veterinary practitioners in Australia to traditional healers in remote Himalayan villages and Bhutanese herders.

Yak Herding Futures

Essentially, yak farming is at a crossroads where a firm decision is needed to either encourage and strengthen the farming practices or witness the gradual extinction of the age-old tradition (Wangchuk & Wangdi 2015, p.9).



Plate 71- Three generations of Dagala herders.

The themes explored in this thesis will continue to impact yak herders, their herds, and the environments they inhabit. A decolonial perspective on veterinary program and policy development in herding communities is an imperative. The

current bioveterinary strategies do not map well to the specific eco-social pressures of yaks and herder communities.

Life in the margins of society is a precarious existence fraught with numerous disadvantages, particularly regarding access to healthcare for both humans and animals. For instance, while I was at the Jomolhari Mountain Festival and dog show in Soe, a group of herders arrived, carrying an injured man on a stretcher down to the road head, which was still a day's walk away. From that point, they would go by vehicle to the hospital in Thimphu. They had already trekked for two days carrying the man, Norbu, over two high mountain passes. Norbu had severe injuries after being mauled by a Himalayan black bear. A nurse from their local health unit was accompanying them, administering antibiotics and pain relief, as well as changing his dressings daily. She later shared his story with me.

Norbu had been walking across a mountainside, half an hour from his house, at dusk. He was searching for his horses, which had wandered off to graze. As he rounded a bend in the trail, he surprised a bear that charged at him viciously. Too injured to move, he lay there waiting until his brother-in-law came looking for him. By then, it was dark, and the rescuers couldn't begin their journey until the following morning. As I lay awake that night listening to his moans and the concerned mumbling of his rescuers, I was acutely aware of our isolation from the services we take for granted in our urban lifestyles. The standard of healthcare and the immediacy of ambulance responses are assumed minimums of our public health systems. I could see how self-sufficient these communities must be, relying on local social networks and traditional knowledge for survival on every level.

The disadvantages and perils of life in the high-altitude rangelands are significant. I reflected on Norbu's story and that of the young women in Lingshi, who were trying to protect their yak calves from predators. This was also where Dawa and I had stitched up the injured yak. These human and animal healthcare disadvantages resulted in substantial economic consequences, including lost earnings, livestock, and lives. Even though community nurses and paravets were stationed in every sub-district (*gewog*) of Bhutan, people and animals living in rural and remote areas have less access to healthcare than their urban counterparts.

These disadvantages, when combined with the low rates of yak sale and slaughter, limit economic advancement for these marginal transhumant pastoralists. Currently,

the sale of yak products, like dairy, is only sufficient to cover the feed cost for the yaks (Wangmo & Norbu 2024). The Lingshi herders have more opportunities, particularly due to the presence of cordyceps, the medicinal plant industry, and tourism.

However, Dagala herders have no alternative income sources and as a result, have to sell more yak for slaughter or to *Tshethar tsokpas* than Lingshi herders.

With all these burdens, the number of herding families declines annually. The harsh and remote lifestyle, together with low incomes, drives many herders to abandon their way of life and urbanise at lower altitudes. Young people are also moving away from traditional pastoralism in search of easier employment options, leaving the older demographic to manage the herds.



Plate 72- Houses in Dagala are simple wood and stone constructions minimal furniture and few possessions.



Plate 73- Lingshi houses tend to be larger constructions with more signs of wealth.

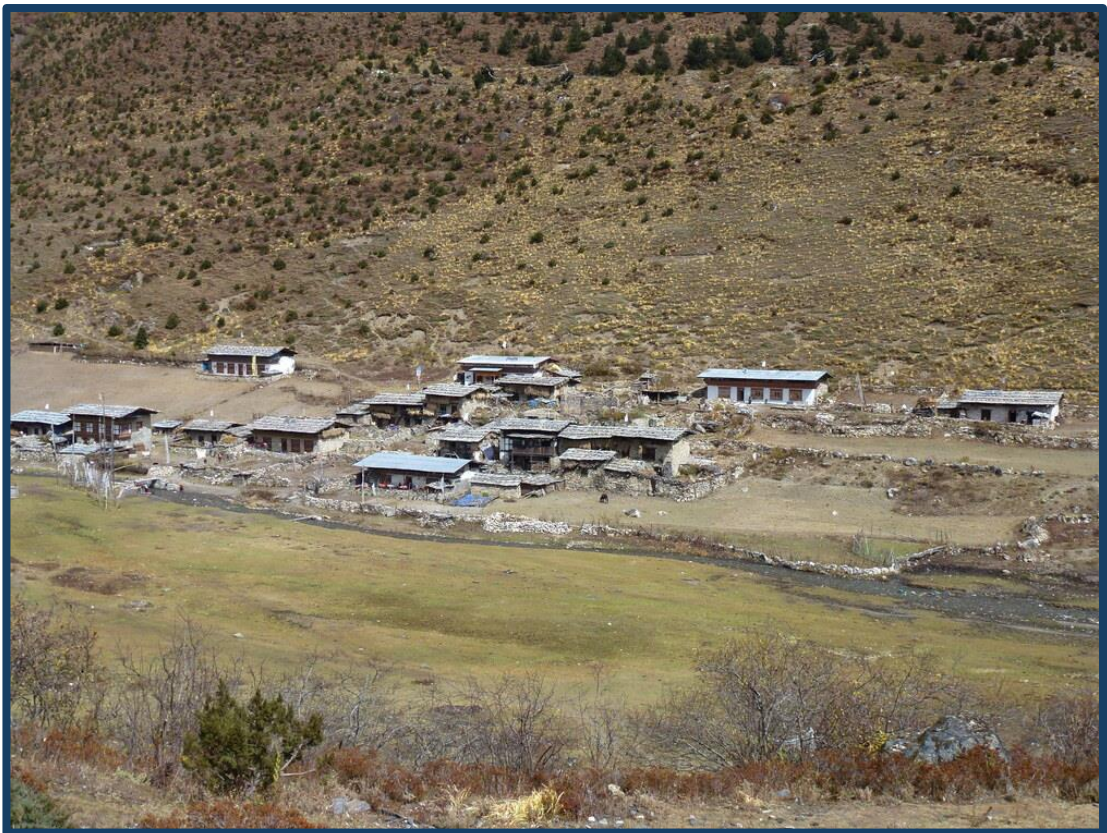


Plate 74- Chebesa village near Lingshi.

The state is concerned about the declining herding activities. They have researched and documented these issues in efforts to develop strategies and programs to reduce the challenges and encourage families, particularly youth, to remain in the highlands.¹²⁸ This is important for multiple reasons. The highland ecology has been shaped into its current form by the grazing pressure of yaks and the herders' pasture management techniques. This rich ecosystem contains hundreds of medicinal plants. Multispecies ecological connections such as these, where herders are intertwined with yaks and other species as an entangled socio-ecological sphere, are found across High Asia. This environment requires grazing activities to maintain its delicate balance. Research in yak herding areas of Bhutan's neighbour, Sikkim, has shown that these activities, this transhumant pastoralism, increase plant species diversity and may enhance biodiversity and ecosystem function (Ingty 2021). If the herders and herds disappear, different species colonise the newly available environment. Coupled with the impacts of climate change already occurring in high-altitude regions, there is a significant risk that these meadows, rich in biodiversity including medicinal plants, may be lost.

This thesis explored the tensions arising from within the milieu of Bhutan's Buddhist culture, livestock development, and state veterinary regimes. It expands on these themes in relation to yaks and their herders in northwestern Bhutan's high-altitude pasturelands, examining their ethnoveterinary medicine and multi-species relationships of health.

In doing so, this thesis contributes to a clearer picture of Bhutanese human-animal relationships and the influence of the state, along with its religion and culture, on these relationships. This analysis diverges from previous multispecies ethnographies and shifts towards a more-than-human perspective by incorporating deities and spirits in the intertwined lived experiences of the Bhutanese, their animals, and the veterinary regimes.

¹²⁸ Other significant documented co-factors in the decline of yak herding are climate change, pasture degradation, lack of available fodder in winter, and policy changes to rangeland governance and access rights. These factors are outside the scope of this thesis's veterinary context. See the following publications for more information: (Cannon et al. 2009, Wangchuk, Dhammasaccakarn, Tepsing, et al. 2013, Wangchuk & Wangdi 2015, Wangchuk & Wangdi 2018, Wangda 2016, Tshering & Thinley 2017, Jamtsho & Katel 2019, Dorji, Derks, Dorji, Groot Koerkamp, et al. 2020, Dorji, Derks, Groot Koerkamp, et al. 2020, Dorji 2022, Dorji Wangchuk 2022, Wangchuk et al. 2023, Wangdi et al. 2023)

Throughout this thesis, I have described landscapes alive with animals, vengeful spirits, ferocious deities, and rich in cultural heritage, voices, stories, and practices. I also encountered an abundant environment alive with medicines and possibilities. The possibility of losing these things within our lifetime is a poignant reminder of the vulnerability of erasure, the fragility of traditions and environments, and the urgency of the decisions we make that affect tomorrow.



Plate 75- Ap Tshechu, Kinlay's father, a Dagala herder.

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Appendix One- Terminology

Throughout this thesis, I kept the original language (often *Dzongkha*) for specialised terms where possible. They are listed here, along with their English translation, as a quick reference guide for the reader. For a more extensive collection of north-western Bhutan's yak herder terminology in their dialect *Bjobke*, see Appendix Two.

Table 2- Terminology Used in This Thesis

Terminology	Wylie Dzongkha	Bjobke	Meaning
ama	ama		mother
ara	a rag		alcohol, distilled white spirits
aum	am		honorific term for a woman or female form
bar chad	bar chad		obstacles
bjob	byogp		herder, nomad
bjobke	byogp skad		Herder dialect from western Bhutan
bjobkyi	byogb khyi		Bhutanese mastiff, herding dog
bön	bon		one of Bhutan's spiritual traditions
bönchod	bon chos		ceremony or ritual to a Bön deity
bönpos	bon po		practitioner of Bön tradition
brokpa	'brog pa		herder, nomad from Eastern Bhutan
bumpa	bum pa		ritual offering vase
charkab		charkab	thick woven yak wool blanket used as a raincoat
chillup	phyi glingpa		foreigner
chiwog	spyi 'og		small electoral precincts, below gewogs
chö	chos		religion, the doctrine or teachings of the Buddha, dharma
chod	mchod		religious ceremony
chöke	chos skad		dharma language
chorten	mchod rten		stupa
chos-su	chos srung	chos-su	yearly rituals, annual puja, annual house blessing, rituals, sometimes called lochod
chosp	chosp		ritual or religious practitioner, priest, clergy, can be a lay person
chugo		chugo	dried cheese
chyangkyi	spyang khyi		stray dog
damaru	da ma ru		small double sided hand drum
dikpa	sdig pa		harmful action
doma	rdo ma		a betel leaf (Piper betel) wrapped around a piece of areca nut (Areca catechu) and chewed for its stimulant and addictive properties
don-du		don-du	herder ritual, possible propitiating a gdon
doṣa			three medical elements in Ayurveda

drib	sgrib, grib		pollution, defilement, transgression
drilbu	dril bu		bell
drukpa	brug pa		dragon person, colloquial for someone from Bhutan, the land of the dragons
drukpa kagyü	brug pa bka' brgyud		Drukpa Kagyu - lineage of Buddhism
drungtso	drung 'tsho		medical practitioner
düd	bdud		demon
düdchod	bdud mchod		ritual to placate demon
dudro	dud 'gro		animal- low destiny/ to go low or bent over
dün	gdon		malevolent spirit
dünchod	gdon mchod		ritual ceremony propitiating a gdon
dungshing	thang shing		fir pine
dzongkha	rdzong kha		language of the Dzongs (forts). A Tibeto-Burmese language spoken by northern Bhutanese, now the official language of Bhutan
dzongkhag	rdzongkhag		district
ema datshi	e ma dar tshi		chilli cheese curry- Bhutan's national dish
gep			abbreviated version of gyalpo
gewa	dge ba		virtue
gewog	rged 'og		village block or administrative unit
gho	go		Bhutanese national dress for men
go lha	sgo lha		door deity
gomchen	sgom chen		lay ritual practitioner, meditation practitioner
gonor	sgo nor		door wealth, colloquial for livestock
gonor	sgo nor; sgo nor sman pa		Department of Livestock personnel, usually paraveterinarians, livestock extension officers. Short version, gonor, is used colloquially.
gonor drungtso	sgo nor drung 'tsho		veterinarian
gonpa	mgon pa		hermitage, monastery or temple
goyum	go gyom		gid, coenurosis, larval stages of tapeworm (<i>Taenia multiceps</i>) in brain and spine causing neurological symptoms
gung lha	gung lha		ceiling deity
gup	rgap		village leader
gyalpo	rgyal po		class of spirit of territorial landowner
gyu shi	rgyud bzhi		the Four Medical Tantras, foundation text of Buddhist medicine
Je Khenpo	rje mkhan po		chief abbot or spiritual leader of Bhutan, head of Drukpa Kagyu monastic institutes
Jomo sulni		Jomo sulni	ritual practice, offering live yak to Aum Jomo as her ride
karchod	dkar mchod		white offering, white coloured food offering, no animal sacrifice or meat, blood

karmo dñn-du		karmo dñn-du	herder ritual
kasho	bka' shog		decree or edict
khartar	kha tar		white scarf often used as an offering
kira	dki ra		Bhutanese national dress for women
kora	skor ba		circumambulate, to go round.
kushu	sku shogs		monk, monastic, ordained religious practitioner
kye lha	skye lha		birth deity
kyi	khyi		dog
la	la		soul
lama, lam	bla ma		abbot, monk, guru, spiritual teacher
leh	las		karma
lesag	las bsag		accumulate negative karma
lha	lha		deity or God
lhamo	lha mo		goddess, female deity
lhasang	lha bsangs		smoke or incense offering; fumigation, purification
lho menjong	lho sman ljong		southern land of medicine, historical name for Bhutan
lho tshampa	lho mtsams pa		southerner, colloquial for someone from southern Bhutan, usually of Nepali cultural heritage
lo jong	blo sbyong		mind training
lochod	lo mchod		yearly rituals, annual puja, annual house blessing, rituals, sometimes called chos-su
lu	klu		serpent deity, lives underground, in rocks, trees or water. Related to the Indian nāga
luchod	klu mchod		ritual performed for lu, usually as propitiation or in case of illness
lunad	klu nad		illness caused by a lu
lungta	rlung rta		wind horse, with-fulfilling power, luck
lutor	glud gtor		ransom
marchod	dmar mchod		red offering, meat offering, animal sacrifice
melong mo	me long mo		mirror divination
mi gewa	mi dge ba		non-virtuous action/ negative karma
mo	mo		divination
mo pa	mo pa		divinator
mo thab	mo btab		performing a divination
namtar	rnam thar		hagiographies, often of a Buddhist saint or the historical Buddha
ngalong	snga long		a Bhutanese person from the west, usually of Tibeto-Burmese cultural heritage
ngultrum	dngul kram		Bhutanese currency
nor	nor		wealth, colloquial for livestock
nor lha	nor lha		livestock deity
nyingma	rnying ma		Nyingma Buddhist lineage
nyungney	snyung gnas		Buddhist practice of purification popular in the Himalayas and Tibet involving fasting, prostrating and praying to Chenrezig, the Buddha of compassion.
pecha	dpe cha		loose leaf book, usually a Buddhist religious text

phamo	dpa' mo		female spirit medium, shaman
phawo	dpa' bo		male spirit medium, shaman
rimdro	rim gro		ritual practice, religious rite
samsara			the cyclic nature of existence, where beings transmigrate through endless births in the six realms of existence in Buddhist cosmology
sang	bsang		smoke or incense
semchen	sems chan		sentient being
semchenchod	sems chan mchod		part of ritual blessing livestock
shag mo	shag mo		dice divination
sharchop	shar phyogs pa		Bhutanese person from the east, usually of Tibeto-Burmese cultural heritage
sho	sho		dice
sogchak	srog chaks		life possessor
Sowa Rigpa	gso ba rig pa		Buddhist medicine, the science of healing, traditional Tibetan and Bhutanese medicine
srin po	srin po		demon, ogre, monster
sür	gsur		burnt food offering during a ritual
ta	rta		horse
takin	abrong gyim tse		takin (<i>Budorcas taxicolor whitei</i>)
tensur	rten 'dzugs		offering live animal to deities
tensur tsulni		tensur tsulni	herder ritual ceremony offering a yak to the deity
tenzhu darphi		tenzhu darphi	red and white, or plain red wool tassels tied to animals who are offered to deities for them to ride (tensur tsulni)
thab lha	thab lha		stove deity
thignye			plant based medicine to kill ticks
thünlam	mthun lam		harmonious relations
torma	gtor ma		dough made of butter and flour and used in rituals
tren mo	tren mo		mala bead divination
tsamjo	rtsa jmo		pastures, grazing land
tsen	btsan		cliff dwelling demon
tsen-du		tsen-du	herder ritual, possibly propitiating a tsen spirit
Tshangla			language spoken by Sharchop, Easterners, principal pre-Tibetan language in Bhutan
tshethar	tshe thar		freeing lives, animal liberation
tsho marmo	mtsho sman mo		female water spirit/deity of the lake
tsip	rtsisp		astrologer
tsip thab	rtsi btab		conducting an astrology reading
tsok	tshogs		food offerings on the altar during religious ceremonies
tsokpa	tshogs pa		organisation, association
tsomen	mtsho sman		lake dwelling spirit, female lake deity, sometimes called a mermaid
wang	dbang		empowerment, blessing, initiation

wangtang	dbang thang		field of power, fortune, luck
yak	g.yag		yak (<i>Bos grunniens</i>)
yartsa guenbub	dbyar rtsa dgun 'bu		cordyceps, caterpillar fungus: <i>Ophiocordyceps sinensis</i> , <i>Cordyceps sinensis</i>
yidam	yi dam		Buddhist meditation deity
yul lha	yul lha		deity of the local area
zholi		zholi	father of all yaks, largest or most dominant male yak
zimkyi	gzim khyi		indoor, pet dog

Appendix Two- Yak Herder Terminology

While conducting fieldwork with the yak herders of northwest Bhutan, I recorded some of the terminology they used. At that time, I could not find any publications on herder terminology or languages. Therefore, I had to create my own to assist in my research and communication while in the field. The most common herder dialect is *Drokey* ('brog skad) or *Bjobkey* (bcob skad) in the west, and *Brokpa* ('brog pa) in the east, although, there are many variations locally and regionally. Many of these dialects lack a literary form but retain associations with *Dzongkha*, Tibetan, and *Chöke*, sharing common words (e.g. *nor*) and grammar. Although a few linguists have published work on Bhutan's languages, these did not include herder dialects.¹²⁹ After I concluded my fieldwork, two publications on herder language appeared— the Dzongkha Development Commission's *Drokey- Dzongkha- English Lexicon and Phrase Book*, and Pema Wangdi's (2021) PhD thesis, *A Grammar of Brokpa*.

The tables below summarise the herder vocabulary I recorded from northwest Bhutan, primarily from the Dagala district. I restricted this to animals, animal anatomy, animal products, diseases, herding equipment, and household items. I have approximated the transliteration of the pronunciations I heard, included variations when they appeared, and kept audio recordings of these pronunciations for future work. However, this is not a linguistic study. By presenting the vocabulary here, I hope it can aid future work with herders and help preserve their unique culture and language.

¹²⁹ For example, Gwendolyn Hyslop's research on Kurtöp (2017, 2022), Tenzin Dorji's work on Khenkha (2023), Erik Andvik's Tshangla study (2010), and Selin Grollmann's Bjokpakha research (2020).

Table 3- Yak Types

Bjobke	English
Nor	all yak
Bhochu	under 1 year old, male and female
Shey	under 2 years old, male and female
Jhum	2-3 year old female
Jhuto	2-3 year old male
Nambha	3-4 year old female, no calf yet
Nyeju	3-4 year old male
Nambha	4-5 year old female, before given birth
Yakto	4 years old and older male, uncastrated but planned to castrate
Lognam	5 year old male
Bji	female over 6 years old, after giving birth
Zholey, Sholi	breeding male, 7-8 years old, 'father of all'
Zhoeto	breeding male, 5-6 years old
Bji gay	female over 14 years
Yak gay	male over 14 years
Bjicha	female still milking but calf died
Bhogham	milking female when calf is under 1 year old
Sheygham	milking female when calf is over 1 year old
Khamto	dry female (no milk production), over 5 years old
Yambji, Nem	infertile female
Bjigyem	unproductive female
Zhoephab	castrated breeding male
Yak lhab	riding yak, castrated with nose piercing
Yak	castrated male over 6 years old
Chum	herd not being milked, kept separate from milking herd
Tenzhu, Tensur	yak offered to the livestock deity (<i>Nor lha</i>)
Tsethar yak	yak liberated from sale, slaughter and work

Table 4- Yak Anatomy

<i>Bjobkey</i>	English
Yango, Ghothok, Guto	head
Namcho	ears
Miktog	eye
Hapa	nose, nostrils
Thoep, Pchiu	forehead
Kha	mouth
Che, Je	tongue
So	teeth
Lep	brain
Rawo	horns
Tako	back of neck
Yuko, Ukho	front of neck
Ushey, Ukho, Euw sho	dewlap
Kuem	throat
Bjala, Siew	hump
Soep, Jolip	shoulders
Lakp, Lhab	foreleg
Namchum rutok	upper arm
Kili, Gotab	elbow
Latse, Kang chup	fetlock
Mip	hoof, claw
Mip chup	sole
Mip chu	ergot
Jangkho, Changkok	chest
Tsidro, Kep	ribs
Gep, Geto	back
Phowa gi lhotab	flank
Gaytse	upper back
Kaytse	lower back
Kaep	hips
Abugangtse, Gorip	buttocks/ rump
Khangm	hind leg
Chimi	upper hind leg
Khangm	below hock
Jukma, Juma	tail
Dhunghi, Dohi	heart
Lowo	lungs
Rutho	bones
Zhathab	oesophagus
Yudok	trachea

Hingtha	aorta
Khoep, Gep	rumen, stomach
Goechupatra	reticulum
Tseu radhu, Tsiuraduk	omasum/ abomasum
Chim	liver
Trip	gall bladder
Trip bi khatha	bile duct
Chinchum, Chijup	spleen
Khedho, Khyedok	kidney
Ghanphu	urinary bladder
Chutsa	ureters, urethra
Motsen	female genitals
Bhotsa	uterus, ovary, female organs
Photsen	male genitals
Hip, Hiptho, Gondok	testicles, scrotum
Je	penis
Thu	vagina
Abu, Jang	anus
No troe	intestines
Naaju	small intestine
Kaaju	large intestine
Ghaa	udder
Leutsi	teats
Thiu	umbilical cord
Bho ney	placenta
Tsa	nerves
Traktsa	veins/ arteries
Ngachu	water bag
Tsilu	fat
Phwa gi tsilu	omentum

Table 5- Dairy Products

Bjobkey	English
Om	milk
Mar, Maa	butter
Dhau Kaap, Taow	butter milk
Bchi	colostrum
Dhachu	whey
Se chu	fermented whey for curdling milk
Om shishu	spoilt or sour milk
Sho	yoghurt
Chugo	dried cheese
Chugo loem	wet hard cheese
Chu shey	small squares of dried hard cheese
Philu kham	dried condensed milk cheese
Philu loem	wet condensed milk cheese
Datsi	soft fresh cheese
Tachu	dried small square cheese on string
Chachu/ Ruchu	10x15 cm square dried cheese, made from butter milk
Mu Chu	made from milk, similar to <i>chachu</i> but oilier and tastier

Table 6- Yak Meat

Bjobkey	English
Yak sha	yak meat
Yak sha kham	dried yak meat
Yak sha gho ra chem	yak ribs (most expensive part)
Jukma	sausage
Mar sha	fermented yak meat
Kaow	dried edible skin, leather
Komthey	hide
Kochin	glue from leather
Kangchu	leg below knee/ hock

Table 7- Yak Wool and Hair Products

Bjobkey	English
Tsip	soft underbelly wool from yak 5 years old- cut yearly
Tsip	thicker hair- cut from thighs every 4 years
Jukma	tail and tail hair
Yang juk	yak tail cut from dead animal used for decoration
Natha	rope
Thap	rope to tie load on yak
Thab	black rope used for carrying firewood and everyday loads
Khye thag	different colour rope to tie load on yak. Can not use for other purposes
Thar phe, Pen tsi	red colour yak hair tassels tied to neck and tail of <i>Tensur</i> animals
Nep ja	red and white tassels tied in ears of <i>Tensur</i> animals
Bja	traditional yak wool tent
Phatse	sack, storage bags
Zha chu	yak wool canvas sheet/ blanket for covering loaded luggage
Woodham	slingshot, stone thrower
Cha ka, Char kab	thick woven yak wool blanket used as a raincoat
Bchari gho	black <i>gho</i> made from yak hair (male national dress)
Bchari kirra	black <i>kirra</i> made from yak hair (female national dress)
Bag	shoulder bag
Bchari ghoti	jacket
Jho lham	boots with sole from yak skin
Bchari meycha	blanket
Den	mattress

Table 8- Yak Equipment

Bjobkey	English
Gap töe	outer waterproof saddle blanket
Ghar	saddle
Thoda	short rope to tie 2 sacks load together with one rope
Zhachu	yak wool blanket to cover load against rain
Trishey	ring of bells around neck on leather and wool base
Dungdu	large bell tied under neck
Ngangbu	large tassel of red yak hair tied to back of neck for decoration
Nyepja	multicoloured tassels of yak hair tied to ears as decoration when moving to new pasture
Phungye	multicoloured tassels of yak hair tied to foreleg as decoration when moving to new pasture
Gyuge	multicoloured tassels of yak hair tied to tail as decoration when moving to new pasture
Pho kye	round fence for keeping yak calves inside
Tsa gi pho kye	bamboo round fence for keeping yak calves inside, used at high altitude
Dam	long horizontal wooden slats of the pho kye
Khatey	vertical posts in the ground to make the pho kye
Tsophu	wooden stakes stuck in the ground for tying yak calves to when milking
Dang	long horizontal rope tied along the ground inside pho kye for tying yak calves to
Gudak	short ropes to tie calves to the dang
Chu trak	wooden nose peg (sharpen then strengthen in fire)

Table 9- Herding Activities

Bjobkey	English
Drokhoni	gathering livestock in morning for milking
Naazhey	gathering livestock in evening
Em dri ni	evening milking of females with a 2-year-old calf
Om sho ni	milking
Sha phab ni	castrate
Pung Chini	casting
Kham droni	tying legs together
Dang chuni	tying small calves on long line
Jukha Dromni	collecting dung for fuel
Tsa chini	give salt
Nor zha kyeni	sending out to pasture after milking
Dangzhi	fencing with stone
Ha ley chab ni	putting wooden peg through nose of a 2-year-old calf to prevent suckling while grazing
Hlap bae ni	piercing the nose to tie rope

Jum chab ni	cutting tail hair at age 4 and 6 years
Ga chab ni	loading saddle on horse/ mule/ yak
Khucha kyeni	loading equipment on horse/ mule/ yak
Ta khini	leading horse
Yak lhab kyeni	leading yak by nose rope

Table 10- Horses, Donkeys and Mules

Bjobkey	English
Ta	horse
Drey	mule
Bonkhu	donkey
Sep	uncastrated male horse
Phochey	castrated male horse
Gyum	female horse
Tiu chu/ Tigu	foal
Sepchu	male horse up to 3 years old
Gyurtham	female horse up to 3 years old
Phodrey	male mule
Modrey	female mule
Shoen ta	riding horse
Khye ta	pack horse
Halflinka	breeding male

Table 11- Horse and Donkey Anatomy

Bjobkey	English
Gotho	head
Namcho	ears
Lhapa	nostrils
Thoep	forehead
Kha	mouth
Che	tongue
So	teeth
Lep	brain
Tako	back of neck
Yuko	front of neck
Ziew	mane
Dongcha	fetlock
Dong	horse face

Kuem	throat
Soep	shoulders
Lakp	foreleg
Namchum rutok	upper arm
Kili	elbow
Ngatok	cannon
Lap chu	knee down
Latse	fetlock on front leg
Mip/ mipchu	hoof
Drenka tona	ergot
Jangkho	chest
Tsim	ribs
Gep	back
Phowa gi lhotab	flank
Gaytse	upper back
Kaytse	lower back
Kaep	hips
Gandram	buttocks/ rump
Khangm	hind leg
Leydhu	femur
Gyekhup	hock
Khangm	below hock
Nato	canon
Khamtsi	fetlock on hind leg
Jukma	tail
Dhunghi	heart
Lowo	lungs
Rutho	bones
Zhathab	oesophagus
Yudok	trachea
Hingtha	aorta
Phow	stomach
Chinm	liver
Trip	gall bladder
Trip bi khatha	bile duct
Khedho	kidney
Ghanphu	urinary bladder
Bhotsa	uterus, ovary, all female organs
Hip, Hiptho	testicles, scrotum
Je	penis
Thu	vagina
Abu	anus

Naaju	small intestine
Kaaju	large intestine
Chinchum	spleen
Ghaa	udder
Leutsi	teats
Thiu	umbilical cord
Bho ney	placenta
Tsa	nerves
Traktsa	veins/ arteries
Ngachu	water bag

Table 12- Horse Equipment

Bjobkey	English
Thiu	bridle
Sap	bit
Orlo	reins
Bchey kheb	woollen decoration on forehead
Ngambu	red tassel on top of head
Kheyda	neck rope with coloured tassel
Lha ta gyab	leg hobbles
Sha toe	inner saddle blanket
Gap toe	outer saddle blanket
Tikpa	waterproof saddle blanket
Trishey	small bells tied to neck and ropes
Dungdu	large bell tied under neck
Pche	dongle inside bell

Table 13- Diseases and Health Problems

Bjobkey	English
Khatsa khane, Gob	foot and mouth disease
Bagey, Bagotey	bottlejaw, actinobacillus infection
Bho tsa ma tsub	dystocia
Bhoney thoni, Ney	retained placenta
Bjikho	weakness
Chabsa khaney	constipation
Chabsa Trakbai shaney, trang shi	dysentery
Chentsey	liver Fluke
Chu duk	water poisoning
Chu tsa	bloat
Ganey	chronic mastitis
Go yum	gid, coenurosis
Gung	dog scabies
Hlap	nasal discharge
Khang chag ni, Khang cha chab	hind limb fracture
Kong	scabies
Kye ma	tick infestation
Lhap chag ni, Lhap cha chab	forelimb fracture
Lo baney	coughing
Lo ney	pneumonia
Ma	wounds
Migney	conjunctivitis
Mip gi natsa	hoof disease
Mitok natsa	eye disease
Nyentsa	haemorrhagic septicaemia
Om gi ganey	mastitis
Om gi natsa	nipple infection, early mastitis
Pha duk	sickness get when graze area where cattle grazed in summer
Phowa gi bhup, Chen bup	internal parasites
Rochi chonye	rabies
Saoned	high fever, stiff gait, nasal discharge
Shanay, Shaoned	diarrhoea
Shi soma	lice, larvae infestation
Thab shi	skin disease of white skinned yak, photosensitivity
Trangduk	colic
Tsa duk	plant poisoning
Tsi be beow	joint dislocation

Uptsi	tapeworm
Yangjim	infertility
Zha kham maep	anorexia

Table 14- Other Types of Animals

Bjobkey	English
Dogs	
Rochi	dog
Chigu	puppy
Pho chi	male dog
Mo chi	female dog
Chi tsam	female with pups
Chang chi	stray dog
Lha chi	mastiff
Ba tsa	cross breed mastiff and stray
Hab ni	barking
Ngu ni	howling
Cats	
Jili	cat- all age and gender
Jigu	kittens
Meow	meow
Mani jam	purr
Sheep	
Luk	any age and gender
Luk pey	breeding male
Lum	adult female
La chum	2-3 year old female
Phe tso	2-3 year old male
Tshem	pregnant female
Luk kho	lamb
Phey luk	castrated male
Goats	
Ra pey	male
Ra rum	female

Appendix Three- Department of Livestock: History, Facilities, Structure

Department of Livestock, The Ministry of Agriculture and Forests

Bhutan's veterinary institutions operate under the Ministry of Agriculture and Forests (MoAF), the state authority on animal matters in Bhutan.¹³⁰ The mission of MoAF is “to ensure the sustainable social and economic well-being of the Bhutanese people through adequate access to food and natural resources” (MOAF 2020). The three RNR sectors – the Department of Agriculture, the Department of Livestock (DoL), and the Department of Forests and Park Services, were consolidated under the Ministry of Agriculture and Forests. Additionally, the MoAF includes several other institutions, such as the Bhutan Agriculture and Fisheries Regulatory Authority (BAFRA), the National Biodiversity Centre, the Council for RNR Research, and the Rural Development Training Centre. The objectives of the MoAF closely align with Bhutan's goals for sustainable development, food security and nutrition, and improving rural livelihoods.¹³¹ Most veterinarians are based in the DoL, and a few work with BAFRA. I was an official guest of the MoAF and DoL during my stay in Bhutan.

The MoAF's strategic direction is guided by the National Five-Year Plans. The Planning Commission initially developed these plans until 2008, when control was transferred to the newly formed Gross National Happiness Commission. The 12th Five Year Plan (2018-2023) allocated 3,050.35 million Nu to the MoAF to “explore new prospects for improving rural livelihood by focusing on increasing agricultural productivity, transforming subsistence farming to commercial farming, and sustainable utilisation of forestry resources.” (GNHC, 2018, p. 7) Specifically, the DoL aimed to increase meat self-sufficiency from 37% to 47%, fish from 12.9% to 18%, and dairy products from 88% to 91% (GNHC, 2018, p. 13). Bhutan has achieved self-sufficiency in egg production following bird flu outbreaks in the 2000s, which halted

¹³⁰ In 2022, the MoAF was reorganised into a new structure called the Ministry of Agriculture and Livestock (MoAL). It contained the Department of Agriculture, Department of Livestock, Department of Agricultural Marketing and Cooperatives, and the National Biodiversity Centre.

¹³¹ *MoAF Vision*: Sustainable natural resources for equitable social and economic well being of the Bhutanese people and the nation. *Mission*: To ensure sustainable social and economic well-being of the Bhutanese people through adequate access to food and natural resources. (RNRSCS 2015, p.1)

the import of Indian eggs and prompted the DoL to rapidly develop domestic poultry production.

Bhutan's administrative structure is divided into 20 *dzongkhags*, which are further subdivided into 205 *gewogs* or sub-districts. In addition to this administrative framework, four major *Tromdes (khrom sde)* or municipal corporations serve the four largest towns—Thimphu, Phuentsholing, Gelephu, and Samdrup Jongkhar. The government decentralised its administrative structure down to the *gewog* level by establishing 'extension services' in each *gewog*. These services include schools, Basic Health Units (BHUs), local administration offices, and a Renewable Natural Resource (RNR) centre.

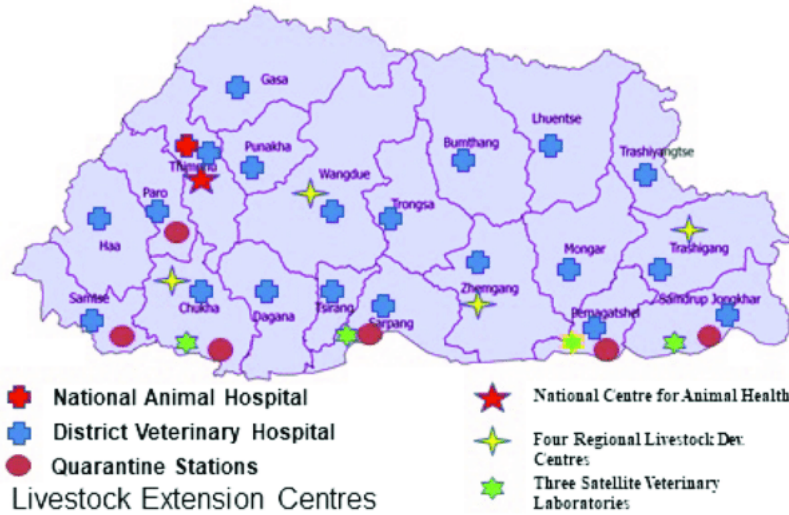
The RNR centres contain the field offices of the Ministry of Agriculture and Forests—the Departments of Livestock, Agriculture, and Forests and Park Services. Each RNR centre contains a DoL Livestock Extension Centres, a dispensary, and a Livestock Extension Officer (LEO), who is a paravet. There are 205 of these Livestock Extension Centres, one in each *gewog's* RNR centre.

Each of the 20 Bhutanese *dzongkhags* features a *Dzongkhag* Veterinary Hospital, which comprises a substantial building accommodating at least one veterinarian, several paravets, a laboratory, and administration staff. The four regions of Bhutan host their own Regional Livestock Development Centre and there are four Thromde Veterinary Hospital and Satellite Laboratories (Rinzin 2018). Additionally, several national-level institutions, the National Animal Hospital (NAH), National Centre for Animal Health (NCAH), and the Dairy Development Centre are found in or near Thimphu, the capital (MOAF 2021). Other production centres, such as aquaculture, pig, poultry, and cattle breeding centres, featuring both native and imported breeds, are dispersed throughout various parts of the country.

The DoL headquarters are situated in the MoAF government building complex, part of an enclave of central government offices. This enclave lies adjacent to the Tashichho Dzong (*bkra shis chos rdzong*), Thimphu's monastery fortress that houses the throne room, king's offices, the cabinet secretariat, and the ministries of home affairs and finance, forming the power centre of Bhutan. Proximity to this political hub provides DoL personnel with access to national decision-making meetings and political leaders.

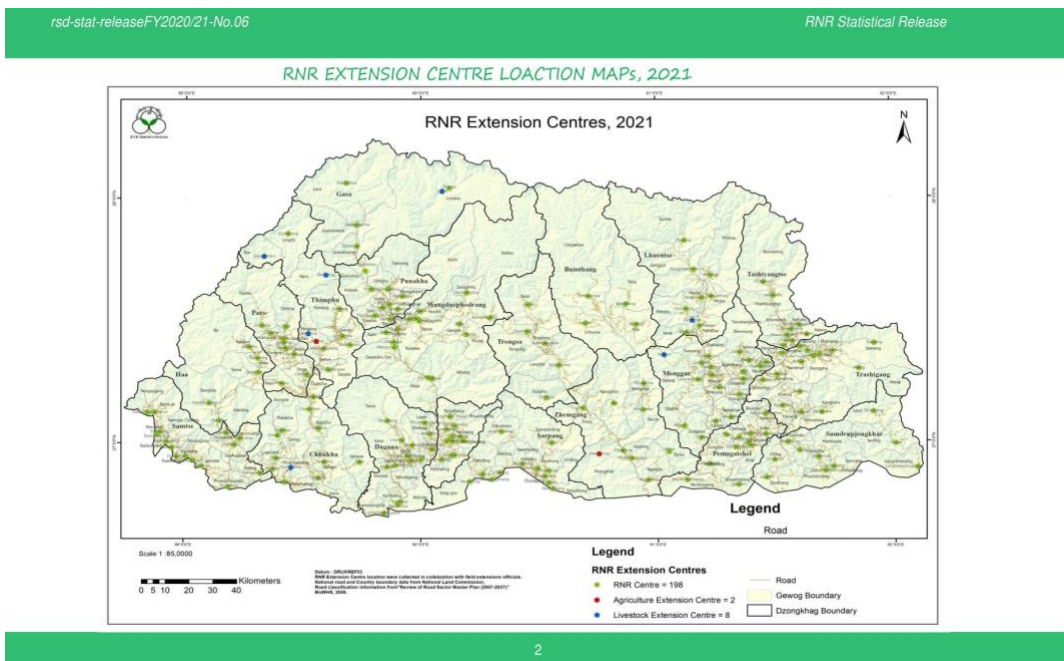
The stated objectives of the DoL's extensive national veterinary regime are:

- to enhance food and nutrition security and rural livelihood through promotion of livestock farming
- to enhance effective and efficient delivery of livestock services
- to generate appropriate technologies for enhancement of livestock production
- to encourage youths (sic) and public sector investment in livestock enterprises
- to promote sustainable management and utilisation of Natural Resources and contribute to RNR sector growth. (MOAF 2019)



Map 7- Network of animal health facilities in Bhutan

Source: Rinzin (2018).



Map 8- Map of RNR extension centres

Source: MOAF (2021).

Table 15- RNR and DoL Infrastructure 2011-2015

Source: NSB (NSB 2016, p.88).

Infrastructure	2011	2012	2013	2014	2015
RNR (Common services)					
RNR Extension Centers	139	139	139	139	139
RNR Research Centers	4	4	4	4	4
RNR Research sub-stations	6	6	6	6	6
Livestock					
Dzongkhag Veterinary Hospitals	20	20	20	20	20
City Veterinary Hospital	...	...	...	...	1
National Animal Hospital	...	...	...	...	1
Regional Livestock Development Centre	...	...	...	...	1
National Livestock Commodity Research Centres	...	...	...	...	7
Livestock Extension Centers	42	42	42	42	17
Satellite Veterinary Laboratories	3	3	4	4	4
Government Livestock Farms	11	11	11	11	13
Fodder Seed Production Center	1	1	1	1	1
Vaccine Production Centre (NCAH)	1	1	1	1	1
National Artificial Insemination Center	1	1	1	...	...
National Cold Water Fishery Center	1	1	1	...	...
National Warm Water Fish Culture Center	1	1	1	...	...
National Center for Animal Health	1	1	1	1	1
National Centre for Animal Nutrition	...	...	...	...	1
Liquid Nitrogen and Semen Processing Centre (NDRC)	...	...	...	...	1
Livestock Product Value Addition Centre, Serbithang	...	...	...	...	1

Bhutan's Livestock

Bhutan's government conducts regular surveys, collects census data and performs quantitative research. The data demonstrates a gradual decline in the national yak since 2007. The equine and sheep populations have continued to decline overall as their use and need decline in Bhutan. There is an overall decline in the total cattle population but a steady increase in the proportion of 'improved' cattle breeds and a proportional decline in indigenous breeds. Pig numbers have also steadily declined, especially since JANGSA animal saving trust began their activities in the early 2000's. A upward trend since the mid-2010's can be attributed to the DOL's intensive pig farming programs. Poultry are the largest growing population, and the largest population of farmed land animals. It is difficult to obtain exact numbers of farmed fish because most reports only provide the production of fish by weight, not in individual animals.

During the years of my fieldwork, Bhutan's animal population included 45,000 yak, 304,000 cattle, 22,700 horses, 10,800 sheep, 48,000 goats, 14, 000 pigs, and 550,000 poultry. Of those cattle, 83,000 were 'improved', 27.3% of the population, up from 24.1% in 2012 (RNRSCS 2015, p.32). That percentage has steadily grown to 38.9 % in 2023 (NSB 2025).

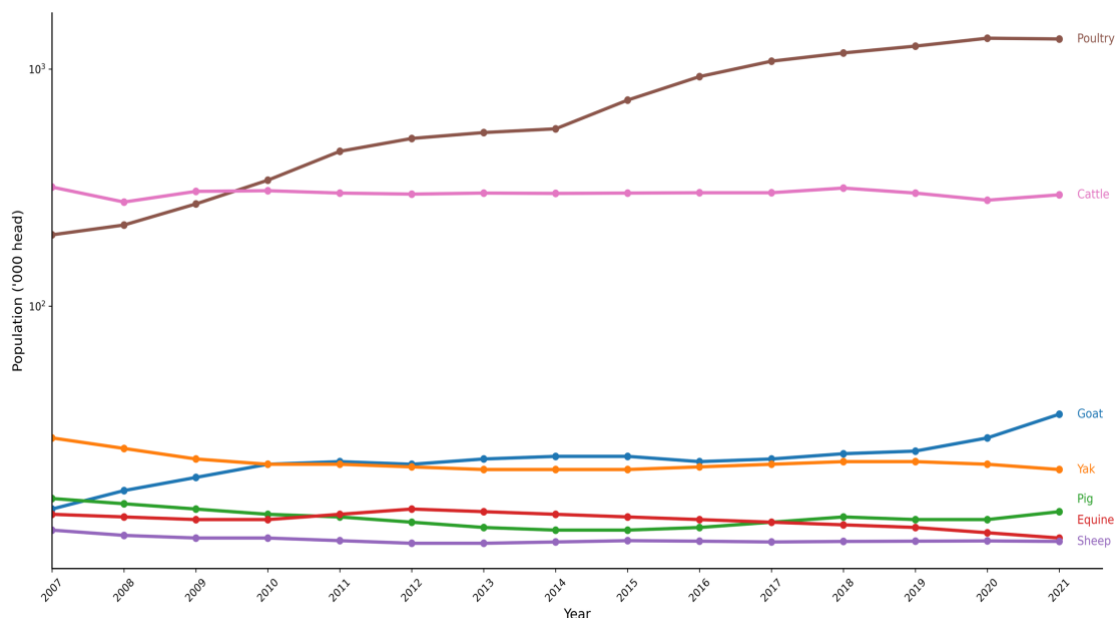


Figure 4- Average numbers of livestock 1987- 2021.

Source: NSB (2021, pp.26, 51), NSB (2025, p.86).

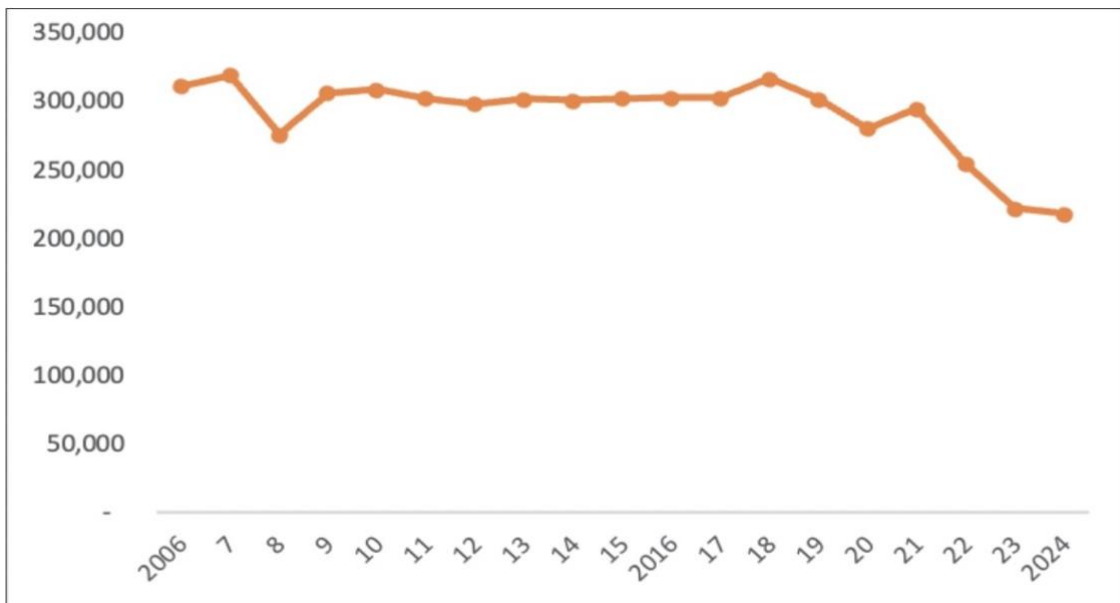


Figure 5- Total cattle population.

Source: NSB (2025, p.86).

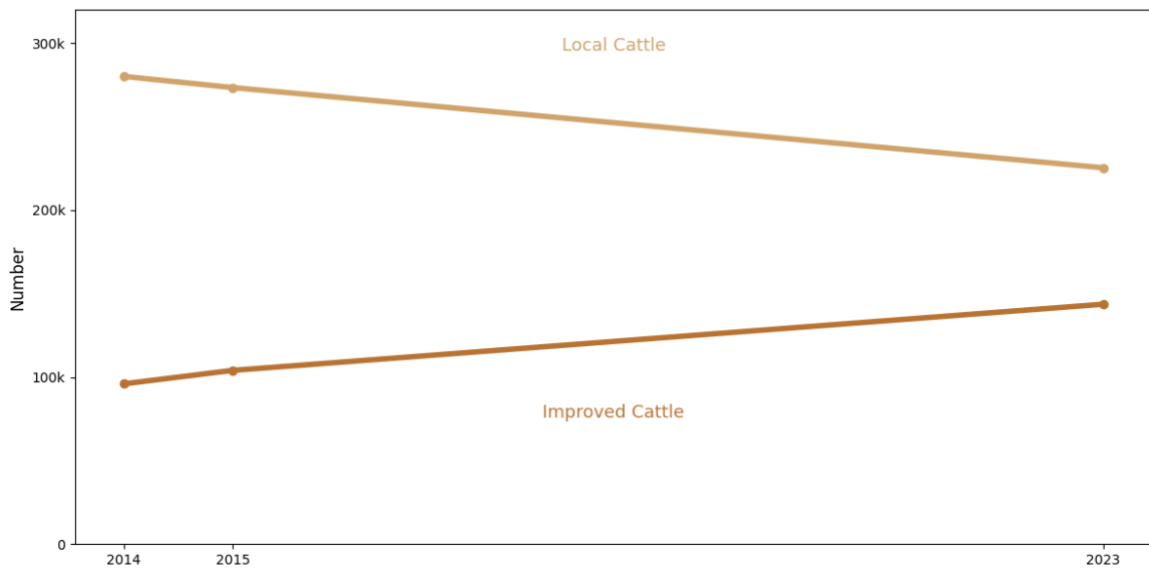


Figure 6- Percentage of improved to indigenous cattle.

Source: RNRSCS (2015), NSB (2016, 2025).

Bhutan’s Livestock Production

Livestock production data is readily available from Ministry and National Statistics Bureau reports. Despite some yearly fluctuations, the overall trend demonstrates egg, dairy, meat, and fish production are increasing over the decades, except for yak meat.

There was a disruption to meat, poultry and egg production during COVID-19 lockdowns in 2020 when all animal-based imports were suspended into Bhutan. However, the numbers have since recovered (NSB 2025).

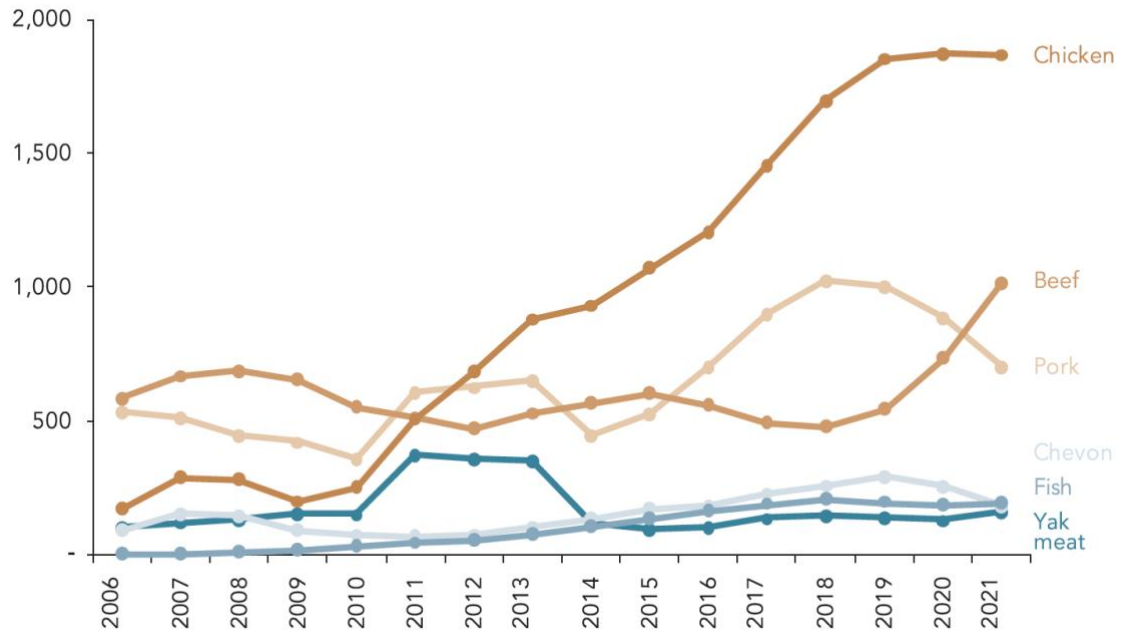


Figure 7- Average meat production 2006- 2021

Source: NSB (2021, p.51), NSB (2025, p.86)

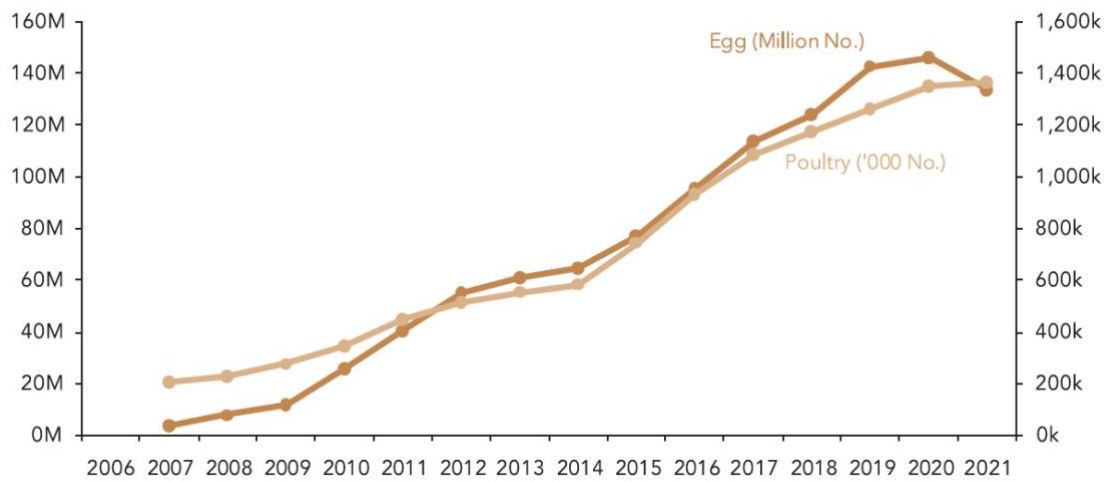


Figure 8- Average egg production 2006- 2021

Source: NSB (2021, p.51)

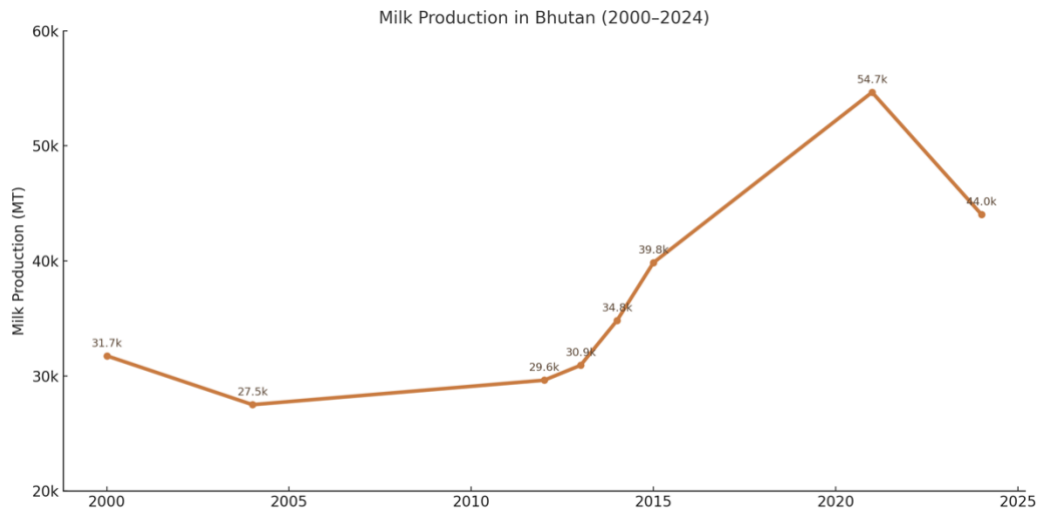


Figure 9- Average milk production 2000- 2024

Source: RNRSCS (2015), NSB (2016, 2021, 2025)

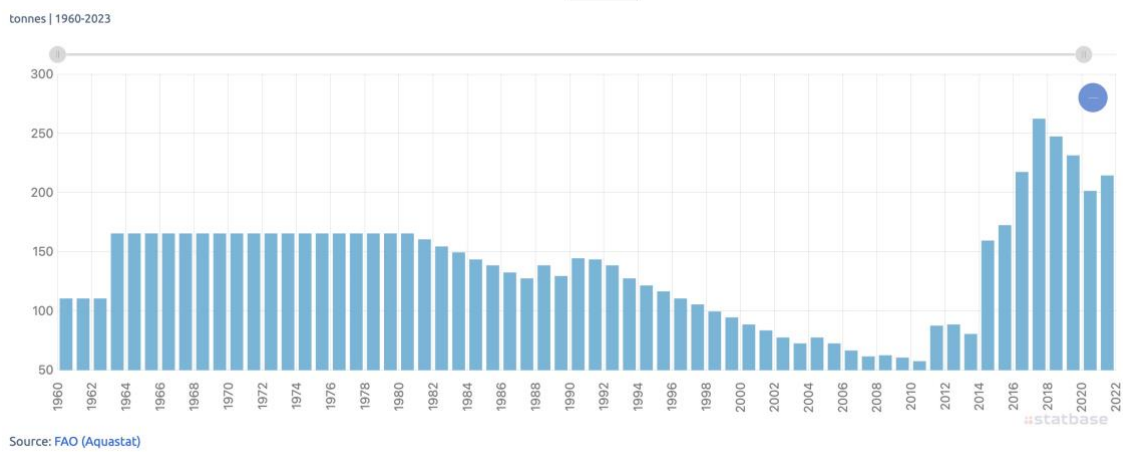


Figure 10- Farmed fish production in tonnes.

Source: FAO (Aquastat) (2025)

Animals slaughtered to produce all meat, 1961 to 2021

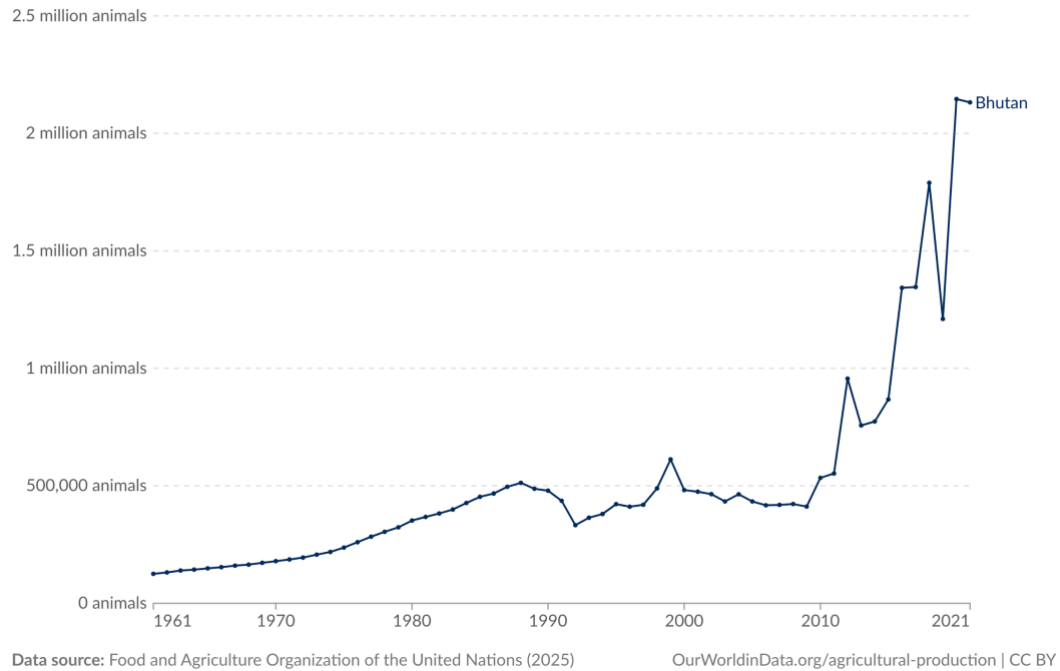


Figure 11- Animals Slaughtered for meat in Bhutan 1961 – 2021.

Source: Our World in Data (2025).

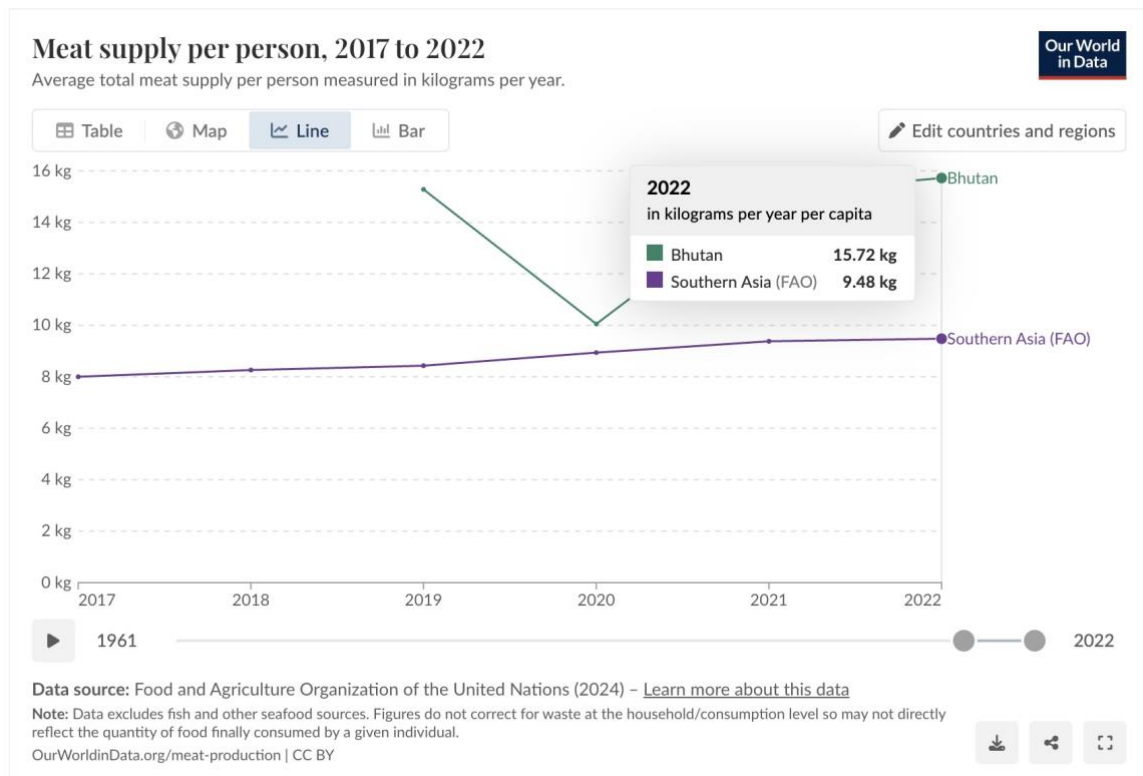


Figure 12- Meat supply per person: Bhutan vs South Asia.

Source: Ritchie et al. (2023).

Statistics on the total meat, eggs, and dairy purchased or consumed per capita in Bhutan is unavailable. The Food and Agriculture Organisation of the United Nations data lists the numbers of animals slaughtered per year for meat from 1961, but this doesn't account for consumption of livestock products imported from other countries. The same organisation has data on the kilograms of meat supplied per capita from 2017 only, demonstrating the noted drop in 2020 due to COVID-19 lockdowns.

I was unable to source aggregate data on total consumption practices in Bhutan (domestic production plus imports). It may be reasonable to assume, however, that consumption rates would be proportionate to, and cause, the upward trends of animal production and slaughter rates. It is clear from the last two figures that the numbers of animals slaughtered for meat has been steadily rising. Interestingly, Bhutan's consumption per capita is significantly higher than the rest of South Asia. This data supports claims made in media reports, quotes from Ministry officials, and public narratives that the rate of consumption and the import of meat and dairy products is rising (Dema 2015, Yuden 2020a, M Rai 2024).

Appendix Four- Ethnoveterinary Medicine Today

Beyond Bhutan, neighbouring regions exhibit extensive EVM research, development and commercialisation. Bhutan is wedged between India, Tibet, and China. These countries have significantly influenced Bhutan's culture, medicine, and economics, and may have historically shaped Bhutan's EVM as well. The following short section summarises the contemporary status of EVM in these countries.

Indian EVM

The Indian state bioveterinary departments use ethnoveterinary medicines (EVM) and Ayurvedic veterinary herbal products in their daily practice, involving millions of regional South Asian veterinarians and animal caretakers. Additionally, Bhutan's veterinary department imports some proprietary Ayurvedic veterinary medicines for distribution to local animal farmers. Currently, Bhutan does not produce its own veterinary herbal medication, despite the southern regions of Bhutan sharing many of the same ethnomedical and ethnoveterinary ingredients found in other parts of the Indian and Nepali Himalayas. I did, however, document some *Lhotshampa* farmers, healers, and practitioners in the south using Ayurvedic medicines and philosophies when caring for local animals.

Since India's independence from Britain in 1947, the Government of India has recognised the value of its EVM, where subsistence farmers rely on their traditional knowledge to maintain the health of their livestock. However, before independence, the British colonial administration and its veterinary institutions excluded and subjugated local knowledge and practices (Mishra 2015). Currently, state-funded research into traditional veterinary medicine is conducted by national institutions, veterinary schools, and ethnobotanical specialists, with significant expansion over the past few decades. As a result, numerous publications and monographs on Indian EVM are readily accessible.

Over the past few decades, the commercial mass production and sale of traditional, or Ayurvedic, veterinary medicines have given rise to a multi-million-dollar industry. The Indian private sector has developed and produced thousands of veterinary herbal medicine products for both domestic and international markets, incorporating herbs into intensive livestock feeds such as poultry and pig pellets. Traditional veterinary medicines are provided free of charge to farmers for their livestock by personnel from

the Indian Department of Animal Husbandry through government dispensaries. Beyond these state dispensaries, farmers can also purchase herbal medicines from most pharmacies and farm shops nationwide. More recently, growing trends in pet-keeping in India have driven growth in traditional veterinary medicines, veterinary Ayurveda, for dogs and cats, with some products being exported to the Australian and international pet markets. Exports also extend to Bhutan, where these veterinary products are provided free of charge to farmers and graziers.

The rich biodiversity of the Himalayas has been an abundant source of ethnomedicines and ethnoveterinary medicines. A substantial body of EVM research papers and monographs is available from the Indian, Nepalese, and Pakistani Himalayas (Uniyal et al. 2006, Bharati & Sharma 2012, Bharati & Sharma 2012, Maiti et al. 2013). They document varied practices and medicinal uses, representing excellent early works cataloguing traditional EVM knowledge. Researchers frequently note the troubling decline in EVM practitioners and their knowledge in these regions. This issue is not exclusive to EVM; it is observed in many forms of traditional knowledge, including ethnomedicine. I have also observed this decline in Bhutan.

Tibetan EVM

The way Bhutanese veterinarians understand and embody their role is unique to their region, which is part of the Tibetan cultural area. Many cultural concepts of health and healing are rooted in Vajrayana Buddhism and *Sowa Rigpa*, which originated in Tibet. As such, we find similarities and Tibetan influences in Bhutan's culturally constructed narratives about illness, health, human-animal relationships, animal cosmology and sentience, and Buddhist philosophy. Therefore, the ideas and practices of traditional animal healing throughout much of Bhutan may be similarly influenced, particularly in the central and northern regions.

Tibetan language texts indicate the existence of a well-established system of Tibetan veterinary medicine that persisted for hundreds of years, as well as numerous scholars and textual sources. It is uncertain how much of this knowledge has survived till now, beyond the textual sources others have analysed and what I collected and summarised in Appendix Six.

Today, however, Tibetan veterinary medicine is practised in the Amdo region of the Tibetan plateau (Qinghai province, China). These practitioners were trained by Amchi Nyima who had established a veterinary hospital in the 1950s under the state

Department of Animal Husbandry in Dzoige (Ruoergai). He used his training in *Sowa Rigpa* knowledge and medicines to translate this to livestock. He experimented with various traditional Tibetan medicines to treat illnesses and injuries in horses and livestock. He taught an estimated 1,500 students, many of whom are now spread across the eastern Tibetan plateau, and twenty of them still work for the state department as paravets, caring for local livestock. In the Tibetan Autonomous Region, the Chinese Academy of Sciences is researching and promoting traditional Tibetan medicines, although publications on the results of this work are not currently accessible.¹³²

The only available English-language publication on EVM research from Tibetan cultural regions of China documents this same group of twenty traditional Tibetan veterinary practitioners in Dzoige. Shang et al. (2012) from the Chinese Academy of Agricultural Sciences surveyed these Tibetan paravets who utilised *Sowa Rigpa* theory and medicines, describing 180 traditional ingredients. Two of these Chinese government researchers later authored a Chinese-language book based on this research, which more thoroughly describes and catalogues these 180 medical ingredients, along with the traditional instruments used by those Tibetan practitioners (Shang & Bian 2015). It is likely that, in addition to Shang and Bian's work, publications from the Tibetan cultural regions may be found in the Chinese-language literature. I have, however, not investigated these sources.

Chinese EVM

Arguably, the most visible and practised form of traditional veterinary medicine worldwide is traditional Chinese veterinary medicine and acupuncture. What we now call Traditional Chinese Medicine (TCM) and Traditional Chinese Veterinary Medicine (TCVM) are standardised systems that were consolidated and institutionalised by the Chinese state in the 20th century as part of the Communist state-building project (Hsu 2008, Taylor 2004). These were packaged and exported to the world, where international training colleges deliver accredited qualifications in Chinese veterinary

¹³² Personal communications with staff working in this department (2013).

herbal medicine and acupuncture.¹³³ Many thousands of bioveterinary-trained veterinarians, like me, have completed postgraduate certification in these subjects. There are abundant academic textbooks and research publications on the use and efficacy of these therapeutics in the English-language literature. The majority, however, are only available in Chinese-language literature sources.

Within China, aside from the institutional form of TCVM, ethnoveterinary surveys and research articles document regional and local EVM knowledge and practices. Recent changes in laws governing the use of antimicrobials in animal feed have led to a rapid increase in research, commercial development, and sales of herbal additives in animal feed and veterinary medicines (Wang et al. 2025). Similarly, Chinese TCVM products are produced, exported and sold worldwide. Several international manufacturers also produce TCVM products for veterinary use.¹³⁴

¹³³ For example, The International Veterinary Acupuncture Society (ivas.org), The College of Integrative Veterinary Therapies (civtedu.org), and the Qi University (chiu.edu).

¹³⁴ Natural Path Herbs (nphc.ca), Dr Xie's Jing Tang Herbal (tcmherbal.com), TCVM Pet Supply (tcmmpet.com).

Appendix Five- Ethnoveterinary Medicine Survey

An important aspect of this PhD research, and a priority for Bhutan's Department of Livestock, was an ethnoveterinary survey of Bhutanese Traditional Knowledge on animal health care practices and traditional veterinary ingredients used in Bhutan. In response to this, while conducting my PhD research, I surveyed 14 of Bhutan's districts, interviewing many animal agriculturists, healers, herders, farmers and local veterinary personnel. The survey's methodology is described in the Introductory chapter.

The results are compiled in the following two tables. I separated the data into Table 1: Northern Bhutanese districts, usually 2000 metres altitude and above, and Table 2: Southern Bhutanese districts, below 2000 metres altitude. I arranged the data in alphabetical order in column one, the most used local name for the medicinal ingredient. Local names often had several variations or phonetically similar transliterations for the same species, in which case I have listed them all. Where possible, I provided the scientific name for the ingredients in column two. However, this is preliminary data only and these identifications may change.

I recorded descriptions of the materials, collection instructions, and other information in column three. Column four summarises treatment recipes, indications, species treated, and other directions. This column's information is numbered, where each number refers to a different person's knowledge. Column six lists the districts where each ingredient was mentioned, and the number of people from that district who mentioned that medical substance. For example, Merak 4 means that four respondents from Merak mentioned that substance.

The Northern Bhutan Survey identified knowledge of 69 medical ingredients, with only 14 lacking scientific identification. In Southern Bhutan, 277 ingredients were documented, of which all but 46 were identified. Plant-based ingredients were predominantly used, but animal and mineral substances were also mentioned. Common household items such as soap, oil, meat, butter, milk, yoghurt, alcohol, turmeric, garlic, chives, grains, kerosene, and naphthalene were frequently utilised. Many of these Bhutanese EVM ingredients are referenced in human texts on *Sowa Rigpa* and Ayurveda. Some are described in ethnomedical and ethnoveterinary

research publications, especially those from the Himalayas, India, Nepal, and Tibetan cultural regions.

These expansive survey results demonstrate Bhutan's rich ethnoveterinary traditions and biological heritage. What's more, they show Bhutan's two monikers, the Land of Medicine and the Land of Dragons, are still relevant in these contemporary times. There is vital and urgent work needed to archive and analyse Bhutan's ethnoveterinary medicine before that knowledge is lost to future generations.

(For confidentiality reasons at the request of the National Biodiversity Centre, Royal Government of Bhutan, pages 310- 360 have been redacted from this thesis. For access to the results of the national ethnoveterinary survey, please contact the National Biodiversity Centre, nbc.gov.bt).

REDACTED

Appendix Six- Tibetan Veterinary and Animal Husbandry Texts

Tibetan Veterinary Medicine- A Defined Textual Tradition

On Bhutan's northern border, Tibetan *Sowa Rigpa* has a long, documented, institutional history, textual tradition, and a thriving contemporary industry and practice. Like Bhutan, Tibetans also relied on animals for transport, food and fibre, expending great effort to keep their animals healthy. I initially began this PhD project with the intention of researching and documenting Tibetan veterinary medicine. However, many Tibetans and Tibetan scholars were dubious about the existence of a tradition or of any surviving texts. I was aware of a handful of contemporary academic publications that described Tibetan veterinary texts found in the Dunhuang library and in Tibetan cultural areas of Nepal, but none from Tibet or other Tibetan cultural areas, such as Bhutan. While the PhD research turned into an ethnography of Bhutan's veterinary traditions, I also collected forty-four Tibetan veterinary medicine texts and twenty-two animal husbandry texts, which are summarised in the tables in this appendix.

It is evident that a Tibetan veterinary tradition did exist, and it left a documented textual trail (Blondeau 1972, Maurer 2001, 1995, 2019b, 2024). The first reference to Tibetan veterinary medicine appears during the reign of the Tibetan king Trisong Detsun (Khri srong lde btsan; 742-797).¹³⁵ He is well known for his efforts to codify regional sources of human medicine into a Tibetan tradition. This historiography notes that the king invited medical and veterinary experts from various regions to the court to produce veterinary treatises, particularly concerning horses. Claire Heffernan (1997), however, describes an earlier Persian veterinary text that was translated into Tibetan for King Songtsen Gampo (Srong btsan sgam po; 569–649).

¹³⁵ Panels describing this are displayed in the 'Tibetan Medicine History Hall' of the Qinghai Tibetan Medicine Culture Museum, Xining, Qinghai, China. This historiography is repeated in several sources, for example, Stobs rgyal (2007), Maurer (2024).

Yeshe Tsogyal's (2007) publication on the traditional Tibetan diagnosis and treatment of horse diseases details historical sources of 1,500 years of Tibetan equine medicine. This book includes the principal figures and their textual sources from the 10th, 12th, 18th, 19th, and 20th centuries, including works by the 5th and 12th Dalai Lamas. As it is beyond the scope of this appendix to analyse the entire history of Tibetan veterinary medicine, I have not pursued further work on this. Petra Maurer's extensive work on Tibetan equine veterinary texts provides a comprehensive overview of the current state of knowledge (Maurer 1995, 2001, 2019a, 2019b, 2024).

Other contemporary scholars have also published works on Tibetan veterinary medicine. Within the collection of Tibetan documents found in the Dunhuang library, 11th and 12th century manuscripts describe the care and treatment of horses in the King's army. Anne-Marie Blondeau (1972) analysed six of these Dunhuang manuscripts on Tibetan equine medicine and husbandry, translating them into French. She compared them with six Sanskrit texts on horses from the Tibetan Buddhist canon, the *Tengyur (bstan 'gyur)*. One of these Sanskrit texts, Shalihotra's treatise on horses, is well known in Indian literature and concerns Ayurvedic treatments for horses. It was translated from Sanskrit to Tibetan by the esteemed Tibetan translator *Rinchen Zangpo* (Lotsawa Rin chen bzang po; 958 - 1055) and included in the *Tengyur* (see V11 and V12 in the veterinary texts table). Petra Maurer (2024) subsequently analysed these texts as well.

Several Tibetan equine medical texts have been found among Tibetan ethnic groups in Nepal. Petra Maurer (1995) analysed a Tibetan translation of an Ayurvedic text on horse medicine, which briefly mentions a manuscript on the same subject discovered in the caves of Dunhuang. Her PhD thesis (2001) analysed a collection of eighteen handwritten Tibetan texts, primarily belonging to the King of Mustang, which discuss horse breeds, qualities, diseases, diagnoses, and treatments. An English-language summary of some of these manuscripts was later published (Maurer & von den Driesch 2006). Also in Nepal, Clair Heffernan (1997), Angela von den Driesch (1992), Ken Bauer (2004), and Sienna Craig (2008) have published works detailing traditional veterinary texts and contemporary horse healers and their existing practices observed in Mustang and Dolpo.

My research into Tibetan libraries and private collections has uncovered forty-four traditional Tibetan veterinary texts beyond those mentioned earlier. These manuscripts are predominantly modern reproductions of older works, printed and bound in book format over the last 40 years. Some include personal knowledge and experience, while others are transcriptions of earlier texts by various authors. They primarily focus on horses and livestock, including yaks, sheep, cattle, and pigs. Four of these are handwritten manuscripts describing horse treatments that I found in Indian Himalayan libraries. Additionally, Arura Publications has archived several handwritten veterinary manuscripts, some of which are reprinted in their compilations.¹³⁶ The Gesar epics also contain sections on veterinary medicine.¹³⁷

In addition to the veterinary sources mentioned above, I collected twenty-two Tibetan texts on animal husbandry. While some are contemporary Chinese government publications on livestock care and management, others document the traditional animal care and herding practices of Tibetan herders, farmers and communities.

As stated above, when I first began investigating the existence of traditional Tibetan veterinary medicine, many informants believed it had never existed or that the tradition had been lost. This brief summary of extant texts demonstrates that Tibetan veterinary medicine was indeed practised, and efforts were made in the 20th century to collect, archive, and reprint these vital sources. However, the total number of traditional Tibetan veterinary and animal husbandry texts that I have collected, as well as those described by other scholars, is relatively small—fewer than 130. While several of these manuscripts reference older sources that date back to the 8th century CE, copies have yet to be located or may no longer exist. I sincerely hope that the texts I have documented here reflect only a small fraction of surviving sources. Nonetheless, there is an urgent need to gather and archive these textual sources and document the histories and practices of Tibetan veterinary traditions before they are lost to future generations.

¹³⁶ Arura Tibetan Medical Group, 1995- Volumes 44, 47, 56, 61, 64, 71.

¹³⁷ Personal communication with Frances Garrett (2016). See Garrett (2022).

Title Uchen	Title Wylie	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
V3	bod lugs gso rig gi khnyi smyon bcos thabs gzhung lugs gces btus/	Selected Texts on Mad Dog [rabies] Treatments in Tibetan Traditional Medicine	blo bzang bkra shis	2012	bod ljongs mi dmangs dpe skrun khang	Lhasa	192	9787223032636	a) Private collection- Dr Dondrup, Director, Arura Institute, Xining; b) Columbia University Library	b) RA639 .B63 2012	https://clio.columbia.edu/catalog/10786624	Scanned book	
V4	phyyugs sman gsal ston kun phan bdud rtsi'i 'byung gnas/	The Source of All Nectar That Benefits all by Clearly Showing Livestock	nyi mas brstam pa	1986	mi rigs dpe skrun khang	Beijing	221	NA	Original- Purchased Lhasa hookshon			Scanned book	
V5	phyyugs nad 'gog bcos rgyun shes/	General Knowledge on the Prevention and Treatments	yan mkhas	1979	mtsho sngon mi	zi ling	214	NA	a) LTWA: b) BDRG (scan of LTWA)	a) LTWA: D13683; b) bdr:MW1KG 21712	http://purl.bdrc.io/resource/MW1KG21712	Scanned book	

Title Uchen	V6	V7
	ཀུང་པོད་ཐུགས་སྐྱེད་རྒྱུ་གཞི་ལྟོན་པའི་སྒྲིག་གཞི	ཐུགས་ཀྱང་བཏུག་ཐབས་གསལ་བའི་མཁའ་མཁེ་ལྟོན་པའི་མཁའ་མཁེ་
Title Wylie	krung bod phyugs sman dpyad gzhi phyogs sgrig/	phyugs nad brtag thabs gsal ba'i me long/
Title English	Complete Collection of Chinese and Tibetan Livestock Medicine	Clear Mirror of Livestock Diseases and Examinations
Author	nyi ma lhun grub	pad rgyal brtag shis
Year	1985	2001
Publisher	Shigatse Regional Animal Husbandry and Veterinary	mtsho sngon mi rigs dpe sgrun
City	Shigatse	zi ling
Pages	555 (Tibetan Section)	406
ISBN	NA	7542009036
Source	Private collection - Dr Dondrup, Director, Arura Institute, Xining.	a) Lhasa bookshop; b) BDRC
Other cat.		b) bdr:MW30363
URL		http://purl.bdrc.io/resource/MW30363
Format	Scanned book - Tibetan section only	a) Scanned book b) BDRC Scan
Notes		

Title Uchen	Title Wylie	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
V8	ལྷགས་གསོ་བདུད་རྩི་རིང་ལུ་བཞུགས་སོ།	Pool of Nectar of Animal Husbandry	blo bzang bstan 'dzin	1995	si khron mi rigs dpe skrun khang	khreng tu'u	702	7540915412 9787540915414	a) Private Collection- Dr Drabo; b) LTWA; c) BDRG (Scan of original from LTWA)	b) LTWA 9421; c) bdr:MW1KG21707	http://puvl.bdrco.io/resource/MW1KG21707	a) Photocopy b), c) Scanned book	Bilingual Tibetan/ Chinese
V9	ཏྲ་དབྱེད་མཚོང་བ་ཀུན་གསལ་འདུལ་དཀར་མེ་མོང་ཞེས་བཞུགས་སོ།	The Bright Silver Mirror that Illuminates Horse Examination and Treatment	chab mdo zhi ba lha sprul sku bstan 'dzin phrin las	1892	NA	Dharamsala	190	NA	a) LTWA; b) BDRG (scan of LTWA)	a) LTWA: Class No. 513; Access No. 2153; b) bdr:MW1KG10154	http://puvl.bdrco.io/resource/MW1KG10154	Scanned book	Hand written bound book in Ume with colour illustrations
V10	ལྷགས་རིགས་ཀྱི་སྐྱེན་སྲུང་ཚར་ལུ་བཞུགས་སོ།	Miscellaneous Livestock Medicinal Compounds	NA	NA	NA	NA	NA	NA	Namgyal Institute, Sikkim	Namgyal Institute	-	Scan of pecha	Hand written Pecha in Uchen with colour illustrations.

	Title Uchen		Title Wylie
V13	第一章 藏兽医学基本知识		
	Dì yī zhāng cáng shòu yīxué jīběn zhīshi	ལྷགས་ནང་བཟླག་བཅོས་གསལ་སྟོན་དང་སེམས་བྱེ་སྤོང་གུལ་རིག་པ་མཛེད་པའི་དོ་མཚན་	bod kyi rta'i gso dpyad gzlung lugs bdams bsgrigs/
	Chapter 1 - Basic Knowledge of Tibetan Veterinary Medicine	A Precious Necklace of Joyful Direct Realisation: A Clear Explanation of the	Compilation of Selected Texts on Treatment of Tibetan Horses
	NA	mdzod dge nyi mas brtsams ba	ye shes stobs rgyal
	NA	1987	1990
	NA	mi rigs dpe skrun khang	bod ljongs bod yig dpe rnying
	NA	Beijing	Lhasa
	30	304	374
	NA	M16049(3)2	7805890048
	NA	Columbia University Library	a) Amye Marchin Institute; b) BDRC
	NA	SF781 .N956 1987	b) bdr:MW30280
	URL	http://www.shuilixhbx.cn/n/pri-ntjisp	https://clio.colu-mbia.edu/catalog/82274948
	Format	Downloaded photos of Chinese language article	a) Scanned book b) Scanned book
	Notes	Chinese language history and overview of Tibetan Veterinary Medicine.	

Title Uchen	Title Wylie	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
V16	zog bcos skye dngos sman rdzas bed spyos gtong stangs kyi lag deb/	Manual for Using Herbal Medicines to Treat Livestock	skal bzang zla ba bsod nams rgyal mtshan	1980	bod ljongs mi dmangs dpe skrun khang	Lhasa	182	NA	a) LTWA; b) BDRC (scan of LTWA)		http://purl.bdrc.io/resource/MW1KG21713	Scanned book	
V17	phyugs rigs kyi sman sbyor thor bu bzhugs so/	Miscellaneous Medicinal Compounds for Livestock Diseases	dge slong mu ni sha sa ni/	NA	NA	NA	7	NA	BDRC	BDRC W00JW5012 03-11CZ2685-209-216-anv		Scan of pecha	Handwritten in Uchen

	V18	V19
Title Uchen	བོད་ཀྱི་སྐྱུག་ལ་བཤམ་པ་ཚོས་བྲུང་ཐོན་སྐྱེད་སྐྱོད་གཅིག་བསྟུགས།	ཕྱུག་ནང་བཤམ་པ་བཅས་ཀྱི་དང་རྒྱུ་བཤམ་བཤམ་པ་ཚོས་བྲུང་ཐོན་སྐྱེད་སྐྱོད་གཅིག་བསྟུགས།
Title Wylie	bod kyi phyugs nad sman bcos nus thon sman sbyor gces bsdus/	phyugs nad brtag'bcos myong grub bdud rtsi'i bang
Title English	A Collation of Potent Medicinal Compounds for the Treatment of Tibetan Livestock Diseases	A Storehouse of Nectar: Experienced Examination of Livestock
Author	padma tsul grims bkra shis don 'grub	mdzod dge 'od zer
Year	2011 (1st ed) 2014 (2nd Ed)	1996
Publisher	si khron mi rigs dpe skrun khang	si khron mi rigs dbe
City	Chendu	Chendu
Pages	180	282
ISBN	9787540947095 7540947098	7540911859
Source	a) BDRC (1st Ed); b) Columbia University Library (2nd Ed)	Columbia University Library
Other cat.	a) bdr:MW1KG25846; b) SF917 .B63 2014	SF781.039 1996
URL	http://purl.bdrco.io/resource/MW1KG25846 https://clio.columbia.edu/catalog/9008107	https://clio.columbia.edu/catalog/5323130
Format	Scanned book	Scanned book
Notes	Bilingual Tibetan/ Chinese. Author Statement: mdzod dge rdzong skar dmar zhang phyugs nad 'gog'bcos sa tshugs kyis bsgyur byas/	

	V23		V24	V25
Title Uchen	ལྷགས་ནང་བཏག་བཅོས་རྒྱན་མཁོ་ལྷགས་བཏུམ།	ལྷག་གི་འགོ་ནང་དང་ བཞིན་གྱི་རྒྱལ་ལུ་མ།	ལྷག་གི་རྩལ་ནང་གསོ་ ཐབས།	
Title Wylie	phyugs nad brtag bcos rgyun mkho phyugs btus/	lug gi 'go nad rang bzhin gyi rnag thum/	lu gui rnyang nad gso thabs/	
Title English	A Collection of Essential Diagnoses and Treatment of Livestock Diseases	Abscesses of Contagious Diseases in Sheep	Treating Diarrhea in Lambs	
Author	ye shes stobs rgyal	lis 'phrin bun	NA	
Year	2004 (1st Ed) 2009 (2nd Ed)	1985	1985	
Publisher	mi rigs dpe skrun khang	tsho sngon mi rigs dpe skrun	tsho sngon mi rigs dpe skrun	
City	Beijing	tsho sngon	tsho sngon	
Pages	140	23	54	
ISBN	7105066881 (1st Ed) 9787105066889 (2nd Ed)	NA	NA	
Source	a) Latse Library (1st Ed) b) Columbia University Library (1st Ed) c) BDRC (2nd Ed)	Latse Library	Latse Library	
Other cat.	a) 636.089 Y4 2004 23396 b) SF781 .Y474 2004 c) bdr:MW8LS18796	636.089 L8 1985	636.089 L8 1985 7749	
URL	https://clio.columbia.edu/catalog/19150995 http://purl.bdrc.io/resource/MW8LS18796	-	-	
Format	Scanned book	Scanned book- Tibetan section only	Scanned book- Tibetan section only	
Notes		Bilingual Tibetan/ Chinese	Bilingual Tibetan/ Chinese	

Title Uchen	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
བོ་བཟང་བསྟན་འཛིན་གྱི་གསུང་ཚམ་སྟུགས་ བསྟུགས་ལྷན་གསུང་ཚུལ་ལྟར་བྲིས་	blo bzang bstan 'dzin gyi gsung rtsom phyogs bsgrigs / phyugs gso bdud rtsi'i rdzing bu/	ལུགས་རྟུགས་ ནང་སྟན་པའི་ཚུ བའི་ཤེས་བྲ།	2010	si khron mi rigs dbe skrun khang	Chendu	507	9787540943592	a) Columbia University Library; ii) BDRC	a) RC71 .B57 2013; b) bdr:MW1KG6160	a) https://cdio.columbia.edu/catalog/9169757.b b) http://purl.bdrc.io/resource/MW1KG6160	Scanned book- Volume Two	Three volume set. Volume Two- horse, sheep and cattle care, diseases and treatments
ལུགས་རྟུགས་ ནང་སྟན་པའི་ཚུ བའི་ཤེས་བྲ།	lugs rnying phyugs nad sman pa'i rtsa ba'i shes bya /	Roots of Knowledge of Traditional Veterinary Medicine	1980	kan su'u mi dmang gpe	kan su	101	NA	Lhasa bookshop		-	Scanned book	
སྟུགས་དང་ ཁྱིམ་ཁུའི་རིམས་ འགོག་སྲིབ་སྟུགས་	sgo phyugs dang khyim bya'i rims 'gog khrim srol /	Laws and Regulations for the Prevention of Infectious Diseases in	1994	si khron mi rigs dbe	Chendu	68	754091349 5	Lhasa bookshop		-	Original book	
The Collected Writings of Lozang Tenzin. Volume 2: A Pool of Nectar of Animal Husbandary.	blo bzang bstan 'dzin	phyugs nad sman pa'i deb chogs	2010	si khron mi rigs dbe skrun khang	Chendu	507	9787540943592	a) Columbia University Library; ii) BDRC	a) RC71 .B57 2013; b) bdr:MW1KG6160	a) https://cdio.columbia.edu/catalog/9169757.b b) http://purl.bdrc.io/resource/MW1KG6160	Scanned book- Volume Two	Three volume set. Volume Two- horse, sheep and cattle care, diseases and treatments

Title Uchen	Title Wylie	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
V29	bod lugs phyugs bcos sman pa'e lag thabs sbyong brdar slob yig/	Instructions for Veterinary Doctors: A Handbook for Revision	NA	2012	NA	NA	18	NA	Dzoige Tibetan Veterinary Doctor Private Collection	NA	-	Scanned booklet	
V30	bod lugs phyugs bcos sman pas gzhan rten sren 'bu la brtag bcos kh rin yig/	Instruction Manual for Traditional Tibetan Veterinary Doctors on the Diagnosis of Parasitic Worms in Livestock	jla ba	2013	mdzod dge rdzong skar shang phyugs	Dzoige	11	NA	Dzoige Tibetan Veterinary Doctor Private Collection	NA	-	Scanned booklet	
V31	phyugs dang bya rigs kyi nad yams 'gog bcos lag rt sal/	Methods to Prevent and Control Types of Infectious Diseases in Poultry and Livestock	these ring rdo rje ma shol bying bso nams gyu sgron	2008	bod ljongs mi dmang dbe skrun khang	Lhasa	38	9787223023825 7223023821	Columbia University Library	SF961 .P484 2008	https://cdio.columbia.edu/catalog/7319367	Scanned book	

	V32	V33
Title Uchen	ལྷགས་བཀོལ་སྤྱིན་མཁེ་རྩམས་རྒྱལ་ལོགས་སྤོའི་བཀོལ་སྤྱོད་དང་ཉམ་ཚན་གསལ་སྤྲོད་ཀྱི་སྐོར་གྱི་ཞུན་ཤིང་།	གསུང་འབུམ་མཛོད་དག་གི་མེ་མུ་
Title Wylie	phyugs bkol srim phra rims dug 'gog rtsi'i bkol spyod dang nyar tshags skor gyi	gsung 'bum / mdzod dge nyi ma /
Title English	Practical Knowledge on Preventative Medicine for Contagious Parasitic Worms	The Collected Works of Dzoige Nyima
Author	wo'u khrun ku'e	mdzod dge nyi ma
Year	2008	2017
Publisher	kan su'u mi rigs dpe skrun khang	si khron mi rigs dpe skrun khang
City	Lanzhou	Chendu
Pages	107	
ISBN	9787542113917	9787540969066
Source	Columbia University Library	a) BDRG; b) Columbia University Library
Other cat.	SF781.W83185 2008	a) bdr:MW3CN22920; b) R603.T5 B596 2017
URL	https://clio.colu.mbia.edu/catalog/7191655	http://purl.bdrc.io/resource/MW3CN22920 https://clio.columbia.edu/catalog/13404754
Format	Scanned book	Scanned book
Notes		9 Volumes: Dzoige's Lobzang Nyima's Collected works 1926-1990- Tibetan medicine and animal husbandry

	V36	V37
Title Uchen	ལྷགས་ནང་འགྲོག་བཅོས་ཤིང་གསལ་བྱ།	ལྷགས་ནང་སྐྱེན་བཅོས་ཀྱི།
Title Wylie	phyugs nad 'gog bcos shes bya/	phyugs nad sman bcos/
Title English	Knowledge on Preventing Livestock Diseases	Livestock Treatments.
Author	Bai, Ping	kan lho bod rang skyong khul phyugs las cuvü yis rtsom
Year	2010	1997
Publisher	si khron mi rigs dpe skrun khang	kan su mi rigs dpe skrun khang
City	Chendu	Lanzhou
Pages	4115	193
ISBN	9787540945831 7540945834	7542105434 9787542105431
Source	Harvard University Widener Library	Berlin State Library
Other cat.	32044148677610	721318118
URL	https://id.lib.harvard.edu/ama/99155188193003941/catalog	https://stabikat.de/Record/721318118
Format	Scan of front matter, introduction, table of contents	Scan of front matter, introduction, table of contents
Notes	Bilingual Tibetan/ Chinese	

	V38	V39
Title Uchen	ཕྱགས་ནང་སྐོར་པའི་ལག་དེབ། ཉོན་མཚན་རང་རློང་ལྡང་ལྡང་ཕྱགས་སྐོར་ཉེ་བའི་རང་རློང་ལྡང་ལྡང་མཁུ་མཁུ་རིམས་རིམས་ནང་སྐོར་འགྲེལ་བཀའ་གྲུབ་ལྷན་ཁག་གི་ལྷན་པོ་	ཕྱགས་ནང་སྐོར་པའི་ལག་དེབ་མང་ཆ་བའི་རང་རློང་ལྡང་ལྡང་ཕྱགས་སྐོར་ཉེ་བའི་རང་རློང་ལྡང་ལྡང་མཁུ་མཁུ་རིམས་རིམས་ནང་སྐོར་འགྲེལ་བཀའ་གྲུབ་ལྷན་ཁག་གི་ལྷན་པོ་
Title Wylie	phyugs nad sman pa'i lag deb/ stod cha/ bod rang skyong ljongs phyugs sman cud/ bod rang skyong ljongs strog chags rims nad	phyugs nad sman pa'i lag deb/ smad cha/ bod rang skyong ljongs phyugs sman cud/ bod rang skyong ljongs strog chags rims nad
Title English	Handbook of Veterinary Medicine. Volume 1: Prevention of Epidemic Diseases of Animals Using Veterinary Medicine from Tibetan Autonomous	Handbook of Veterinary Medicine. Volume 2: Prevention of Epidemic Diseases of Animals Using Veterinary Medicine from Tibetan Autonomous
Author	NA	NA
Year	2009	2009
Publisher	NA	NA
City	Lhasa	Lhasa
Pages	430	358
ISBN	NA	NA
Source	Berlin State Library	Berlin State Library
Other cat.	879213949 Call Number: 5 B 69656-1	87921399X Call Number: 5 B 69656-2
URL	https://stabikat.de/Record/879213949	https://stabikat.de/Record/87921399X
Format	Scan of front matter, introduction, table of contents	Scan of front matter, introduction, table of contents
Notes		

V40	
Title Uchen	ལྷགས་ནང་བསྐྱེད་པའི་འཛེར་ལོ་བཟའ་ཚོ་གོང་ཁག་ཅོད་པའི་མཚན་ལྟུགས།
Title Wylie	phyugs nad bsrung ba'i 'khor lo zab mo god kha gcod pa'i man ngag/
Title English	Pith Oral Instructions on the Profound Protective Mandala that Cuts the Loss of Livestock from Livestock Diseases
Author	NA
Year	NA
Publisher	NA
City	NA
Pages	6
ISBN	NA
Source	BDRC
Other cat.	bdr:MW2PD17514_8BEEF9
URL	http://purl.bdrclio/resource/MW2PD17514_8BEEF9
Format	Scanned book section
Notes	Copy of handwritten pecha in Ume in: Zhe chen mkhar dmar gsang sngags bstan rgyas gling du bzhuogs pa'i dpe dkon phyogs bsodus gnyis pa, 50:443-48.

	V41	V42
Title Uchen	ལྷནས་བཞིའི་བཅོས་པའམ་སྐྱེས།	མི་ལྷནས་ལམས་བཅོས་ལུང་པའ་ འབྲས་མེད་སྐྱེས།
Title Wylie	phyugs bzhi'i bcos thabs sogs/	mi phyugs lag bcos byang thang 'brog mi'i blo gros/
Title English	Treatments on the Four Types of Livestock	Chang Thang Herder's Wisdom on Human and Livestock Medical Treatments
Author	NA	dpal mgon rdzong gnam
Year	NA	2017
Publisher	NA	bod ljongs yig rnying dpe bskrun khang
City	NA	Lhasa
Pages	314	70
ISBN	NA	9787570000517
Source	BDRC	BDRC
Other cat.	bdr:MW1NLM359	bdr:MW4CZ368308
URL	http://purl.bdrco.io/resource/MW1NLM359	http://purl.bdrco.io/resource/MW4CZ368308
Format	Scan of pecha	Scan of Part 2. Front matter, introduction
Notes	Handwritten pecha in Ume kept at the National Library of Mongolia	Part 2 - Pgs 25-39- Livestock and Horse Disease and Treatments

	V44
Title Uchen	བོད་རང་སྐྱོང་ཁུལ་གྱི་འགྲེལ་བཤུགས་ཀྱི་དཀར་ཆེན།
Title Wylie	bod rang skyong ljongs kyi dkar chag/ 'brog las kyi dkar chag/
Title English	Catalogue of the Tibetan Autonomous Region. Catalogue of Pastoralism
Author	NA
Year	2015
Publisher	Fang zhi chu ban she
City	Beijing
Pages	48
ISBN	9787514416626 7514416625
Source	a) National Library of Australia; b) Columbia University Library
Other cat.	a) 7245843; b) SF55.C6 X59 2015
URL	https://catalogue.nla.gov.au/catalog/7245843 https://clio.columbia.edu/catalog/11713635
Format	Scanned book
Notes	Chinese language text. Trilingual table of contents Tibetan/ Chinese/ English. Pgs 113- 200; Veterinary

Table 17- Tibetan Animal Husbandry Texts

Title Uchen	Title Wylie	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
AH1 ཧོར་གྲག་གསོ་སྦྱོང་བྱེད་པའི་ཧོར་སྦྱོང་ ལམ་ལུགས།	nor gnag gso spel byed pa'i nyer spyod lag rtсал /	Technology Necessary to Raise Livestock	NA	2013	si khron mi rigs dpe skrun khang dang gnam sa dpe skrun khang	khren tu'u	160	9787540940072	a) Lhasa Bookshop; b) BDRC	b) bdr:MW3CN8182	http://purl.bdrc.io/resource/MW3CN8182	a) Original Book; b) Scanned book; c) Scanned book	
AH2 ཧོར་གྲག་འཚོ་གསོ་དང་སྦྱོང་སྦྱོང་གི་ ལམ་ལུགས།	nor nag 'tsho gso dang rgyud spel byed thabs/	Methods of Livestock Breeding, Feeding and Care	NA	ND	mtsho sngon mi rigs dpe skrun khang	mtsho sngon	100	NA	a) LTWA; b) BDRC	a) Library of Tibetan Works and Archives: Acc No. 4235; b) bdr:MW4CZ309045	http://purl.bdrc.io/resource/MW4CZ309045	Scanned book	Bilingual Tibetan/ Chinese

Title Uchen	Title Wylie	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
AH3	ལྷུགས་ལས་ལག་སྐོར་གྱི་ཚོང་ལུ་	A Textbook on Technology and Utility in Pastoral Industries	tshe dbang thar	2010	mi rigs dpe skrun khang	Beijing	202	9787105049806	a) Lhasa Bookshop; b) BDRC		http://purl.bdrc.io/resource/MW8LS18631	a) Original Book; b) Scanned book; c) Scanned book	
AH4	རྩེ་མང་གི་ལྷུགས་ལས་ལག་ལས་གྱི་ཤེས་བྲལ།	Things to Know About Nomadic Pastoral Industries of the	NA	2010	si khron dpe skrun tshogs pa dang si khron mi rigs dpe skrun	khren tu'u	168	9787540945817	Lhasa Bookshop	b) bdr:MW8LS18631	-	Original Book	Bilingual Tibetan/ Chinese

	AH5	AH6
Title Uchen	ལྷནས་ལས་ཀྱི་རྒྱུན་སེམས་སྒྲིག་འཛུགས་ཀྱི་དཔེ་སྟླ	གནས་ཆལ་གི་ལས་སྐྱོན་བསྐྱོར་སྤྱོད་དང་ཉན་དེའི་གནས་ཆལ་སྤྱོད་སྤྱོལ།
Title Wylie	phyugs las kyi rgyun shes klog deb/	gzan chag gi las snon bsres sbyor dang nyin re'i gzan chag sbyor sdeb
Title English	Textbook on General Knowledge of Pastoral Industries	A Training Manual on Mixed Fodder Processing and Everyday Livestock Mating
Author	khros ma thar	lhag pa tshe ring, spen pa rgya mtshos
Year	a) 2007; b) 2011	a) 2008 ed; b) 2005, 2010 Ed
Publisher	krung go'i bod rig pa dpe skrun khang	mi rigs dpe skrun khang
City	Beijing	Beijing
Pages	137	57
ISBN	a) 9787800579202 (2007 Ed); b) 9787802533936 (2011 Ed)	9787105064533
Source	a) Delhi bookshop- 2007 Edition; b) BDRG- 2011 Edition	a) Delhi bookshop; b) BDRG
Other cat.	b) bdr:MW8LS20311	b) bdr:MW1KG24995
URL	http://purl.bdrc.io/resource/MW8LS20311	
Format	a) Original Book; b) Scanned book; c) Scanned book	a) Original Book; b) Scanned book; c) Scanned book.
Notes	Bilingual Tibetan/ Chinese	

Title Uchen		
AH9	འགྲུག་གསོ་ཚོགས།	AH10
Title Wylie	ra lug gso tshags	nor phyuugs/ nor phyuugs/
Title English	Animal Husbandry of Sheep and Goats	Livestock
Author	lhag pa tshe ring, spen pa rgya mtshos, tshe ring sgröl ma	lhag pa tshe ring, spen pa rgya mtshos, tshe ring sgröl ma
Year	a) 2005; b) 2009	2008
Publisher	mi rigs dpe skrun khang	mi rigs dpe skrun khang
City	Beijing	Beijing
Pages	82	62
ISBN	a) 9787105072170; b) 9787105072170	9787105074518
Source	a) Delhi bookshop; b) BDRC	a) Delhi bookshop; b) BDRC
Other cat.	b)bdr:MW8LS19246	bdr:MW8LS19243
URL	http://purl.bdr.cio/resource/MW8LS19246	http://purl.bdr.cio/resource/MW8LS19243
Format	a) Original Book; b) Scanned book; c) Scanned book	a) Original Book; b) Scanned book; c) Scanned book
Notes		

Title Uchen	Title Wylie	Title English	Author	Year	Publisher	City	Pages	ISBN	Source	Other cat.	URL	Format	Notes
AH13	"གང་མཐོ་འབྲུག་ཁུལ་དུ་མི་སྲུག་གཉིས་ལ་ ལྷན་དུ་འགོ་བའི་ལྷན་འབྲུའི་ནང་ལྷན་པས་བསྐྱོས་ འགོག་བཅོས་" ཤེས་བྱའི་དེས་བའི་སྐབས་ལོ་	Questions and Answers on Topics of Knowledge: How to Prevent Worm Diseases Spreading Between Humans and Animals	NA	2009	lho nub mi rigs slob graw chen mo	dkar mdzes	12	NA	Delhi bookshop		-	Scanned book	Bilingual Tibetan/ Chinese
AH14	རྩལ་ལྷན་གྱི་འཕམ་ཁུལ་ཤར་ཡུག་གུང་རྒྱུ་ དང་དང་རང་ལས་ཀྱི་སྲུག་ལས་ཀྱི་	Contemporary Pastoral Industries and the Protection of Grassland Environments, Animals and Plants	NA	ND	NA (in Mandarin)	NA	40	NA	Delhi bookshop		-	Scanned book	Bilingual Tibetan/ Chinese. Bibliography data is in Chinese.
AH15	དང་ལྷན་གྱི་ ཚན་ལྷན་གྱི་རྒྱུ་དང་ མཁོ་ཆེ་བའི་ལག་ རྩལ་	Major Techniques for Raising Free-Range Goats	NA	2008	bod ljongs mi dmang dbe skrun khang	Lhasa	70	978722302 4099;	Columbia University Library	SF995 .B634 2008	https://clio.columbia.edu/catalog/7319318	Scanned book	

	AH19	AH20
Title Uchen	ལྷགས་ལུང་དཔལ་གསལ་དང་གཞན་ཆས་སྦྱར་བའི་ལོ་ལྷན་ཁྲིམས།	ཚོག་འདེམ་རྒྱ་ལུང་མཛོེར་བ་དང་ལྷན་ཁྲིམས་ལྷན་ཁྲིམས་བཞུགས་སོ།
Title Wylie	phyugs rtswa 'debs gso dang gzan chas sbyor bjo lag rtsal/	cog ro'i rta bshad mthong ba don ldan zhes bya ba bzhugs so/
Title English	Skills for Cultivating Livestock Grass and Fodder	Meaningful to Behold: A Discussion of Cogro Horses
Author	lhag pa nyi ma kun dgal' bzang po	thogs med rnam rgyal bstan dzin blo
Year	2008	1994
Publisher	bod ljongs mi dmangs dpe skrun khang	bod ljongs mi dmang dbe skrun khang
City	Lhasa	NA
Pages	40	45
ISBN	9787223023719	7223007303
Source	Columbia University Library	Latse Library
Other cat.	NA	7223007303
URL	https://clio.columbia.edu/catalog/7319458	-
Format	Scanned book	Scanned book
Notes		

