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The Geopolitics of Melting Mountains

An International Political Ecology of the Himalaya

Alexander E. Davis

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After writing two books in three years during my postdoctoral research fellowship at La Trobe University, I thought I would not be able, or willing, to write another one for some time. At the end of the fellowship, I moved to Perth to take up a position at the University of Western Australia (UWA), with plans for more intensive fieldwork in the Himalaya in between teaching semesters, leading to a series of journal articles. I took up this ongoing lectureship position in January 2020. Western Australia's response to the Covid pandemic, though, meant I was unable to leave the state for over two years. WA is the flattest, and hottest, country I have ever seen.

It does not get less Himalayan than WA. Perth is the most remote major city in the world, and WA is the second largest sub-state political administrative area in the world, behind Siberia. But this did give me a chance to sit and reflect after a decade of frequent travelling for fieldwork and conferences. Eventually, I had to admit that the best path forward was to write another book while waiting for borders to open. I was able to make short return visits to the main field sites only due to some delays in the publishing process in late 2022.

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to La Trobe to start my postdoctoral fellowship, the thinking was that I would work on India's borderlands and its foreign policy. When I chose that topic, I was not aware of the strength that the university had on the Himalayan region. I was planning on looking at South India's role in the Indian Ocean as well as the northern border states and their connections with China. But, with the interdisciplinary strength the university had, I instead became obsessed with the Himalaya, and it came to take up all my attention. These three scholars, an environmental historian, an anthropologist, and a linguist, were instrumental in the approach taken in this book. I would not have been able to write it or develop this perspective without them. I have long thought international relations was best as an interdisciplinary field, and my collaboration with these three outstanding scholars confirmed this.

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About This Book

The Geopolitics of Melting Mountains rethinks geopolitics and ecology in the Himalaya. Most international relations analyses of the Himalaya emphasise the central role of the region's states and their great power struggles. By reducing the region to its state actors, however, we miss the intense more-than-human diversity of the region, the environmental risk that border disputes bring with them, and the crucial role that the mountains play in the global environment. This book rethinks the region by focusing on the entanglements between ecology and international politics in the Himalaya. In doing so, it reimagines the politics of an environmentally crucial global region and creates novel international relations theorising by drawing on insights from political ecology. This approach is called international political ecology. After synthesising international relations and political ecology, the book examines the Himalaya as a global region, before moving on to look at the international aspects of political ecology in the Himalaya through key areas of the mountains where international politics and ecology are deeply, inextricably linked. It includes three detailed case studies of different environmental and political issues in the Himalaya: ice caps (the India–China–Pakistan boundary dispute in the Western Himalaya), foothills and forests (the Nepal–Bhutan–Sikkim borderlands) and rivers (the India–China–Bangladesh disputes over the Brahmaputra River basin). Each case study draws on a mix of source materials including my own fieldwork in the region, government sources, foreign policy discourse, Himalayan ethnographies and environmental and

ecological sciences scholarship. The book concludes by looking at what types of international, transboundary and local political formations might best protect the Himalayan region into the future.

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Abbreviations

ACTO	Amazon Cooperation Treaty Organization
ADD	Abu Dhabi Dialogue
ASEAN	Association for Southeast Asian Nations
ATS	Antarctic Treaty System
AU	African Union
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BJP	Bharatiya Janata Party
BRI	Belt and Road Initiation
BRO	Border Roads Organisation
CBM	Confidence Building Measures
CDM	Clean Development Mechanism
COP	Conference of Parties
CPEC	China Pakistan Economic Corridor
EIAs	Environmental Impact Assessments
FWO	Frontier Works Organisation
GLOF	Glacial Lake Outburst Flood
GNH	Gross National Happiness
ICIMOD	International Centre for Integrated Mountain Development
INC	Indian National Congress
IR	International Relations
ITBP	Indo-Tibetan Border Police
KLCDI	Kangchenjunga Landscape Conservation and Development Initiative
LAC	Line of Actual Control
LAHDC	Ladakh Autonomous Hill Development Council

LBA	Leh Buddhist Association
LoC	Line of Control
LUTF	Ladakh Union Territory Front
MGC	Mekong Ganga Cooperation
NEFA	North Eastern Frontier Provinces
NH	National Highway
NHPC	National Hydroelectric Power Corporation (India)
PLA	People's Liberation Army
PRC	People's Republic of China
R&R	Rehabilitation and Resettlement
SAARC	South Asian Association for Regional Cooperation
SAWI	South Asia Water Initiative
SCO	Shanghai Cooperation Organisation
SIFF	Siang Indigenous Farmers' Forum
TAR	Tibetan Autonomous Region
THED	Theory of Himalayan Environmental Degradation
TraMCA	Transboundary Manas Conservation Area
UAE	United Arab Emirates
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFAO	United Nations Food and Agriculture Organisation
UNFCCC	United Nations Framework Convention on Climate Change
WCD	World Commission on Dams
WWF	World Wildlife Fund

CHAPTER 1

Politics and Ecology in the Himalaya

Introduction: Making States on Moving Mountains

After the 2015 Nepal earthquake, the world's tallest mountain *Chomolungma* moved three centimetres to the southwest. With it, the border between Nepal and China also moved. Following the People's Republic of China's (PRC) annexation of Tibet in 1950, China and Nepal had a dispute over their border, which included parts of the mountain. Although the border was resolved in 1960, they continued to dispute the height of *Chomolungma*. Nepal accepted an Indian survey from 1955. The PRC, by contrast, taking pride in their mountaineering skills and rejecting what they saw as Western measurements, scaled the mountain from the Tibetan side to make their own estimate (Greene 2019, pp. 63–72). Part of the disagreement was whether to stop measuring at the rocks or at the ice cap. The ice cap would, of course, change with seasonal conditions. Following the 2015 earthquake, given the suspicion that the mountain had shifted, and with their bilateral relationship improving, Nepal and China agreed to a joint surveying mission. Nepal, as a landlocked state, has long struggled to balance its relationship with two massive neighbours. It had been subtly tilting towards China to disrupt its reliance on India (Bhatnagar and Ahmed 2021, pp. 60–79). It has only recently become conceivable for Nepali commerce to access Chinese

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ports by road and rail, given the extreme geography and altitude of their border. It is of course still far more difficult and expensive. Unsurprisingly, this provokes anxiety within India as it may make Nepal less reliant on Indian ports.

Nepal and China finally agreed in December 2020 that the mountain is in fact 8848.86 m tall. *Chomolungma* itself, mostly known to the outside world as 'Everest', is also disputed for its name. Even George Everest, the mountaineer for whom it has been named, did not think it should be called 'Everest'. The Nepali government refers to it is *Sagarmatha* (meaning 'peak of heaven' or 'sky head'). This name was given to the mountain in 1956. *Chomolungma* is the Romanised Tibetan name, which means 'goddess mother of the world'. For Tibetan Buddhists, including many that live nearby, the mountain is either a goddess itself or a goddess lives there. In their English language communications, the PRC uses a transliteration of the Tibetan name from Mandarin: *Qomolangma*.

The mountain, aside from the geopolitical dispute, is being transformed by other human activities. Political ecologists have found that the intrusion of global markets into new regions can have a profound effect on ecologies by eroding Indigenous knowledge and associated practices. The ecological knowledge of the Sherpa community on *Chomolungma* is changing with the advent of global warming and increased human activity. It is perhaps in danger. This is largely due to the massive increase in tourism in recent decades, which has also brought economic benefits to Nepal (Spoon 2011, pp. 657–672). Tourism has made many in the Sherpa community extremely wealthy. In 2019, tourism to the area reached such a level that pictures of a queue to the summit drew global attention and outrage. Each year in the winter off-season, Sherpas risk their lives to collect tonnes of waste from tourists off the mountain, as well as five other popular peaks nearby. As a backdrop to all of these issues, the threat of climate change, and melting ice caps, is ever-present.

These interwoven challenges: environmental destruction, increased human activity, border disputes, geologically active mountains, geopolitical tensions, cultural changes, and the erosion of local culture and knowledge, are replicated across the Himalaya today.

The China–Nepal dispute is just one of the numerous border issues that have divided the 2,400 kms of the Himalayan mountains in recent years. To describe the region geopolitically, it begins on the disputed Pakistan–India border in Kashmir, curls Southeast through trilateral India–China–Pakistan dispute in Ladakh, the disputed India–Nepal

border, the resolved China–Nepal border, the disputed China–Bhutan border and finally the Eastern section of the disputed China–India border. Since the contemporary Indian, Chinese and Pakistani states emerged in the 1940s, they have struggled to solidify their control of the Himalaya. India and Pakistan have fought three wars over Kashmir. The region remains restive. Aksai Chin, between Ladakh (India), the Tibetan Autonomous Region (TAR) (China), and Xinjiang (China), is administered by China and claimed by India. In the East, Arunachal Pradesh is administered by India and claimed by the PRC as *Tsang Nan* (Southern Tibet). These numerous border disputes and the challenges posed variously by the 'rise of India' and the 'rise of China' have to this point been the primary reason that international relations (IR) theorists have looked at the region.

The Himalaya, though, is literally Asia rising. It rises each year by roughly ten centimetres, as the Indian continental plate crashes into the Eurasian plate, as it has done for the past fifty million years. This makes it even more difficult to measure the height of mountains that are used as important political borders. Of the ten centimetres, it loses five through erosion, with the rocks grating against one another. It is geologically as well as geopolitically active.

If we scratch the surface of the state-to-state tensions, then, we should very quickly realise that there is far more going on than whether or not the tensions between India, China and Pakistan will lead to war. Roughly 240 million people live in the region. These people's cultures and languages do not correspond at all to the arbitrary national borders which have been imposed on their homelands. Rising nationalism though has often led to assimilatory cultural policies in each of the region's states. People are moved for growing infrastructure projects, roads, rail, and airports, many of which are built for military purposes. Moreover, dam construction is particularly common in the region, and this is particularly likely to displace communities. Once the erosion of Indigenous knowledge around the region is added into this mix of global climate change and state-to-state conflict, the constant state of 'frozen' conflicts is more than enough to facilitate a catastrophic ending, without the need for border tensions to actually turn into outright war.

As if these challenges were not enough, the region is crucial to the global environment and earth systems. It sits at the intersection of three biodiversity hotspots, making it one of the most diverse human and non-human regions in the world. The mountains constitute the headwaters

of most of Asia's large rivers, including the Indus, Ganges, Brahmaputra, Irrawaddy, Salween, Mekong, Yangtze and Yellow Rivers. Many of these are now heavily dammed across borders. These rivers have made possible the remarkable population density we see in South, Southeast and East Asia. The Himalayan icepack feeds these rivers and moderates the monsoonal rains. Together, these two water sources provide much of Asia's fresh water, and the rivers deposit fertile sediment on Asia's lowland agricultural river plains. Plains populations use this fresh water and silt for drinking water, agriculture and manufacturing, supporting approximately 47% of the world's human population (Pomeranz 2013, pp. 4–10). 1.9 billion depend directly on this watershed. More than three billion people rely on the food produced (Sharma et al. 2019, p. 4). The interconnected projects of militarisation and intense development among these rivers' headwaters is transforming their environments and contributing to above-average warming in the world's most hydrologically important node (Krishnan et al. 2019, pp. 57–98). The construction of large hydropower projects, by all the regions states, is adding to this hydrological and ecological degradation, and contributing to the sense of disenfranchisement felt by Indigenous Himalayan peoples (Huber 2019, pp. 414–436; Gohain 2017, pp. 262–276; Gergan 2020, pp. 1–11).

This situation is unfolding as human activity transforms the planet. Some have argued that this marks a new geological epoch, known as the Anthropocene (Steffen 2011, pp. 739–761).[1] This time period is marked by rising seas, melting ice caps, mass extinctions and a massive global loss of biodiversity. This should tell us that the earth is far more than a backdrop for human political dramas. If human behaviour is shaping the planet geologically, it should follow that the planet is a key constitutive element in our politics.

In this book, I argue that the ecological and cultural violence inflicted by state-building and militarisation, intimately connected to geopolitical tensions, threatens the region's ecologies, cultures and languages. This has yet to be adequately considered or theorised in IR scholarship. Furthermore, I argue that geopolitical tensions in the Himalaya cannot be thought of outside of their ecological context. Rather, the ecology and politics in the region play off one another in a symbiotic

[1] For a discussion in the context of international politics, see: Dalby (2020).

fashion. Removing either aspect from the other distorts the region's realities and cripples our efforts to analyse and understand it. Seismologically active borders are only one example. Borders based on rivers and ice shift with the season. Ice melt is accelerated by increased human activity on the ice caps, including military activity. Rivers in the region can change course. The ecology of these borders has direct effects on their politics. Discussing border disputes without looking at their ecological causes and consequences simplifies the region's politics down to will-they–won't-they questions of war and conflict. Similarly, taking the environmental destruction outside of the context of state-sponsored development projects and militarisation, depoliticises the slow violence being inflicted on the region (Nixon 2011). This situation has the potential for ongoing political and ecological devastation, beyond the threat posed by war.

If IR cannot reckon with these kinds of questions, then it is ultimately incapable of understanding the political challenges of a warming planet. In order to redress this, I argue that we need to view the Himalaya as a more-than-human region, in which geopolitics, culture and ecology are deeply entangled with one another. Humans and their politics are part of this situation, but only one element. The Himalaya is home to enormous biodiversity, a watershed that supports much of human life and a mosaic of ethnic groups, many of whom speak threatened languages. These threats are amplified by climate change, which is occurring in the Himalaya at twice global averages, contributing to landslides, flooding and droughts (Davis et al. 2021, pp. 15–35). This demonstrates the need to think of the Himalaya as more-than-human.

The transformation of the mountains' sociocultural fabric is equally profound. National language and other assimilation and development projects promote English, Putonghua (Modern Standard Chinese) and increasingly Hindi (Axelsen and Manrubia 2014, pp. 1–8). Along with eliminating languages, these policies also cause many smaller scale but equally important, linguistic shifts (Roche 2019, pp. 487–514). These linguistic transformations bring with them cultural shifts, and they are being accelerated in the mountains as developments in technology and infrastructure allow state actors to assert more influence in the borderlands. Cultures and societies are being simultaneously polarised and erased, in a process deeply intermingled with environmental destruction and geopolitical moves over borders.

As it stands today, the region's complexity has not been matched by IR's theorisations, which, as we will see, overwhelmingly focus on the

possibility of violent conflict between state actors—will they fight or won't they? For the most part, the answer to this question has been that all-out war between the region's great powers is highly unlikely, not least because of the chilling effect nuclear weapons have on the bilateral relationships. However, tensions will remain as India, Pakistan and China grow in economic and military clout.[2] This is doubtless an integral, necessary component of the region's troubles. However, international political analysis of the region ultimately must go beyond the stagnant, states-and-security, Delhi–Beijing–Islamabad centred story. We must instead look at the numerous interconnections between its geopolitics, cultures and ecologies. As I show in the case studies of this book, the Himalaya's more-than-human ecologies are, and always have been, a constitutive actors in its politics. Moreover, the Himalayan environment should not be thought of as just a passive victim of these politics. If anything, this book will show that the mountains are themselves the most powerful agents in the geopolitical conflicts that are ongoing to this day.

To understand this situation, I retheorise the Himalaya's geopolitics through an approach that I term international political ecology—which focuses on the interaction between international politics, the mountains and their more-than-human ecology.[3] This approach, I argue, gives us a deeper understanding of the region than our traditional state-centric frameworks and enables us to reckon with crucial human and ecological issues which are ultimately more important, and more threatening, than the possibility of physical violence, war and conflict.

[2] For scholarship on the 2020 border clashes between India and China, see: Sharma (2020, pp. 4–7), Kaura (2020, pp. 501–518), Harder (2020, pp. 620–621), Tarapore (2020, pp. 207–237), Pant and Saha (2020, pp. 187–206).

[3] This book is not the first this phrasing has been used, and the conceptual framing I argue has broad scope for future research. See: Jan Selby (2022). This book uses a similar theoretical hybrid, looking at human–environment relations, political ecology and international relations scholarship.

Political Ecology and International Relations in Dialogue

Political ecology connects across scales, global, national, and local, to examine the relationships between humans and environments. It is premised, then, on moving away from top-down analyses of politics, and as a result, often takes the emphasis off the relationships between states. At first glance, then, IR approaches might appear to be in opposition to political ecology. IR theory has long rested on a claim of the international as a separate level of analysis which is distinguished from the domestic by the prevalence of anarchy. Political ecology itself is often viewed as 'global', as opposed to 'international'. As Robbins (2011, p. 13) put it, political ecology is predicated on the assumption that 'any tug on the strands of the global web of human–environment linkages reverberates throughout the system as a whole'. Robbins' introduction to the field emphasises the role played by transnational capital in shaping political and environmental outcomes. This is very much a global understanding of the world, but one that can be applied equally to resource extraction in Mozambique (Symons 2018, pp. 487–507), the dispossession of Indigenous people caused by conservation parks in Peru (Zinngrebe 2016, p. 35), air pollution in Delhi (Veron 2006, pp. 2093–2109) and fisheries in the Gulf of California (Greenburg 2006, pp. 121–148).

In order to understand the political ecology of the Himalaya, though, we should not shy away entirely from the great power competition, and the resultant militarisation, that is taking place there. Indeed, India, China and Pakistan's competing territorial claims are foundational to the region's struggles. Indeed, much of the infrastructure development in the region is built not just for the military, or directed by military necessity, but by the military, with an explicit narrative of dominating nature. In India, the Border Roads Organisation (BRO) terms themselves the mountain tamers and are a part of the Army. In Pakistan, the Frontier Works Organisation (FWO) does the same. Political ecology, though, as we will see, has not always placed emphasis on state actors, and particularly the results of geopolitical tensions between them.

Border disputes and competition for resources, which are seen in numerous bilateral relationships across the Himalaya, are ultimately matters of geopolitics and competition for territory. We see this partly over water for agriculture and drinking, but also over the rush to dam Himalayan rivers for the purpose of electricity generation. As we will

see in Chapter 6, increased resource extraction is a key element of the Himalaya's political story over the last few decades. The boom in infrastructure is enabling state actors to consolidate their hold over the Himalaya. When we look at how the situation emerged historically, it becomes clear that this degree of external influence of the Himalaya is new. The process of state-making is still ongoing. The state actors taking to the mountains are still building their territorial claims to this day, drawing on spurious histories of interaction between Himalayan peoples and the plains. In early 2021, China announced that it was building a village just over the contested McMahon Line in what India considered its territory of Arunachal Pradesh (Krishnan 2021). At roughly the same time, India announced the building of a statue in the town of Tawang, celebrating Major Ralengnao Khathing, whom it credited with bringing Tawang into India. His celebration by the Indian state today is a way of folding his Monpa heritage into the Indian story, thereby solidifying India's claim to the disputed town (Parashar 2021). Both of these acts are examples of ongoing, contemporary and competitive state-making: competition between India and China for this piece of territory and its people. But this process is performed through infrastructure, concrete and cultural or historic statues.

The Himalaya's difficult terrain has led to a form of political organisation emerging that greatly differs from might term the logic of the 'Westphalian' states system. Much of the high-altitude terrain remains sparsely populated today. Some growing urban centres are growing rapidly, however, in Himalayan cities such as Kathmandu, Lhasa and Gangtok. In this sense, ecology and political organisation have always been deeply connected in the region. This necessitates understanding the relationship between the state, local peoples and the environment in order to understand the contemporary situation in the region.

Whereas IR scholars looking at India–China–Pakistan tensions have almost exclusively asked if conflict or cooperation is likely in great power relationships, political ecologists tend to ask questions like what causes environmental destruction, who benefits from it, and how people affected respond to it? IR's emphasis on conflict of cooperation has thus far prevented the questions asked by political ecologists from entering into our analysis of the region. Similarly, we cannot neglect the international aspects of the environmental destruction currently ongoing in the Himalaya. This destruction is still taking place, indeed it is accelerating, and it presents a significant threat to its peoples and its environment,

beyond the threat of sudden violent conflict. India and China have both seen surges in majoritarian nationalism in recent years, becoming increasingly authoritarian. Small Himalayan states like Bhutan and Nepal have continually needed to assert their unique cultural identities in order to differentiate themselves from these two diverse superstates. Hindu nationalists in India have constructed India's identity as based on an assimilatory, Hindu-centred sense of unity (Leidig 2020, pp. 215–237). They have tended to include Himalayan Buddhist groups within their framing. This is an uneasy alliance. In China, ethnic minorities, such as Tibetan and Uyghur peoples, have become intensely surveilled. Many are subjected to forced labour (Leibold 2020, pp. 46–60). This has induced some Himalayan Buddhist communities to move deeper into uneasy alliances with Narendra Modi's BJP, as the possibility of being governed by China is so threatening (Davis and Gamble 2020, pp. 288–304).

To understand the Himalaya, however, the planetary environmental scale is important given the role that the mountains play in the global climate. However, the regions' struggles are also deeply international. A 'global' framing does not fully capture the role that state actors are playing in recreating the mountains. The imposition of state sovereignty over a region of such intense human and non-human diversity has been a key cause of many of the problems that the region faces. An international political ecology approach can reveal to us the symbiotic relationship between state tensions, culture and ecology in the region.

This necessitates a bottom-up approach, literally from the ground up, but also focusing on multidirectional flows between the level of the earth (of rocks, plants, animals, mountains, water and ice caps) the level of people (of locals, nomads, engineers, soldiers, tourists and labourers), the level of the international (Prime Ministers and Presidents, diplomats, foreign policy elites and militaries) and the level of the global (transnational capital, the earth's climatic systems). The connections between these four levels are not hard to imagine, particularly when we think of geopolitics in the Himalaya. Himalayan geopolitics are generally thought of as dominated by contested borders and conflict between state actors. But the story is far more complex, and more important, than that. In India, as noted, many Himalayan roads are built by the BRO. The BRO takes their direction from Delhi. They regularly hire low-wage workers from the plains of India, including many women from poor regions of Bihar and Jharkhand, to do the basics of construction, while being driven

by military necessities of troop deployment (Sabhlok 2017, pp. 1711–1728). This is done in direct competition with other international actors, most obviously China and Pakistan, who have their own massive infrastructure projects in the region. However, the roads also affect locals, who gain easier travel between their towns, alongside easier connections to the mainstream of Indian plains life. Troops will certainly use the roads also, which contributes to transforming the culture of Himalayan urban centres. Tourists will also use the roads, coming from highly polluted Indian cities like Delhi and Mumbai to experience clean air, but also from outside of India. Road construction has ecological effects as well. Poorly built roads dissect mountain environments. They can lead to landslides and change water flow patterns (Lennartz 2013, pp. 364–371). When driving along these roads to the border areas, trucks spew black carbon, which can settle on the ice caps, causing accelerated warming. The primary reason that the Himalaya has been so slow to be connected to the plains is because of its exceptionally rough, stark, terrain. Technological improvements today have meant that the region is suddenly opening up to the lowland powers of Asia.

Roads and infrastructure development have long been central to the territorialisation of the Himalaya. It is not accidental that this situation led to a massive increase in India–China tensions in 2020, which are yet to cool down, although most troops withdrew for winter in early 2021, implying that the infrastructure for permanent militarisation is not in place yet (Sharma 2021). Troops eventually disengaged after a two-year long standoff in September of 2022. It remains to be seen if they will be back (Ghoshal 2022). It appears, though, that high altitude and freezing temperatures might still win the day.

Why did the standoff happen at all? Building roads close to the border facilitates troop deployment, which provokes fear on the other side. The anxiety produces further infrastructure building. The Indian Himalayan regions of Ladakh, Sikkim and Arunachal Pradesh have recently been the site of incursions by Chinese soldiers. China's BRI is seeing a massive expansion of infrastructure across Western Tibet and into Pakistan. India has responded in kind by seeking to complete its own border roads as quickly as possible. The feedback loop only accelerates with this type of strategic thinking.

What these examples point to is the intense interaction between politics and ecology in the Himalaya. These politics are certainly international

because they are, at least to some extent, driven by state actors and political tension. They are geopolitical, as they are ultimately about controlling the land and the politics of territory. But they have profound ecological entanglements. The ecology of the Himalaya has helped to build the contest between state actors that we see in the region now.

The process of militarisation, state-making and the transformation or destruction of local cultures, and the slow devastation of the region's ecologies are intimately connected to one another. Having sketched out the theoretical framework and surveying the region as a whole, the book investigates this process in three key Himalayan regions; the ice caps of the Western Himalaya, the foothills of the Sikkim–Nepal–Bhutan borderlands, and the Brahmaputra River basin. Each of these case studies examines the processes through which geopolitical, cultural and ecological entanglements in the Himalaya are facilitating a potentially catastrophic ending.

It is worth briefly addressing here my own positionality within this research. I am very much an outsider to the Himalaya's politics, a white researcher working at an Australian university. Moreover, much of this book was written at a time when travel was impossible, and so I was disconnected from the region throughout the process. My inability to perform a second set of field trips in each location until so late in the process of writing the book has limited some of the claims made in this book. Nevertheless, I argue that the IR scholarship on the region is so lacking, that it was very much worthwhile pursing this project from afar. A new research agenda is needed, as I discuss in the conclusion. I was, at least, able to undertake field trips to the three case studies sites (Delhi, Yunnan, Sikkim, Assam, Arunachal Pradesh and Ladakh, specifically) in the years prior to Covid-related border closures. I returned to Delhi, Ladakh, Sikkim and Assam in late 2022 and early 2023. I did not visit Nepal until a short hike up *Chomolungma* in late 2022. I was unable to visit Bhutan and Pakistan, despite having the funds to do so. Still, I do not claim to speak for Himalayan peoples or to have the kind of in-depth cultural knowledge that many Indigenous scholars in the region have. Such scholars are cited liberally throughout this book, as are ethnographic studies of Himalayan communities. Moreover, political ecologists

such as Zanotti et al. (2020) have argued that the co-creation of knowledge is a crucial element of decolonial research, a position with which I very much agree. Sadly, this was impossible from such a distance.[4]

Ultimately, I have the perspective of an outsider looking in, with critical theorising as my primary hope for partly transcending this position. Crucially though, no single disciplinary or cultural perspective can hope to understand such an intensely diverse, interconnected region. When we think through the ways in which slow violence in the Himalaya produces so many competing and overlapping forms of oppression, and limits solidarity between Himalayan peoples, it becomes all the more obvious that multiple perspectives are needed. So, given the extremely precarious situation in the Himalaya, it is very much necessary to reimagine the international politics of the region, by synthesising the analysis of geopolitics, the state-led struggle for territory, with political ecology.

Scientific Knowledge, Environmental Crisis and the Anthropocene

There have been long-running claims that the Himalaya is uniquely vulnerable to climate change and likely to experience an environmental crisis. In the 1970s, the 'Theory of Himalayan Environmental Degradation' (THED) became broadly popular, and environmental crisis narratives in the region still proliferate today. When one is in the region, though, there is only a limited sense of environmental crisis among many communities. There are environmental challenges, certainly, which one does not have to look particularly closely to see. Similarly, there are widespread concerns about the need to develop the region and improve lives and livelihoods. The THED emerged at a moment when development studies, and aid decision-makers, came to see overpopulation as the cause of both poverty and environmental destruction.[5] The theory blamed Himalayan pastoralists, and the widespread use of biofuels for cooking, for deforestation in the region, leading to the degradation of the

[4] I reflect on the need to co-produce knowledge within the region in the conclusion, particularly in the context of developing more specific policy options for governing local ecosystems.

[5] This period is mostly associated with this is thinkers like Paul Ehrlich, author of *The Population Bomb*, which argued the growing number of humans on the planet would lead to the collapse of the planetary ecosystem.

land. In doing so, it blamed Himalayan communities for floods downstream on the plains (Aase 2017, pp. 1–14). If this way of life were to proliferate, the thinking went, and Himalayan communities were to have more children, the resulting deforestation would lead to the breakdown of the environmental systems that much of Asia depended on (Chakraborty et al. 2021, pp. 42–52). This neo-Malthusian panic shaped development policy in the region for decades and arguably still does (Guthman 1997, pp. 45–69; Blaikie and Muldayin 2004, pp. 520–548).

These initial predictions were wildly inaccurate, given that some thought the breakdown of Himalayan environmental systems would happen by the new millennium. The theory has been widely attacked as such in critical scholarship, though it is still discussed seriously elsewhere, particularly in the hard sciences and development studies (Chakraborty et al. 2021). Claims of crisis are still popular in the media and effective at getting attention for the Himalaya and climate change more broadly,[6] and they prompt a particular kind of solution—crisis-driven interventions which tend to ignore local communities concerns and beliefs.

Some of the region's most powerful actors—states and intergovernmental organisations seeking development—often frame climate change as a problem that requires solely scientific knowledge, technological improvements and, as Chakraborty et al. (2021, p. 42) put it 'techno-managerialism'. But purely scientific knowledge has a poor record in the Himalaya, as the THED and its associated policy solutions suggest, and privileging it above all else tends to dispossess local communities. This contributes to the erasure of local environmental knowledge. The exception to this is ICIMOD's work, which is very sensitive to local concerns. This is despite the fact that ICIMOD's framing of environmental problems and development politics still tends to split humans from nature, which is anathema to the long-running perspectives of Himalayan communities (Chakraborty et al. 2021, p. 42).

This is the risk with the Anthropocene framing today—it implies that people and populations generally are the problem, and not, say, overdevelopment in Europe, America and Australia, major carbon-emitting countries and corporations, capitalism more generally, hypermasculinity,

[6] I have made reference to 'crisis' myself, elsewhere, but think of any crisis as particularly slow-burning, and with these kinds of top-down interventions, from the state or international organisations being fundamentally counter-productive. See: Davis et al. (2019a).

or the spread of plantation economies around the world (Davis et al. 2019b, pp. 1–15). The Anthropocene framing brings with it issues of equity and justice. Communities in the Himalaya are far less responsible for climate change, and the risky development going on in the region, but they have often been blamed for the problems. They are certainly not to blame for the geopolitical divides that I explore here. In this sense, I use the term Anthropocene in this book critically and with some reluctance.

Nevertheless, the key conceptual leaps that this book makes, and argues for in IR scholarship elsewhere, are rejecting the idea that humans and their politics are separate from the earth, and viewing the earth as an agential force in politics. Both of these concerns are captured by the simpler Anthropocene formulation. The study of IR, and geopolitics, has long been mired in environmental determinism and racism, with specific societies and climates seen as leading to 'natural' dominance of some societies over others.[7] Rethinking the international politics of the Himalaya should come with a goal of resisting racialised and dispossessing environmental narratives. These exist both in terms of political theorising and in terms of policy choices made by the region's states. Countering these, and offering alternatives, is an important goal of this book.

Outline of the Book

This book explores the interconnections between cultures, ecologies and geopolitics through a hybrid IR-political ecology approach and explores them more deeply through three case studies of specific Himalayan regions. I argue that intertwined challenges of environmental destruction, geopolitical disputes and cultural loss, conceptualised as slow violence, are the region's central political challenge. I build this argument across five subsequent chapters. To begin, Chapter 2 looks at the theoretical development necessary to understand the Himalaya. I survey and critique the relevant literature, to build the case for an international political ecology in opposition to a classical 'international relations' approach. I first look at IR's scholarship on the Himalayan region. Following this, I review political ecology approaches and argue that IR's critical approaches can be put in dialogue with political ecology. This includes working through postcolonial and green approaches to IR and uses this to build a case for

[7] This has been a long-term element of postcolonial IR theorising, and will be discussed further in Chapter 1. For a history, see: Davis et al. (2020).

an ecologically centred approach to international politics, which I term international political ecology. Postcolonial IR has looked at how imperial legacies structure contemporary international affairs, discussed Indigenous peoples and their experiences of the international and critiqued ongoing forms of imperialism. Green IR theorising has, broadly speaking, wrestled with the Anthropocene, the idea that humans have become the primary geological force shaping the planet, on a global scale. Neither approach has yet to undertake a more granular, regional analysis of the Himalaya, of the type offered here.

Chapter 3 looks at the Himalaya as an international region and contextualises the contemporary situation historically. This includes both geological and geopolitical timescales. Recent advances in environmental history and environmental sciences' scholarship on the Himalaya have revealed to us the global significance of the region. I also emphasise the role of the Himalaya's exceptionally diverse peoples in its political development. This allows me to build the case for the deep interconnections between culture, international politics and ecology in the region. Furthermore, it provides the necessary ecological background to contextualise the more contemporary, detailed case studies of international ecological politics in the Himalaya.

Following this, I undertake three detailed case studies of specific Himalayan ecological zones, focusing on ice caps (the Western Himalaya), forests (the Nepal–Sikkim–Bhutan borderlands) and river systems (the Yarlung Tsangpo–Brahmaputra River basin). In each of these case studies, the source material includes my own fieldwork in the region, government sources, foreign policy discourse and ethnographic scholarship, all placed in the context of the environmental sciences. Partly because fieldwork was impossible for 2020–2022, when the bulk of this book was written, I draw regularly on reputable media sources for some of the more recent happenings in the region.[8]

Chapter 4 looks at the site of the most recent India–China violence: the Ladakh-Gilgit-Western Tibet ice caps. This region, the peaks of the Western Himalaya, has long been a site of conflict over disputed borders.

[8] Based in Western Australia as I was when writing this book, fieldwork impossible due to that state's particularly harsh border closures. Australia's national borders were closed from early 2020 to late 2021. WA's hard border did not lift until March 2022. I was able to make brief return visits to the three field sites in early 2023 due only to delays in the publishing process.

It is nestled between Pakistani and Indian Kashmir, Xinjiang (China) and eastern Afghanistan, and the region has long been very lightly populated. The chapter looks at the history of geopolitical struggle in the region and the way that this has shaped and been shaped by its more-than-human environment. The history of the India–China–Pakistan trilateral border junction, the Siachen glacier has been perennially militarised since 1999 and a similar situation appears to be emerging along the India–China disputed borders in the region. That the Indian and Chinese armies both only withdrew in winter, after the extreme temperatures and altitudes had damaged their military equipment, should tell us much about how the Himalayas themselves influence the conflict (Bedi 2021). Here, I particularly focus on the ways in which the colonial logic of bordering high altitudes has been replicated by postcolonial states. Here, slow violence takes the form of cultural transformations, accelerated global warming and the militarisation of high peaks of the region.

Chapter 5 looks at the relationship between border disputes and militarisation in the Himalayan foothills and forests, focusing on the Sikkim–Bhutan–Nepal borderlands. This region has also seen direct India–China combat in Doklam. However, the region also includes surprisingly more functional examples of cross border exchanges, between India and Bhutan, where transboundary communities are still able to exist and cross borders with limited restriction from state governments (Dutta and Yashwant 2021). Interestingly, the use of national parks and conservation in the area has been used partly to increase federal government control while setting aside land for animals. Some of these national parks, though, are also militarised, with authority given to shoot poachers on sight. However, this chapter also identifies the ways in which a state-based logic has been transcended in some cases, in particular by the slow and careful work of ICIMOD in the region. I also look at the emerging green narratives of these Himalayan foothills, and the extent to which environmental conservation has been furthered by green narratives like Bhutan's Gross National Happiness (GNH) and Sikkim's 'Green Sikkim Mission' and 'Organic Sikkim mission'. The region's environment, though, is under threat from an enormous infrastructure boom. For example, it is only through the difficult and seemingly endless work of environmental and anti-dam activists in the region that the main channel of the state's primary source of water, the Teesta river, is not a dead river.

Chapter 6 focuses on water, looking at water governance and competitive development in the Yarlung Tsangpo–Brahmaputra River basin. I

look at China's dam building in Eastern Tibet and the anxieties this has produced in the Northeast Indian states of Assam and Arunachal Pradesh. This has led to further dam building in the river system, and increased development, on either side of contested borders. China has recently announced plans for the world's largest dam in the TAR, just before the border with India. It is to be built on a sacred site of a sacred river and positioned directly on the heart of a goddess (The Third Pole 2020). Dams are also major infrastructure projects which necessitate greater state intervention into these regions. They require security, powerlines and larger roads for heavy construction equipment. As we will see, water governance in the region prioritises the needs of upstream riparian states, disregards the local peoples who live on the river, treats rivers as water channels rather than complex ecosystems and penalises downstream states, particularly Bangladesh. This river system has very limited international governance and agreements between its states. However, as environmental history scholarship on the river system shows, the river basin's ecology is continuing to resist efforts by state actors to dominate it.

I conclude the book by arguing for a complete reimagining of geopolitics and ecology in the Himalaya and by thinking through the policy and governance implications.

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CHAPTER 2

Bridging International Relations and Political Ecology

Introduction: International Relations and Political Ecology

As political ecologist Arturo Escobar (2016, p. 15) once put it, the world faces a crisis of 'a particular world or set of world-making practices, the world that we usually refer to as the dominant form of Euro-modernity (capitalist, rationalist, liberal, secular, patriarchal, white, or what have you)'. This, he sees as the 'one-world world', an ideological frame of understanding that seeks to erase all other worldviews (Escobar 2018). The field of IR, with its Eurocentric and imperial theorisation of the world, has itself arguably been party to such a world-making project (Hobson 2011; Thakur et al. 2017, pp. 3–23). IR's mainstream theorisations seek to explain the world by flattening it, simplifying the world into its constituent parts—states competing for power—and naturalising this competition. IR's 'state as actor' model—in which the international state is the only agent in international affairs—tells us that borderland peoples and borderland ecologies do not matter. This should be troubling, as it ensures that IR's mainstream frameworks operate from a set of assumptions that obscure as much about the geopolitical contest in the Himalaya as they reveal. If anything, they facilitate a potentially catastrophic ending, by making conflict and destruction appear inevitable, making it appear impossible for us to get off our current path.

A. E. Davis, *The Geopolitics of Melting Mountains*,
Critical Studies of the Asia-Pacific,
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The goal of this book is to understand the role of international, state-based geopolitical competition in creating the current ecological and environmental situation that the Himalaya faces, through a synthesis of critical IR theory and political ecology. This chapter reviews recent theoretical developments in IR, particularly postcolonial and green IR approaches, so as to put the discipline into dialogue with political ecology. I argue that a synthesis of these schools of thought provides us with the best chance of understanding the ongoing political situation across the Himalaya. It can allow us to understand the ways in which cultures and ecologies are threatened together by the militarisation of the Himalaya, and in which geopolitics is entangled with these issues.

The Himalaya's diverse cultures and ecologies were only recently boxed into the European, lowland-based concept of territorially defined, bounded and bordered nation-states. The diverse peoples of the Himalaya, then, do not sit comfortably within the cultural mainstream of India, China and Pakistan. Consequently, these three states have repeatedly fought over its resources, particularly its watershed, and for the loyalty of its peoples (Guyot-Réchard 2016). IR scholarship is yet to fully understand this situation, its complexity and its dire environmental consequences. While political ecology scholarship on the region has engaged deeply with experiences of particular Himalayan peoples and regions (Kovacs 2019, pp. 88–98), it has not yet examined the ways in which the region's dynamics are shaped by the geopolitical rivalries between India, China and Pakistan. IR, however, has only very rarely examined the region with an ecological or culturally centred approach. This demonstrates the need for a synthesis of these two approaches in order to understand the complexity of the region's politics.

Throughout this chapter, I also argue that there are two theoretical leaps IR needs to make in order to understand the Himalaya, which emerge from political ecology scholarship. First, we need to dispel the distinction between humans and nature. Second, we need to see the mountains as having an agential force within the region's politics. Once we make these two leaps, we can start to rethink the politics of the region.

The chapter begins by illustrating the need for such an approach by examining how IR scholarship has thought about the Himalayan region. As we will see, IR's state-centric theorisation has thus far struggled to properly reckon with the region beyond great power politics. This is due to its unwillingness to go beyond questions of conflict or cooperation. I then move on to discuss political ecology's understanding of global and

international issues, and particularly the way it has engaged with the state. Finally, I turn to postcolonial and green IR's alternative theorisations, to show that a synthesis of political ecology and critical IR, which I call international political ecology, can unlock for us the Himalaya's deeply interconnected geopolitical, cultural and ecological challenges.

How Does the Himalaya Look in IR?

When looking at the Himalaya, IR scholars have tended to focus on contested borders and examined the region from a state-centric perspective, investigating the likelihood of border tensions escalating. This limited focus means that there is a strong tendency to focus on the Pakistani, Indian and Chinese states' experiences in the Himalaya, and to neglect the region's historical experience, environment, and diverse peoples. Only very limited theoretically informed IR analysis has centred on the mountains or their inhabitants.[1] When linguistic, cultural and environmental issues are discussed, they are placed as secondary to state security and the potential for violent conflict. This emphasis on the structure of the international system determining outcomes leads us to miss a series of crucial issues, such as the loss of cultures and languages and melting ice, making them more difficult to reckon with.

Brahma Chellaney (2013, p. 309), who has written extensively about the area, suggests that without intergovernmental agreements, the Himalaya would become Asia's 'treacherous new battleground'. Chellaney's analysis emphasises the region's environment but simplifies its complex issues into state-based environmental arguments. He blames the mountains' ills primarily on China, arguing that grassroots activism has checked India's development projects and prevented environmental destruction (Chellaney 2018). This argument is made in the face of much contradictory evidence and presents a statist analysis of a regional problem for which India and China bear similar levels of responsibility (Ling et al. 2016). Like China, India is not only militarising the region but combining this militarisation with tourism promotion and large-scale infrastructure and extractive projects. More importantly, debates blaming one state actor over another miss the systemic failure to protect the environment which is ongoing in the region. Although some dam projects have been stopped

[1] For some rare examples, see: Baruah (2020, 2005), Davis et al. (2021), Ling et al. (2016).

or delayed in India by local protests, anti-dam activists are branded as 'anti-national' and enemies of India's development. Anti-dam activists are often punished for their work. The dam rush continues throughout the country.

Chellaney further argues that there is and can be 'environmentally responsible' dam building in the region (Chellaney 2013, pp. 281–286), but as much analysis, such as recent studies by Amelie Huber (2019, pp. 414–436) and Mabel Gergan (2017, pp. 490–498) have shown, it is challenging to achieve this aim in a region as ecologically, hydrologically and seismologically fragile as the Himalaya. The 'environmentally responsible' use of the region's hydropower would require a network of low-impact, micro-hydropower stations that would primarily benefit local communities. The large dams that are being built with sand dredged from the rivers they block are the antithesis of 'environmentally responsible' hydropower. Moreover, instead of benefiting local people, they displace communities and direct their accrued energy to downhill population centres.

Chellaney's concern that future wars might be fought over water is, in this sense, misplaced. The militarisation of the region is already leading to a Himalayan hydrological crisis without the need for violent conflict. The primary issue is not that water *may* be a cause of conflict, but that it *is* being unsustainably exploited for hydropower in an extremely risky fashion. The risks of this dam building were brutally demonstrated in February 2021, when a glacial lake outburst flood originating in Nanda Devi National Park caused the collapse of a dam on the Rishiganga river in Uttarakhand, India. When glaciers melt, they leave behind large pools of water, which can often overwhelm their barriers. The Himalaya is at high risk of these floods, and they will only become more common with global warming (Watanbe and Rothacher 1996, pp. 77–81). In the case of the Rishiganga incident, most of the victims were locals and low-paid labourers from Bihar. The people and environments most affected by these changes are not given sufficient chances to reject them. Along with Huber and Gergan, other scholars in political geography and elsewhere have repeatedly critiqued such claims (Gohain 2017, pp. 262–276; McDuie-Ra and Chettri 2020, pp. 7–8). Like elsewhere, these large hydropower projects and water extraction projects are occurring in and from minoritised regions, damaging local ecosystems and displacing disempowered local peoples.

Beyond Chellaney's work, much IR scholarship has focused on tensions within the India–China relationship. Malone and Mukherjee (2010, pp. 137–158) frame the relationship as one of conflict or cooperation, arguing that shared civilisational links and the desire for a multipolar world order might enable the two states to transcend their border conflicts. In a recent article, Srinath Raghavan (2019, pp. 691–711) examined the extent to which the 'security dilemma' governs India's relationship with China. His command of the Indian state's archival material is excellent. Still, his solutions to tensions focus on the international level, emphasising the need for restraint and cooperation from decision-makers in New Delhi and Beijing. Such restraint would doubtless be a precondition for an end to the region's struggles. However, once we take on an environmental politics frame, it becomes clearer that it is only one small element of the region's issues.

Srinath Raghavan's work is also part of a boom in archival studies on India's foreign policy, which has shed considerable light on India's foreign policy choices, including its relationships with Pakistan (Pallavi Raghavan 2020) and China (Guyot-Réchard 2016; Madan 2019; Xavier 2020). These studies show that Indian foreign policy towards its borderlands and its neighbours was nuanced, complicated and driven by strategic thinking. They dispel the myth that India was not concerned about its borders with China prior to the 1962 war. Perhaps most importantly, they reveal the ways in which borderland communities related to foreign policy and denaturalise the realist assumption that India, China and Pakistan were inevitably going to come into conflict. These historical studies, coupled with historical studies of South Asia's borders,[2] offers us a path towards rethinking the Himalaya's geopolitics.

Elsewhere, constructivist approaches to Himalayan geopolitics, which I argue have a role to play in addressing these issues, sometimes fall into IR's statist trap. Joe Thomas Karackattu (2013, pp. 691–711) discusses the challenges and opportunities of India–China border trade, without considering the environment of the India–China border, or its minoritised inhabitants. Lora Saalman (2011, p. 114) looks at how Chinese foreign policy analysts view India's army, noting that India is more concerned about border conflicts than China. Shashank Joshi (2011, p. 559) presents the border dispute as the key cause of India–China tension, arguing that

[2] These will be addressed in detail in subsequent chapters. For examples of scholarship, see: Gardner (2021), Gamble and Davis (2023), Simpson (2021).

their shared security dilemma has 'hardened' each state's stance. Elsewhere, Joshi (2011, p. 559) argues that as India and China simultaneously 'rise', they have both increased their assertiveness. He also notes that India's media has become ferociously anti-China.

Constructivist scholarship, particularly that which emphasises the deeper historical construction of the national interest (Weldes 1999; Chacko and Davis 2017), tells us much about how state actors perceive one another, and where these perceptions come from. Constructivist analysis can assist us, if it were to centre not just on state-to-state tensions, but also on borderland populations, how they have been folded into state and national identities, and, coupled with local ethnographies of how these populations experience international politics, constructivism can assist us in understanding the international politics of the Himalaya. Crucially, though, this work has not yet been performed.

Even IR scholarship that opposes Eurocentrism or encompasses postcolonial approaches tends to minimise Himalayan peoples' experience. Vincent Wang (2011, pp. 437–469), for example, notes India and China's shared civilisational heritage and argues that both states' foreign policy discourses tend to oppose the same international hierarchies. Swaran Singh (2008, p. 83) has called for the 'indigenisation of [India and China's] mutual exploration and policy formations' in the study of their relationship. This 'Indigenisation' only extends to traditions of thought associated with the mainstream of these states' foreign policy elites. IR scholarship has yet to look seriously at the Himalaya's Indigenous groups, and the role they play in the politics of the region.

There are some exceptions to this state-centric approach to the Himalaya. For example, in a useful intervention, Itty Abraham's (2014, p. xv) work on territorialisation of India argues that:

> The 'body politic' comes to be internally divided and hierarchically organized on political, social and economic lines through the boundary-making actions of foreign policy … the boundaries that mark majorities and minorities and that exclude populations from the national centre on the basis of ethnicity, class, religion, gender, and civilization, are found to follow inevitably from the particular political intersection of territory and sovereignty.

Abraham was writing primarily about India. But his statement could be equally applied around the Himalaya to China and Pakistan and even

Nepal and Bhutan. The territorialisation of the Himalaya, and the cartographic obsessions of its states, have played a crucial role in the current situation. The Himalaya as a political space is very differently marked in India, Pakistan and China than are more lowland regions. I will return to this theme in Chapter 3.

In another useful intervention, L.H.M. Ling and Mahendra P. Lama (2016) rejected the great power contestation model and its focus on competing, territorially marked states. They sought to ask questions beyond 'cooperation and conflict'. They instead referred to 'India–China' as 'civilisational twins' with various shared inheritances, many of which emerged from the Himalaya (Ling and Lama 2016, pp. 2–3). They described borders as capillaries and opportunities, emphasising ongoing cross border connections between India and China (Ling and Lama 2016, pp. 2–3). In the same volume, Abdenur (2016, pp. 20–38) looked at the history of borderland interconnections between India and China through the Himalaya, from the Silk Road to the reopening of Nathu La in Sikkim in 2006, noting that this pass has been an essential channel between India and China for both trade and cultural exchanges. They closed on a hopeful note, suggesting that the reopening of the pass might produce renewed relations across the Himalaya.

Their optimistic analysis was, however, overcome when Nathu La was closed due to the 2017 Doklam incident. It has since been opened and closed again during the 2020 military standoff. Uncertainty about its future operations shows how vulnerable it is to rising tensions. Elsewhere, along the Ladakh–Tibet border and the Arunachal Pradesh–Tibet border, international passes have been permanently closed, cutting off long histories of interconnected Himalayan worlds. This history of connections between China, India and the diverse set of Himalayan polities and communities across the Himalaya is doubtless crucial. It was never completely closed off and should not be forgotten. However, this long history of interaction was traditionally mediated by local peoples who have since been excluded from these interactions (Harris 2013; van Spengen 2000). While elite interactions between capital cities may have increased, the militarisation of highland borders has severed many traditional trade routes and split families and communities. Trade in material and symbolic goods would ultimately be far stronger and more inclusive of minoritised groups if borders were softened. Schneiderman's (2013, pp. 25–36) study of the China–Nepal border corridor demonstrates this point. Her study documented how limited cross border movement is allowed now that

China and Nepal have an agreed border. Over the last decade, the China–India and India–Pakistan borders have been hardened and have become much less porous. Here, Border studies offer some crucial insights into geopolitics in the Himalaya, as a form of colonial politics in its own right. As Baud and Van Schendel (1997, p. 211) argue, state borders are 'political constructs, imagined projections of territorial power'. This requires defending the border, surveilling it, and folding its people into the nation. When these borders are themselves contested it ensures the militarisation of these borders and cuts off and transforms communities.

Borders could become capillaries, but thinking of India and China as civilisational brothers neglects the slow violence their rivalry has wrought in the Himalaya in the real world.

As I will examine below, there are some theoretical developments within IR that point the way forwards. Within the discipline's theoretical work completed to date, however, there is a paucity of analysis of the region outside of its state actors and the possibility of war. The emphasis on state actors blinds us to the agency that regions, cultures and ecologies have in the region's politics. As a result, IR scholarship is yet to capture the complexity of the Himalaya's politics or recognised the mountains' vital role in earth systems. I will return to theoretical developments in IR that offer some hope below. First, however, I turn to political ecology, so as to puts its critique in dialogue with IR.

Political Ecology and Its International Entanglements

Political ecology's theoretical scholarship and approach offer an alternative to IR's state-centric theorisation. Together, I argue that these two approaches can provide us with an alternate, interdisciplinary approach. Political ecology is a body of scholarship which is interested in the relationship between politics and ecology and holds that they cannot and should not be separated, or studied apart from one another. It is particularly concerned with power inequalities and hierarchies, and often focused on the dispossessed. Political ecologists, as Sinead Bailey and Raymond Bryant note, agree broadly on two key elements in their approach to scholarship. First, environmental issues in the Global South are not a reflection of policy or market failures, but are 'a manifestation of broader political and economic forces', which are associated particularly with capitalism. Second, in order to solve these environmental issues, technocratic

and policy fixes are insufficient. Rather, what is required is 'far-reaching changes to local, regional and global political-economic processes' (Bailey and Bryant 1997, p. 3).

Political ecology as a discipline emerged in the 1970s, rooted in Marxist ideas of dependency and world systems theory, while seeking to understand environmental destruction (Biersack 2006, p. 3). It sought to bridge the social and physical sciences, with the goal of understanding ecological crises (Paulson et al. 2003, p. 206). The field is broad, obviously and necessarily interdisciplinary, as it engages both politics and ecology. This modernist, scientific and Marxist approach has to some extent been displaced. Poststructuralist, feminist and postcolonial critiques have rejected a purely empiricist, scientific approach. Perhaps the most significant critique, though, has been based on the rejection of the binary between humans and nature (Biersack 2006). Nevertheless, political ecology and its debates about the relationship between humans, politics and nature have become a key strand of thought in geography for thinking through the relationship between humans and the environment.

The idea of ecological entanglements as shaping our politics has become key for political ecology. Escobar (2016, p. 12), for example, calls for thinking the world through as a 'pluriverse' or 'a world where many words fit'. This is defined by 'a relational ontology', wherein 'nothing preexists the relations that constitute it' (Escobar 2016, p. 18). This suggests immense and deep connectivity between peoples, politics, cultures and ecologies. It is this approach that is particularly important for the study of the Himalaya's geopolitics. As I will argue throughout, we cannot understand geopolitics in the Himalaya without a thorough appreciation of the mountains and the people who have long lived in them.

There is a possible tension here between materialism, scientific understandings of how the planet works, the ideas that define social movements and our relationship to the earth. Political ecology occupies the space between these two extremes, a 'militant middle ground', as Biersack (2006, p. 29) put it. This means drawing on scientific knowledge while also engaging directly with political ideas, Indigenous knowledge and social movements beyond the state. IR itself has long had a reflectivist–rationalist debate. Rationalist approaches in IR have long assumed that the state is a rational actor, which acts in its own interests based on

systemic pressures.[3] Within this, some have argued that the environment is ultimately a second-order issue for states, based on the structure of the system. For Eckersley, these 'ecorealists' cannot explain the ongoing forms of international cooperation over the environment, including quickly proliferating international treaties (Eckersley 2005, pp. 161–162). This holds for the Himalaya as well, when we think about the role that the region's only dedicated intergovernmental organisation, the International Centre for integrated Mountain Development (ICIMOD), plays. ICIMOD, based in Kathmandu, is largely dedicated to circulating scientific knowledge around the Himalaya and has had considerable successes in building transboundary conservation initiatives in some specific areas of the region. I will return to this institution in Chapter 3 and in more detail in Chapter 5. As I will expand on below, however, postcolonial critiques have addressed the deeply Eurocentric assumptions about the international system on which this is based. Similarly, ecological critiques in IR have pointed out the problems inherent in seeing humans as separate from their environment (Dalby 2014, pp. 3–16). As we saw above, constructivist analyses have long argued that foreign policy is often determined by ideas, history, identity and perceptions of others (Biermann 2020, pp. 1–20). A purely scientific or rationalist approach to the Himalaya's politics, then, would align itself with the statist approaches to the Himalayas which have done such a poor job of interpreting the politics of the region.

One of the conceptual leaps that IR needs to make is to see the Himalayan environment as having forms of agency, because it is so intimately connected to its people and its politics. Dam building in the region is an example. Dams have been built on either side of contested borders, seeking to exploit water resources and control the flow of water. This effort by people to master nature, however, has led to disasters such as the 2021 glacial lake flood in Uttarakhand. Much political ecology scholarship has been committed to disrupting the common assumption that people can be separated from their environment. As Frank Biermann has argued, environmental policy studies are similarly in need of a paradigm shift. He identifies the need to overcome the commonly used dichotomy between 'humans' and 'nature' and to place more emphasis on questions

[3] Within this, there are of course greatly differing interpretations of how the system works. Neorealists assume that states cannot trust one another, while neoliberal institutionalists argue that cooperation and trust is possible under certain circumstances. See, for example: Elman and Jensen (2014) and Robert Keohane (2012, pp. 125–138).

of planetary justice (Biermann 2020, pp. 1–20). This is communicated by the framing of a 'more-than-human' world. The 'more-than-human' formation indicates the impossibility of viewing humans and non-humans as separate from one another (Pugliese 2020).

Some political ecology scholarship has also been influenced by post-colonial theory and development studies, which have also been influential in postcolonial IR theorising. The field has strong ethical commitments, in Raymond Bryant and Lucy Jarosz's (2004, p. 808) words, political ecology's ethical stance is 'one that privileges the rights and concerns (often livelihood-based) of the poor over those of powerful political and economic elites'. In this sense, political ecology is interested in power imbalances, the displacement of peoples, localised environmental destruction, and the role that global capital plays in environmental destruction. Here, much discussion has looked at environmental sciences and global inequalities. The Global North has no legitimate claim to all environmental knowledge, or to all scientific knowledge (Biersack 2006, p. 26). Political ecologists have critiqued the production of national parks as places where the human/nature distinction takes a physical space. In many settler-colonial societies, we see the creation of nature reserves as a form of dispossession of Indigenous peoples.[4] Local and Indigenous environmental knowledge should not be forgotten in scholarship or erased in practice. This, though, is often the case when it comes to international political agreements in the Himalaya. We will see this when we turn to the Indus Waters Treaty in Chapter 4, which grants control of the river to state actors, and enables extraction and dam building, while also taking a very narrow, outdated definition of a 'river'.

Much political ecology scholarship has a strong decolonial ethic. As Zanotti et al. (2020, p. 45) put it, the field has looked back at 'the historical legacies of human and more-than-human relationships' in seeking to understand dispossession and environmental destruction. Macarena Gomez-Barris (2017), for example, has looked at patterns of how regions with high levels of biodiversity, with minoritised populations, are treated by racialised global capitalist systems, transforming them into political spaces from which resources can be extracted. The connection between minority–majority politics, and whose lands are extracted from, needs to be made in the Himalayan region.

[4] For such scholarship in the Himalaya, see: Ogra (2008, pp. 1408–1422), Thing et al. (2017, pp. 292–303) and Dutta (2020, pp. 1–10).

Connecting between local and global scales is central to political ecology, and yet, the scale that sits in between, the level of the state, is sometimes forgotten. This scale, I argue, is still key to the Himalayan context. More specifically, little has been made of the role that geopolitical competition has played and is playing in creating political and ecological outcomes in the region. Geopolitical competition is of course very much one of IR's primary concerns. The Himalaya, with its diverse peoples and its watershed, is an ideal case study from which to think this through because, as we will see in subsequent chapters, politics and ecology are intimately linked in the region.

An emphasis on the international, the level at which states interact with one another has been rare in political ecology. There have, however, been occasional calls to 'bring the state back in' or to 'reinstate the state' and numerous debates on the extent to which the state and its institutions can reckon with environmental crisis (Barry and Eckersley 2005). The state, of course, can play a crucial role in mediating ecological outcomes. It can be an effective regulator, or it can be the author of environmental destruction. It can act to assist extractive industries and displace people. It is doubtless a key actor in global negotiations over climate. Some have argued it is the only actor with the capacity to address climate change (Leven 2020). This is an ongoing matter of debate in political ecology. Robyn Eckersley (2020, p. 218), for example, has long argued that the greening of the state, and the transformation from liberal democracy to ecological democracy, should be the focus of activist energy. Ioris (2014, p. 167), working from a Marxist perspective, has argued that the state is the most powerful actor in environmental politics and criticises 'naïve faith in the ecostate'. He further argues that 'through the advance of environmental statehood, the contemporary state has become both a mediator of socioecological conflicts and a driver of additional environmental change' (2014, p. 167).

Whether or not the state can be of assistance in mitigating or ending environmental crisis in the Himalaya is questionable. The extent to which the state is a regulator of environmental destruction, rather than a solution to it, is very much a live issue for our purposes here. Eckersley's work on critical environmental political theory has shown how liberal democratic societies have been largely unable to deal with ecological crises and argues for ecological democracy. When we look at the Himalaya's political development, as Chapter 3 explores in detail, it becomes clear that the state and the territorial obsession that state actors have brought

to the region are particularly ill-suited to dealing with the Himalaya's environmental challenges. Rather, I argue that softening borders, decentralising governance, incorporating Indigenous and scientific voices, are better ways of managing environmental crises in the Himalaya. There are some examples of such governance in the Himalaya, which I discuss in Chapter 5 in detail. These, I argue, point the way forward.

One lesson to draw from political ecology is that the state should not be seen as a black box, or a monolithic entity, as it often assumed to be in IR. In the case of the Himalaya, it is the imposition of a series of territorially bound states on such a diverse and more-than-human world, and the territorialising nature of the nation-state, that is producing problems in the first place. It is difficult to imagine ecological democracy taking root in the Pakistani and Indian Himalaya, given there is already a substantial democratic deficit. Let alone Tibet. I argue throughout, then, that a fundamental aspect of the issues faced by the Himalaya is the marginalisation faced by its Indigenous inhabitants at the hands of state actors. The state receding from the mountains, then, and the incorporation of substate actors, Indigenous communities and environmental scientists, into governance looms as one of the possible ways through which the current situation might be undone.

The challenges that the Himalaya faces are intimately connected to the state-to-state tensions, which, as shown above, is well understood but not adequately critiqued in IR scholarship. This must draw our attention to the role that politics plays in shaping ecology. However, in the Himalayan region, it is crucial to note here that the politics that shape ecology are fundamentally international and should not be taken out of this context. What, then, is the relationship between environmental destruction and international politics in the Himalaya? I argue throughout that several issues in the region are exacerbated by state activity and geopolitical tensions. The increase in state activity in the Himalaya has led state actors to displace Indigenous peoples. It has led to militarised conservation (Dutta 2020, pp. 1–10). It has led to the mass construction of dams, which displace local people and spur local protest movements. Political ecology with its emphasis on inequalities and global/local power dynamics as connected to environmental destruction and resource extraction resonates particularly well with green and postcolonial IR theory.

Political ecology has drawn out the entangled nature of culture, ecology and the global economy. This body of scholarship draws our

attention to the urgent need to think international politics through in the context of a world of melting ice caps and rising seas. It tells us of the need to rethink great power contestation and geopolitical issues. For the case of the Himalaya, competition between states, the resultant infrastructure building and militarisation, is a crucial part of the story. The boxing of Himalayan territory into the container of the nation-state is having a profound effect on the territory itself. It is this element of the story that requires us to bring IR back in, albeit not in the conventional, state-centric form which has thus far failed to understand the region's struggles.

Critical International Relations in Dialogue with Political Ecology

Critical international relations scholarship has offered robust critiques of the Eurocentric and imperial origins of the discipline, and its ways of thinking about the world. Two forms of this, in particular, should be thought of as influential for our purposes here: postcolonial and green IR scholarship. While green IR has only come to the fore in the last decade or so, postcolonial IR emerged in the 1990s and has become a consistent source of scholarship and critique in the discipline.[5]In the past decade, this style of scholarship, looking at colonial legacies and ongoing forms of colonial power in international affairs has become an increasingly influential school of thought in the discipline.[6] Recent work has examined the possibility of decolonising IR, and the colonial history of the discipline itself (Capan 2017, pp. 1–15). Crucially for our purposes, some of this work has also begun to examine the role of Indigenous peoples in IR, and forms of Indigenous diplomacy (Beier 2009, pp. 11–27). As we saw above, however, this approach is yet to turn its eyes to the Himalaya and the ongoing cultural and environmental destruction taking place in the region.

Some scholarship has looked at the ways in which anti-colonial thought shaped non-Western states' foreign policy. For example, Indian foreign policy after 1947 was positioned in opposition to imperialism globally,

[5] For foundational postcolonial IR scholarship, see: Krishna (1993, pp. 385–417) and Darby and Paolini (1994, pp. 371–397).

[6] For a clear introduction to postcolonial IR and its critique of mainstream IR theory, see: Seth (2011, pp. 167–183).

and it launched significant critiques of ongoing forms of imperialism, race and racism (Davis 2019; Chacko 2012; Davis and Thakur 2016). India and China's respective foreign policies and their relationship with one another have been profoundly shaped by their own colonial experiences (Chatterjee Miller 2013). At the same time, there are very important colonial legacies in the make-up of the Himalaya's postcolonial states. There are other ways in which the Indian state maintained or relied upon its colonial history in order to make claims over Himalayan territory (Davis 2019, pp. 1–16). India's territorial claims in Ladakh, for example, rely on broad interpretations of British colonial cartography and they have been dismissed by the PRC on this basis. I will return to this theme in Chapter 4. The postcolonial ambivalence of the Indian state, then, continues to define its foreign policy, its borders and its engagement with the world to this day.

Postcolonial IR, however, has not always reckoned with forms of imperialism carried out or maintained by postcolonial states. India, for example, has used a colonial-era law, the Armed Forces (Special Powers) Act, to enable its soldiers to act with legal impunity in regions that are seen as potentially 'disloyal' (McDuie-Ra 2009, pp. 255–270). This law has been active in parts of Northeast India for decades. To take this further, some postcolonial theorists have argued that the current political situation that Tibet finds itself in under Chinese rule as an example of colonial rule. The PRC annexed Tibet in 1950, and the Seventeen Point Agreement was signed in 1951 (Guyot-Réchard 2016). Indeed, while much of the colonised world was claiming independence, Tibet and Tibetan peoples lost their country and autonomy (McGranahan 2019, pp. 518–519). Although this is certainly the most extreme case of dispossession and colonisation in the region, it was not entirely an outlier. Many Himalayan peoples experience the historic moment of decolonisation as an increase in external control over their lives.[7] The spectre of Chinese annexation and the brutality of its governance in Tibet has caused enormous political fears among Tibetic peoples living outside of the PRC ever since. Taking this further, the PRC's assimilationist policies in Tibet and elsewhere have recently begun to be critiqued by some as forms of

[7] This point has been made in studies of Kashmir and Tibet in particular. See: Gagné (2017, pp. 222–238).

settler colonialism.[8] These issues have not been adequately addressed in IR (Anand 2019, pp. 129–147).

In order to understand this, we need to be attentive to forms of colonialism beyond the most written about, that of eighteenth- and nineteenth-centuries European expansion. The New Qing Historians have reassessed Chinese history, showing that the expansion of Han Chinese used techniques associated with European imperialism, particularly looking at Han expansion into historically Tibetan areas Ü-Tsang. Kham and Amdo. Increasing Han control of Kham was accomplished at least in part by encouraging new settlements (Relyea 2015, pp. 963–1009). The techniques used to accomplish this drew on those used by European and American colonists (Relyea 2016, pp. 250–370, 2019, pp. 180–215). The PRC draws on the claim that Tibet was 'always' part of China to justify its policies (McGranahan 2019, pp. 517–540). This situation is ongoing. Roche, Leibold and Hillman, for example, have argued that the techniques of urbanisation deployed by the PRC in China today are a form of colonial governance (Roche et al. 2021).

Despite its colonial forms of governance in Tibet, and this history, the idea that China is primarily a victim of colonialism, through its century of national humiliation at the hands of the British and the Japanese (Callahan 2009), continues to animate contemporary Chinese nationalism (Anand 2019, pp. 129–147). This history, and the way that it is remembered, is crucial to Chinese foreign policy. This point has been made frequently in postcolonial approaches to IR, and ultimately, the approach should guide us towards the postcolonial ambivalence of both the Indian and Chinese states, and zoom in on their minoritised peoples. Moreover, a postcolonial approach to IR should critique the foundations of each of these states just as it does the foundations post-imperial states and settler-colonial states.

This emphasis on Indigenous peoples, the land and knowledge, historical colonial legacies and ongoing forms of colonial oppression is particularly useful for understanding the Himalaya. Ultimately, postcolonial IR offers us far more than just a critique of Eurocentric IR theory. It gives us the tools to understand colonial oppression in the present, and how memories of empire shape contemporary politics.

However, postcolonial IR approaches to the Himalaya need to understand the ways in which oppression is mobilised environmentally, which

[8] For a detailed history of one region, see: Rohlf (2016).

means turning to an emergent area of the field, known as green IR. Green IR has begun to theorise the planet itself as an actor in international politics and has in particular looked at how climate change and environmental destruction are caused by human (and state) actions (Burke et al. 2016, p. 505; Harrington 2016, pp. 478–498; Dyer 2018, pp. 84–90). Green IR approaches are perhaps the most obviously connected with political ecology in the discipline. Prior to the 2000s, environmental issues in IR were primarily discussed from neoliberal institutionalist perspectives, in which international organisations and states were seen as producing differing levels cooperation over international environmental issues. This approach, moreover, emphasises social scientific rationalism and is broadly positivist in nature. It offers very much a top-down approach to understanding international environmental challenges. In the Himalaya, there are important forms of transboundary governance, such as those shepherded by ICIMOD, which do engage across borders. Some of these are effective at connecting not just across borders, but engaging with local communities as well. However, green IR has begun to identify a range of sub-state actors, including local and Indigenous social movements resisting particular infrastructure projects. IR's approach to the environment previously tended to emphasise the need for state-based cooperation to solve environmental issues, particularly looking at the creation of treaties. This style of analysis, though useful, is more environmental than in it is explicitly 'green'. Green IR has a more activist approach, arguing for a much deeper understanding of the relationship between humans and the planet they inhabit and scaling this up to the level of the international.

This approach has been brought to prominence with broader scholarly debates on the Anthropocene and spurred on by the numerous threats global presented by climate change. IR scholarship has only recently begun to engage with the environmental and ecological sciences, to understand earth systems. To this point, much of the work in IR which attempts a dialogue with the emergent literature on the Anthropocene has been 'big picture' in nature, rather than granular, or engaging with a particular place. It has primarily been theorised as 'global' and systemic (Harrington 2016, pp. 478–498). This global backdrop is of course essential and very much a part of the struggles the Himalaya faces. A world with a warming climate, melting ice and dammed rivers necessitates bearing in mind this global scale.

In their manifesto calling for new investment between IR and the physicality of the planet, Anthony Burke et al. (2016, p. 500) stated that 'global ecological collapse brings new urgency to the claim that "we are all in this together"—humans, animals, ecologies, biosphere. To survive, we must ask questions that are intimately connected to capitalism, modernity, and oppression'. They also called for greater interdisciplinary dialogue, so as to 'engage with a world of melted ice caps and permafrost, flooded cities, oceans so acidic they cannot support life, and the loss of the Amazon's rainforests' (Burke et al. 2016, p. 500). There is a deep need for interdisciplinary engagements in this kind of approach, similar to that seen in political ecology. Engagement between international politics and political ecology looms as one of the most promising ways in which to accomplish this.

Following on from this, Simon Dalby (2020, p. 7) has usefully argued for a reinterpretation of geopolitics is necessary in the Anthropocene as:

> the globalizing forces of state, along with economic development, are also geomorphic and environmental forces responsible for rearranging landscapes, damming rivers, and moving huge amounts of material to build roads, railways, and cities—all done with the intention of connecting the state into a global economy.

This is most certainly unfolding rapidly in the Himalaya. The context in which it is happening, though, is also displacing local peoples and displacing local ecological knowledge with it. Dalby (2020, p. 8) continues that with human behaviour now shaping the earth geologically:

> geopolitics is now shaping future climates, not the other way around… Thus it no longer makes sense to see the world just as an external backdrop to the human drama, or a source of resources and a sink for wastes. The Anthropocene brings an end to these distinctions of nature and humanity. We live in an increasingly artificial world in which the choices are between a reasserted politics of dominance with increasingly militarized borders, or comprehensive attempts at economic innovation which recognize that policies of separation, and the invocation of sovereignty as a rationale for evading responsibilities across borders, are untenable.

Although much of this applies to the Himalaya, the sense of this world being artificial is misplaced here. Rather, as we will see, attempts to engineer the region have resulted in numerous environmental problems and

local resistance, which have historically slowed attempts at infrastructure development in the region. The Himalaya's ecological power shows that this transformation is incomplete. It is anything but artificial.

There is a critique of mainstream thought within green IR. State-centric thinking and security-centric thinking, to which IR is deeply prone, are ultimately anathema to thinking environmentally. It tends to see nature, air and water as being of short-term instrumental use to humans and their governing bodies. It rationalises the use and abuse of the planet and seeks to protect it solely to maintain this exploitation. As Dyer (2018, p. 86) puts it, an ecocentric perspective on international affairs 'implies a rejection of the split between domestic and international politics, given that arbitrary boundaries between nations do not coincide with ecosystems'. Humans, moreover, are ecologically connected with one another, in ways that have global and local environmental importance (Dyer 2018, p. 86).

Similar to political ecology, green IR scholarship has drawn on ecological debates between Earth systems governance advancing humanity's control over the planet, and the more critical, more-than-human world framing, arguing that we need to dispel the binary between humans and nature (Eckersley 2017, pp. 983–999). As Dalby put it, the Anthropocene means 'we are literally making our own future', and so can no longer hold to the division between humans and nature (Dalby 2014, pp. 3–16). Eckersley (2020, p. 218) notes that 'the territorial borders of nation-states are not only ecologically arbitrary but also democratically arbitrary'. She notes also that the general acceptance of the idea of the Anthropocene should not mean that we think of ourselves as the sole force shaping the planet. It is here that we see the strongest connection between ongoing international relations debates and political ecology. A green IR approach captures the intricacies of humanity's relationship with the planet on which our 'international' relationships take place. This requires engaging with the planet on which international politics takes place. We also need to ground this analysis in specific environmental regions.

Perhaps the most important mistake that IR analysts and theorists have made when engaging with environmental 'threats' is its tendency to 'securitise' the environment. We saw this earlier with the work of Chellaney, with the suggestion that wars might be fought in the future over water. Although this may ultimately be accurate, we must undo this kind of thinking to avoid such conflicts in the future. To securitise something is to frame an issue or an object as a threat to someone's (often the state's)

security (Trombetta 2018, pp. 585–602). This approach sees environmental destruction as being important, or worthy of protection, because a matter of national or human security. Framing something as a 'security' issue turns it into a 'life-and-death' threat and animates a military or militarised policy response. Aside from militarisation, securitising the environment can often lead to deeply undesirable policy results. As we will see, however, this contest between states like India, China and Pakistan for Himalayan water resources, though, is ultimately unwinnable for any state (Gamble 2019, pp. 30–31).

Unless more effective forms of transboundary governance can be introduced, that connect with local concerns as well as those of the state, the environmental crisis in the Himalayas will continue. I argue in Chapters 5 and 6, that this requires the input not just of state actors but of Indigenous peoples and sub-state administrations which are more sensitive to localised environmental issues.

Today, there is a common refrain that future wars will be fought over water. This reflects the idea that we should care about the environment because it will create security threats. Resource scarcity, environmental degradation and the possibility of climate refugees are treated as important because they may generate conflict between states and therefore become national security issues. The securitisation of the environment ultimately makes it impossible to see humanity as connected to its environment, or as part of it.

Political ecology, and green IR, ultimately must stand in opposition to this kind of thinking. In the case of the Himalaya, presenting the environment as a security threat misunderstands the role the environment is playing in the region's politics, and feeds into the kind of thinking leads to further militarisation, rather than undoing it (Davis et al. 2021, pp. 15–35).

The stakes for reimagining the Himalaya's geopolitics, then, are extremely high.

Conclusion: An International Political Ecology Approach

Insights from political ecology resonate strongly with developments in critical IR scholarship. Political ecology highlights a more diverse range of actors and forces us to connect across local, international and global

scales, while postcolonial and green IR theories draw in analyses of the state and geopolitics, without giving way to state-centrism.

This approach is particularly suited to understand the geopolitics of the Himalaya. The Himalaya's politics, as we will see in subsequent chapters, require a new approach. IR's mainstream frameworks present as a particularly poor way of understanding the complexity and diversity of the region. A hybrid approach to the region is necessary, as it can allow us to understand the Himalaya's ecology as having a prominent role in its politics, and the experiences of people that actually live in the region, without losing sight of geopolitical tension. We can use this to view the importance of the Himalayan watershed on a global level without losing sight of the minoritised peoples who live on it, and the behaviour of the states which govern them. This enables us to get beyond IR's statist analyses, while still emphasising the transboundary nature of the Himalaya's environment and the arbitrary borders which state actors have imposed on it. In terms of IR scholarship, this approach means paying close attention to the relationship between state actors, geopolitical competition and the entanglements between these facets of international affairs with the more-than-human environments in which they take place.

Within this approach, we should not think of humans as separate from nature, or of the environment as just a passive victim in geopolitical disputes, as something that holds resources to be fought over by state actors. There are clearly elements of the story that IR's realist or state-centric approaches tell us about. However, we need to think about the earth as having forms of agency, as ultimately having the power to undo international politics over a longer time scale. Historically, as I will discuss in Chapter 3, the Himalaya, its verticality and its altitude has always played a crucial and constitutive role in the region's politics. I will now move on to survey the Himalaya, its politics, its border disputes, and its cultures, to demonstrate the utility of this approach and to do the necessary groundwork for more detailed case studies.

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CHAPTER 3

The Himalaya as an International Region

Introduction: Surveying the Himalaya

The Himalaya is often presented as peripheral, as remote, or as a 'frontier' (Harris 2013). These terms are even used by state actors operating in the region. This may be an obvious outsider's perspective, but it is of course not the case for people who live there. That being said, the construction of the region as a frontier through colonial cartography and postcolonial state-making has been crucial to the region's politics for centuries. As a result of this, the Himalaya has become the contested meeting point of three of the world's most populous states rather than its own political region. Aside from the political contest, the region is, as noted earlier, the key watershed for South, East and South-East Asia. It is, moreover, almost impossible to generalise about, given the intense diversity of its more-than-human world. As I will explore in this chapter, this takes the form of languages, ecological zones, forests, peaks and valleys and biodiversity hotspots.

And yet, there is limited shared identity between social movements across the region. This is in part because of the various forms of overlapping oppression and slow violence in the region. Debates and tensions between Indigenous and migrant rights are commonplace. This diversity gives the region a curious position in international politics. This chapter provides the necessary historical and political background to contextualise

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the more detailed case studies in the remainder of the book. I survey the geopolitics of the Himalaya, examine the broader picture of state-making history in the region, how its states came into being, how the region has been transformed ecologically through this process and how international organisations have interceded in the region. Finally, I look at how the region's languages and cultures have been and are being transformed by this process. Taken together, this reveals to us the geopolitical and ecological entanglements taking place today in the region. Throughout, I argue that to understand the region, IR scholarship and its' states-and-security approach are insufficient. Rather, the central drama that the region faces requires understanding the combined ecological, cultural and political transformation of the region.

The Transformation of the Himalaya

In the middle of the twentieth century, the Himalayan passes that traders, pilgrims and nomads had used for millennia were blocked by a series of international border disputes. Some trade and exchange has restarted across these multiple divides, but the states involved have exerted a growing effort to solidify control within their borders. They have deployed troops to protect or project their claims and enabled large-scale transport, resource extraction and tourism to reach further into this culturally diverse and ecologically fragile region.

I have already described the numerous border disputes and tensions across the region, which take in all the region's states in some form. India–Pakistan tensions were clear from the moment of state-making, although took time to become fully territorialised and militarised (Raghavan 2020). Sino-Indian tensions were strained during the 1950s as the People's Republic of China (PRC) annexed and occupied the Tibetan Plateau and stationed troops in the high-altitude grey zones between India and China. The brief 1962 India–China border war shattered their cooperation and tensions have remained. Since then, China (1964), India (1998) and Pakistan (1998) have all become nuclear-armed states. Nuclearisation and disputed borders have combined to produce entrenched low-level tensions and persistent militarisation, creating a state of stable instability.

Tensions between China and India have placed the smaller Himalayan states between them in difficult positions. India incorporated the small

kingdom Sikkim into its territory in 1975. It underwrites Bhutan's security. Nepal has had close ties to India but has recently shown a geopolitical turn towards China. Pakistan has been closely aligned with China since the 1950s. The normalised state of tension escalated in 2017 with the Doklam standoff, when China tried to wrest Bhutanese territory from Indian troops. China's Belt and Road Initiative (BRI) development plans in Nepal and Pakistan have exacerbated these tensions. In 2020, Chinese soldiers entered Indian-administered territory in Ladakh and Sikkim, leading to more violence and tensions than the region has seen in decades. Tensions over Kashmir between India and Pakistan have remained since decolonisation. The BJP's abrogation of Article 370 of India's constitution, revoking autonomy for Jammu and Kashmir which was central to that region joining the Indian Union in 1947, led to an increase in these tensions as well (Davis 2021).

State-to-state tensions have led to the militarisation of the region and also intensified the region's development. All its states, but particularly Pakistan, China and India, have engaged in ongoing state-making and infrastructure projects in their border regions aimed partly at solidifying territorial control. Hundreds of thousands of troops are now stationed across the mountains. The militarisation of the Himalaya is relatively well understood, if not adequately critiqued, within IR scholarship.[1] Due to its broad emphasis on great power politics, IR scholars have tended to see the Himalaya primarily as the space in which India, China and their allies meet, contest, occasionally fight and eventually compromise. The region's environment and cultural diversity are usually presented as secondary to state security. In IR literature, Himalayan geopolitics has been seen as a struggle between nuclear-armed neighbours whose Delhi, Beijing and Islamabad-based elites make decisions about the mountains, based primarily on mutual enmity. This aspect of the situation is integral but, ultimately, insufficient to understand the Himalaya. It erases the importance of the physical environment and the agency of its diverse inhabitants.

[1] For a visual guide, see: O'Donnell and Bollfrass (2020).

Organising Politics at High-Altitude

To comprehend how the contemporary situation arose, it is necessary to understand the region's intertwined environmental, social and political histories. The history of state-making in the region was informed by colonial understandings of mountains as 'natural borders' and of Himalayan peoples as insufficiently 'advanced' to govern their own affairs. The placing of lowland cartographic norms over the region has contributed significantly to the environmental and cultural crisis they face. Until their recent transformation, the middle and high altitudes of the Himalaya tended to be ruled through political communities based on sometimes overlapping allegiances rather than fixed sovereign states or empires. Even when the vast, highland-based Tibetan (618c–843c CE) and Gurkha (1559–1768 CE) empires arose, and the Mongols and Mughals imposed themselves on the region, its subjects often maintained tax and tribute connections with other polities and did not always stay in fixed settlements (Schwieger 2015, pp. 146–185).

Himalayan peoples have previously transformed their environments—primarily through deforestation and irrigation—in the service of agriculture and pastoralism, creating anthropogenic landscapes that needed to be maintained. But the landscapes these communities created were, in the main, sustainable (Storozum et al. 2017, pp. 423–441) and they did not interfere with the delivery of water and fertile soils to lowland settlements.

Like most slow violence, the profound political, social and environmental transformations of the Himalaya have taken a long time to unfold. Its roots lie in the eighteenth and nineteenth centuries. During this period, two, large, plains-based empires arose in the south and east of the Himalaya: the British in South Asia and the Qing in East Asia. The British pushed into the mountains from the South, and even as they and other European powers ruthlessly colonising China's Eastern seaboard, Qing bureaucrats and warlords adopted colonial tactics to push their southwestern frontier into the Eastern Himalaya (Relyea 2015, pp. 963–1009).

The British, for their part, took the Himalaya, as they did most mountainous regions, to be their 'natural' Northern border (Goettlich 2018, pp. 203–228). This perspective legitimised their casting of this biologically and culturally diverse area as a buffer zone, whose peoples could be bullied into submission or cajoled into unequal treaties. During the same period, the Qing Dynasty was sinicising eastern Tibet (Tsomu

2013, pp. 319–344; Giersch 2006), the British were turning Sikkim and Kashmir into dependent princely states and forcing unequal trading treaties on Nepal and Bhutan (Naik 2014, pp. 1496–1508).

These two empires in the lower Himalaya did not, however, occupy the region's high altitudes. The terrain was too rugged, and the altitude too high, for these empires to survey or administer the territory. The Qing Empire, headed by a Manchu rather than a Han emperor, had developed a religious relationship with Tibet's most powerful Buddhist rulers, the Dalai Lamas. The Dalai Lama's court understood this relationship as one of the equals (Schwieger 2015, pp. 146–185). The Qing sent an army to defend the Dalai Lama against the eighteenth-century Gurkhas invasion. Following this incursion, they crucially did not govern, occupy or control the Himalaya (McGranahan 2019, pp. 518–539). The British only influenced the area indirectly through their relationships with the Himalayan rulers, and by conducting expeditions there to garner geographic information. Both empires' activities at high-altitudes were restricted by technology and cost (Gamble 2019, pp. 43–67). As a result, the region escaped the colonial transformation of the environment that occurred in the Northern Indian river plains and the lower Yangze River Basin in the nineteenth century (D'Souza 2006, pp. 621–628).

Instead, the transformation of the Himalaya has been a product of the region's incipient territorialisation by its newly formed states. This territorialisation began in the first decade of the twentieth century. By this stage, the Eastern Himalaya had become a sphere of competitive imperial influence between the British and Qing, and both empires sent troops to secure their influence.

The 1903–1904, British expedition headed by Francis Younghusband (1863–1942) was followed by increasing Chinese influence in the Eastern Himalaya (Tsomu, 2013) and the warlord Zhao Erfeng's (1845–1911) rule of Tibet between 1905 and 1910. Zhao Erfeng's soldiers travelled south to the borders of British India and placed Qing flags to mark the frontier. The British later replaced them with their own flags (Guyot-Réchard 2016). Zhao Erfeng was decapitated when the Qing Empire fell in 1911, and following this, the thirteenth Dalai Lama, Thubten Gyatso (1876–1933) declared Tibet an independent state. Chinese Republican rulers did not accept this declaration.

The controversy over Tibet's status continued to circumscribe the region's geopolitics into the next decade when British, Chinese and Tibetan delegates met at the 1913–1914 Shimla Conference to decide

their common borders. The British, whose insistence on territorialisation and defined borders had been the impetus for the conference, came prepared with a surveyor's map that marked the 'natural' border between 'Outer Tibet' (Tibetan ruled) and 'Inner Tibet' (Chinese ruled), and their Indian territories in the Western and Eastern Himalaya. All these lines were drawn along mountain ranges by British cartographers. The borders between 'Outer Tibet' and British India proved to have lasting consequences as they were later to mark the international border between China and India. Surveyor Henry McMahon created a line in the eastern Himalaya, skimming the region's highest peaks. William Johnson, a boundary commissioner for the British Empire, created a map establishing the external boundaries of the princely state of Jammu and Kashmir, which he insisted included Ladakh and the uninhabited high-altitude plain of Aksai Chin. These surveyed lines were then presented as the natural borders between British India and the Chinese sphere of influence, including Tibet.

The Republican Chinese withdrew from the conference before the Shimla Accord could be signed and refused to acknowledge the Tibetans' right to sign an international treaty. Both sides of the intermittent Chinese Civil War (1927–1949), the Nationalists and the Communists, rejected the Shimla Accord and claimed all areas where 'Tibetans' lived as part of their territory (McGranahan 2003, pp. 39–60).

State-making in the Himalaya

The post-WWII process of decolonisation transformed the governance of the Himalaya. The partition of British India into two new republics, India and Pakistan, split the Western and Eastern Himalaya, isolating the Northeast from the rest of India. Nepal, Bhutan and Sikkim were able to maintain or increase their international identities. Sikkim, though, was placed in a particularly precarious position.

India's push to territorialise grew out of fear among some of its leaders about its ethnic/racial diversity in the Himalaya, and the 'racial affinity' between Himalayan people and the Chinese. Its first Home Minister, Sardar Patel (1875–1950), who was responsible for integrating the princely states into India (Raghavan 2010, pp. 65–100), expressed these concerns to India's first Prime Minister, Jawaharlal Nehru (1889–1964) in a letter in 1950: 'China is no longer divided. It is united and strong. All along the Himalaya in the north and north-east, we have

on our side of the frontier a population ethnologically and culturally not different from Tibetans and Mongoloids' (Patel 1950). In contrast to Patel, Nehru believed that a hearts and minds campaign would win over the 'backward' borderland people (Nehru 1949). Discussions about the Himalaya swung, therefore, between Patel's racialised nationalism and Nehru's paternalism. With these terms of debate, the postcolonial Indian state began to reproduce imperial geopolitics at home, despite its more strident international anticolonialism abroad. As we will see in subsequent chapters, similar debates about race, frontiers and loyalty continue to frame India's Himalayan policies today (Gergan 2020; Gohain 2018, pp. 445–453).

The largest of the Himalayan states that Patel was tasked with bringing into the new Indian state was Kashmir. Included within the Kashmir dispute was the majority Tibetan Buddhist, high-altitude region of Ladakh. Ladakh had been conquered by the Dogra dynasty, and after Partition was administered by India and claimed by Pakistan. Colonial understandings of its geography and culture played a crucial role in determining its borderland status (Gardner 2019, pp. 149–170). Through this process, the Himalaya were also subjected to the ideas of state-making that produced the India–Pakistan conflict. Its links to Tibet, however, also meant that parts of it would be claimed by the next new state to arise in the Himalaya, the PRC. The PRC was declared in 1949, two years after Indian and Pakistani independence. Shortly after, the People's Liberation Army (PLA) occupied Tibet, and slowly made their way to Western Tibet, taking control of Aksai Chin, claimed by India. A decade later, the fourteen Dalai Lama, Tenzin Gyatso (1935–) fled Lhasa for exile in India via Tawang.

Like their imperial Qing and British predecessors, China and India agreed that the Himalaya was a 'natural boundary' between two large plains-based states, rather than a region with a mosaic of distinct polities and peoples. They disagreed, however, on where this boundary should be drawn. Nehru accepted the British-era boundaries and repeatedly stated that the Himalaya reflected a cultural and geographical divide (Chacko 2012). The PRC's new ruler, Mao Zedong (1893–1976) accepted that the Himalaya was the divide between China and South Asia, but not the British-drawn boundaries. His government made claims to territory based on imprecise conceptions of Tibetan ethnicity; wherever there were Tibetans, they claimed, was Chinese territory. Geopolitical and border

tensions were driven by both sides' lack of knowledge and engagement with these high-altitude areas.

This disagreement meant that the process of decolonisation in India, China and Pakistan became a fight over the territories of newly minoritised peoples. Bérénice Guyot-Réchard suggests that without an obvious or agreed-upon border and local peoples being outside of each state's 'core citizenry', India and China became one another's 'shadow' in the Himalaya during the 1950s, competing for the loyalty of mountain peoples (Guyot-Réchard 2016, p. 3).

In the end, however, loyalty was demanded by war rather than sought by favours or gifts of autonomy. India and Pakistan fought a war before establishing a Line of Control (LoC) in Kashmir in 1947. The 1962 India–China war produced the Line of Actual Control (LAC) along their Eastern and Western borders.

One way that this loyalty was pursued was through the provisioning of new infrastructure such as roads and airstrips. These not only enabled Chinese and Indian troops and later administrators to access the region, but they also signalled the various states' possession of territory. A road dispute in the Aksai Chin led to the 1962 China–India war. Both sides have engaged in developing borderland infrastructure ever since, and this has driven more tensions and conflict.

These unresolved borders remain seventy years later, and those between China and Bhutan and the now-Indian state of Sikkim remain militarised. Seventy years of the region's military-led development has had a profoundly negative effect on its environment and its people. Many Himalayan peoples experienced post-WWII decolonisation as colonisation, becoming minorities in their own lands.[2] The environmental changes in the mountains during this time have mirrored those noted in other colonised places.

[2] This has been well established, particularly in anthropological and ethnographic studies of the erstwhile Indian state of Jammu and Kashmir and in historical studies of Tibet. On Jammu and Kashmir, see: Smith (2013, pp. 47–59) and Gagné (2017, pp. 222–238). On Tibet, see: Gros (2020).

The Contemporary Environment

The Himalaya's pre-colonial human occupation has been rendered insignificant by the changes that accompanied post-1960s territorialisation. China, India, Pakistan, Nepal and to a lesser extent Bhutan all began to build roads, railways, airfields and larger urban centres in the region. The developments carried out in the 1960s to 1990s sought to provide military access to disputed borders and to emphasise the various states' presence in border regions.

These twentieth-century changes have been, in turn, rendered insignificant by the environment's transformations of the twenty-first century. Driven by the interconnected incentives of nationalism and development and fuelled by a combination of economic growth and technological advances, twenty-first-century Himalayan development has included increased militarisation, large-scale development projects, intensified agriculture, resource extraction, population shifts and increases in pollution.

On the ground, this transformation has manifested differently at different altitudes and in different states. Historically, the frozen upper altitudes were uninhabited or lightly inhabited. Some high-altitude sites are now visited seasonally by tourists from all over the world. Others are continually occupied by troops. Tourist impacts on frequently visited mountains such as *Chomolungma* (Everest) and Gangotri have been well documented.[3] They have led to litter, black carbon or soot pollution on the ice and glacier contraction. Tourism in high-altitude sites is facilitated by state-built rail, roads and airports. Until recently, high-altitude travel was most concentrated in Nepal. Now, however, growing numbers of domestic tourists from India and China are visiting both sides of the Himalaya, having only been briefly slowed by Covid (Angmo and Dolma 2015, pp. 301–305; Zhang and Zhang 2019, pp. 109–117).

What has been less well-articulated has been the influence of military occupation on the cryosphere (Baghel and Nüsser 2015, pp. 24–36). Much of the disputed border between China, India and Pakistan in the Western and Eastern Himalaya is located on either permafrost or glaciers. The military presence is exaggerating ice and snow loss and is being threatened by this loss and other manifestations of climate change such as avalanches and landslides from increased rainfall (Zhan et al.

[3] On Gangotri, see: Sati (2018, pp. 312–322). On *Chomolungma*, see: Guzzellaa et al. (2016, pp. 382–390).

2017, pp. 166–175). Siachen glacier has been damaged by the militarisation, including proliferation of garbage and military supplies (Baghel and Nüsser 2015, p. 33). Unlike other glaciers in the region, Siachen is already shrinking, as will be discussed in Chapter 4 (Kumar et al. 2020, p. 368). The regular movement of troops around the region has adversely affected the glaciers of the high peaks (Jayaram 2021, p. 632). Moreover, in places such as Ladakh in the Western Indian Himalaya, Tawang in the Eastern Indian Himalaya and the north-face of *Chomolungma* in the TAR, associated infrastructure development, including the building of war memorials as tourist sites, has facilitated and arguably increased, tourism.

Roads are the most common large infrastructure projects in the high-altitude Himalaya. They are made and remade with a focus on troop movement rather than local transportation or environmental impact, though they are of course used by local communities as well. In the Chinese-administered Himalaya, road construction is supplemented by railroad works, which are used to bring in tourists, workers and troops. These railroads cross permafrost, follow river courses and travel through long tunnels. Higher tourist numbers have created a plastic pollution crisis, and further strains on limited water supplies (Wang 2019, pp. 224–248). In some areas, local rivers and lakes are even being dammed or otherwise altered, and mass, monoculture plantations are being established to provide more attractive vistas (Wei 2015).

As discussed above, the other dominant form of infrastructure in the Himalaya is hydropower dams. Much of the world stopped building large dams following the release of the condemnatory World Commission on Dams Report in 2000, but Himalayan states Nepal, Bhutan and Pakistan, and particularly China and India bucked this trend.[4] Since this time, they have become world leaders in dam construction, responsible for a rapidly growing number of new large dams than elsewhere in the world (Mulligan et al. 2019, pp. 1–9; Dong and Lassoei 2013, p. 2). This growth in dam building, like other Himalayan development projects, has been underpinned by economic and technical advances and encouraged by competitive territorialisation. These two states are racing to dam Himalayan rivers and stake their claim on their hydropower potential. This competition has encouraged the multiplying of dams on single rivers on

[4] Other states including Tajikistan, Turkey, Egypt and Ethiopia continue to build large dams, with support from international financiers, see: Menga and Swyndegouw (2018, pp. 1–18).

either side of international borders, their relatively quick construction and a lack of transparency about hydropower projects and their environmental consequences (Gamble 2019).

The race to build dams often plays out in third countries. India's largest single foreign aid project is a dam in Bhutan. China's BRI has funded dams in Nepal (Murton and Lord 2020, pp. 1–13). In the last decade, the proliferation of hydropower projects has also been encouraged by hydropower's inclusion within the international Clean Development Mechanism (CDM). This scheme has subsidised dam building as 'carbon offsets', despite the overwhelming evidence that large dams cause hydrological and ecological damage (Erlewein and Nüsser 2011, p. 293). According to ICIMOD, there are at least 550 hydropower projects either built, under construction or planned in China, India, Pakistan and Bhutan (Sharma et al. 2016, pp. 236–240).

Regional environmental change is made worse by climate change, which is occurring above global averages across the Himalaya (Krishnan 2018, p. 78). Even slight changes in the region's climate have dramatic impacts on regional (and global) climatic, hydrological and ecological systems. Glaciers are melting, and rain patterns are shifting, increasing the likelihood of flash floods and landslides that are killing soldiers as well as civilians. Changes in these earth systems and their effects are, in turn, destabilising the region's economy and security.

International cooperation as well as the engagement of local peoples is needed to mitigate the effects of climate change on both local environments and the Greater Himalayan Watershed. Instead, geopolitical tensions have fed into, and been exaggerated by, water crises in Pakistan, India and China. Rather than co-focusing their efforts on the cooperation that is needed to ensure that the region's climate change is mitigated, its rivers' flows are stabilised, and its local people are adapting to climate change, Himalayan states are primarily involved in competitive and controversial, large-scale development projects. There have been examples of successful regional cooperation on environmental issues. India and China have cooperated in green-focused Confidence Building Measures (CBMs), and ICIMOD's circulation of scientific knowledge between all the region's states is also very positive (Davis et al. 2019). But along with these successes, there have been severe setbacks. One recent example of this has been the construction of three large dams in quick succession in short distances of each other in three different states' territories on the upper Indus River. Another example was the breakdown of

the waterflow data-sharing agreement between China and India after the Doklam incident (Deka et al. 2019, pp. 99–114).

When the region's land and resources are treated as state property rather than integrated, transboundary ecological systems, these environments become degraded, and this degradation is beginning to have a profound effect on the billions who live downstream from it. Ultimately, Himalayan ecologies cannot sustain this level of militarisation and state competition, and environmental degradation will undo the political dispute.

International Organisations and the Himalaya

International organisations have also played some important roles in governing the Himalaya and its ecological politics though they have generally struggled to engage with the border conflicts that the region faces. India, Pakistan and China all respond poorly to international efforts to mediate border disputes, seeing such attempts as external meddling in domestic problems. As a result of this, international organisations have not loomed particularly large in the classical geopolitics of the Himalaya. However, external actors, particularly international aid donors, do provide funding through international organisations. Although international development and associated NGOs are active in India and Pakistan, most have been heavily regulated within China or even kicked out entirely (Panda 2014). Some of these are aimed at fostering cooperation between India, China and Pakistan. Others are aimed at producing economic development. As thoroughly documented by Paula Hanszas, there have been numerous efforts to negotiate international water disputes between state actors, particularly the Indus, Brahmaputra and Ganga River basins (Hanasz 2019, p. 7). Many of these have been convened and funded via the World Bank and tend to link cooperation with development. Consequently, the World Bank and an international network of aid donors have funded large dam projects, seeing them as examples of green development, in the name of promoting international cooperation. The form of international cooperation that actually exists in the region, then, is not actually of much benefit to the Himalayan environment.

This system is both failing to produce substantial international cooperation and actually facilitating highly risky hydropower projects, rather than slowing them down. The dam rush in the Himalaya has been partly

financed by the World Bank, and this has become particularly prominent in the past decade. Previously, India's dam building had led to such vocal protests that the World Bank came to stop funding dams. The Sardar Sarovar Dam in Gujarat, itself a pet project of Narendra Modi when he was chief minister of Gujarat, was stalled by arguments between riparian states, protests by displaced local peoples and environmentalists (Chaplin 1996, pp. 105–132). The project's resettlement plan proved so controversial that the World Bank withdrew its support in 1993. The Gujarat government's decision to push on with the project despite the withdrawal of a key funder became a source of Gujarati nationalism (Mehta 2010, p. 518), and became an element of broader Hindu nationalism in India. Modi's completion of the dam, and an accompanying statue of his political hero Sardar Vallabhbhai Patel, became a crucial material representation of his nationalist project (Davis and Gamble 2020, pp. 288–304). Although no Himalayan dams have quite the nationalist reverence as the Sardar Sarovar dam, as I will show throughout subsequent chapters, they are still sites of nationalism.

Despite the struggles of the Narmada dam, the World Bank, returned to dams, and has been key to funding a large number of projects across Pakistan, India, Bhutan, Nepal and China. Many of these are on Himalayan rivers, though not necessarily in Himalayan territory. This hydropower exploitation is increasing, with the World Bank funding various projects. They have funded 15 total hydropower projects in China. The World Bank has provided 400 million for the Rampur Hydropower project in Himachal Pradesh in India. In December 2020, the World Bank approved 250 million dollars to improve existing dam safety in India (World Bank 2020). In April 2020, the World Bank approved 700 million dollars to Pakistan to develop hydropower on the Indus River, one of the most heavily dammed and militarily contested rivers in the world (Gilmartin 2015). With dams again seen as 'clean' energy, though, Himalayan rivers are bearing the brunt of low-carbon energy production.

The World Bank has also been influential in running numerous international dialogues in the region seeking to produce more international cooperation over contested waters. Most prominent are the Abu Dhabi Dialogue (ADD) and the South Asia Water Initiative (SAWI) which is funded by the UK, Norway and Australia and convened through the World Bank. These dialogues have not been particularly successful, though there have been moments where transboundary cooperation has

increased. As Hanszas (2019, p. 7) put it, though: 'Despite going on for more than ten years, these international level dialogues have been unable to improve transboundary water governance, due to a lack of trust, the complexity of the region's ecology, and their geopolitical disputes'.[5]

The states of the region, particularly India, China and Pakistan, jealously guard their sovereignty, as an element of their postcolonial identity.[6] This means that they are very reluctant to allow any international organisations or actors to mediate their various border disputes. This mutes the ability of these types of international organisations to engage deeply with the Himalaya.

There have been attempts at fostering regional dialogues and international organisations that sit alongside the Himalaya. The best-known of these is the South Asian Association for Regional Cooperation (SAARC). Its members are Afghanistan, Bangladesh, India, Pakistan, Nepal, The Maldives and Sri Lanka. SAARC is a member-states-based international organisation, which seeks to promote regional cooperation and economic integration. It is a product of the 1990s move to liberalise trade and integrate global economies (Raghurampatruni et al. 2021, pp. 579–580). In this sense, it has similar functions to the Association for Southeast Asian Nations (ASEAN) and the African Union (AU). Moreover, SAARC is riven with geopolitical conflicts, making it a far less functional forum than other organisations in other regions. However, the South Asian framing does not address the Himalaya, and it does not include China. Here, the in-betweenness of the Himalaya, the 'natural boundary' between South Asia and China, leaves it out of traditional regional (South Asia, East Asia, South-East Asia) constructions in world politics.

There have been various attempts at building other regional organisations which touch upon the Himalaya, mostly aimed at increasing trade connectivity across the regions. The Mekong Ganga Cooperation (MGC), the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) and The Shanghai Cooperation Organisation (SCO) are each important examples. Most of these organisations are seeking state-based cooperation and economic development. The SCO, which includes India and China connects these states to Central Asia. There is a great deal of mistrust between the

[5] See also Hanasz (2017, pp. 296–309).

[6] For example, see: Singh (2015), Abraham (2014) and Chatterjee Miller (2013).

members of this organisation (Chao 2022, pp. 293–302). BIMSTEC includes India, Bangladesh, Myanmar, Nepal, Thailand, Sri Lanka and Bhutan and has sought to promote regional integration around the Bay of Bengal. However, the numerous ethnic conflicts between the borderlands of these countries have slowed down regional engagement and associated infrastructure projects (Chacko and Davis 2015, pp. 124–143). The addition of China brings with it the enormous ability for infrastructure development but brings with it the baggage of border conflicts. The Himalaya's environmental issues, then, are largely invisible in these types of institutions.

There are two interconnected international organisations that are environmentally focused that are important for the Himalaya: ICIMOD and the United Nations Educational, Scientific and Cultural Organisation (UNESCO). There are a considerable number of world heritage sites in the Himalaya, which is unsurprising given the region's beauty and biodiversity. UNESCO's model of environmental protection based on natural beauty, biodiversity or culture as representing 'outstanding universal value' has been important in protecting some regions of the Himalaya, as we will see in Chapter 5. Historically, UNESCO's criteria for value have split humans from nature, and the tourism that comes with its certification brings with it its own environmental risks (Caust and Vecco 2017, pp. 1–9). World heritage sites were either given on the basis of non-human qualities (beauty, biodiversity) or human (cultural or historical significance). More recently, a combined category, focused on people's cultural connection to landscapes and environments, has shifted this distinction. ICIMOD's own discourse has also been seen as splitting humans from nature (Chakraborty et al. 2021, pp. 42–52), though this is not always entirely clear.

While substantial academic attention has been paid to the World Bank and associated development dialogues, SAARC and other regional formations there has been far less research conducted into what is likely the most important international organisation in the region: ICIMOD. The lack of specific research is perhaps because of ICIMOD's main role is producing research of its own. ICIMOD describes itself as being 'for mountains and people', and it is one of a small set of local international organisations around the world centred on environmental governance and science. Its member states are Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan. Its focus is on Himalayan development and a big part of its mission is circulating scientific knowledge

around the region to produce transboundary environmental governance. It was founded in the early 1990s, with support from UNESCO, and funded initially by Germany and Switzerland (Ibsen 2018, p. 12). Importantly, ICIMOD receives substantial international funding from various states not in the region, including Australia and Norway.

Much of its work has focused on how local communities can adapt and are adapting to climate change. Here, it links environmental issues with the development of local communities. It is well connected with other international institutions. It describes itself as a 'regional intergovernmental learning and knowledge sharing centre serving the eight regional member countries of the Hindu Kush Himalaya' (ICIMOD 2021a). Its core goals are enhancing livelihoods, sustaining resources and valuing culture (ICIMOD 2021b). Although it acts in a very different political context, one of militarisation, climate change and border disputes, its most comparable organisations are perhaps the Arctic Council and the Antarctic Treaty System (ATS).

These are worth reflecting on briefly, as they have been proposed as models for Himalayan cryosphere governance. ICIMOD is not as expansive an organisation as the others, both of which have attracted substantial scholarly attention. They do, however, offer comparable models of cryosphere governance. The Arctic, Antarctic and the high peaks of the Himalaya are each frozen regions of the world which have which remained at most sparsely populated. The pattern of humans not settling in large numbers in the world's frozen regions is not surprising. But the creep of settlement, development and geopolitics presents potential threats to each region (Ibsen 2018, p. 12).

The ATS prevents militarisation by preventing new claims of sovereignty and banning military operations and resource extraction. The Arctic Council does not generally engage with geopolitical disputes and relies on a consensus-decision-making model. Geopolitical disputes, though, do threaten to undermine the forms of cooperation created by the council. The voting system ensures that every state in the council must approve any major activity that the council undertakes. Importantly, the Arctic Council includes Indigenous peoples as permanent participants. These groups are, however, not given voting rights. The consensus model has occasionally worried the Indigenous participants that geopolitical rivalries might interrupt the work of the council (Rowe 2018, p. 43). Both organisations, though, offer templates for what types of

transboundary governance might function in the Himalaya (Mahapatra 2019).

There have even been rumours of ICIMOD pushing to have this type of body created, or, presumably, pushing itself to become a more powerful institution (Mahapatra 2019). The ATS and the AC, with their regular meetings, formalised governance structures, and voting rights, both go beyond what ICIMOD is currently capable of achieving. ICIMOD relies on a network of donors, funders and state actors to run its sustainable development projects. It does not have a voting system and operates only with the consent of states in which it runs projects. In doing so, though, it draws on a knowledge base across the Himalaya and can transport this kind of environmental knowledge across borders. This makes it an extremely useful international actor, which is able to sidestep the numerous geopolitical disputes in the region. I will return to the possibility of a Himalayan Treaty in the conclusion, after more detailed consideration of these issues in the case study chapters.

ICIMOD, though, operates in a different, arguably more difficult, context than its cryosphere counterparts. Monitoring, protecting and governing any cryosphere region is not easy in any context, let alone one of global warming. The Arctic and Antarctic, though there are actors interested in their natural resources, are not riven with geopolitical and border disputes. ICIMOD manages this primarily by not engaging in the border conflicts. It operates only with the consent of the member states in which its projects take place. By side-stepping this most difficult issue, they are able to circulate scientific knowledge and produce collaborative studies working with local communities. This model has its benefits and is perhaps the most effective means of functioning in the region available to ICIMOD for the moment.

However, there have been various political murmurings of the possibility of creating a stronger intergovernmental organisation in the region, drawing on the ATS and the Arctic Council models, through expanding ICIMOD's remit and utilising its considerable skill set. Shortly after the release of a major climate change report on the Himalayan region, an anonymous ICIMOD senior official commented:

> We know our limitations of working with various sovereign governments. The only way to face this gigantic task of saving the ecosystem and the

> source of sustenance of billions of people is to create a specialised institutional mechanism owned by all the countries. (Quotes in Mahapatra 2019)

In a region riven by geopolitical conflicts, where postcolonial states see sovereignty as the basis of their postcolonial identity, it is extremely difficult to bring such an institution into being.

Languages and Diversity Across Borders in the Himalaya

The same slow violence that is degrading the Himalayan environment is also affecting its most vulnerable populations: the Himalaya's Indigenous and minoritised peoples. One of the most effective ways of examining this dynamic is through the region's linguistic diversity. Language endangerment (Rehg and Campbell 2019), language shift (Pauwels 2016) and the underlying political drivers of these phenomena are all impacting the region's peoples.

The Himalaya are a global centre of linguistic diversity, following general patterns that correlate linguistic diversity and mountainous topography around the world (Axelsen and Manrubia 2014, p. 281). Unsurprisingly, this diversity is not neatly patterned: state, ethnicity, language and cultural practices are not correlated, and thus knowing where someone lives or the identity they profess does not necessarily indicate the languages that they speak.

State-making in the Himalaya has been particularly effective at encouraging monoglot nationalism, which has had significant impacts on the mountains' residents. In the PRC, for example, the state aggressively promotes the national standard language, Putonghua, while providing much weaker support for other languages. The promotion of Putonghua has acutely intensified since the language was nominated as the national tongue in 2000 (Legislative Affairs Commission of the Standing Committee of the National People's Congress of the People's Republic of China 2000). The concerted focus on a single national language has had a drastic impact on the PRC's linguistic diversity—half the country's languages are currently endangered (Shixuan 2013, p. 261–270), leading many 'minority' language speakers to protest (Thurston 2018, pp. 199–218; Cabras 2017, pp. 97–111). Tibetans, for example, have taken to the streets to protest the removal of Tibetan language from

schools (Robin 2014, pp. 209–234), and many of the testimonies of the 156 Tibetan self-immolators focused on language rights (Roche 2021, pp. 67–82).

India, too, has seen language protests, including self-immolations, during the building of the contemporary state (Mitchell 2009). However, unlike the PRC, the Indian state has explicitly promoted linguistic diversity, both in discourse and policy. India does not have a national language (Hindi and English are official languages only) and individual states have a high degree of latitude to design and implement language policies.

Recently, however, Hindi has been increasingly promoted as a 'unifying' language and a pillar of Hindutva, prompting a backlash from speakers of other languages. The drafting of a national educational law in which a three-language model (Hindi, English and local languages) was proposed, for example, led to fears that Hindi would be made compulsory and local languages would suffer (Kumar 2019).

Hindi is taught in schools throughout much of Himalayan India, and as a consequence often acts as a *lingua franca*. The circumstances of its use, however, vary between states. In Sikkim, it plays a secondary role to local languages and the state language, Nepali. Until the creation of the Union Territory, the state language in Ladakh was Urdu, which is orthographically and politically distinct from Hindi but mutually intelligible. This meant that Hindi/Urdu was often used as a *lingua franca*, but locals would often choose to write it in the Latin script rather than the Hindi or Urdu scripts. In Arunachal Pradesh, which is home to over 30 languages, English is the official literary language, and Hindi has become the *lingua franca* for the state's linguistically diverse peoples.

In addition to promoting unifying national languages, Himalayan states also recognise (or erase) other languages within their territories. This is achieved in different ways. Nepal's constitution recognises 123 'national' languages, including Sherpa, Yolmo and Nubri but Nepali is the state's 'official' language (Constitute Project 2019). Other languages receive little support. China 'lumps' different languages into single categories, demoting distinct languages to the status of dialects. Tibetans in the PRC speak at least 16 different varieties of Tibetan (Tournadre 2014, pp. 105–129), which elsewhere would be considered languages, and at least another 26 non-Tibetan languages that are only distantly related to the Tibetan language group (Roche and Suzuki 2018, pp. 1227–1278). But in the PRC, even though these widely divergent languages are lumped together by the state as a single language, their existence is

erased from policy discourses, bringing about their gradual elimination (Roche 2019, pp. 487–514). Although India is not as guilty of 'lumping' as the PRC, its laws still refuse to acknowledge the existence of languages with fewer than 10,000 speakers (Kidwai 2019, pp. 154–159), a policy that effectively erases smaller Himalayan language groups. These policies and practices of erasure overlook the fact that small languages are a global norm and have proven sustainable historically.

While these Himalayan states differ in their approach to minority languages and their promotion of national languages, India, China and Nepal, along with Pakistan and Bhutan all strongly promote English. Bhutan, in particular, has been described by linguist George van Driem as Asia's 'most anglophone country' and provides an example of how the promotion of international Anglophone integration impacts smaller languages (van Driem 2007, p. 311). With English as the medium of education at all levels, and Dzongkha (the national language) taught as an additional subject, the rest of the country's 19 languages are excluded from the education system and most other formal public institutions.

Along with English, the Himalaya's other important transnational *lingua franca* is Nepali. Despite Nepali's minority-language status outside Nepal, it is nonetheless demographically and politically dominant over many smaller, Himalayan languages. As the state language of Sikkim, it not only acts as a *lingua franca*, but is replacing many small languages (Turin 2011, pp. 127–142). Meanwhile, in the Himalayan town of Darjeeling, West Bengal's promotion of Bengali in response to 'Hindi imposition' led first to Nepali speakers protesting for mother tongue education and then counter-protests from the local, Indigenous Lepcha population, for whom the promotion of Nepali was seen as a threat to their already-threatened language (The Telegraph 2004).

The region's other important transnational language is—despite not having strong state backing—Tibetan. Unlike Nepali, Tibetan is a minoritised language in every state in which it is used. Nonetheless, because of its important religious role, and its legacy of imperial patronage, the written Tibetan language, in particular, continues to be influential. Written Tibetan's prestige represents not only a vestige of the lost and often forgotten Tibetan state and religion's influence throughout the region but also a problem for those communities who seek to differentiate themselves from Tibetans. Samuels explains, for example, that the Tamang people had to downplay their historical and cultural connections with Tibet to be recognised as a discrete minority by the Nepali state (Samuels

2018, pp. 17–45). The Tamang and other Buddhist groups in Nepal are sometimes lumped together too because of antipathy towards Tibetans from the dominant Hindu community (Ramble 1997, pp. 379–414).

This combination of contemporary power structures and legacies may also explain why other Nepali ethnic groups such as the Syuba chose a modified version of Nepali's Devanagari script to write their language despite its historical relation to classical, written Tibetan (Gawne 2017, pp. 65–93). The complicated legacies of the previously powerful Tibetan polity's relationship with other Himalayan ethnic groups can also be seen in the Lepcha people of Sikkim's current campaign to remove Tibetan loanwords from their written language.

While some groups move away from Tibetan influence, others seek to draw on its historical prestige. In Himalayan Pakistan, for example, the Muslim Balti people have instigated a movement to write their language in Tibetan script as part of wider efforts to carve out their distinct local identity within the contested Kashmir region (Macdonald 2006, pp. 190–219). In Turtuk, the lone Balti village administered by India, which was taken from Pakistan in 1971, small house museums have been set up as the area became a tourist site for its position near the Line of Control. These museums seek to protect what is seen as a dying culture. The splitting of this population makes maintaining linguistic connections even harder. In India, activists have been campaigning to have Tibetan, which is called Bhoti in India (Shakspo 2005, pp. 61–64), recognised in the national constitution as an official language (Rigzin 2016) and promote its use in Tibetan Buddhist community schools. This promotion is welcomed by groups with significant religious and historical ties and cultural affiliations with Tibet, but it has created controversies and placed pressure on smaller languages (Gohain 2012). Those seeking to nurture smaller, non-Tibetan languages in these communities also face pushback from the Indian state, which seeks to create a Tibetan Buddhist buffer in the high-altitude Himalaya as a deterrent against Chinese influence (Gautam et al. 2012), and sometimes promotes Tibetic languages to do this (Pillalamarri 2014).

Although the Himalayan superstates are marginalising minority languages through the promotion of national tongues, states are not the Himalaya's sole linguistic oppressors. Languages like Tibetan and Nepali, through their local demographic dominance, official recognition, cultural prestige and transnational support, also contribute to the marginalisation of the Himalaya's smaller languages. Their dominance of other languages

is not necessarily encouraged by states, but neither is it prevented by them.

The states' combination of neglect and active negation means that speakers of Indigenous and minoritised languages not only experience the domineering states that have carved up their cultures but also a complex and constantly shifting fabric of local and transnational actors that wreak the slow violence of enforced language shift upon them. General indifference towards these populations only dissipates when strategic interests cynically exploit them or when they become objects of open hostility. Speakers of these languages will be the first to lose and the last to benefit from the mounting tensions, increasing militarisation and degrading environment of the Himalaya. Like the gradually degrading environment, they are subject to the slow violence of the state and its debilitating effects.

There is, furthermore, a growing body of evidence that suggests language and cultural loss contribute to environmental degradation. This link has been documented in the Tibetan grasslands (Cencetti 2011, pp. 39–50), and in many other places around the world (McGregor et al. 2010, pp. 721–729; Flint et al. 2011, pp. 199–209). Language and cultural loss leads to the loss of local environmental knowledge. The importance of minoritised languages and their relationship to local geographies is still under-reported and under-studied in the Himalayan region. While this degradation is a consequence of securitisation and militarisation, it is hard to see how sociocultural and environmental turmoil will bring security.

Conclusion: A New Himalayan Research Agenda for IR

This chapter has sought to show how cultural, political and environmental changes intersect in the Himalaya. Militarisation and the resultant surge of troops into the mountains threaten the region's fragile ecologies, and the region's territorialisation has a symbiotic relationship both with increased numbers of tourists and hydropower projects. India's and China's competitive dam building, in particular, threaten their shared water resources and preclude their proper management. Along with this linguistic destruction comes the destruction of environmental-custodian cultures. Resurgent, developmentalist nationalism and competitive state-making are eliminating the region's smaller languages and associated

cultures. These peoples and environments are threatened in interdependent ways.

Despite this, in IR theory, the Himalaya has, with few exceptions, appeared solely as the site of India–China–Pakistan contestation. Questions of security are doubtless a key constitutive element of what is taking place. But any attempts to resolve the region's unsustainable tensions must grasp how its environment, culture, language and security are interrelated. State-making and militarisation in the Himalaya is already creating disastrous results for local peoples and for the global climate. Analysis of India–China–Pakistan tensions that does not take these circumstances into account distorts its realities.

These issues are all emerging across disputed borders. They are inseparable from one another. They are intensely international. IR needs to engage in a new, interdisciplinary research agenda, to interrogate and unpick the cultural and environmental destruction that are accompanying international politics in the Himalaya, in ways that no longer subordinate local peoples and environments to the security of the international state.

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CHAPTER 4

Militaries on Melting Ice: The Ladakh-Gilgit-Western Tibet Ice Caps

Introduction: Ecological and Geopolitical Entanglements on Ice

One of the more curious elements of the Himalaya's geopolitics is the trilateral border dispute between India, China and Pakistan in the Western Himalaya, which is centred today on largely unpopulated and environmentally fragile ice caps. This chapter examines the trilateral border disputes in the region, and particularly focuses on the ways in which these have been entwined with the region's more-than-human ecologies. Colonial understandings of borders have led to these three postcolonial states re-implementing the strategic logic of 'taking the high ground' in this region. One pertinent example is Siachen glacier, which has become perennially militarised, with India and Pakistan both occupying this fragile landscape as part of their ongoing contest over Kashmir. This has led to the slow 'Siachenisation' of the rest of the region. Siachenisation has generally been deployed as a military term, for the ongoing militarization of high peaks. Here, I deploy it environmentally, connecting militarization of ice with its accelerated melting. With Siachen becoming militarised year-round, the logic of militarising other peaks around it has spread to other border areas, even jumping from the India-Pakistan border dispute to the nearby dispute between India and China.

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The militarization of this region, with India aggressively seizing the highest military positions in 1984, has led to a competition of the highest peaks emerge to push forward and border the region. This situation has also led to the state creeping up the mountains and transforming the cultures of local peoples. Similarly, Pangong Tso, a high altitude lake straddling India and China, has been militarised with both states building increased infrastructure for troop deployments. India and China have even deployed their navies to 4,225 m to patrol their portions of the lake. This destructive militarization of largely unpopulated regions is seemingly in no state's long-term national interest. Nevertheless, the disputes over ice caps and glaciers have only escalated. In 2020, Chinese incursions into Ladakh, which represented an increase in their territorial claims, led to the worst violence the region had seen in decades. The India-Pakistan conflict similarly shows no signs abating, with the year-round occupation of Siachen continuing, and the glacier even being opened to tourism on the Indian side of the border.

This chapter investigates how this situation emerged, and, in particular, the role that the environment has played in state-making, and, in particular the bordering of the region. Recent historical research has emphasised the role that colonial cartography has played in creating the situation the region faces today (Simpson 2021; Gardner 2021; Hopkins 2020). Colonial powers in the region wished to draw linear borders, but ultimately failed to do so, in part due to a lack of capacity. This, however, is only one element of the story. Today, supposedly rational state actors are seeking mastery over the Western Himalaya, enabled by technological developments, satellite monitoring and driven by their border disagreements. They are taking to the mountains, building massive new road, rail and airport connections, extracting resources, damming transboundary rivers, and militarising the region's highest peaks. Road connectivity has dramatically increased, with roads built up to border conflicts, but not enabling connectivity across borders to dissected communities. This takes place against a backdrop of climate change and slowly melting ice, which is only accelerated by the geopolitical contest. With this, the relationship between people and the earth has shifted in the region.

Here, slow violence takes the form of long-running dispossession of communities, and the recruiting of locals to serve national militaries, to serve a colonial bordering logic. In this chapter, I explore ecological and geopolitical entanglements in the Western Himalaya, focused on the interconnected regions of Ladakh, Gilgit and Western Tibet. I argue that the

environment is more than a passive victim in the conflict. Rather, the region's dynamic environment has long given shape to the region's political organisation, and this continues with today's current conflict. This chapter first looks at the historical shifts of colonisation, decolonization and militarization of the Western Himalaya. In particular, I look at how environmental factors have shaped the border conflicts, how the mountains have shaped the politics of the region, to reimagine the Himalayan geopolitics as not being about India–China–Pakistan conflict, but centred on its more-than-human ecology.

Environmental State-making in the Western Himalaya

The stark environment of the Western Himalaya has had a profound effect on political organisation in the region. Many of the border disputes in the high peaks surround the region of the Indian region of Ladakh, which anchors much of the analysis in this chapter. This region was once a place of cultural connectivity, where trade and culture flowed across a series of high passes. It had an historic role in Central Asian trade. The high altitude areas of the Western Himalaya include Ladakh in India, a desert on the South-West edge of the Tibetan plateau, and the Indian state of Himachal Pradesh. On the Chinese side of the border, sit Western Tibet and Southern Xinjiang. In Pakistan, there is Gilgit-Baltistan and Kashmir. To the immediate north of Ladakh is the uninhabited Aksai Chin, which is claimed by India but administered by China. According to the most recent Indian census (2011), there are 274,000 people living in Ladakh. According to the Pakistan census of 2017, 1,492,924 million people live in the region of Gilgit-Baltistan. Skardu, the region closest to Ladakh, though, which was split by Partition, has a population of 214,848. Its communal tensions primarily come from a split by Shia and Sunni Islam. Aksai Chin, claimed as part of Ladakh by India, but administered by China, is uninhabited. Ngari prefecture of the TAR is similarly sparsely populated, particularly at the high peaks and mountain passes that are today the main site of the military confrontation.

The trilateral nature of the border dispute has connected the issues to the India-Pakistan tensions of Kashmir, and communal tensions within India, to India–China conflict over the region's borders. India's reorganisation of Ladakh in 2019 was particularly controversial, both within Ladakh and in Pakistan and China. The region is made of two districts,

largely run by hill development councils: Kargil, which is predominantly Shi'a Muslim, and Leh, which is predominantly Buddhist. The district of Leh has a population of 147,104 and Kargil has a population of 143,388. As Smith (2012, p. 1511) put it, the necessity of this formulaic description reveals to us the ways in which culture, language, religion and politics have combined to produce the territorialization of the region. Some of its border regions, though, are largely uninhabited. The borderlands of Ladakh include many of the key contested territories, such as Siachen Glacier, Chulshul, the Galwan valley, Demchok, Pangong Tso, and nearby Aksai Chin, governed by China and claimed by India.

In order to understand how this situation emerged, with lineal borders policed constantly by three state militaries, it is necessary to go back to the lowland empires that influenced, and bordered, without necessarily colonising, the region. The idea of linear borders was not part of Indigenous understandings of the links and lines between different communities. The concept was imposed from outside, but has become a dominant force in the life of the region. The high mountain passes between Ladakh, Kashmir and Tibet had check points, where trade and pilgrims could pass easily. These border points were known as *mtshams*, which means both border and meeting place (Gamble and Davis 2023). Ladakh and Tibet shared a boundary that was over a thousand kilometres long. The Treaty of Tingmosgang, one of the early treaties to differentiate between Ladakh and Tibet, defined this border as one check-post, at the Lhari Stream near the trading post at Demchok. This is one of the areas of contestation today, and still serves as the de facto border between India and China. The movement of 'nefarious' peoples could be stopped at this post. However, the movement of nomads was to continue. No one crossing this border for religious purposes was stopped. Only large groups of people on state business were required to ask permission to cross the mountain pass. In this sense, nomads, and cultural flows across the mountains were unaffected (Gamble and Davis 2023). This made sense given the topography: in a land of only a few traversable passes, drawing a lineal border was pointless. The notion of bordering the region in a linear fashion was an imposition of lowlands cartographic norms on the Himalaya's stark environment, dynamic and alive environment.

During the colonial period, the Western Himalaya was governed as a patchwork of small polities and princely states, which were influenced by nearby, plains-based empires, without being ruled directly. With its sparse population and high altitude, the Western Himalaya had been the target

for expanding empires, but these areas generally had limited influence. The prevailing narrative of state-making in the region, though, is that the British, were the last empire to conquer these mountains on the Indian side. In the mid-nineteenth century, they defeated the region's previous rulers, the Sikhs, who had invaded the highlands from their base in Punjab. Ladakh had been under the suzerainty of the Sikh empire, under the armies of Raja Gulab Singh. Rather than ruling the region directly, the British created the Princely State of Jammu and Kashmir (1846–1947) from the Sikh Empire's ruins. Its Maharajas, the Dogra, were Hindus, based in the lowland city of Jammu, and ruled over a very diverse people who lived in its fragile environments. Most of the population of Jammu and Kashmir Princely state was located in its capital Srinagar. The realm included Ladakh; the majority-Shi'a, Tibetic-speaking, high altitude Gilgit; the majority-Sunni, mid-altitude valley of Kashmir; and the majority-Hindu lowland city of Jammu (Rai 2018). Ladakh took up much of the land mass within the state, but was lightly populated. It did not include Tibet, as a distinction was drawn between the two polities.

The region was subjected to a series of invasions, with armies moving through and claiming suzerainty over the area. Militaries moved through, and fought over it, but lowland populations would never stay put in place, due to the region's harsh terrain, high altitude and cold winters. Although taxes were applied to its trade, the people of the region were largely left alone. In 1842, following the Dogra-Tibetan conflict, the Treaty of Chushul, stated that:

> We will carry on the trade in shawl, pashma and tea as before by way of Ladakh; and if any one of the Shri Maharaja's enemies comes to our territories and says anything against the Rajah we will not listen to him, and will not allow him to remain in our country, and whatever traders come from Ladakh shall experience no difficulty from our side.[1]

Ladakh, though influenced by external rulers, and subjected to imperial geopolitical desires from the Qing, British and Sikh empires, was taxed, but its peoples were largely left alone in their day to day lives.

[1] English translation of the Persian text of the treaty signed at Leh on second of Asuj 1899 Bikrami (September 1842) between the Government of Maharaja Gulab Singh and the Government of Tibet. See: Sharma (2018, pp. 322–323).

Imperial understandings of geopolitics were important underpinnings of why the Western Himalaya became a borderland dissected by three states in the present day. In the nineteenth century, Lord Curzon framed India as a strategically vital empire which was under threat from various other imperial powers. British control of the Indian ocean was relatively complete, and so the only threat to their Indian empire was the territorial border, the Himalaya. In particular, in his framing, it was mountain passes and valleys which needed to be defended. It was through these 'grooves' that various other empires had made their way to Ladakh (Abraham 2014, p. 112). The British, then, sought to maintain territorial control over the region, seeing it as a potential weakness to their hold over South Asia. Their goal was to create a linear border in the region, formalise control and then establish trading links across it. Within the British colonial 'science' of border-making (Goettlich 2018, pp. 203–228), rivers, ice caps and watersheds were seen as the ideal place to draw borders. This was known as the 'scientific frontier'—the process of finding borders which were both physically existing—the crest of mountains or areas where watersheds split—but also areas which could be demarcated and defended. This meant that the topography of the mountains was partially considered based on military/strategic purposes when colonial borders were drawn. High peaks, ridges where the other side could be monitored, and watersheds were all viewed as key determinants of 'scientific' borders.

Tibet's status was also central to the politics of the region. The Simla Accord of 1914, a conference between the British, the Republic of China and the Tibetan state, is the origins of the border conflicts between India and China across the Himalaya. This occurred during a period of Tibetan independence, though, and was not recognised by The Republican Chinese, or the subsequent PRC. As a response to the dispute, Henry McMahon drew a line, agreed to by the Tibetans, but not the Chinese representatives. This line gave the territory today known as Arunachal Pradesh to India. The McMahon line today is where much of the dispute lies, particularly in Arunachal Pradesh, as I will discuss in Chapter 6. The Chinese, though, were also not particularly influential on the ground as rulers or administrators, in either Arunachal Pradesh, and certainly not in Western Tibet.

The border regions and their ecology, though, were all dynamic in the Western Himalaya. The region is geologically unstable. Ice caps move with the seasons. The mountains themselves are continuing to form. Moreover, the watersheds of the region do not cohere to the colonial

principles applied to them. The water-parting principle, the dominant colonial framing for where borders should be drawn in the late nineteenth century, suggested that watersheds tended to be contiguous with the limits of mountain ranges, and, thus, were the correct place to draw borders. This, as Kyle Gardner has shown, was a poor way of managing the region's mountains, and, in particular, the watershed of the Indus River. British surveyors struggled to fully survey the region's highest peaks, and 'it slowly became apparent that the edge of the Indus River watershed and the highest range of the northwestern Himalayas did not align' (Gardner 2019, p. 150). As a result, partly, of these poorly drawn maps, and inadequate surveying, there were several blank spaces on the maps. Aside from not being able to survey the mountains, and the Himalaya generally not conforming to British principles about cartography, borders and maps, it is important to reiterate here that the very idea of such borders was out of step with local imaginings.

Depictions of the Western Himalaya as harsh, dangerous and impossible to explore pervaded British colonial descriptions of the region as they sought to survey it (Gagné 2017, pp. 225–230). They live on today as the region continues to be presented by its state actors as a difficult to tame frontier. By the time the Indian, Chinese and Pakistani states inherited the territory, there were still missing borders from, due to the enormous difficulty in surveying these mountains (Gardner 2019, pp. 149–170). Historical studies of these borders have shown that colonial cartographic attempts were based on abstract sciences and what Thomas Simpson (2021, p. 72) called 'fabulous geography'. Historically, the creation of borders that transected mountains, glaciers, and other high altitude regions, or navigated the region's complicated hydrology, was a fantasy (Gardner 2021, pp. 60–89). The region's hydrology and the principles used to draw the borders were always in conflict. However, with the rise of satellite technology in recent years, the region's states are now approaching the ability necessary to survey and maintain borders at these altitudes. These technological developments have only served to escalate the conflicts the region faces today. Whereas previously, imperial desires were tempered by the inability to adequately survey the region, or to inhabit it all year-round, today's states are gradually beginning to master the mountains. The results of this reveal to us the centrality of the relationship between human geopolitics and the environment at play in Himalayan geopolitics.

The region's environment, the histories of imperialism and its role in Central Asian trade routes, combined with the intensification of colonial notions of map-making, race and identity, helped to produce the precarious position that the Ladakh, Gilgit and Western Tibet find themselves in today. Although thought of as ideal places for borders, Himalayan rivers, mountains and ice caps rise and recede with the seasons. Sometimes, the changes are less subtle. One of the more extreme examples, an eighteenth-century treaty defined the Gandak River as the border between India and Nepal. But the river slowly shifted course, and the village of Susta found itself subjected to an international border dispute (Jamwal 2017). Where nineteenth-century cartographers struggled without the technology to map high valleys, contemporary scientific knowledge presents another issue for border makers: their science recognises how often this seismically active and ice-carved region transforms. Borders marked by lakes, ice and rivers move with the seasons. The mountains themselves are still moving, ice caps and glaciers, particularly those that have been militarised and subjected to constant human habitation, are slowly shrinking. In this sense, the borders of the region are very much alive.

The 'Decolonization' of the Western Himalaya

The hurried departure of the British rulers of South Asia, and the aftermath of World War Two in China, left the region's emergent states with a series of cartographic difficulties, and its locals with three state militaries to live alongside. Amidst the creation of India and Pakistan, there were calls for Jammu and Kashmir to become an independent, multi-cultural state (Bhat 2017, pp. 285–295). These, though, were dismissed by India and Pakistan. Tibet's hopes for continued independence were of course short-lived. Rather, Ladakh, Gilgit and Western Tibet found themselves at the crossroads of two interrelated geopolitical disputes. Today, the region remains riven by the India-Pakistan dispute over Kashmir, and the border disputes stemming from the idea that the Himalaya is the 'natural barrier' between India and China.

The British Raj was partitioned on the basis of the 'two nation theory', a colonial narration of the many diverse identities and cultures that inhabited South Asia. This theory suggests that there were always two distinction 'nations' of South Asia: a pluralist nation, perhaps with a Hindu majority, and a separate nation of Muslims. The Muslim league emerged out of the Indian National Congress (INC) with the concern

that Muslims would be oppressed by a Hindu majority in India. India's identity was based on a rejection of the two-nation theory, and claims to able to represent all the cultural and religious groups of South Asia. Pakistan relies on the theory for its foundational identity. The territory of Kashmir, with its Muslim majority, with a Hindu Maharaja who acceded to India, was a major test for this theory. Holding all pieces of Muslim majority territory was central to the founding idea of Pakistan. Likewise, holding some piece of Muslim majority territory was crucial to India's desire to reject the two-nation theory (Varshney 1991, pp. 997–1019).

This means that culture was directly tethered to territory and environment at the moment of state creation. This is not a particularly useful organising principle, however, for a region with sparsely or unpopulated mountain peaks and rivers being thought of as borders. These meeting places and high passes, sites of century-old cultural exchanges, represented deep connections between communities and ecologies. Although they had made territorial claims, the British, the Dogra and Qing China had only limited capacity to actually govern the region. The dramatic geography of the Himalaya, and the lack of infrastructure, had made it too difficult to exert sustained influence. This meant that Chinese, Pakistani and Indian territorial claims had little to do Himalayan peoples cultures and identities, and that there was limited contact still between the plains and the mountain peaks that were being imagined as its borders.

The formalisation of the LoC between India and Pakistan split not only the Kashmir valley, but the Buddhist and Shia Muslim areas as well. The militarization of the India-Pakistan border meant that connections between Gilgit and Ladakh were cut off. These families and cultures remain divided today. The Indian and Pakistani armies, given the continual rise and fall of tensions in the region, began to stay in the region, fixed in place along disputed borders.

The status of these regions was immediately uncertain. Ladakh's place within India was uneasy with local leaders demanding autonomy and self-determination. In 1949 Chhewang Rigzin, the president of the Buddhist Association of Ladakh wrote to Jawaharlal Nehru, to ask for self-determination within the Union of India. He argued that '[w]e are a separate nation by all the tests—race, language, religion, culture—determining nationality. The only link connecting us with the other people of the state being the bond of common ruler'. He continued:

> If the Indian National Congress could persuade itself to recognize the Muslims of India as a separate nation although they had so much in common with the other elements of the Indian population the Government of India should have no hesitation in recognizing what is patent and incontrovertible fact in our case. (Rigzin, quoted in Sharma 2018, pp. 324–327)

The letter emphasised the role of Ladakh as a crossroads, noting that 'The Tehsil of Leh has Tibet and China among its neighbours and the town of Leh is the nerve centre of Central Asian trade' (Rigzin, quoted in Sharma 2018, pp. 324–327). The letter concluded with a request for self-determination: 'Has not India repeatedly declared that it stands for the right of self-determination for all nations, and are we not a nation whose right of self-determination it should uphold and to whom it should extend the protection it seeks?' (Rigzin, quoted in Sharma 2018, pp. 324–327).

Gilgit-Baltistan, similarly, had an uncertain status within Pakistan. As it was part of the Dogra empire, it was linked administratively to Pakistani Kashmir. While some demanded the formation of an independent state of Kashmir, others sought autonomy within Pakistan, from Kashmir. The region was integrated into Pakistan as the Gilgit Agency and the Baltistan Agency, neither of which were granted constitutional status within Pakistan, because Pakistan's political elites believed doing so would jeopardise their claims to the whole of Jammu and Kashmir.

The Western Himalaya though, was not just a target of India and Pakistan. China's annexation of Tibet in 1950 changed the international circumstances of the Western Himalaya further. Just nine months after the CCP had taken control of China, 40,000 PLA soldiers defeated Tibetan resistance and Chamdo, and took Lhasa (Guyot-Réchard 2016, p. 95). This led to a long-running conflict in Tibet, which is often not discussed or recognised, as the Tibetan Government in Exile, supported by the CIA, fought Chinese troops across the territory (McGranahan 2010). Chinese rule in the region made the border disputes a more obvious source of tension. Whereas Tibet had accepted the MacMahon line, the Chinese rejected it. This concerned India, whose Prime Minister Jawaharlal Nehru had thought he could have a friendly relationship between the world's two most populous states. Deputy Prime Minister Vallabhbhai Patel was particularly concerned with the loyalty of India's Himalayan citizens (Davis and Gamble 2020, pp. 288–304). Much of the impact of

this was initially felt in the Eastern Himalaya, however, which is more populous, and more easily reachable by the Chinese state.

India and China came to the Panchsheel agreement, or five principles of peaceful co-existence, which emphasised territorial integrity, and mutual non-interference. Chinese maps, however, showed territorial claims over Aksai Chin and India's newly formed North Eastern Frontier Provinces (NEFA) in the Eastern Himalaya. Crucially for the Western Himalaya, China's road from Xinjiang to Lhasa which went through Aksai Chin, claimed by India, was completed in 1957. The road dramatically improved Chinese connectivity through Tibet, increasing its influence. Similarly, the movement of Tibetan communities into India fuelled Chinese suspicions of India (Guyot-Réchard 2016, p. 185).

The Western Himalaya, though, was subjected to similar border disputes as a result. Starting in 1959, refugees from Western Tibet came to settle in Ladakh following an uprising. Today, according to the Central Tibetan Relief Committee, there are 3,500 Tibetan refugees settled in Ladakh (Central Tibetan Administration 2019). Without an obvious or agreed-upon border, and with local peoples being outside of each state's 'core citizenry', India and China came to shadow one another in the Himalaya.[2] Each of these diverse and heterogenous states could claim to be the legitimate ruler of a particular piece of territory, and that drove their mutual anxiety and geopolitical tension.

With the Kashmir conflict entrenched, the regional environment came to be securitised. The Himalaya became subjected to the 'national interests' of the Indian, Pakistani and Chinese states, for its environment, role in trade routes and its role of the region in the headwaters of the Indus River (Raghavan 2010, pp. 101–146). With India–China tensions over Ladakh rising, India-Pakistan tensions over the Indus River were being dealt with through the Indus Waters Treaty of 1960 (Gilmartin 2015). India grew suspicious of Chinese activities in the region, as the PRC began to draw maps showing parts of Ladakh within China.

The Indus Waters Treaty is generally seen as an example of healthy international cooperation between India and Pakistan. It covers the channels of the Indus, Jhelum, Chenab, Ravi, Beas and Sutlej rivers, and governs who can use which waters for what purpose (Indus Waters Treaty 1960). The treaty takes a narrow view of a river, and prioritises the rights

[2] For a history of this connection between state foreign policy and borderland peoples, see: Guyot-Réchard (2016).

of states to water over the overall health of a watershed. With state's water rights prioritised, and watersheds reduced to channels, the treaty does little to prevent militarization of the river, and indeed encourages resource extraction. Once a river is seen as a resource to be managed by the state, the people that live alongside it, and the ecologies that produce it, become invisible. The treaty prioritises the needs of Delhi and Islamabad over the needs of the river, the watershed, or the people that live near it. Treating the river as something from which to extract resources has gradually added to tensions over the region. This treaty has not been revisited since 1960 to be updated with advances in environmental sciences and our understanding of the Himalayan watershed (Fox and Sneddon 2007, p. 255).

The 1962 war between India and China shattered a period of positive relations between India and China. This conflict, as we will see, has been important across the Himalaya in hardening borders. With this, it has had a foundational effect on environmental politics across the mountains. Chinese soldiers simultaneously invaded Ladakh and Arunachal Pradesh to the east. Just as Chinese troops looked as though they had broken open the road from Sela Pass to Assam, they unilaterally announced a cease fire. In doing so, they also built roads in Arunachal Pradesh in areas India had not been able to build. They had also taken Aksai Chin from India (Guyot-Réchard 2016, p. 231). The causes and course of the war have been much debated in Indian foreign policy circles. Nehru's idealism has often been blamed for causing the conflict. The idea that parts of Tibet, such as Kailash (a mountain in Tibet that is sacred in Hinduism, Buddhism and Jainism), could be part of India, was no longer a serious possibility. As Bérénice Guyot-Réchard (2016, p. 242) put it, for China, 'crushing India's armed forces was sufficient to demonstrate to Tibet's populations that India could never be a safe or beneficial alternative'.

India's foreign policy shifted in tone after its 1962 border war with China and with the death of Jawaharlal Nehru in 1964. Small memorials to this war are today dotted around the villages of Ladakh nearest the border. Indira Gandhi's foreign policy towards South Asia, in terms of India's border politics, rearticulated the Nehruvian vision of anticolonialism as more fundamentally tied to territorial integrity (Singh 2015). This meant the confirmation of what Sankaran Krishna has called India's cartographic anxiety. India's Himalayan borders became increasingly militarised and securitised (Krishna 1994, pp. 507–521). This led India to take on a firmer hand in its border areas, which we will see across all

three case studies in this book. With the militarization of the India–China border to Ladakh's north, the stand-off over Aksai Chin and the Siachen Glacier, which emerged in 1984, Ladakh-Tibet connections, which went back centuries, were shut off as well. Coupled with the disputes between India and Pakistan, the border points of the Western Himalaya had become a site with several lineal borders to be fought over. With the slow increase of human habitation resulting from this, and technological advancements, the logic of borders has slowly replicated itself. If anything, India, China and Pakistan have accelerated the colonial quest to define the borders of the region, and with it, made the ecological situation far worse.

Siachen, Kargil, and the 2020 India–China conflict

A key element of this conflict, and its ecological cost, has been the fighting over Siachen glacier. This conflict has often been discussed as evidence of India and Pakistan's 'irrational' foreign policies. The dispute has memorably been described as a fight between 'two bald men over a comb' by Steven Cohen (2001, p. 146). He argues that the glacier itself is of limited strategic significance, and questioned the military logic of the exercise in general. Indeed, the environmental component to the conflict is, as Baghel and Nüsser (2015) have noted, often only mentioned in passing to point out the absurdity of the conflict. That so much analysis has focused on critiquing the rationality of a conflict that it is still ongoing, particularly one that has been so difficult for soldiers even without much fighting, suggests we need to ask different questions. Why, if it is so irrational, is it still happening? The altitude, the stark nature of the landscape, and the role that the region's geography plays in the conflict suggest something deeper is going on, that requires further investigation.

The ownership of the glacier had been left vague in the 1949 border agreement between India and Pakistan, as delineated by the UN. The glacier was not delineated, as the agreement simply stated that the boundary would proceed 'thence north to the glaciers'. It continued: 'This portion of the cease-fire line shall be demarcated in detail on the basis of the factual position as of 27 July 1949 by the local commanders, assisted by United Nations Military Observers' (India and Pakistan 1949). This vague language left open the possibility of ongoing border disputes and tensions, as the lines themselves had never been agreed.

Eventually, someone seized the literal high ground. The logic of bordering these regions, and fighting over what fuzziness was left over the

borders, led India to take its current positions during Operation Meghdoot in 1984. Indian helicopters dropped soldiers onto the heights of the glacier to prevent Pakistan from taking the territory. These military positions are 6700 m above sea level, and temperatures can reach −50 degrees in the winter. Holding these territories year-round is an extremely difficult military exercise. The physical conditions are far more deadly for the soldiers involved than the conflict itself. 140 Pakistan soldiers were killed by an avalanche in 2012. Soldiers regularly suffer from dizziness and strong headaches.

Prateek Joshi (2017, pp. 496–509) has argued that the Siachen conflict represents India's reimagination of Curzon's 'scientific frontier'. The scientific frontier was a colonial formation which argued that high peaks and vistas, along with watersheds, rivers and other natural features of terrain, were the ideal places to draw borders.

Here, India and Pakistan came to reproduce colonial bordering practices. High peaks and vistas are more likely to be defendable, and offer the opportunity to watch over an adversary. India has taken and held the high ground in Siachen—Saltoro ridge—and has ever since justified the position based on the natural features of the area, but also on the basis of the strategic value of these posts. This follows neatly from Curzon's original approach—natural features and military necessity defining borders.

The Kargil conflict of 1999 was a response to India's actions in Operation Meghdoot. Prior to 1999, Indian troops vacated their posts around the city near the border for winter. In 1999, though, Pakistani troops took advantage of the India's army's vacant positions, and occupied 130 winter posts that India had left, crossing some 10 kms into Indian territory. 'Operation Vijay' took place in May–July 1999, as the snows receded and the Pakistani army was evicted from Ladakh. Much to the relief of those fearing escalation between two nuclear-armed neighbours, India avoided crossing the LoC in this operation (Ganguly and Kapur 2012). From this the Indian Army learned not to withdraw for winter. The armies became even more frozen in place, with even the extremely high altitude Siachen Glacier permanently militarised.

India, China and Pakistan each having nuclear weapons have even further frozen the conflict in place. With the cost of escalating conflicts so high, it became impossible for the armies to move forward significantly. But this has not resolved the original border disputes, because of the underlying military logic. The possibility of 'incursions', though, from the other side of the border, makes it necessary to continuously surveil

the borders of the region. What had once just been meeting points on a few high passes, has become a lineal border that is impossible to cross. The fear of incursions is particularly strong in India, because of Pakistan's reputation for sneaking insurgents into Indian Kashmir.

This frozen conflict has led to an increase in humans occupying the highest ice caps. After Kargil, the number of Indian troops stationed in the region rose from 3,000 from the earlier 3rd Infantry Division, to 20,000, entrenching the army further in the lives and livelihoods of Ladakhis and Gilgit Baltistanis. Since the war, the Indian Army, and the Pakistani and Chinese armies have massively increased its presence in the region. Press reports suggest that the Chinese are able to deploy 80,000 troops to Aksai Chin and Ladakh within three days. India patrols the Himalaya partly with the Indo-Tibetan Border Police (ITBP), 6,000 of whom are on the LAC with China at any give time. They have reportedly been considering raising the number of ITBT personnel by 8,000 (Press Trust of India 2018). Through most of 2020 and 2021, India and China were further militarising the region after the violent clashes of 2020. Troop numbers dropped in 2022, though, when China and India disengaged from Pangong Tso. The cold winter and harsh conditions at least played a role in this decision (Ghoshal 2022). The army, and tourism, has dramatically increased the population of the region. As a result of this, Siachen is shrinking more rapidly than the other glaciers in the region (Kumar et al. 2020, p. 2). The regular movement of troops around the region has adversely affected the glaciers of the high peaks (Jayaram 2021, p. 632). Reopening the region to tourism, for patriotic Indians to visit the battleground, will only add to this situation.

One Indian official drew lessons from the two events, stating that: '[India] must not fall into the trap of Siachenisation of the Kargil heights and similar unheld, unpopulated 'gaps' in the High Himalaya along the entire length of the Northern Border' (Indian Government Report, cited in Baghel and Nüsser 2015). Having taken one piece of the high ground, strategic logic implies that one must take all of the high ground, to prevent the other side from retaliating. With this, the high borders between India and Pakistan in the Western Himalaya have followed the same military logic: seizing the high ground alongside borders that were drawn along the highest peaks of the region, where water flowed down either side of the mountain. The colonial logic of bordering had been absorbed by these three postcolonial states.

Throughout the 70 years of conflict, there have been numerous efforts to solve the India-Pakistan Kashmir issue. In most of these negotiations, Pakistan has been willing to accept much of Ladakh as part of India (Yusuf and Najam 2008, pp. 1503–1528). India, similarly, has considered soft borders in Kashmir which would enable communities to reconnect. Ladakhi Buddhists, though, came to resent that their politics and representation were dominated by Hindu-Muslim tension in Kashmir that they did not feel a part of. This led, through the 1980s, to a demand for Ladakh to gain more autonomy within India. This demand split the population of Ladakh along religious, regional and cultural lines. In this sense, the international politics of the region has had a profound effect on its culture.

Sara Smith has described the politicisation of religious identity in Ladakh through the 1980s. In 1989, the Leh Buddhist Association (LBA) announced a social boycott of the Muslim community, with the aim of drawing the national government's attention to their situation (Smith 2012, p. 1516). In response, governance was partially devolved, through the creation of the Ladakh Autonomous Hill Development Council (LAHDC), based in Leh, which was formed in 1995. This was also in response to demands for the creation of Union Territory. A corresponding council was formed in Kargil. This allowed greater autonomy from Jammu and Kashmir. Governance had been decentralised to a point, but Ladakh remained constrained by its border conflicts. The Ladakh Union Territory Front (LUTF) formed in 2002. The INC did not agree to the demand, however, and so the LUTF merged with the Hindu nationalist Bharatiya Janata Party (BJP) (Sharma 2019). Through this polarisation, the BJP began to win the support of local Buddhist groups by supporting the desire for greater autonomy. The longstanding demand for Union Territory status of Ladakhi Buddhists, was met by the Modi government in August of 2019. This decision sparked celebrations in Leh, and protests in Kargil. The decision dissected the polity of Jammu and Kashmir, while simultaneously centralising the power of the Indian central government over the region, also fed into and reflected the communal tensions of the area.

This has also been the case in Pakistan. Gilgit has experienced substantial increases in state surveillance, and communal violence and tensions. The region has long had limited autonomy, and limited say in the affairs of the nation, due to not being incorporated into Pakistan's constitutional structure. Sunni and Shia tensions in the region are well documented

(Varlye 2016, pp. 159–180). Pakistan's history of political Islam has affected the region's Shia population, leading to a massacre in 1988 as the region become more integrated into Pakistan. Both sides of the border are concerned about possible incursions. Mishra suggests that Pakistan has implemented a 'divide and rule' strategy in Gilgit, seeking to inflame tensions between religious and ethnic communities, so as to negate demands for home rule (Mishra 2019, pp. 1–25). He documents long-running tensions between communities, and a greater influx of migrants from lowlands Pakistan taking to the region. Other ethnographic scholarship also describes religious tensions. As with Ladakh, being incorporated into the state has transformed the region culturally. The region has also become increasingly monitored due to the security situation. Ethnographic scholarship in Gilgit-Baltistan is difficult, not least due to the surveillance researchers are placed under (Grieser 2016, p. 141). Although Mishra offers a strong critique of Pakistan's approach to Gilgit, he neglects the fact that similar transformations have taken place in Ladakh, in India. Indeed, this divide-and-rule pattern is replicated across the Himalaya.

In 2009, the unusual status of Gilgit-Baltistan within Pakistan shifted. The region was granted some further autonomy, but was still not made a 'normal' province of Pakistan. Rather, the area was granted a 'province-like' status, granting it a legislature and a Chief Minister. However, the region was not granted the same status as other regions of Pakistan. This was justified on the basis of Pakistan's commitment to the UN Security Council resolutions 39 and 41 (1948) and 91 (1951), which forbid the arbitrary alteration of the region's status (Feyyaz 2019, p. 32). As a result, the region still has an unclear constitutional relationship with Pakistan. It has recently experienced far greater settlement by Pakistanis from the lowlands, who were allowed to buy land in the region from 1971 onwards (Feyyaz 2019, p. 32).

Infrastructure development in the region has also enabled further tensions. The China–Pakistan Economic Corridor (CPEC) has been a key part of the region's geopolitics and the relationship between these two states. Through CPEC has sought to develop the region, by linking Kashgar to Gwadar port in Balochistan (Mishra 2019, p. 18). This has included the stationing of Chinese military personnel at the site of construction of Diamer Basha dam, leading to Indian protests (Datta 2020). The Karakoram Highway, also known as the China-Pakistan Friendship Highway, which links Peshawar to Kashgar through Gilgit,

was opened to the public in 1986. It has been disrupted from time to time due to the geological instability of the region. Most memorably, a landslide near Hunza, which blocked the road, led to the creation of Attabad Lake in 2010. Although this blocked the road, the lake eventually became a top spot for tourism in the region (Khalid 2020). Glacial Lake Outburst Floods (GLOFs), often caused by more quickly melting glaciers, are common across the region. They can be triggered by excessive rainfall, or unusually hot and dry weather. Goods had to be taken via boat over the lake, until a new road was completed in 2015. Anna Greiser and Martin Sokefeld (2015) note that, although the highway has become crucial to local people, the highway also attracts complaints, as 'people in Gilgit often complain that the road at the same time enables an increased influx of suspect and alien persons from other parts of Pakistan'. Here, we see the continued ambivalence of infrastructure development in the region—increased connectivity brings with it cultural transformations, enables more tourism, economic development and outsider influence. It also contributes to the slow environmental degradation the region is experiencing.

It was shortly after the reorganisation of Ladakh that the India–China tension in the region reached a peak. In June of 2020, fighting between Chinese and Indian soldiers over their segment of the disputed Western Himalayan borders left 20 Indian soldiers dead, 20 seriously injured. China later claimed that it suffered only four casualties from the violence (BBC 2021). India and China have a troop build-up in Ladakh, particularly at Pangong Tso, Chushul and the Galwan Valley (Hucheon et al. 2020). The tensions were the worst the region has seen for several decades, with reports of 'warning shots' being fired again in September 2020. Both states withdrew briefly for the winter of 2020–2021, however, suggesting that they had not yet prepared the area for long-term militarization. Negotiations between India and China, stalled shortly after. Incursions resumed in the summer of 2021. Although there has been a subsequent disengagement, a likely result at the time of writing appears to be the year-round militarisation of the area, just as has happened in Siachen. At the very least, the region will be subject to a high level of surveillance and infrastructure building for the foreseeable future.

Cultural and Ecological Entanglements

With the surge of troops to the mountain, and the recreation of the colonial idea of the Western Himalaya as a harsh and contested borderland, I will now move on to look at how this environmental state-making has slowly transformed the region's culture and environment. With the border disputes, some regions of the Western Himalaya, particularly Ladakh and Gilgit, have been changed dramatically by their transformation into army bases. The military presence has shaped the culture of the region. Gagné's ethnographic work on the Indian side of the border has shown how Ladakhis have taken in the conflict and the militarization. Ladakhis tend to speak about the heavy military presence in Leh as a necessary evil, or as something that prevents the region from becoming part of China or Pakistan (Gagné 2017, p. 236).

However, much of the fighting on all sides of the various conflicts has actually been done by locals. The Gilgit Scouts, a regiment of the Indian Army, were responsible for the initial ascension of the region into Pakistan. Local ecological knowledge has become used for defence of each state actor in the conflict. After the 1962 conflict, the Ladakh Scouts, a regiment of the Indian Army, were created. Joining the military has become a key source of employment. The ITBT are likewise deployed at high altitudes because of their experiences and their bodies. Indigenous peoples of high altitudes of the Tibetan plateau are far better able to deal with extreme cold and lower levels of oxygen in the air (Petousi and Robbins 2016, pp. 875–884). In this sense, our bodies are deeply intertwined with the environments that our ancestors have inhabited. The bodies of Tibetan and Ladakhi soldiers are being used by the region's states to enable the further militarization of high altitudes. Similarly, in the 2020 conflict, images on Chinese news media showed soldiers of Tibetan origin being dispatched towards the border. This is part of a long-running effort by the PLA to recruit Tibetan youth. Indian press reports suggested that this had led to further border skirmishes in 2020 (Bhattacherjee 2021). Indian Army officers began to describe Ladakhis as ideal soldiers for the region, because of their skills at mountain climbing, their resistance to extreme cold (Gagné 2017, p. 234), and their bodies being used to the altitude. The Indian Army, however, presented Ladakh as a harsh borderland, just as British cartographers had done in the mineteenth century.

One major element of this militarization has been a boom in infrastructure development. Prior to the Kargil war, infrastructure development in the Western Himalaya was slow. One Indian engineer put this down to the mountains being full of 'geological surprises' (Gergan 2019, pp. 35–42). This curious turn of phrase treats the mountains as an agential force, or as being alive, which they are, but suggests that this is a problem to be overcome by the state. In this construction, the mountains need to be dominated and controlled. Infrastructure in border regions is built by the BRO, who refer to themselves the 'mountain tamers'. One of their road signs at Chang La, a pass between Leh and Pangong Tso, includes the phrase 'we dominate the indomitable'. When infrastructure is built in the region, it has often been slowed by unexpected water flowing out of the rocks whenever digging starts. One road, the Rohtang tunnel connecting Manali to Leh, has taken four decades but was recently completed (Dhillon and Chhina 2020).

Chinese engineers, however, appear to have mastered building roads and high-speed rail networks across Western Tibet (Bhutia 2016). They have something of an advantage, as the terrain they cover is flatter and more stable. This infrastructure boom has further facilitated the movement of troops and tourists. It fuelled Indian anxieties about China's ability to deploy troops to contested regions like Ladakh. India is trying to catch up, by completing 61 strategic border roads in the region by the end of 2022 (Singh 2021). Such targets are usually not met on time, but they are slowly being completed nevertheless. This level of control from the plains had previously impossible due to the unwillingness of expanding empires to actually stay in the region. The proximate cause of the recent fighting seems to have been infrastructure building on both sides. Building roads close to the border facilitates troop deployment, which provokes fear on the other side. The anxiety produces further infrastructure building. In this sense, technological improvements are central to the region's unfolding slow violence.

Strategic roads in Pakistan are built by the FWO, established in 1966, to build the Karakoram highway. There is a long history of collaboration over roads between China and Pakistan, which has added to Indian anxieties. FWO describes itself today as having brought 'prosperity to utterly backward and forgotten areas from the sun burnt plateaus of Baluchistan to lush green dales of Swat and Chitral and from the deserts of Sindh to snow capped Siachin' (FWO 2022).

The year-long militarisation of high altitude regions is an extremely undesirable result not just for the environment, but also for the soldiers. Already, thousands of soldiers have died in the Himalaya, not from fighting, but the extreme environmental conditions (Gao 2016). Landslides and asphyxiation are common, particularly at year-round occupied high altitude sites such as the India-Pakistan stand-off at Siachen Glacier. The prioritising of security above all else, though it may capture how the region's states are behaving, does not capture how the politics of the region have worked historically, or how they work now.

The Indian Army made the region safe for tourism, but is also part of the attraction. A distinct tourist season has emerged in both India and Pakistan, where domestic tourists visit over the months of summer, adding a great deal to the region's population for a few short months. This is particularly intense in Ladakh, where tourists drive across the region over summer, and disappear in winter. Memorials to the Kargil war are among its most popular sites for tourists. The wild success of the Bollywood film *Three Idiots*, though, brought even more people into Ladakh, particularly Indian domestic tourists (Lundup 2013). Today, a visit to Ladakh enables Indians from cities like Delhi and Mumbai to experience clean air, to visit the sites of one of India's most iconic movies, and to revel in the glories of India's military. *Three Idiots* features a closing scene of Kareena Kapoor chasing after Aamir Khan at the contested site of Pangong Tso (Parviz 2018). It is marketed as an adventure tourism destination, where Indians from the plains can experience frontier life. Today, though, some of the most popular tourist sites, aside from the region's natural beauty, are war memorials, largely devoted to the Kargil war with Pakistan in 1999. These memorials both engage with local culture and emphasise the role of the Indian military.

In this sense, militarization and tourism complement one another in important and interesting ways. The Kargil War has made the region a site of nationalist sacrifice. Just South of the city of Leh, past its military run airport, is the Indian Army's 'Hall of Fame'. The folding of local cultures into the conflict manifests physically. In front of this war memorial is a statue of the Buddha, flanked by Indian Army howitzers on either side. A similar war memorial to the Kargil conflict operates in Dras, on the road between Srinagar and Kargil. Both of these are extremely popular and successful sites for Indian tourists. The 2020 fighting between India and China will only add to this situation.

The Indian Army have also contributed to some of the interest in driving around Ladakh's established tourist circuit. The roads up to Siachen glacier along the Shyok and Nubra rivers on the Indian side are continually traversed by army trucks. Troop carriers fly overhead regularly to service the effort on Siachen glacier. The road signs put up by the BRO on the way amuse tourists with clever and curious rhymes ('Safe arriving, no liquor in driving'), and sexist driving advice ('Don't gossip, let him drive' and 'I am curvaceous, be slow'). Around Ladakh, the BRO road signs also feminise the mountains, with lines such as 'be soft on my curves' and 'darling I like you, but not so fast'. Yet more signs have been put up by the Siachen Warriors division of the Indian Army. These are more provocative. Some of these states the distance to towns on the Indian side of the border, as many road signs would. But they also note that Gilgit and Skardu are 'within reach'. Another formulation commonly used is to emphasise the unity of India. Road signs declare that 'From K2 to Kanyakumari, Bharat is one'.[3] Another declares that 'Until I am out of bullets or out of blood, I will keep fighting'. Some signs greenwash the situation, with slogans like: 'Clean Siachen dream Siachen', 'Plastic or planet', and 'An act of energy saving is an act of patriotism'.[4] The military are aware of the ecological situation in the region. Indeed, memorials to lost engineers who died of cold or altitude sickness in building the high passes of the region are also commonplace.

The ecological situation ultimately does not distract from the key mission. Indeed, if anything, there is a sense of nationalist pride taken by the Indian Army and tourists at being able to maintain India's hold on such an elevated piece of territory. The glacier and its military positions were opened up for Indian tourists in late 2019, closed for coronavirus in 2020, and reopened for domestic tourists in September 2021 (Press Trust of India 2021). Tourism to Siachen has been expanded. This was, as India's Defence Minister Rajnath Singh (2021) stated at the ceremony, done so as to 'give people a window to appreciate the tough work done by army jawans and engineers in extreme weather and inhospitable terrains'. Jamyang Tsering Namgyal, the BJP member of the Lok Sabha for Ladakh, stated that: 'Indian citizens should be able to witness

[3] Kanyakumari is the southernmost tip of India. K2 is the tallest mountain in India's claimed territory, but it is administered by Pakistan.

[4] All road signs were sighted on return visit in early 2023.

the highest battlefield and experience the atmosphere which the armed forces endure every day' (Namgyal 2019). Indeed, the reopening of Siachen glacier for tourism was done on world tourism day, the theme for which was 'tourism for inclusive growth'.

Aside from the military advances on the ice caps, and the associated infrastructure development, there are various other factors which have contributed to the warming of the region. One cause of the region warming faster than the rest of the world is the proliferation of black carbon. Black carbon is created from the incomplete combustion of fossil fuels and has increased in the region in recent years. Rather than entering the atmosphere for hundreds of years, black carbon tends to settle, and cause localised warming. It is particularly dangerous when it settles on ice caps and glaciers, as it leads to increased glacial melt. Clean snow reflects heat perfectly. Snow and ice covered in black carbon, however, suck in heat and solar radiation, creating warming. Numerous scientific studies have examined the issue in the region. This is a problem across the Himalayan ice caps, not just in the Western Himalaya. However, with the militarization of ice caps, it has become a particular problem. Ice core samples from around the Himalaya have shown that the concentration of black carbon on the ice caps has increased over the last few decades. The precise sources of the black carbon in the Himalaya are contested and varied. It comes from all states of the region, and is part of global wind patterns, which emerge from the burning of fossil fuels for energy. It can come from the burning of biofuels, such as for cooking food by local populations, which have been common practices across the region for centuries.

Debates about the source of Himalayan black carbon are politically charged. Chaoliu Li et al. (2016, pp. 1–7) argue, for example, that air pollution from the Indo-Gangetic plains is the highest contributor on the Indian and Pakistani side of the Himalaya. On the Tibetan Plateau, however, they argue that the local practice of burning biofuels is the main contributor. It is certainly the case that air pollution on the plains of South Asia is a major problem, caused by coal fired power stations, traffic and crop burning. However, Tibetan villages have been using biofuels for cooking for generations. The population density in remote regions of Western Tibet remains low. Consequently, it seems highly unlikely that the cause of an increase in black carbon deposits in the region actually comes from traditional cooking practices.

Localised sources of black carbon also come from road construction and traffic, all of which have increased over the past decade. For example, one scientific study of Khardung and Phuche glaciers found that both are experiencing accelerated warming due to black carbon (Thakur et al. 2021, pp. 1–16). Khardung Glacier sits directly next to the Khardung La Road, built by the BRO, to take soldiers to Siachen. This road begins from Leh, goes through Khardung La, which is erroneously claimed to be the 'world's highest motorable pass', and leads up the Shyok and Nubra rivers to Siachen glacier. The road is a considerable tourist attraction given its altitude.

Dams and Power Generation

With militaries and tourists proliferating, the desire to extract resources from the region's rivers, infrastructure and power generation have become a major source of environmental concern. Rivers are being dammed in the region at a rapid rate. Dams on the Indus River have been built by India, China and Pakistan. Energy production is one of the key focus areas of the funding associated with CPEC. From the initial investment provided by CPEC (47 billion US dollars), one third was spent on infrastructure development, and two thirds on energy projects. These include oil and gas pipelines to supply China, but also coal, solar and hydropower projects in Pakistan.

Himalayan states have also come to see the region's rivers as a source of 'clean' electricity through hydroelectric projects. This, though, comes with enormous risks in a geologically unstable region. Amelie Huber (2019, pp. 414–436) has argued that these dams place the costs of development on local populations. Research in Sikkim focused on the Lepcha community in Dzongu has found that dam construction has often been met with local protest, and when protests are ignored, social marginalisation increases, which I will discuss in Chapter 5 (Gergan 2020). Leh's main dam, the Nimoo Bazgo Hydroelectric Plant is built at Alchi, next to an eleventh-century monastery. The project sparked fears in Pakistan, and contributed to its own dam building on the Indus River. China's construction of dams on Himalayan rivers has also worried India about shared water resources (Gamble 2019, pp. 42–67). All of the Himalaya's states are concerned about access to water resources and electricity generation. However, the rush to claim water resources leads these states to treat the watershed as something from which to extract value. This makes

environmentally sound governance, which looks after the health of the watershed, nearly impossible. I will explore this element of the Himalayan environment in the two subsequent case studies. It is important to note here, though, that the situation in the Western Himalaya reveals the dangers of militarization and border conflicts. In particular, militarization presents a serious impediment to effective transboundary environmental governance.

The region's ecology, and its traditional ways of living off the land, are threatened by this surge of people into the region, as well as the backdrop of global warming. Schmidt and Nüsser (2017, pp. 1–15) portray the precarity of relying on slowly shrinking glaciers for water. Glacial retreat in the region has been slow. Still, any loss of glaciers would be quickly devastating for its traditional farming techniques. In many summers, ice melt is the only form of water for irrigation in the region. In response, locals have built ice stupas and artificial glaciers in the winter, to replace lost glacial melt for the spring Nüsser et al. (2019, pp. 1327–1337). These forms of local adaptation and knowledge cannot easily be transferred across the transboundary region of the Western Himalaya, though, because the once interconnected communities of the region have been so thoroughly shut off from one another by the border disputes. This comes despite the increase in connections between Ladakh and the rest of India. The region's climate is changing in other ways as well. Rainfall in Ladakh has increased dramatically in recent years. The average rainfall in Ladakh during summer has risen from 30 mm in 2009 to over 140 mm in 2019. Flash floods struck Leh in 2010, killing 255 people (Dwivedi 2019). Although this might be a replacement for lost glacial melt, traditional homes in Ladakh are not built to withstand rain.

Security-centric thinking does not capture the reality of the situation in the Western Himalaya. If we look at the region across its borders, and think it through from a political ecology approach, though, we capture the entanglements between geopolitics and ecologies of the region. This reveals to us the complexity and precarity of the current geopolitical and environmental situation. If India, China and Pakistan continue to see the watershed as a target for competitive resource extraction, this will only accelerate environmental degradation. The Himalayan environment will ultimately have the final say in this situation, as its ecology is unlikely to sustain intense militarisation, climate change and hydropower extraction over the long term.

Conclusion: Bordering High Altitudes

When we read international politics in Western Himalaya, we cannot just emphasise the region's states and the possibility of war. The Western Himalayan ice caps have always been deeply entangled in the region's politics. IR's ignorance of ecology and history, and its assumption that the state is a rational actor, and the only one that matters in international affairs, obscures these entanglements. The connectivity between culture, ecology and geopolitics, also ties IR and political ecology together. We cannot understand one of these factors without the others.

Looking at the ecological entanglements with geopolitics in the Western Himalaya tells us the ways in which the environment of the region is alive in the conflict. With the region's glaciers slowly shrinking, albeit unevenly, and its local people trying to adapt, understanding the Western Himalaya as a transboundary region is critical. The verticality of the region has always played a crucial and active role in the region's politics. This, though, is unacknowledged by the region's states, and by IR's theorisations. The region's states need to recede from the mountains, allow greater local autonomy, and build environmental protocols and governance that incorporate sub-national administration, and listen to local voices and scientific knowledge. The history and experience of the Western Himalaya show the need to do this, and how flawed and damaging a rationalist, statist framing is for understanding the Himalaya. Lack of acknowledgement of both the region's fraught environment and its borderless history may underpin these ongoing tensions, but recognition of both suggests a way forward. If the highest peaks and rivers were de-territorialised, it would avoid much senseless loss of life, environmental destruction and allow social and cultural exchange for the region's local communities.

I will now move to a lower altitude, to look at how similar issues are playing out in the foothills of the Eastern Himalaya, specifically the Sikkim-Nepal-Bhutan borderlands.

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CHAPTER 5

Foothills, Forests and Fortresses: The Sikkim-Bhutan-Nepal Borderlands

Introduction: The Sikkim-Nepal-Bhutan borderlands

This chapter examines the Eastern Himalayan region, focused on the Sikkim-Bhutan-Nepal borderlands. As with the previous chapter, the region has been the site of border tensions, with the states of the region also seeing long-term histories of migration between its various polities. Here, though, we are not just dealing with the major powers of the Himalaya. This region is also the home of three smaller Kingdoms which became independent states in the international system. Bhutan and Nepal regard themselves as never having been directly colonised, though both were shaped by colonial histories. Another, Sikkim, was eventually integrated into India after a short-lived period of semi-independence. As with the Western Himalaya, the high altitude regions are particularly subjected to territorial disputes and many of the borders have been drawn along high mountain ridges. These have become key sites of tensions. Nathu-La, a pass between Sikkim in India and Yadong county in Tibet was another site of conflict in 2020 during the Ladakh standoff. The pass was sealed after the 1962 India–China war, and has been opened and closed repeatedly ever since. Today, it is a tourist site as much as it is a trading post. The India–Nepal border is also disputed in this region. To the East, the high altitude region of Kalapani is disputed between the

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Indian state of Uttarakhand and Nepal. It has been the site of tensions, as India built a road through the disputed region in 2020 (Xavier 2020). Perhaps the best-known standoff in recent times, though, was over the Doklam region, contested between Bhutan and China. This has been the site of substantial military tensions between India and China, particularly in 2017.

Here, though, I turn my attention primarily to how these border tensions have played out in the foothills and forests of the region and affected the region's environment. The foothills of the region are more densely populated, and incredibly linguistically and culturally diverse. The region hosts substantial more-than-human diversity. This means that it is particularly difficult to fit the region's diversity into nation-state boxes. It also leaves space for transboundary conservation, ecosystems management and traditional cultural flows and agricultural practices. Militarization of these borders makes this far more difficult, as it transforms habitats and changes migration patterns of animals. It has also disrupted traditional forms of agriculture which depend on the movement of animals with seasons, particularly yaks. Some of the lower altitude, forested regions have substantial national parks, and world heritage status based on visual beauty, biodiversity and endangered animals including rhinos, red pandas and tigers. The lowlands border between India and Bhutan has been the site of tensions, but not due to state-to-state tensions, but due to the restive political situation in Assam within India and its own violent politics of inclusion and exclusion.

Indeed, in this chapter I argue that the tight bordering of the region has had numerous impacts on its environmental and cultural make-up, and made it difficult, but not impossible, to create or maintain transboundary ecological flows. The increase of infrastructure in the region, including roads, airports and dams, has contributed to deforestation, led to fortress conservation and ecological transformations. However, this is an extremely uneven and still unfolding story. Some of the rivers in the area have been heavily dammed, most notably the Teesta River which flows through Sikkim. Some, though, such as the Manas River, have not been nearly as hindered by state activities. There are also examples of more functional border systems, which allow for local-level migration and communication, and ecological flows. Similarly, though, there are examples of fortress conservation in the region, such as Kaziranga national park in Assam, there are also examples of ongoing transboundary conservation which do, to some extent, transcend the logic of state borders.

The Kangchenjunga Landscape project, for example, has been arranged through collaboration between ICIMOD, local communities and state actors and enabled the creation of wildlife corridors across Nepal, Sikkim and Bhutan.

The chapter looks first at the military tensions over the region, the process of state-making, partly by reviewing the IR literature on the region, and thinking through how Sikkim, Nepal and Bhutan's fates were linked through the process of decolonization. This includes the struggle for Nepal, Bhutan and Sikkim for their political independence, and the incorporation of Sikkim into India. The construction of the Himalaya as a 'natural' border between India and China has led to sealed borders in the Eastern section of the Himalaya, as it has with the Western section discussed in chapter 4. I then look at how the construction of borders in the region created a complicated politics of tensions between Indigenous and migrant rights, and the more-than-human world that they inhabit. I examine this through the construction of national parks in the region, environmental conservation and how this has been shaped by borders, such as Manas national park on the India–Bhutan border, the trans-boundary Kangchenjunga landscape, and efforts to maintain yak diversity and traditional farming practices. Finally, I examine the narratives that have emerged of Eastern Himalayan polities as being particularly 'green' and ecologically conscious. Throughout, I argue that despite the many flaws of the region, there are ideas for transboundary conservation that operate in this region that offer something of a way forward.

The Independent Lives of Sikkim, Nepal and Bhutan

India and China becoming independent and fully-fledged states in the international system was a stressful time for small Himalayan Kingdoms. Some had agreements with the Raj, guaranteeing them protectorate status (Sikkim and Bhutan) or recognising them as separate political entities (Nepal). However, the creation of an independent India, and the folding of various quasi-sovereign princely states into that union, raised the possibility that Himalayan Kingdoms which had agreements with the British might be seen as part of India. Some princely states were annexed by force, as occurred in Hyderabad (Raghavan 2010, pp. 65–100). Others acceded to Pakistan or India. Similarly, as we saw in Chapter 4, China's expansion westwards to Ladakh and Aksai Chin in the 1950s created

substantial border tensions with India. There was a shadow thrown over Nepal, Sikkim and Bhutan by the Chinese annexation as well, with the possibility raised of the region's newly independent states taking aggressive action. While Ladakh was seen as unequipped for Independence, Nehru viewed Sikkim, Nepal and Bhutan as separate cases, more distinct from India, but was unsure about Sikkim's ability to function internationally.

In order to understand the borders in the region, and how they related to the region's communities and ecologies, it is necessary to understand the history of state-making between Sikkim, Bhutan and Nepal, Tibet, India and China. Although this region of the Himalaya was a patchwork of small kingdoms continually being influenced by the rise and fall of outside powers, I will focus primarily on the sovereign and semi-sovereign claims of Sikkim, Nepal and Bhutan. Small Buddhist kingdoms Sikkim and Bhutan, and territories with close ties to Lhasa, were conceivably within the orbit of China. China's claim to Tawang today still relates to the monastery there sending tithes to Lhasa historically. Similarly, Nepal, an independent Hindu-majority kingdom that was never colonised by the British, could conceivably have been a princely state of the Raj. However, its different ties to the Raj and higher degree of autonomy ensured that it was given an independent status at the moment of decolonization.

This process of state-making across the Himalaya offered some opportunities for borderland peoples. As Guyot-Réchard (2019, pp. 1–12) put it, this offered the chance for borderland peoples to exercise a form of agency that does not fit into the traditional IR framework of state-based agency. Prior to 1962, India and China's approach to the region 'gave local people a measure of choice, of agency', because they could compare the two options presented and choose between them. This dynamic ended in 1962 with the India–China border war. While Nepal, Bhutan and Sikkim similarly sought, and in some cases found, their sovereign independence. Today, these three polities have curious and entangled political lives. Through this process, though, we see some examples of functional, non-Westphalian international governance, alongside the militarisation of borders and greenwashing.

I will begin with the largest territory—Nepal. The geopolitics of Nepal, nestled between far larger neighbours India and China, have long been shaped by its in-betweenness (Chaturvedi and Malone 2012, pp. 287–312). This is not just tied to its identity, but very much to its topography. Nepal has dealt with this by seeking to balance its relationship with both

states, while always trying to maintain its distinct identity (Bhatnagar and Ahmed 2021, pp. 60–79). Consequently, Nepal has sternly resisted excessive integration with India throughout its sovereign life. Although never directly colonised, it was very much shaped by colonisation and the colonial period. Indeed, Nepal's relationship with India is still shaped by colonial ideas, particularly Raj frontier defence policies. The foundational 1950 *India-Nepal Treaty of Peace and Friendship* has allowed for close trade, cultural and people-to-people links. The plains border of Nepal with India is easily traversable. The high peaks of the Nepal-Tibet border, however, including *Chomolungma*, are far more difficult to traverse. This has led some to comment that Nepal is not just land-locked, but India-locked. This is an over-statement. There have been long-running historic trade links between Nepal and Tibet. The communities of highland Nepal are more oriented towards Tibet than they are India and have long-running historic trading and cultural connections with Tibet. Nepal's borders with Sikkim, Uttarakhand to the east and west include high peaks and foothills. Its borders to the south with Bihar and Uttar Pradesh are on the plains of India. To the North, its borders are largely drawn along the ridgeline of the high Himalayas, taking in peaks and high mountain passes to Tibet. Its borders with India have often been the subject of political wrangling and tensions, with some contested territories, and border commissions operating since independence (Bhatnagar and Ahmed 2021).

Nepal's reliance on India for trade and port access has helped to produce a degree of resentment towards India among its population. This is particularly the case when India has blockaded Nepal to assert its dominance and to ensure Nepal does not get too close to China. The opening up of new trade routes through Tibet is particularly important to Nepal's strategic elites to decrease its reliance on India. Nepal's pro-China Prime Minister Oli has tried to break Nepal's reliance on India by balancing its relationship with China. In particular, high-speed rail connections between Nepal, Tibet and the plains of China, might open up new routes for Nepal-China connections. Existing trade routes through Tibet are open and have generally been so. They have, however, been slow and hard to traverse at any great volume. These projects, under the banner of the BRI, have accelerated considerably since India's 2015 blockade on Nepal (Murton and Lord 2020).

Foundational to India's approach to Nepal is the idea of a buffer state, and the idea of Himalaya as a barrier. This is particularly tethered to the

Himalayan environment. In a wide-ranging foreign policy speech in 1950, around the time of the signing of the India–Nepal friendship Treaty, Nehru reiterated the belief that the Himalaya was the 'natural' frontier between India and China. He commented that India had taken good and bad things from the British, but that India's friendship with Nepal was a benefit. He stated that 'Even a child knows that one cannot go to Nepal without passing through India'. One can, of course, go to Nepal from Tibet as well, and it was normal to do so for many communities at the time he was speaking. He then noted that:

> apart from our sympathetic interest in Nepal, we are also interested in the security of our own country. From time immemorial, the Himalayas have provided us with a magnificent frontier. Of course, they are no longer as impassable as they used to be, but they are still fairly effective. We cannot allow that barrier to be penetrated because it is also the principal barrier to India. (Nehru 1949a, p. 436)

Here, Nepal's role as a buffer state is constructed explicitly through the colonial narrative of the Himalaya as offering natural protection to India. Presciently, he noted that that barrier was imperfect due to technological improvements. This is an early foreshadowing of the infrastructural geopolitics between India and China that play out in third countries Nepal and Bhutan.

Given the diversity of the Himalaya discussed in Chapter 3, it should not be surprising that the Nepali language and Nepali people are dispersed across the Eastern Himalaya, which, as we will see, has contributed to tensions around the region over majority-minority politics (Davis et al. 2021, pp. 10–35). Similarly, within Nepal, there are 122 national languages recognised, reflecting the human diversity of its valleys.[1] This is particularly the case in Sikkim and Bhutan, where Nepali migrants have been viewed with scepticism and outright hostility by Buddhist monarchs and political elites. In this sense, the construction of the Westphalian state systems across the Himalaya has profoundly shaped the politics of identity and belonging.

Elsewhere, political debates about the origins of South Asian religions have been imbued with geopolitical meanings. Modi's diplomacy

[1] Although these languages are recognised as national languages, this does not necessarily imply high levels of state support. See: Davis et al. (2021, pp. 26–29).

with Nepal has often focused on pilgrimage routes between Hindu and Buddhist sites, emphasising cultural ties (Bhatnagar and Ahmed 2021). Indian strategic elites tend to see religion as a useful cultural tool to tie the two countries together. However, the precise wording of these types of statements has led to conflict. In mid-2020, India's External Affairs Minister Subramaniam Jaishankhar commented that Siddhartha Gautama was 'one of the greatest Indians of all time'. The Indian MEA had to retract the assertion that the Buddha was born in India, or 'Indian' after complaints from Nepali counterparts. The Ministry of External Affairs of Nepal responded that: 'It is a well-established and undeniable fact proven by historical and archaeological evidence that Gautama Buddha was born in Lumbini, Nepal. Lumbini, the birthplace of Buddha and the fountain of Buddhism, is one of the UNESCO world heritage sites' (Bhattacherjee 2020).

This cultural diplomacy, though it is based on friendly narratives and may genuinely tie India, China and Nepal together, is still ultimately also contested. China has also sought to claim itself as the true heir to Buddhist philosophy and culture. Indeed, China, with its high Buddhist population, has recently invested 3 billion dollars in Lumbini, to turn it into a major pilgrimage site (Al Jazeera 2011). This includes the construction of road and rail connections, an airport, hotels, temples and a university. In this sense, these cultural connections are a vector for geopolitical and geocultural competition, as well as tying the two countries together (Winter 2019).

Bhutan: Cultural Distinctiveness Between India and China

Bhutan, like Nepal, was able to negotiate its borders and sovereignty on better terms with the process of decolonization, but still was positioned within the colonial narratives that underpin the Himalaya's contemporary geopolitics. Bhutan's treaty with the British gave them full domestic control and recognised them as a separate entity to colonial India. However, the Raj had control of Bhutan's foreign affairs. Bhutan became a protectorate of the British Raj under the Treaty of Punakha in 1910, falling under British Suzerainty following China's making claims to Tibet and Bhutan (Hang et al. 2019, p. 445). Nepal was more obviously recognised by these treaties as an independent country. Bhutan, however, has largely stayed within India's orbit, and India has maintained most of the

colonial-era treaties with the Kingdom (Mitra and Thaliyakkatil 2018, pp. 240–260). Nehru saw Sikkim and Bhutan, unlike Nepal, as being 'independent under the protection of India'.

As with Nepal, Bhutan's lowlands border with India is permeable and with considerable people-to-people interactions, while its border with Tibet is drawn along the high peaks, and harder to traverse. Bhutan's foreign policy has mostly been thought of as balancing itself between India and China, and particularly relying on India for its security. Bhutan has not come in for a great deal of attention from foreign policy scholars. In 1949, Bhutan and India agreed to a ten-point treaty which effectively maintained the colonial relationship. The treaty contained some colonial language, however, relating to India giving 'guidance' to Bhutan. In 2007, the Indo-Bhutan Friendship Treaty was edited, to remove this kind of language. Aside from balancing these relationships, Bhutan has also made a considerable effort to maintain its sovereign distinctiveness, which is based on its culture. For example, the term Druk Gyalpo was used in the treaty, rather than Maharaja, which would imply the ruler of an Indian princely state (Phuntsho 2013, p. 518).

As we have seen in previous chapters, border conflicts, and questions of cooperation and conflict tend to be the focus of this region in IR scholarship. The Doklam standoff of 2017 has perhaps garnered the most IR analysis of the region in recent years. The region of Doklam has been acknowledged by Bhutan and China as a disputed territory. It is nestled between Sikkim, the Chumbi valley in Tibet and Paro in Bhutan. Remote sensing images suggest that several dirt roads across the Doklam plateau are connected to the Chinese highway system. The consensus in this literature is that China is the aggressor in the area, and India's work is primarily defensive. The example of Doklam has generally been taken as a step towards the escalation of the India–China rivalry (Ganguly and Scobell 2018, pp. 177–190; Ratha 2020, pp. 196–215). The literature on Doklam is largely realist in nature, examining India and China's tensions over the region (Kaura 2020, pp. 501–518). For example, Dalbir Ahlawat and Lindsay Hughes (2018, pp. 613–625) have argued that China and India followed a mix of offensive realism and defensive realism, arguing that both states had adopted realist strategic thinking with their own national characteristics. The argument is theoretically incoherent, as these terms denote theories of how international politics functions, not military tactics. Chao Xie (2019, pp. 172–189) has examined the possibilities for cooperation between India and China after the standoff, drawing on theories of India and China as status-seeking states.

Bhutan does, however, have an important form of agency within this conflict, which has received some scholarly attention. Writing from a historical and postcolonial geopolitical perspective, Nitasha Kaul (2021a, pp. 317–336) argues the Bhutan's 'inbetweenness' has been constructed historically through colonial processes, in ways that create the idea that it is 'naturally' oriented southwards. This, though, was not the case for the highland communities of Bhutan, who were more oriented towards their highland counterparts in Tibet. As with Nepal, the notion of Bhutan and Nepal as being oriented southward neglects the centuries of connections between upland Himalayan peoples. It does so at least in part so as to deny the connections between Nepali and Bhutanese upland communities' connections to Lhasa and with it Tibet. This negates any claim the Chinese might have to more territory, but also erases important histories of connection that are erased through geopolitical discourses.

The idea that the Himalaya are a natural boundary between India and China here has played an important role in constructing the geopolitics of the Eastern Himalaya. This is a colonial construction—a way of thinking about geopolitics that is still very much alive today and imbibed by the region's states. The high peaks that form Bhutan's border with China were seen as 'impenetrable', and Bhutan's construction as a small nation 'high up in the Himalaya' has a discursive and environmental effect of orienting the country southward (Kaul 2021a, p. 326). The British, in surveying Bhutan, refused to recognise Bhutan's pre-existing trading links, including across the high passes between it, Tibet and Nepal (Kaul 2021a, p. 326). Kaul argues that colonial interactions between the British and Bhutan oriented the Bhutanese economy southward. This closed off historical trade links. By the mid-twentieth century, these trade links were fully shut off with the growing India–China hostility.

Despite the centrality of India–China tensions in Bhutanese foreign policy, the state does exercise its own agency in this relationship, and produces its own foreign policy narratives. The Doklam standoff of 2017 was an early signal of increasing India–China tensions in the Himalaya. It demonstrates both the difficulties that Bhutan finds itself in, and also its ability to maintain an independent stance (Kaul 2022, pp. 297–337). While Bhutan relies on India for its defence, it also has to continually differentiate itself from India through its sense of cultural difference from India and the princely states. The Doklam standoff has generally been presented as an India–China issue, even by leaders like Trump and Modi, both of whom discussed the standoff on these terms (Chawla 2019).

However, Bhutan had its own narrative of the standoff, which differed from India and China's approach (Mitra and Thaliyakkattil 2018).

China claimed that India crossed into Chinese territory to obstruct road construction on Beijing-administered land, and that the disputed territory of Doklam, which was the subject of a peaceful negotiation between China and Bhutan. India conceded that it had sought to stop road construction, but accused China of seeking to unilaterally determine the trilateral border dispute outside of diplomatic processes. It sees the construction as a national security threat due to its proximity to the Siliguri corridor that connects 'mainland' India to Assam and the Northeast. Bhutan simply contends that China had violated written agreements on the border issues, and has reiterated its claim to the territory, thereby subtly denying India a role in the dispute within its territory (Mitra and Thaliyakkattil 2018, p. 243). This contest demonstrates the awkwardness of Bhutan's position—relying on India for its protection, but not wanting to be seen as an Indian protectorate. Ultimately, both India and China's narratives undermined Bhutanese sovereignty during the standoff.

Bhutan's role in the international system, and its cultural distinctiveness, is also constructed through perceptions of it as mysterious and timeless. When we look at its policy of Gross National Happiness (GNH), discussed further below, it becomes clear also that Bhutanese policy-makers have used this colonial framing, because it is the basis of Bhutan's sovereignty. In a context where both major powers tend to dismiss or marginalise Bhutanese sovereignty, this is a serious issue. As Kaul put it, based on an analysis of Indian and Western travelogues, 'the 'archive' of outsider knowledge on Bhutan from travel narratives systematically and predominantly constructed it as a timeless place with obscure origins' (Kaul 2021b, p. 634). This narrative is a key element of Bhutan's contemporary foreign relations, and it maintains and justifies Bhutan's international identity.

Sikkim: Independence and Annexation

The example of Sikkim joining India was particularly concerning to Bhutan, and to a lesser extent, Nepal. The Kingdom of Sikkim was established by the Namgyal dynasty in 1642. Like its neighbour Bhutan,

Sikkim was not fully incorporated into the British Raj.[2] Sikkim also had a distinct cultural identity, strongly entrenched Buddhist religious practices and a Buddhist King (the Chogyal). Importantly, unlike Bhutan, by 1947, a majority of Sikkim's population identified as 'Nepali', and the area had a slight Hindu majority (Sinha 2019, pp. 1–13; Chettri 2017, pp. 34–38). However, when British control of the subcontinent ended in 1947, Sikkim residents voted against joining the Union of India. Prime Minister Nehru granted Sikkim a special protectorate status, in which India would be responsible for its defence and diplomacy, but a constitutional monarchy would continue to be responsible for domestic affairs. Again, Nehru's approach to these border areas is often written off as an example of his 'idealism' by Indian foreign policy elites and scholars, because it represented a romantic anachronism, rather than cold-hearted geopolitics (Ahlawat and Hughes 2018, p. 614).

Following the establishment of the Union of India, Chogyal Palden Thondup Namgyal was determined to maintain Sikkim's international identity, and would often reference his desire to follow the Bhutanese model—a small, fully independent Himalayan Kingdom (Duff 2015). He was broadly seen in Sikkim as representing Sikkim's Bhutia and Lepcha populations (Sinha 2019, p. 81). A predominantly-Nepali political movement in Sikkim, though, sought to unseat the Chogyal, and came to support integration into India to achieve this aim.

In 1949, Nehru became concerned about Sikkim's ability to function as an independent state. He was still prepared to accept that the people of Sikkim were hesitant to join India, and did not force the matter. He wrote in a letter to premiers of the provinces that 'The future of Sikkim is tied up completely with India and we can accept no other basis for it.… But, unwisely, the people there hesitate to accede' (Nehru 1949a, p. 277). Nehru was concerned that Sikkim might not be viable and that without Indian assistance 'the economic structure of Sikkim would collapse' (Nehru 1949b, p. 290).

Under the Chogyal, Sikkim's ethnic and political divisions became increasingly tense. Sikkim's non-Buddhist communities felt marginalised by the electoral structure and the rule of a Buddhist monarch (Duff 2015). The Sikkim National Congress, a multi-ethnic political party, formed in 1962, pressed for integration into India. India's border conflict

[2] Sikkim was not colonised directly, but the Chogyal's governance was supervised by a British political officer. See: Duff (2015).

with China in 1962 in Ladakh and Arunachal Pradesh made Indian strategic elites nervous about Sikkim's notional independence. Indian foreign policy elites began to perceive Sikkim's status as an impracticality that needed to be corrected (Datta-Ray 2013, p. 328). The Chogyal sought to maintain Sikkim's international identity, primarily through trips to Delhi to negotiate with Nehru and his successors, as well as to Nepal and Bhutan (Duff 2015). Yet the kingdom's status was tenuous. After the 1962 India–China border war, the Nehruvian style of anticolonialism became less prominent in Indian foreign policy, with previously disputed borders becoming increasingly securitised. Under Indira Gandhi, national security and self-reliance took on a prominent position within domestic politics, and with this, she rearticulated Indian foreign policy. As Sinderpal Singh (2014, p. 61) argued, Indira framed 'the discourse of anti-imperialism as a demonstration of the will and ability to defend India's territorial frontiers'. As Gandhi (quoted in Singh 2014, p. 61) put it with regards to Pakistan and the Kashmir issue, 'India will have to take whatever steps are necessary for the protection of the security of our borders and for the maintenance of our integrity and stability'. This represents the hardening of India's Himalayan borders, in part in response to China's own toughening stance in Tibet.

Elections held in April 1973 were disastrous for the Sikkimese Monarchy. The pro-India Sikkim National Congress won 31 of the 32 seats in the chamber. Protests and counter-protests threatened to spill into violence, creating greater pretext for India's intervention. Under the guidance of the new Legislative assembly, Sikkim became an associate state of India in 1974. In the following year, a referendum on becoming a formal state within India took place. Abolishing the monarchy received 59,637 votes. Just 1,496 votes were counted against, a result of 97.55 per cent in favour of abolishing the Monarchy. Journalist Sunanda K. Datta Ray (2013, p. 310), who was working in Sikkim at the time, termed the action an 'annexation', arguing that Sikkim's incorporation was not done via legitimate democratic means.

The Dewan of Sikkim, Das, reflecting the official Indian position, justified the intervention. First, he argued that there was an eruption of protest against the monarchy. Second, he noted that Nepali immigrants had become a majority, meaning that '[Sikkim] had no concept of

a nation-state' (Das 1983, p. 77). Finally, he argued that Sikkim is 'one of Delhi's most strategic and sensitive border areas' (Das 1983, p. 77).[3]

The event is sometimes taken today as evidence of the hard-headed Gandhi replacing Nehruvian romanticism (Verghese 1975). India had done so with the justification of ending ethnic tensions and spreading democracy yet had played some role in intensifying the divisions in Sikkimese society. This all took place amidst a backdrop of geopolitical tensions, which securitised India's borders. The UK Foreign and Commonwealth Office noted that the positioning of Sikkim as a protectorate of independent India was an anomaly brought about by Nehru's personal willingness to listen to the Chogyal (Duff 2015). A press report from Hong Kong, however, noted 'India's expansionist ambition to annex Sikkim'. The PRC also noted that this was evidence of India's 'interference in the internal affairs of another state' (Anon 1974), and refused to recognise India's holding of Sikkim until 2003.

The example of Sikkim's incorporation into India has been important in setting the geopolitical tensions and has been referenced in Bhutan's dealings with India and with Nepali migration:

> To give the historical background, Sikkim which was immediately east of Nepal strongly opposed induction of Nepalese settlers. The British, however, forcibly brought Nepalese settlers into Sikkim for their own political reasons. In no time the Nepalese population increased through high birth rate and through regular immigration from Nepal and soon they formed 80% of the population. Today, as everyone is aware, Sikkim is governed by the Nepalese majority and the original Sikkimese people are a small minority in their own country. (National Assembly of Bhutan 2014)

Ultimately, we can only conclude that the creation of nation-states out of the patchwork of people and polities in the Eastern Himalaya has profoundly affected the region. The construction of Himalayan borders across high peaks in this case, alongside the construction of 'buffer states' has helped to solidify these geopolitical tensions. Nevertheless, Bhutan's sovereignty depends on its claim of cultural difference from Nepali and Indian peoples. This has led to concerns about migrants, with large numbers of Nepalis being evicted from the country through the 1990s.

[3] A recent book by a RAW official working in Gangtok at the time, presents the annexation principally as the 'dawn of democracy' in Sikkim. See: Sidhu (2018).

It has also led to the dominance of the Dzongkha language, as it is the language of the royal family in Bhutan. In Bhutan, *dzong* (fortresses) have historically been centres of learning and centres of military power, and are important historic sites (van Driem 1994, p. 88).

Bhutan's northern borders with Tibet were closed after an influx of migrants following intense repressions in the PRC and the flight of the Dalai Lama to India. This ended centuries of trade between Bhutan and Tibet. Sikkim's proximity to border disputes was a key part of India's justification for the annexation. This, similarly, cut off flows between the two countries. Moreover, suspicion about Nepali migrants in Bhutan led them to seek to evict its pre-existing population. The logic of bordering and cutting of historic flows and exchanges between communities had closed key passes between these regions. By closing off to the North, Bhutan became even more reliant on its southern partner, India. Since decolonization, it is accurate to argue that these states have been primarily oriented towards India. This is indeed partly due to their foothills and plains borders being far more traversable than the mountain passes connecting them to Tibet. Still, Himalayan peoples did traverse those passes with regularity for centuries, and it is a lowland construction of borders to assume that these places are 'naturally' oriented southwards. Rather, these connections have been cut off with the proliferation of lineal borders and their associated geopolitical entanglements. With India and China's rise in geopolitical power and their growing infrastructural prowess, this is now more rapidly transforming the region's cultures and ecologies.

Borders, Animals and More-than-human Ecologies

With the construction of these states and borders, the political geography of the Eastern Himalaya has become particularly constricted. There are important examples of borders dissecting forests and animal habitats. However, the region shows some examples of transboundary conservation that might point the way forward for the rest of the Himalaya. Although the high peaks of Himalayan borders have tended to be militarised and cut off, there are examples of transboundary conservation here which show to us that the imposition of the Westphalian states system is incomplete or disrupted.

Here, I first examine the challenges posed to yak herders by hard, militarised borders between Sikkim and Tibet, followed by two examples

of borderland environments that offer possible paths forward for transboundary conservation: the area around Manas National Park between Assam and Bhutan; and efforts to create a transboundary conservation zone around Mt Kangchenjunga, between Sikkim, China, Nepal and Bhutan. Some of the less militarised borders have enabled wildlife corridors to be established. Tiger corridors between India and Nepal have been successful in doubling Nepal's tiger population in recent years. The region also has numerous national parks and elephants also now regularly move between Nepal and India. However, human-animal conflict has also been caused by increases in potentially dangerous animals. Habitat disturbance is the most common cause of such conflict across the Himalaya (Sharma et al. 2021, p. 11582). The creation of national parks, however, to protect animals, has sometimes displaced local communities. The high peaks of the region have two world heritage sites—Kangchenjunga and *Chomolungma*. Its foothills have two further heritage sites: Manas (India) and Kaziranga national parks. Although these mountain sites are fundamentally transboundary, both of these have been registered solely by one state.

While many difficulties in the region have been caused by the imposition of territorially bounded states on the Himalaya, this shows us some important ways in which the imposition of a Westphalian logic of borders has not been fully imposed, or has been resisted. It is here that ICIMOD is a particularly important and effective international actor: circulating knowledge of conservation efforts across contested borders, and able to produce some forms of transboundary conservation to mitigate the environmental effects of state-making in the Eastern Himalaya.

Transboundary Conservation Across Altitudes: Yaks, Mountains and Rivers

Yaks are central to agriculture on the Tibetan plateau and across the Himalaya, and historically herders have been able to move through mountain passes in the region without substantial difficulty. This form of traditional farming, however, is threatened by the creation of borders, localised climate change and generational changes across the region. Yak herding takes numerous forms, including sedentary and nomadic grazing practices. The animals are particularly important to the region due to their ability to survive at high altitude, with intense cold, and to live on crops with a short grazing period. Yak pastoralism is concentrated in Qinghai in

the Tibetan plateau in China, which is home to 90 per cent of the world's yak. Outside of this area, though, a migratory form of yak pastoralism is practised across high mountains areas, across the high altitude sweep of the Himalaya from Pakistan through to the far Eastern Himalaya and Northern Myanmar (Ning et al. 2016, p. 4).

It is this traditional form of pastoralism which has been particularly challenged by climate change and hard borders, with limits placed on movement across the numerous contested Himalayan regions. Many yak herders practice transhumance, moving from lowland areas in winter, and highlands in summer, to keep their animals fed all year. This practice has become far more difficult in recent years. Amidst an unusually harsh winter with heavy snowfalls in 2019, 300 yaks died in North Sikkim due to lack of food (*Agence France-Presse* 2019).

Efforts at managing yaks across the region have largely been run through ICIMOD, which has arranged an International Conference on Yaks since 1997. The genetic diversity of yaks has been threatened by the inability of herders to move freely as they have for centuries. This has been very keenly felt in Sikkim, where yak herders have been severely impacted by borders limiting the genetic diversity of their animals (Ning et al. 2016). It has also been felt in Nepal, Bhutan and Tibet, due to the number of international borders, some of which are completely shut, constricting these territories. In order to deal with this, ICIMOD has arranged and negotiated the moving around of breeding bulls across Sikkim, Nepal and Bhutan. A breeding program to share genetic material, assisting in maintaining the genetic diversity of the yaks between herders who can no longer easily move between borders. The political process here is somewhat arduous, with an intergovernmental organisation enabling the knowledge sharing necessary, convincing state actors to sign off on the sharing of animals, and eventually being allowed to cross the international borders. This led to the Bhutanese government agreeing to share four-year-old breeding male yaks with Nepal and Sikkim to improve the genetic diversity of herding (Manandhar 2022).

This is an example of international borders in the region disrupting traditional practices. While ICIMOD has been able to produce some workarounds, this solution requires buy-in from state actors, local communities and administrations and coordination from an international organisation. Even then, it is only able to mitigate the problems caused by cutting off the region's transboundary flows.

Elsewhere in this region, particularly at lower altitudes, conservation efforts have occasionally been able to transcend borders, through transboundary conservation agreements and through enabling of more open border practices. The border between Assam and Bhutan, for example, is relatively fluid with movement allowed between India and Bhutan. This is despite the fact that the region has been militarised on the Indian side, due to the long-running political violence in the region over ethnonationalist and religious conflicts. Here, conservation projects have sat alongside political violence and militarisation, but still, perhaps paradoxically, some decentralised transboundary environmental practices have remained.

A key example here is transboundary conservation on the Manas River basin, between Bodoland in India and southern Bhutan. The Manas River and its tributaries flow between Bhutan and India through Manas National Park (India) and Royal Manas National Park (Bhutan). In India, the site became a national park and tiger reserve in 1973, and a world heritage site in 1985. It had previously been a game sanctuary under the colonial regime (Saikia 2009, pp. 113–129). Conservation in nearby Kaziranga, though successful at protecting species, has been militarised and contributed to the dispossession of local people, and has been seen as an example of fortress conservation (Dutta 2020, pp. 1–10).

The UNESCO declaration of Manas National Park as a world heritage area was based on its scenic beauty and its high volume of rare and endangered species (UNESCO n.d.). Despite being bordered by the Royal Manas National Park in Bhutan, the world heritage site does not cover the Bhutanese side. However, UNESCO does note that transboundary cooperation is 'important to the effectiveness of its protection', and suggests that the creation of a 'transboundary world heritage property across the Indian and Bhutanese Manas Tiger Conservation Landscape would enable greater coordination and cooperation' (UNESCO 2011).

Although a shared UNESCO declaration seems unlikely in the short term, the connections between the two parks are institutionalised. There have been annual coordination meetings between the two national parks since the mid-2000s, and there have been proposals to create a single, transboundary conservation area between the two states: the Transboundary Manas Conservation Area (TraMCA). This has been supported by the World Wildlife Fund (WWF), which has worked with both the Indian and Bhutanese forest departments to coordinate transboundary conservation efforts. This has facilitated shared reports on biodiversity

and tiger conservation with input from both states (WWF Asia 2015). This has also had support from the Bodoland Territorial Council (Dutta 2020, p. 5).

The Manas borderlands have seen some greater transboundary conservation efforts, and more flows of people and animals between India and Bhutan. India and Bhutan have open borders with one another, and several border posts on the lowlands, making transboundary connections far easier. Moreover, as India underwrites Bhutan's security, the Indian state does not see this border as particularly threatening. This is despite the history of violent conflict in the region. The violence has certainly not aided conservation. The site was placed on the endangered list of world heritage sites in 1992, but was taken off it in 2011. The park was damaged by unrest in the region, as it became a key post for the Bodo people's movement. The park is within Bodoland, and it has been a staging post for movements demanding greater autonomy or statehood. The park was closed to the public for seven years as a result. Some 90 per cent of its one-horned rhinoceros were killed during this period (Dutta 2020, p. 5). Although the insurgency has quietened down in recent years, caches of weapons are still occasionally found hidden in the national park (Naqvi 2019).

Elsewhere, there are even more decentralised forms of conservation and transboundary cooperation. Anwesha Dutta and Shailendra Yashwant have documented an Indigenous system of water management and irrigation, known as *Jamfwi*, that operates in India–Bhutan borderland at Saralpara (Dutta and Yashwant 2021). Here, flood mitigation is managed not through the connection between state actors, or their conservation departments, but by local people. Ordinarily, an international management system would route diplomatic communications about a change in waterflow from a village in Bhutan, say Sarpang, to Thimpu, to Delhi, then to a regional capital (Guwahati), and finally to the affected Indian village which may be just a few kilometres from the source of the information. By the time the message has travelled so far, it may well be too late for downstream villagers to deal with. As Dutta and Yashwant document, in this region, flood warnings and water data are shared far more quickly through WhatsApp groups that operate on the Bhutanese cell network, which works on the Indian side of the border. As they put it, the example shows that 'people-to-people networks in the borderlands can play an important role in the community management of common

pool resources, thereby avoiding ineffective official diplomatic channels' (Dutta and Yashwant 2021, p. 197).

In this region at least, then, informal environmental management practices still sometimes transcend the logic of state borders.

The Kangchenjunga Transboundary Landscape

Returning to the higher-altitude sections of the region, we find more efforts to conserve the region which do not cohere to state borders. In particular, Kangchenjunga, the third highest mountain in the world that straddles the Nepal-Sikkim borders has seen successful attempts at building transboundary conservation. Its broader ecosystem, though, including its foothills, covers a far larger area and is governed across China, Nepal, India and Bhutan. The need for transboundary conservation architecture was recognised by ICIMOD, through the Kangchenjunga Landscape Conservation and Development Initiative (KLCDI), which has sought over several decades to create cooperation over the transboundary landscape. These efforts have been able to successfully produce transboundary cooperation between administrations, including the creation of wildlife corridors, which take into account the needs of local communities. This is made possible partly due to regional administrations being very friendly to conservation efforts. The mountain is sacred to local communities, particularly the Bhutia and Lepcha communities, who see it is both a god and the abode of the gods. These populations have long sought to protect it from mountaineers and mass tourism, making conservation easier. The first ascent on Kangchenjunga was made from the Nepali side in 1955. Sikkim banned the climbing of Kangchenjunga in 2000, following outrage from local communities. The Sikkim-side ascent has only been made three times. Mountaineers have long sought to reach the summit and advocated opening new trekking routes. The mountain and its ecosystem are also part of the India–China border, though this section is not formally disputed. The tri-border area has closed borders with considerable military activity, and the inability of some land animals to transit the border region has disrupted ecological flows around the region.

The Indian side of the mountain, and its national park, was granted World Heritage Status in 2016 on the combined basis of its natural beauty, its biodiversity, and its cultural significance, as being 'integrated with Buddhist beliefs and [constituting] the basis for Sikkimese identity'

(UNESCO 2016). This mixed definition connects the idea of 'natural beauty' with associated human cultural practices. It is, however, not a transboundary heritage site. UNESCO notes that 'The functional integrity of this system would also profit from opportunities to engage with neighbouring countries such as Nepal, China and Bhutan which share the wider ecosystem' (UNESCO 2016). The UNESCO system, though assisting in some ways, has not yet been used as a vehicle for transboundary conservation in the region. There have been bolder suggestions that Kangchenjunga be turned into one transboundary national park (Chettri and Sharma 2006). However, doing so would risk undercutting the work done with local communities by the ICIMOD creation of the KLCDI.

ICIMOD's coordination of conservation efforts in Kangchenjunga has drawn on what they term a 'transboundary landscape approach', which sees effective conservation as needing to connect social and ecological factors, as working with local communities as well as regional authorities, to produce conservation across a transboundary ecosystem (Gurung et al. 2019, pp. 1–15). This still partially draws a distinction between humans and nature, though it is far more subtle than seen in UNESCO discourse or state development discourse. For example, Karma Phuntsho and Nakul Chettri (2008, p. 159) narrate the frame taken to the KLCDI by stating that:

> Humans have co-existed with nature and shaped the earth's landscape for centuries… The rise in consumptive use of natural resources, however, brought about an undesirable alteration in the state of nature and the earth's landscapes.

This risks marginalising the worldviews and epistemologies of some of the Indigenous communities that are engaged with through this process. Humans co-existing with nature is a subtly different construction than humans as part of nature. Nevertheless, this has been a productive example of transboundary cooperation in the region, which is both rare, and very difficult to accomplish.

The process began in 1997, and consultations at the national level took place in 2003 between India, Bhutan and Nepal. The plan was agreed to by national governments in 2017. The threats identified to the area were fragmentation of its landscape, population pressures, infrastructure development and demand for the region's natural resources. As part of this,

the lack of information sharing between state actors was also identified as a challenge to overcome. The project sought to sustainably manage the ecosystem across borders, while also strengthening local communities and enabling their economic development.

It is worth considering the process behind the creation of this system. A 2007 study found that Kangchenjunga had numerous but fragmented environmental protected areas. As these were fragmented, corridors for animal flows between protected areas were limited (Chettri et al. 2007, pp. 211–214). Fourteen pre-existing protected areas within the ecosystem, one in Nepal, seven in Sikkim, five in Darjeeling and one in Bhutan, totalling 6032 square kilometres were identified as needing to be linked (Chettri et al. 2008, p. 23). Two of these, the largest: Kangchenjunga Conservation Area in Nepal and the Khangchendzonga National Park in Sikkim, are considered 'globally significant' (Gurung et al. 2019, p. 5). Here, ICIMOD was again a key actor in creating transboundary conservation practices. They describe a process of planning wildlife corridors 'resulting from a village-level participatory process', which was used to determine how these connect disparate, fragmented protected areas, without damaging or dispossessing local communities. (Chettri et al. 2007, p. 213).

The Eastern Himalaya is extremely constricted due to the multitude of borders and conflicts, and demands for its resources and growing populations. This includes militarisation and infrastructure development. Its dense forests, high peaks, abundant wildlife and numerous communities, all live alongside borders and their associated intercommunal and international conflicts. Much of this has been wrought through the construction of state actors and borders across the region. Much of the transboundary management that exists has been negotiated by a complex network of international organisations—ICIMOD and UNESCO - that sits above the level of the state—sharing knowledge and monitoring environmental outcomes, and seeking to coordinate conservation efforts. In one sense, the level of success, particularly in Kangchenjunga, is remarkable. At the same time, the network of international organisations establishing ecosystems governance to mitigate the damage done to the landscape by the creation of states themselves seems bizarre when we think of these ecosystems as having governed themselves for centuries. The wild areas of the region, dense forests, jungles and unruly rivers, played a role in turning this region into the borderland that it has become for today's contemporary geopolitics. It has taken several decades of work from an

intergovernmental organisation to establish transboundary conservation corridors across this mountainous terrain.

Green(wash)ing the Himalaya? Conservation, Dams and Borders

Despite the mixed record of conservation in the Eastern Himalayan foothills and high peaks, environmental narratives about the region have become powerful. Political bodies in the region, be it local government, a domestic state like Sikkim or an international state like Bhutan, have all come to advertise themselves as fundamentally green. Himalayan foothills of this region are also covered in decarbonising forests, its rivers are sources of green energy, and much of its agriculture has gone green through organic farming. Single-use plastics have also been banned in Sikkim. Here, I examine the environmental narratives promoted politically across the foothills of the region, which seek to brand these different polities as particularly green, for their forests, their beauty, and their ways of living. The results, though, are mixed. The idea that the construction of dams is a source of 'green' energy, with Sikkim's Teesta River particularly subjected to damming as part of India's green energy pledges, is particularly damaging. In Bhutan, environmental protection has been embedded in the constitution. In Eastern Nepal, similar green narratives have emerged on a smaller scale. Mona Chettri, for example, documents the impact of Ilam in Eastern Nepal declaring itself the 'Green City' of Nepal (Chettri 2019, pp. 971–987). In Ilam, the green narrative literally included painting houses and businesses in the main bazaar green (Chettri 2019). The municipality has had some considerable success in having its citizens adopt greener practices on a small scale (Chettri 2019). As Chettri put it, the replicability of this would be limited if the measures did not create 'a strong sense of local ownership and engagement' (Chettri 2019, p. 987). These narratives, then, do seek shape community behaviours. At the same time, these narratives speak to the tourist experience, crafting a narrative for consumption internally, and then broadcasting it outwards, with tourism seen as a path to sustainable development.

Bhutan's Gross National Happiness Model

Bhutan has been extremely successful in presenting and promoting itself internationally as a pristine environment. Here, the construction of Bhutan as a mysterious and timeless place has arguably played into its policy narratives. Still, Bhutan has also become known as 'carbon negative'—its forest suck in more carbon than the rest of the country emits. This is at least partly due to the constitutional status of the country's forests, which prevents deforestation.

A key element of this has been its GNH standard, which pursues a holistic version of development that includes cultural well-being and environmental protections. GNH was introduced as a policy in 1998 by Bhutan's fourth King Jigme Singye Wangchuk, though precisely when the concept was imagined is unclear. The state narrative is that Jigme Wangchuck worked on the concept from the early 1970s, drawing on critiques of materialist development models focused solely on Gross Domestic Product (GNH Centre, no date given A). The GNH centre states that the concepts go back to Jigme Wangchuk's thought in the early 1970s, and even looks back to the 1962 legal code of Bhutan stating that if 'the government cannot create happiness for its people, then there is no purpose for government to exist'. This creates the sense that Bhutan has always focused on the happiness of its people, and makes the GNH model appear timeless. The official history states that: 'as a Buddhist nation, it is clear that the cultivation of compassion stemmed from this ancient wisdom. That the focus was not just the economic progress of Bhutan, but of a flourishing human society living in harmony with nature' (GNH centre n.d.). Some critics, though, have argued that GNH was primarily brought about as a national security tool, which coalesced at a time when Bhutanese elites felt they were losing their grip on power (Masaki and Tshering 2021, pp. 273–292). It also emerged following a period when Nepali migrants were removed from Bhutan, partly due to fears of cultural changes similar to those which happened in Sikkim in 1975. In the early 1990s, with concerns about Nepali migration and settlements in Southern Bhutan growing, some 90,000 refugees fled the state. Refugee camps were set up in Nepal. Some 58,500 refugees have been resettled in third countries (Pellegrini and Tasciotti 2014, pp. 103–109). The precise details of how this was carried out are unclear, due to domestic censorship and the difficulties faced entering Bhutan by foreign researchers at the time (Pellegrini and Tasciotti 2014).

In 2008, GNH was written into the constitution of Bhutan. This same document provides protections for Bhutan's forests, establishes birth right citizenship, and states that Buddhism is the cultural heritage of the state (Government of Bhutan 2008). The ideas behind GNH draw on Buddhist thought, Bhutanese identity and Buddhist ideas of the state. In particular, it draws on the idea of the 'just King' model, whose role it is to create the context in which their people can attain enlightenment and happiness (See 2022, p. 453). In this sense, GNH has become a source of legitimacy for the Monarchy. The concept has since been widely investigated, and there is a considerable body of scholarship investigating its impacts on Bhutan and its viability as a model of development more broadly. The GNH framework is based on four pillars, and nine domains of human happiness: living standards, education, health, environment, community vitality, time use, psychological well-being, good governance and cultural resilience (See 2022, p. 453). Its key pillars are: sustainable and equitable socio-economic development; environmental conservation, preservation and promotion of culture and, again, good governance. To be developed within this framework, all nine indicators must be met in some way. In this sense, sustainable practice is thoroughly built into Bhutanese governance, both through GNH and through the constitution. However, how these competing priorities play out is ultimately political, and there is considerable scope for these categories to be interpreted in different ways (Montes 2020, pp. 300–322).

As described by the GNH centre in Bhutan, environmental conservation is included because:

> in addition to providing critical services such as water and energy, the environment is believed to contribute to aesthetic and other stimulus that can be directly healing to people who enjoy vivid colors and light, untainted breeze and silence in nature's sound. (GNH Centre n.d.)

'Sustainable and equitable socio-economic development' does not so much refer to environment, as it does valuing the contribution of entire families and of leisure time. As part of this, Bhutan's tourism strategy has been high value, low yield, with high prices charged to keep tourist numbers limited. This has shifted somewhat to emphasise ecotourism as a key element of Bhutanese development (Montes 2020).

Bhutan's 2008 Constitution has numerous environmental rules as part of its guide for how the country should be run. The best known of these

states that: 'The Government shall ensure that, in order to conserve the country's natural resources and to prevent degradation of the ecosystem, a minimum of sixty percent of Bhutan's total land shall be maintained under forest cover for all time' (National Council of Bhutan 2008). The constitution also states that 'Parliament may enact environmental legislation to ensure sustainable use of natural resources and maintain intergenerational equity' (National Council of Bhutan 2008).

A good measure for testing Bhutan's commitment to balancing its GNH environmental targets with development is its approach to dam building. Bhutan has been far less aggressive in building dams than India and China. It has been driven in part by India's own demand for hydropower, and many of the dam projects within Bhutan have been funded by India as foreign aid. These aid projects are to be connected to India's power grid. Bhutan currently aims to produce 10,000–12,000 MW of hydropower.

Indo-Bhutanese cooperation on hydropower dates back to 1968, when the Bindu dam, with a very small capacity, came online. Since then, four projects within Bhutan have been completed. The Chukka (1988) and Kuricchu (2002) dams were completed under the same agreements. More recently the Tala (2007) and Mangdecchu (2019) dams have come online, with far higher capacity (Llamosas and Sovacool 2021). Bhutan is regularly the largest recipient of Indian foreign aid. For example, in the 2019–2020 budget, Bhutan was allocated 392.7 million in foreign aid, out of a 1.32 billion dollar aid budget (Borgen Project 2021). Aid to Bhutan peaked in 2015–2016. For much of the decade between 2010 and 2020, diplomacy and aid to Bhutan took up roughly half of India's aid budget (Mitra 2022). Modi spoke at the inauguration of the 720 MW run-of-river Mangdecchu project in 2019, stating that 'The two countries have together transformed the power of the rivers of Bhutan into not only electricity but mutual prosperity' (Modi 2019). The project was funded entirely through India, with 30 per cent of the funds being a gift, and 70 per cent as a loan. It sits on the Mangde Chu river near Trongsa just before the Jigme Singye Wangchuk National Park.

The dams in Bhutan have not been uncontroversial in downstream India, particularly in Assam. They have been the cause of protest and wrangling between sub-regional administrations. For example, in 2021, during flooding, the government of Assam complained about the simultaneous release of waters from neighbouring states and Bhutan into the Brahmaputra: 'Release of water from Doyang (Nagaland), Ranganadi

(Arunachal Pradesh) and dams in Bhutan [causing] large scale inundation in Assam, and the authorities concerned need to be told not to release water simultaneously' (Karmakar 2021). Assam being in between these various administrations, and often facing the most intense floods from the Brahmaputra, requires a greater level of coordination and cooperation that is fundamentally transboundary. In particular, Assam noted its concerns about Kaziranga National Park and Tiger Reserve. Here, then, the Indian central government's funding dams in Bhutan that are causing downstream environmental problems in Assam.

Dams in Bhutan are built and managed by the Druk Green Power Corporation. In an interview with *The Third Pole*, the head of Druk Green Power Corporation Chhewang Rinzin stated defended Bhutan's dam building as cautious and responsible, emphasising that the country focuses on run of the river dams and had paid off most of its loans to India already. He conceded, however, that:

> … it is a grave concern that global warming and climate change could impact hydrological flows in the rivers and this could subsequently impact the electricity generation and therefore the economic viability of investments made in hydropower projects. (Rinzin, quoted in Gyelmo 2018)

When asked if it was safe to have repeated dams on Himalayan rivers, he drew on examples from Europe and North America. As we will see in Chapter 6, such thinking has been damaging to Himalayan rivers for some time.

In this sense, GNH, in concert with the Bhutanese constitution, acts partly as a governmental structure for environmental protection, in a way that is effective and potentially replicable. However, in the form the Bhutanese model takes, it simultaneously produces and reproduces a Bhutanese cultural identity which supports its political elites and constructs the idea of the eternal unity of the Bhutanese people and state. This is written in a fashion which excludes migrant communities. At the same time, the strategy has meant balancing demands of economic development, and environmental protection, in a fashion which has contributed to the larger dams rush in the Himalaya. It also carves out an identity that supports the national security of the state. In this sense, while the Bhutanese model is appealing, and has some positive environmental effects, the narratives that this model draws on reiterate and

reaffirm the Bhutanese state as eternal. There is an anxiety at the heart of Bhutanese political life, that what happened to Sikkim might happen to Bhutan. Though not greenwashing per se, then, GNH is an imperfect answer to the difficult questions of environmental protections and inter-communal harmony in the Himalaya. It seeks to protect the security of the Bhutanese state and its elites, and their culture, at the same time as it seeks to protect the environment.

Green Sikkim, Organic Sikkim: Development 'Missions' and Ecology

Not dissimilar to Bhutan's efforts to promote itself as a particularly green, the Indian state of Sikkim has sought to pursue a green identity through its state-led 'missions' (McDuie-Ra and Chettri 2018, pp. 1471–1494). Three of these missions resonate in particular with environmental themes: 'Green Sikkim mission', 'Organic Sikkim mission' and 'Sikkim Tourism Mission'. As McDuie-Ra and Chettri note,

> the ability of the state to preserve Sikkim's mountain ecology while making astounding progress in human development — evident in dramatic reductions in poverty rates, allegedly universal sanitation, impressive electricity provision, and strong education indicators… is central to narratives of success repeated internally and projected externally. (McDuie-Ra and Chettri, p. 1472)

Moreover, these narratives are buttressed by the comparison of Sikkim's relative success in comparison to other, less restive border states in North-east India. With these missions and development outcomes, Sikkim has begun to brand itself as the greenest state in India. The best known of these outside the state, the 'Organic Sikkim's mission', dates back to 2003, when a resolution in the state assembly sought to convert all agricultural land to organic farming. The state progressively made it more difficult to get access to inorganic fertiliser, by closing suppliers and banning imports, and, by 2016, it announced that it had certified all farms in the state as organic (Meek and Anderson 2020, pp. 653–654). This has been a celebrated move internationally. The state was awarded the Future Policy Award from the United Nations Food and Agriculture Organisation (UNFAO) in 2018 (UNFAO 2018). However, the rapid shift to

organic farming has transformed the lives of farmers in the area, and transformed its agricultural production. In some cases, farm productivity has dropped, Sikkim's food supply has become more fragile and dependent on other states, and smaller farmers disadvantaged (Mishra et al. 2021, p. 11). This has been particularly difficult for villages, particularly subsistence farmers, and those cut off by landslides in Dzongu, who have seen agricultural yields drop due to their inability to use pesticides.

As part of the 'Green Sikkim mission', the state has also become the first in India to ban single-use plastics. The Green Sikkim mission states that it originates 'with the view to raising avenue plantation and beautification of all vacant and waste lands to further reinforce wide spread recognition of Sikkim being a Green State' (Sikkim Government Forest and Environment Department n.d.) The mission, supports afforestation and the planting of Indigenous plants. However, it also notes that 'Tourism development equally requires good roads along with the aesthetic cover to attract more tourists' (Sikkim Government Forest and Environment Department n.d.). In this sense, aesthetics are a key goal of the project, alongside afforestation and improving Sikkim's local environment. This even extends to choices of paint. Many buildings in Gangtok and other Sikkimese cities have been painted green—quite literal greenwashing.

The green branding of Himalayan foothills has also become crucial to Sikkim's tourism industry, with the narratives of relevance to those inside and outside the state alike. Green slogans with local and external meaning are scattered all over the state. While visiting the capital Gangtok in 2019, the city was covered in evidence of these slogans. The Sikkim tourism department used the slogan 'Sikkim: Where Nature Smiles'. Another read 'Green city, clean city, my dream city Gangtok'. The Gangtok Municipal Council posted the sign 'what's the point of your education, if you still throw garbage on the streets to be ultimately picked by an uneducated person!' Another advertisement, funded through the Swachh Bharat program of the Central Indian government,[4] features a Narendra Modi quote, stating 'Sikkim has already achieved the feat of living in harmony with nature'. This ties Sikkim's own green branding into the BJP government's own goals of cleaning up India's cities.

[4] On Swachh Bharat, see: Doron and Jeffrey (2018, pp. 6–8).

While this branding is likely effective inside and outside of the state, the extent to which Sikkim's environment is actually superior to the rest of India is very much in question. The Teesta River, for example, which originates in China and Sikkim and flows through West Bengal before joining the Brahmaputra in Bangladesh. It has been heavily dammed in Sikkim creating downstream problems in Bangladesh (Baten and Titumir 2016, pp. 13–27; McDuie-Ra and Chettri 2020, pp. 1–12). It remains a key irritant in the state-to-state level relationship. The Teesta's headwaters lie the North of the Indian state of Sikkim, very close to the India–China border with the Teesta Kangse glacier. It and its tributaries span much of the state of Sikkim, before flowing through West Bengal and India Bangladesh, where it joins the Brahmaputra River. These dams have caused numerous ecological problems in Sikkim. India and Bangladesh have long failed to sign a water-sharing agreement over the Teesta, due to opposition from the government of West Bengal. As a result, Bangladesh recently turned to Chinese development funds to develop the Teesta within its borders (Roy 2020).

In particular, Sikkim's environment is affected by the quest to turn the Himalayan watershed into a primary source of energy for India, and the India–China contest. Much of the green Sikkim narrative, then, relies on the construction of dams being seen as a source of 'green' energy. Along the one major road to Gangtok, NH10, one passes several dams on the Teesta River, accompanied with ads for dams as green energy posted by the National Hydroelectric Power Corporation (NHPC) of India. These ads stress the ability for young girls to study at night by electric light, and emphasise the low emission nature of the energy produced by dams. However, also obvious to the eye is the damage to the river caused by several multi-purpose dams with large reservoirs blocking its flow. Further dams are being built, or planned to be built, further downstream in West Bengal.

The state of the Teesta, its numerous dams, and the silencing of anti-dam movements in the region, undercut the state's green branding. The state has plans for 27 hydropower projects, and some major projects have already been completed, particularly the Teesta -V dam at Dikchu in East Sikkim (Gergan 2020, p. 6). Environmental destruction and Indigenous dispossession in the region have tended to go hand in hand. Dams have contributed to what Gergan has termed the 'violent marginalization of Tribal territories and epistemologies' in Sikkim. This is particularly the case of the Teesta Five dam. The dams in the region tend to be built on

minority lands. As elsewhere in India, and as we will see when we turn to the Brahmaputra, anti-dam protestors are often painted as the enemies of India's development. Anti-dam movements in Sikkim have been met with repression. The Teesta Stage Five dam is built in Dikchu and was protested heavily by the Indigenous Lepcha people of Sikkim (Banerjee and Li 2016). This area was struck by a 6.9 magnitude earthquake in 2011, which killed some dam workers. This was interpreted by some local Lepcha peoples as an act of angry deities in the region (Gergan 2020). The Teesta Stage Three project in Chungthang has also been completed. Aside from the earthquake, disasters such as frequent landslides and flash flooding have been regular occurrences at the dam sites in the state. Landslides, exacerbated by dams and road-building have been known to cut villages off for months at a time.

Anti-dam protesters have had some success in Dzongu. Two dams have been stopped, or at least slowed, by the anti-dam movement. These are the 520 megawatt Teesta Stage Four Project and the 280 megawatt Panam Hydro Project on the Rongnyoo River. These rivers, and associated storytelling, are central to Lepcha identity and religion (Lepcha and Lepcha 2021), which has motivated the anti-dam movement and enabled it to gain support among much of the community. This has contributed to the stereotype that the Lepcha are 'primordial environmentalists' (Lepcha 2021, p 45). The movement has used Gandhian tactics, performing a rolling 915-day hunger strike in Gangtok to protest the dam (Dhungel 2021), and responded to demands that the area comes with an alternative form of 'development' by creating ecotourism homestay businesses (Lepcha 2021, p. 46). The area where these dams are planned is within the Kanchenjunga national park and the associated KLCDI, but this alone has not fully disrupted the planned dam projects.

Massive water diversion dam projects mean that several portions of the Teesta flow underground, taking water away from the ecology of the river (Lepcha 2017). Other portions of the river have reservoirs that greatly exceed the usual water level, flooding portions of the river. This has harmed fish in the river. The region is also prone to cloudburst floods and glacial lake outburst floods, which can be made more likely by changing the patterns of the river (Lepcha 2017, p. 250). The damming of the Teesta River does not appear to be a direct result of geopolitical tensions in the region and the dams are not obviously securitised as very little of the water in Sikkim originates from China. It is more to do with the Indian state's desire to extract hydropower from the river and send that

power downstream. When I was visiting a village in Dzongu, for example, not far from two massive hydropower dams, the electricity went out daily, often for over six hours. These projects do not benefit local communities, but rather extract hydropower from the river and export it out of the area affected. There is a sense, then, that local anti-dam movements, which were widely supported within Dzongu, have been punished for opposing this nationalist form of development. Although they have been slowed down, these projects are not likely to disappear completely. Anti-dam activism in Sikkim is an ongoing struggle with no obvious endpoint. Moreover, these projects take place within the context of Himalayan border conflicts and tensions, and militarisation. Much of North Sikkim, particularly the far north, is heavily fortified due to the border conflicts and incursions with China. Dams mark state territory, and require significant road and electrical infrastructure, necessitating state security. These types of projects on the broader Brahmaputra River basin will be explored further in Chapter 6.

Most importantly, though, it is clear from the example of the Teesta River that hydroelectric projects dramatically undercut Sikkim's carefully honed green narratives.

Conclusion: A Mixed Environmental Record

Although there are doubtless some positive stories examined in this chapter, of genuine transboundary cooperation over water and animal corridors, and local-level green initiatives, the environmental record of this region is ultimately mixed. Mega-dams projects violently marginalise Indigenous communities. There is also a long record of communal conflict in these borderlands, which has had considerable costs to peoples and ecologies. Still, at borders where some transboundary flows of water, culture, peoples and animals have been maintained, possibilities for rethinking the region's political and ecological order emerge. The state-based logic of organising environments around sovereign borders, while it has doubtless dissected the regions habitats and contributed militarisation, this bordering process is incomplete or disrupted on occasion. This has been seen, for example, in the case of the Kangchenjunga landscape, where the state-based logic has been partially disrupted by careful negotiation coordinated by ICIMOD. In other examples, such as the Assam-Bhutan borderland, the closing down of cultural connections and environmental flows across borders is incomplete. Transboundary communities and traditional ecological practices were never entirely cut off.

The inscribing of borders into the diverse foothills and valleys of the region, has nevertheless had a profound effect on the environment of the region. One element that emerges from this analysis is the need to find more functional forms of transboundary environmental governance that consider not just state actors but local communities. Probably the most destructive form that this takes, though, is the damming of the Teesta River in Sikkim. These dams necessitate a larger state presence, and in the context of the nearby border disputes, the dams take on strategic meaning as well. I will now move on to examine how this has played out in the broader Brahmaputra River basin, where local water users are rarely taken into account by international actors, and militarisation of the watershed is very much ongoing. Ultimately, much of the transboundary conservation in the region represents remarkably complex efforts by intergovernmental organisations to mitigate the problems caused by borders, with limited results. All of this has been done to maintain ecosystems that were functioning on their own before the borders were drawn.

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CHAPTER 6

Competitive Dam Building in the Yarlung Tsangpo-Brahmaputra River Basin

Introduction: Extracting 'Green' Energy from Himalayan Rivers

As discussed in previous chapters, hydropower has become central to all Himalayan states' efforts to become carbon neutral, while simultaneously meeting their development goals. This is due partly, at least, to the global process of combating climate change, which has put a substantial pressure on developing states to gradually phase out the use of fossil fuels for energy generation. The IPCC's Sixth Assessment Report, and the build-up to Conference Of Parties (COP) 26 in Glasgow, prompted China to announce a 2060 carbon neutrality target. As India announced its own 2070 target for carbon neutrality, it also argued to maintain the use of coal for development. However, India and China were both central to efforts to change the wording of a treaty on coal from 'phase out the use of coal' to 'phase down the use of coal' (Singh et al. 2021), and so the rush is perhaps not as great as we might imagine. Nevertheless, Modi (2023) has argued at India Energy Week in Bangalore argued that '[o]ur commitment to green energy is unwavering', a slogan then repeated in advertising around India.

Ultimately, both India and China have been unwilling to compromise on their ongoing development when making climate pledges. To this point, policy-makers in these states have been unable to imagine meeting

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their energy and developmental needs without exploiting the Himalayan watershed for hydropower to eventually replace coal. Here, the global green energy transition takes a dark turn. Both India and China have enormous plans for the exploitation of Himalayan rivers for hydropower, as I explored partly in Chapters four and five. Similarly, Bhutan has also been a smaller element of the dam building rush with some of India's largest expenses of foreign aid being dam projects there. Further downstream, Bangladesh is extremely vulnerable to climate change sea level rise. As a member of the Climate Vulnerable Forum, Bangladesh has regularly urged all countries to take more ambitious climate action. At the same time, Bangladesh continues to pursue coal power for development, partly in collaboration with India through the Rampal coal power station, soon to be opened near the Sundarbans—a transboundary wetland and national park spanning India and Bangladesh (Nicholas 2022). Bangladesh is similarly concerned with the downstream effects of the dams planned for Himalayan rivers, particularly those on the Brahmaputra River.

In this chapter, I focus on the Brahmaputra River basin, which has so far proven particularly difficult for state actors to exploit for hydropower. It is also the site of the most extreme plans for hydropower generation. In recent years it has been opened up to more exploitation, with numerous dams being planned for its waters. These dams are securitised—built partly with state military rivalries in mind, across contested borders. Upstream dams in China have caused fears of water loss in India and Bhutan. Dams in Arunachal Pradesh similarly cause concerns in Assam and Bangladesh. If we factor into this situation the long-running series of border conflicts, a concerning geopolitical and ecological situation emerges.

This situation also appears to be accelerating. In perhaps the most extreme example, China's 14th five-year plan included a scheme to build the world's most powerful dam on the bend in the Brahmaputra River, where the river loses altitude rapidly. The downstream flow in this section of the river makes it particularly potent. It is planned for Medog county, the last Chinese territory before the contested border with India's state of Arunachal Pradesh. This project, much like previous dams on the Yarlung Tsangpo, has sparked fears in India where rumours that China plans to divert the river entirely, or use its dams to cause floods downstream, appear in the media and in policy circles with some regularity (Deka 2021, pp. 327–343). India's response to Chinese dams, though, has not always been coherent. China has already built an extensive network of dams on

the Yarlung Tsangpo's tributaries, and India has sought to respond with its own projects. This discourse is often simplistic, however. It tends to treat the Brahmaputra River as just its main channel, rather than as a massively complex river system. Regardless of the extent to which these plans actually exist, this securitises the flow of the river, which makes it all but impossible for transboundary water management to function effectively over this river basin.

This chapter examines the geopolitics of the Brahmaputra-Yarlung Tsangpo River basin. Academic and policy studies of transboundary water regularly rely on simplified ideas about rivers as watercourses that cross international borders. In doing so, they also draw on problematic ideas about borders, the actors involved in water politics (states) and the water systems themselves. This lack of serious engagement with river basin ecologies and local water users is often replicated in international governance. In place of this approach, I argue that the river system, with the complex ecologies that underpin it, is itself an actor in the geopolitics of the region. If the India–China contest for the region continues, ultimately, the river will either wash away the geopolitics, or the geopolitics will destroy the river.

I build this argument in four sections. I first survey the river system as a whole, looking at its environmental history, and its unusual ecology, examining and critiquing the ways in which the Brahmaputra has been thought about in IR. This demonstrates the need to retheorise the region through an international political ecology approach. I then contrast this with the history of state-making and border disputes, looking at the ways in which environmental issues are a factor in the region becoming seen as a colonial frontier, and later, a postcolonial borderland. Finally, I examine the region's hydropower contest, the forms of international cooperation that currently exist over water in the region, how riverine people relate to them, and how the situation is entangled with geopolitical competition.

Understanding the Yarlung Tsangpo-Brahmaputra River Basin

The Yarlung Tsangpo emerges around the Angsi glacier near Mount Kailash in Tibet. It flows through Tibet for almost 3000 kms. This portion is often known as the highest river in the world, as it traverses high altitude desert on the Tibetan Plateau. After flowing through Tibet, it turns sharply near the contested India–China border between Tibet

and Arunachal Pradesh. As the river passes through such diverse territory, it also has numerous names. In Tibet, it is the Yarlung Tsangpo. In Arunachal Pradesh, it is known as the Siang, where it is joined by numerous tributaries, as it flows downhill through muddy jungle terrain. It crosses into Assam at Pasighat, where it is known as the Brahmaputra, and is joined by the Lohit and Dibang rivers. It flows into Bangladesh, where it is known as the Jamuna, and is joined by the Teesta River and the Ganga. It eventually drains out into the Bay of Bengal. It is worth noting here that the Bay of Bengal is facing a similar process of militarization, and being divided up by state actors, amidst India–China competition (Amrith 2013, pp. 257–262).

The total drainage of the basin of the river network covers 570,000 square kilometres, supporting around 130 million people that live in the region (Yang et al. 2016, pp. 16–30). The ecology of the broader Brahmaputra River basin has helped to make the region particularly difficult for state actors to tame. Its headwaters sit at 5000 m above sea level. It traverses particularly intense topography. The highest peak in the river basin, Mount Kanchenjunga, reaches 8,586 m. Just 115 kms from this peak are sections of the river basin on the lowland plains of India (Gamble 2019, pp. 42–67). It is also one of the most sediment-rich rivers in the world. This makes it particularly fertile (Thomas 2017, p. 46). However, due to extreme rainfall, the river and its tributaries flood regularly with spectacular intensity (Saikia 2019, pp. 1–16). With the climate changing, these floods are expected to be more common and more intense (Biggs 2018, p. 454).

These ecological factors have meant that the upper reaches of the river basin have not experienced high levels of human habitation and its inhabitants have, until comparatively recently, been spared outright domination by outside political actors. On the plateau, Tibetans have relied upon the river for water and irrigation for centuries, using it for agriculture, particularly irrigating river flats. Similarly, the area of Arunachal Pradesh has been influenced by external actors for centuries, through trade and pilgrimage networks. This will be seen when we look at the patterns of state-making in the region, as both the British and Qing empires made claims over the area, without actually being present. This is true even of the lower-lying areas of the river basin. Due to its propensity to flood and wash away infrastructure, sections of the river on the plains of Northeast India and Bangladesh have only recently been opened up to international development and infrastructure projects (Saikia 2019, pp. 475–492).

The specific watercourse of the Brahmaputra is just one element of the river basin's ecology. The broader river basin covers numerous tributaries around the region that also traverse international borders. This includes the Teesta River (discussed in Chapter 5), which has some headwaters in China and flows through Sikkim and West Bengal before joining the Brahmaputra in Bangladesh; the Manas River, which flows from China through Bhutan, Arunachal Pradesh and Assam; and the Dirang and the Kameng rivers in Arunachal Pradesh. The population of Bangladesh rely on the river for water, agriculture and livelihoods. All of Bangladesh, though, relies on the Himalayan watershed and the silt it deposits throughout the country (van Schendel 2020, pp. 1–15). The silt is generated partly through the grating of Himalayan rocks, as the South Asian continental plate crashes into Asia. Some 80 per cent of Bangladesh lies in floodplains (van Schendel 2020, p. 9). The coastline around the Bay of Bengal is very prone to erosion, which may present existential threat to Bangladeshi coastal and riverine communities (Brammer 2014, pp. 51–62). However, the annual floods also replenish the land, depositing silt. The communities of this section of the river, are very much adapted to patterns of flooding in the region (van Schendel 2020, p. 7). Dams upstream can block silt flows, contributing to Bangladesh's struggles with erosion.

The watershed is also intimately connected to coastal areas through river deltas, and through the monsoon. The river is fed by snow melt in the Himalaya in the dry section of Tibet, and through the dry season, snow melt from Tibet is the main feeder of the river (Mohammaed et al. 2017, p. 169). The eastern part of the basin, however, receives exceptionally high rainfall during the monsoon season, contributing substantially to its waters within India and Bangladesh. The watershed, then, also relies on the monsoon system, which depends on hot tropical winds coming up through the Indian Ocean, and hitting the high peaks of the Himalaya and falling back over South and South-East Asia as rain. The ocean and the mountains, then, are connected intimately through global climactic systems. The threats to the Brahmaputra River system, then, are both the local threat of militarization and displacement and the global threat of climate change.

The river's history, and its ecology, though, have also been crucial to its political life. Within Tibet, where it flows relatively narrowly, it has now been thoroughly engineered by the Chinese state (Gamble 2019). Once it leaves the high altitude desert of Tibet, and enters the jungles

of Northeast India, it turns sharply and tumbles down into Arunachal Pradesh, where it changes character. The exceptional rainfall of Northeast India during the monsoon contributes to river basin's waters, as do its many tributaries within India. This makes it particularly prone to flooding. The desire to prevent or control flooding is also leading India to seek to dam the river. Historically, local communities in Northeast India and Bangladesh were used to its unruly nature, and had learned to live alongside it, with its flooding and high sedimentation. This of course was not without its risks (Saikia 2019, pp. 1–16).

It is necessary also to map the border disputes over the region, in the context of its ecology and, in particular, water flows. Much of my analysis here falls on the Indian state of Arunachal Pradesh, claimed by China as *Tsang Nan* (South Tibet). The region was the main scene of Chinese incursions in the 1962 border war. It is also an area of intense biodiversity, which has intersected with the conflict. One Chinese scientific study, published in the journal *Nature*, no less, found that the region of the TAR most important for biodiversity conservation is the area of Tsang Nan. This, of course, means the portions of the river basin administered by India (Xu et al. 2022). Large portions of this state are covered by the Dihang-Dibang Biosphere Reserve. Although the politics of this study are troubling, it is correct to state that the region is particularly important for biodiversity conservation.

Much of the contested region of Arunachal Pradesh is a muddy jungle which has proven extremely difficult for the state to connect to the 'mainland' of India. For example, an engineer working on a strategic road being built through the Dibang wildlife sanctuary towards the border, stated that 'Only 2–3 kms can be completed in a month, which gets even more sluggish during the rainy season' (Bhattacharyya 2022). Arunachal Pradesh is one of two major biodiversity hotspots in India, the other being the Western Ghats in the South of India. It hosts 50 per cent of India's flowering plants (Paul et al. 2005, pp. 623–634). The LAC corresponds to some extent with this diversity. The contested border in this area is similarly tied to the high peaks of Himalaya. The section administered by India, has far higher levels of biodiversity, due to its lower altitude. The sections on the higher altitude Tibetan Plateau, however, tend to be colder, and receive less rainfall, and, as a result, host less biodiversity. Rhododendrons in particularly are common in Arunachal Pradesh. These plants have become part of the border, as they do not grow above a certain altitude. The Indian Army has previously made attempts to

plant vegetation, so as to provide cover for moving towards the border. However, with the altitude leading up to the LAC, these plants are unable to survive. The border was drawn in part to reflect the region's ecologies as well as competing claims between empires.

This diversity of plants and animals is under threat from the increased dam and road construction, which is driven in part by military necessity. For example, the Dibang region is further threatened by the Dibang Multipurpose Project. This project is aimed at power generation as well as flood moderation and water storage (NHPC 2022). The dam is intended to limit flooding in downstream Assam, as well as generate power through constructing what would be India's largest dam, and the world's tallest concrete gravity dam. Several small villages belonging to the Idu Mishmi tribe sit in the planned reservoir created by the dam will be flooded by the project (Sarma 2017, pp. 1–15). The dam is planned nearby the Dibang Wildlife Sanctuary as the Dibang Tiger Reserve, and may well threaten these areas as well. As Ambika Aiyadurai has explored, the Idu Mishmi tribe view tigers as their brothers, and treat killing tigers as homicide. This type of local environmental knowledge and interconnections between humans and nature is threatened by displacement through dam projects (Aiyadurai 2016, p. 308).

Indeed, this region of the river basin is inhabited by numerous endangered and dangerous species, elephants, tigers and leopards. The higher regions are inhabited by red pandas and musk deer. Such animals used to live across Asia, but now only survive in the wild in regions with less dense human habitation. They have been in retreat for thousands of years across China, as settlements from the Northeast of China expanded westward. As Mark Elvin (2004, p. 9) put it, 'Chinese farmers and elephants do not mix'. As touched on in Chapter 5, Arunachal Pradesh and Assam are also host to numerous nature reserves and national parks. Nature conservation in the region, though, has been controversial, as it has the potential to dispossess local peoples and even contribute to militarization. Within Northeast India, the military has been employed as a conservation actor since the 1980s (Dutta 2020). In the lowlands of the basin, in Assam, conservation has itself been militarised, with fortress conservation employed to keep people and poachers out of national parks (Dutta 2020).

International Relations and the Brahmaputra River Basin

How, then, have IR analyses of the Brahmaputra River basin dealt with this extreme environmental region? Such analyses have tended to focus on state actors, their various tensions, and treated the environment as something which states naturally fight over. Within this, they tend to assume that international cooperation is the key to protecting the river and the environment (Wiring et al. 2013). Although some form of international cooperation is necessary, and currently is extremely limited, the focus on this element tends to naturalise the borders between contemporary states, along with their competition over resources. Mapping the region's ecology only through its borders and focusing solely on state actors erases the region's human and more-than-human diversity. Much of this work is well-meaning, and indeed greater cooperation between state actors is likely a necessary element of any long-term solution to the region's struggles. Nevertheless, defining cooperation as something that occurs between states (as some of this work does) has the effect of not only erasing the role of riverine peoples, but turning the difficulties of governing the Brahmaputra River basin into something to be done from Delhi, Beijing, Dhaka and perhaps, Thimphu (Barua et al. 2019, p. 2589).

Studies focused on how international cooperation can be achieved, for example, tend not to address the needs of communities who live on the watershed, but are dispossessed by its states. Brahma Chellaney, who has written extensively about the area, suggests that without intergovernmental agreements, the Himalaya would become Asia's 'treacherous new battleground' (Chellaney 2013, p. 309). Chellaney's analysis emphasises the region's environment but simplifies its complex issues into state-based environmental arguments. The idea of 'water wars' is similarly troubling as it tends to securitise a river's watercourse or basin. Securitization of a river's waters produces substantial roadblocks to cooperation, and increased state secrecy over its waters. This has occurred between India and Bangladesh, over the 54 transboundary rivers the two countries share, but has also happened in various other transboundary rivers (Thomas 2021, p. 6).

Cooperation between Delhi, Dhaka, Thimphu and Beijing does not capture the role of the diverse riverine communities that live on the basin and rely on it. Political ecology approaches point to the need to broaden

the range of actors that we consider when we look at the region. Moreover, what international cooperation over water that does exist in the Himalayan watershed, tends to securitise the region's waters, and divide it up for use between state actors (Davis 2021; Fox and Sneddon 2007, pp. 237–261; Hanasz 2017a). Here, we can also turn to border studies and critical geopolitics, which have rethought the supposedly static nature of international borders. Moreover, connecting social and natural systems through the Anthropocene concept can allow us to rethink the connections between politics, communities, and water. This is particularly useful for rethinking international rivers (Thomas 2017, pp. 34–53). International rivers are often treated simplistically, as seen in the case of the Indus Waters Treaty, as watercourses that cross international boundaries. This is true of international cooperation over rivers, which tends to divide up the water that flows through the watercourse for state use. By flouting a border, the Brahmaputra-Yarlung Tsangpo becomes subjected to the competing claims of the Indian and Chinese states, but because of its unruly nature, it is also a key actor in these geopolitics.

The Brahmaputra's governance within India is fragmented, with some centralised control, but also powerful local administrations. In China, it is highly centralised. However, as the river basin functions as a transboundary water system, it is increasingly subjected to various national security concerns, which severely limit cooperation (Pahl-Wostl and Knieper 2014, pp. 139–154). As it stands, the Indian and Chinese states govern the river as though the river only exists within their own borders, except when fretting about what upstream riparian states might do. While such governance might prevent state-level fights over the region, by allocating water to state users, this still does not prevent extensive damming of rivers. If anything, by allocating water resources directly to states, it risks dispossessing local users. More importantly for our purposes here, much of the IR literature has ignored earth systems science, river basin ecology and political ecology understandings of the region.

Scientific projections of climate change in the region are also alarming and point to the urgent need to change river management practices as well as limiting carbon emissions. Extreme precipitation is expected to increase in at both 1.5c and 2.0c warming increases. Snowmelt, however, may decline rapidly, though this will depend on changes to the ice pack. Taken together, these suggest that over the next century, extreme weather events in the basin are likely to be more commonplace, with periods of high

flows and floods being more likely (Mohammaed et al. 2017, pp. 166–167). Periods of low flows are 'projected to become less frequent and low flow values for different return periods are projected to be higher at' [2 degrees of warming] (Mohammaed et al. 2017, p. 167). Extreme precipitation events also become far more likely at 2 degrees of warming.

These issues are most directly captured by the links between dams and geopolitics in the region. Large dams physically transform the river system, extracting water for agriculture and power generation, threatening human and non-human habitats. They are built amidst geopolitical tensions, and their construction only furthers these tensions. Their justification as producing 'green energy' leads to them being backed directly by global institutions seeking to accelerate the global green energy transition. In order to understand how this situation emerged, I will now move on to look at the process of state-making in the region, examine the ways in which the region's environment, particularly its watershed, influenced the process of creating contested borders in the region.

Culture, Geopolitics and Ecology in the Brahmaputra River Basin

In order to understand the contemporary geopolitics of the river, and its lack of transboundary cooperation, we must first ask, 'how did the Brahmaputra become an international river'? The Brahmaputra region in particular was constructed as a 'frontier' between Qing China and 'mainland India' under British rule. This points to the history of state-making in the region. It also points to a larger range of actors that are important in governing the river (Thomas 2017). Historical analyses of the river have, however, examined the history of state-making on the Brahmaputra River basin. Ruth Gamble has examined the efforts of Qing China and British Indian explorers to map, explore and control the upper reaches of the Brahmaputra River basin (Gamble 2019). Neither side of this imperial contest was permanently inhabiting the upper reaches of the Brahmaputra River basin. Neither the Imperial British nor the Chinese state had power on the ground in the region. It was drawn on the supposed basis of 'natural boundaries'—watersheds and mountain ranges (Goettlich 2019, pp. 203–228). Their claims existed on maps, but not on the ground.

The contested border in this region was, like others discussed in this book, drawn at the Shimla conference of 1913–1914. All these lines were drawn along mountain ranges by British cartographers (Davis et al. 2021).

As I described in Ladakh, the region's boundaries were primarily drawn with watersheds and mountain peaks in mind. Such line drawings could not take into account the river's intricate flows, let alone the cultural and kinship relationships of the region (Gamble 2019, p. 52). The region that the British claimed, particularly the town of Tawang, had strong ties to Lhasa. However, the region stretched down towards the Assamese plains and, for the British, to have Chinese controlled territory so close to British India was unacceptable (Gamble 2019, p. 52).

These are the origins of the river system becoming both international and a borderland. The Chinese, though, rejected the outcome of the treaty, as it was signed by the British and the Tibetans. These are the origins of the contemporary dispute between India and China over the McMahon line and over Arunachal Pradesh. Today, the dispute is central to the geopolitics over the river.

The Brahmaputra ultimately became an international river through the process of decolonization. India, China and East Pakistan's claims related not just to people and culture, but also to natural resources and environmental topography. The basis of claiming territory for these new states, was the culture, religion and ethnicity of local communities. Borders were also drawn in relation to physical topography, as per the English 'science' of border making, but also with reference to resources, water, and ports, as well as high peaks and ice caps (Thomas 2017).

The creation of East Pakistan necessitated forming borders. Again, British boundary-makers used rivers as markers for territory. The partitioning of Bengal into West Bengal (India) and East Pakistan in 1947 was drawn partly so as to share natural resources, particularly rivers, water and ports access (Thomas 2021). The river itself, then, was part of the border making process. Water between India and Bangladesh, though, flows through fifty different rivers, in what van Schendel called a 'crazy pattern of channels, marshes and lakes' (van Schendel 2020, p. 4). The basis of the Partition has left a series of difficult political issues, with competing forms of nationalism (including Bangladeshi, Indian, Assamese, Bodo) being connected to the region's territory. The India–Bangladesh border was only further demarcated and simplified in 2016, demonstrating how slow the process of border making was between India and Bangladesh.

Since decolonization, states have gradually increased their control over the region and its waters. The 1962 war between India and China took place within the river basin, with the Chinese occupying Tawang in Arunachal Pradesh, and moving through river valleys that lead down to

the plains of Assam (Gamble 2019). The Chinese eventually pulled back over the McMahon line, but continue to claim almost all of Arunachal Pradesh, and parts of Assam, as their territory.

As for the river itself, due its intense sedimentation and its propensity to flood, the Indian government has sought, and failed to find, ways of controlling and regulating its flow. Arupjoyti Saikia describes the effort to find international expertise in river basin governance (with experts focused on different river systems): 'Several years of working with international experts led to one simple realization: there hardly existed any expert knowledge about the river and without this nothing could be done to tame it' (Saikia 2019, p. 475). Attempts by American engineers to master the river based on their experiences of American rivers, though, failed repeatedly. This was part of a long-running Cold War history of the United States and the USSR competing to bring 'development' to India.[1] However, as Saikia (2019, p. 476) puts it: 'None agreed that their failed measures were based on a fundamentally erroneous understanding of the river's nature'.

The use of engineers, cartographers and explorers to determine borders, using the earth, such as ice caps, mountains, ridges and rivers, again shows the need to reconceptualise the environment's role in international politics. As Thomas argued regarding the use of the Ganga river as a border, 'national borders and international rivers determine one another… [this] demands that we reconceptualise international rivers as synergistic, multifaceted and ongoing interactions between rivers and borders' (Thomas 2017, p. 46). Water and silt flows are crucial to agriculture across the region. Its floods mean it was seen as a region difficult to settle and control. In this sense, the river system is partially responsible for the location of the borders it traverses. Its jungles, ice caps and floods have contributed to its construction as a borderland in need of economic development.

Although the communities that live along the highest sections of the river basin have been spared external domination, today the situation has changed dramatically. Based partly on the disputes over Arunachal Pradesh, India and China have both sought to solidify their control and influence over borderland territories. China has built infrastructure up to the border, and even occasionally pushed across the LAC (Brethouwer

[1] On this topic, see: Engerman (2019).

et al. 2022, p. 3). Fitting these diverse and minoritised peoples and environments into the black box of the nation-state would have been difficult enough, due to the intensely more-than-human world of the river basin. However, as we will see, given the disputes over the border between the two vast postcolonial nation-states, the shift from the colonial frontier to postcolonial borderland has led to an even more difficult political and ecological situation.

Today, the geopolitics of the river are shaped primarily by the borders it transcends. China's claims over the Indian state of Arunachal Pradesh are the most central rupture through which the river passes. However, similar issues arise on a smaller scale between India and Bangladesh. Today, most military tensions are found on the LAC in the Eastern Himalaya, centred on the Indian state of Arunachal Pradesh. Downstream, Bangladesh is ultimately the most vulnerable to climate change and changed water flows.

China's posture over the region is particularly strong in Southeast Tibet, near the border with India. The second border defence regiment sits in Cona County, immediately besides Tawang. While visiting on fieldwork, I could see that Tawang itself has a large military presence, with considerable construction and troop movements. The roads to the town were built by the BRO and have considerable military presence. China's most substantial military build-up along the Brahmaputra is between Wolongzhen, in Mailing, and Nyingchi city, a stretch of 135 kms the river which runs alongside the river (O'Donnell and Bolfrass 2020). Just across the border from Gelling, where the Yarlung Tsangpo crosses into Arunachal Pradesh, sits the 'Medog County 3rd Independent Battalion' (O'Donnell and Bolfrass 2020). These placings are on the river, close to Arunachal Pradesh, where the McMahon line runs along the region's high peaks. India has advanced landing stations for troop deployment in Pasighat, Tuting, Tawang, and Dirang. Unsurprisingly, much of India's nuclear posture is directed towards Pakistan. However, there are nuclear warheads stationed near Tezpur in Assam. China's southwest is similarly nuclear armed, with several forces based in Yunnan. These postures make it difficult for either side to confidently move forward. However, just as with the situation in Ladakh, the impossibility of advance has seemingly done nothing to defuse the ongoing tensions.

In the mid-2000s, the Indian government initiated the Special Accelerated Road Development Programme in Northeast, involving the BRO and the ITBP. The ITBP are used to defend high altitude regions, such

as Bum La (a pass between India and China near Tawang), as with the Western Himalaya (Ziipao 2020, pp. 1–21). While strategic roads in the region are well funded, smaller roads connecting villages are often non-motorable (Ziipao 2020, p. 12). Ziipao (2020, p. 14) concludes that 'Indian state approach to road development has tended to be disconnected from the rural population, as evident in the case of the Frontier and Trilateral highways: the focus of road being securitization and political authority'. While roads do bring some benefits to local populations, the military takes precedence.

Despite the long history of attempts to control the river, the Brahmaputra on India's side of the border is still subjected to engineering efforts to master it. Some major infrastructure projects, road and rail connections, though, have recently been completed. The region is opening more to influence from outside. India's military position is also well understood through the BRO's activities. China's aggression in 1962 led to India accelerating its road-building in the region. High mountain passes make this road-building particularly difficult. Sela pass, for example, sits at 4170 m above sea level, and is regularly slowed, or blocked entirely, in winter. A tunnel through the most difficult part of the road is nearing completion. However, building roads on the Indian side of the border is extremely challenging and slow. Poorly built roads can lead to landslides and dissect mountain environments. The roads are regularly washed away by landslides, floods, and heavy rain. The Arunachal state government insists that the region's roads be funded above those on the Indian plains. Planned roads include the Trans-Arunachal Highway runs parallel to the 2000-km-long McMahon line, connecting Tawang in the West through Wakro near the border with Myanmar. The road circles the lowlands of Arunachal, along the border with Assam, before joining the road to Tawang through Bomdila. After heavy rain, the Deputy commissioner of East Siang stated that: 'A portion of National Highway (NH) 13, connecting Pasighat (East Siang), Pangin (Siang) and Aalo (West Siang), was swept away by a landslide due to heavy rain… The highway passes through a maze of areas with sinkholes. Several rapids pass through this area, especially during the monsoon season, which may have caused the landslide' (Chakravartty 2021). This portion of the road was only ten years old. This points to the difficulty of infrastructure development, not just to provide connectivity to the border areas, but across Arunachal Pradesh and along the Brahmaputra River, more generally.

On the Chinese side of the border, the infrastructural change to the river is far more complete. The large dams that are being built on the Chinese side of the border, using sand dredged from the rivers they block are the antithesis of 'environmentally responsible' hydropower (Gamble 2019). Moreover, instead of benefiting local people, they displace communities and direct their accrued energy to downhill population centres. Similarly, China's mega-dam at the bend of the river, an almost impossibly difficult engineering project, is planned for a Tibetan sacred site. In terms of water, though, India's concerns relate to China's management of the upper-basin, and particularly that China might block the water's flow, and that water flows might be subjected to military tactics.

International Organisations, Development Assistance, and the Brahmaputra's Geopolitics

International organisations, and external actors, have sought to work with the region's states to produce better collaborative governance amidst the border disputes. These, though, have not helped defuse the tensions, and have tended instead to fuel the dams and infrastructure rush. As Chakraborty and Sherpa (2021, p. 49) put it, the scientific-rationalist approach to dealing with the Himalaya, often espoused by international organisations, contributes to the dispossession of local peoples and while it may limit climate change globally, it is anathema to climate justice. The contemporary geopolitics of the river, then, are shaped not just by its states, but by international institutions and donors seeking to promote international cooperation. International organisations and dialogues have sought to produce cooperation between the region's states but have not been able to unlock the geopolitical disputes at the heart of the contest. Simultaneously, international organisations have supported development projects that are leading to this situation. China has built high-speed rail networks along the river along the Tibetan Plateau, and dammed the river and tributaries itself. India, partly in response, has built new rail and road connections towards the bend in the river, in Arunachal Pradesh and has numerous dams planned for the river system. Across the region, there are substantial plans for building large dams on its waters and tributaries, many of which have already been built (Huber 2019).

Track Two dialogues have become particularly commonplace, and sponsored by international organisations and well-meaning funders. The

SAWI, for example, has pushed for transboundary cooperation over the river system. This dialogue is funded by Norway, Australia and the United Kingdom (SAWI 2019). It seeks to produce international understanding between the river's states, and sometimes extends to state governments (such as Assam) (SAWI 2019).

The river's waters appear in discourse from international organisations, including the Asian Development Bank and World Bank discourse as a barrier to the development of the region (Saikia 2019, p. 490). Despite the overall contest between India and China for the Brahmaputra's waters, there are some forms of international cooperation that exist over river basin. What cooperation does exist at the international level tends to be based on a largely top-down approach to water governance, with substantial funding provided for water management projects. SAWI is funded by the UK, Norway and Australia, and run through the World Bank, but under this scheme 'riparian states remain more or less passive recipients of the initiative' (Hanasz 2017a, p. 9, 2017b, pp. 296–309). The World Bank has a long history of funding dams as green development in the region. Consequently, these schemes risk alienating riparian communities rather than supporting them. There are also international dialogues which occur over the river. Hanasz notes the involvement of external parties to the Ganges–Brahmaputra watershed in track two dialogues over the river system. Despite going on for more than ten years, these international level dialogues have been unable to improve transboundary water governance, due to a lack of trust, the complexity of the region's ecology, and their geopolitical disputes (Hanasz 2017c, pp. 459–474).

What this means is that the involvement of international organisations and aid donors in the region has actually exacerbated the stresses on the local environment, rather than producing more cooperation. International engagements have done very little to mitigate the international tensions over the watershed. They have, however, facilitated and funded the aggressive infrastructure development over the region, particularly including the constructing of risky and destructive dams.

The Geopolitics of Dams in the Brahmaputra River Basin

The Indian government estimates that the state of Arunachal Pradesh alone could generate one third of the power needed for India's electricity needs through hydropower (Mimi 2017, p. 219). Some dams

have already been completed in the state, and others are planned, but have received the considerable local protest. On the Chinese side of the border, the river system has already been extensively dammed. The Zangmu Dam near Gyaca, was the first completed by China on the Yarlung-Tsangpo (Ghosh 2020). The dam created considerable media coverage and even panic in India, as it led to the rumour that China was planning on withholding water and even diverting the river entirely (Deka 2021). However, China had already completed numerous dams on the Brahmaputra's tributaries and there is a cluster of dams near Zangmu, Dagu, Jiexu and Jiacha. Moreover, Gamble (2019) notes that the river in China has been thoroughly engineered in Tibet, with dams being emphasised as clean energy. The Chinese, once accustomed to the high altitude, have considerable advantages compared to India in dam constructions. The river's sand is dredged, turned into concrete, and that concrete is used to dam the Yarlung Tsangpo. Once it crosses into India, the Brahmaputra and its sediment-rich waters traverse jungle, sludge and mud. Building infrastructure on the Tibetan plateau is relatively straightforward compared to building it on the Indian side of the border (Gamble 2019). In this sense, China has environmental and strategic advantages beyond just being upstream.

Within the conflict over borders in the Brahmaputra River basin, dams have become key military assets as well as a major environmental issue. The region's waters are securitised. Dams act like forward operating bases, because they represent massive, high-value infrastructure targets, which require substantial state security forces. In this sense, dams also contribute to the securitization of the Brahmaputra's waters, as they enable the diverting and storage of water resources, preventing them from flowing downstream. The damaging local consequences of dams often lead to local protest and resistance. But, as seen in Chapter 4, when infrastructure becomes a military necessity, it tends to be built far more quickly.

Military concerns and strategic logic have fed into the situation that the Brahmaputra faces today, with India and China feeling the need to occupy the river system militarily. The building of dams requires road and rail infrastructure, security personnel and contributes to this territorialization. Beginning with India's first prime minister Jawaharlal Nehru, large dams had come to be seen as the 'modern temples of resurgent India' (Gamble 2019). He later recanted this approach, yet gigantic development projects have remained symbols of national unity in contemporary India (Davis and Gamble 2020, pp. 288–304). Large development projects on the

Brahmaputra have similarity been celebrated as signs of national pride (ET Now Digital 2021). The Brahmaputra River basin itself has slowed this process down substantially. The Himalaya's unstable geology has also been a major obstacle to efforts to engineer the Brahmaputra River on the Indian side of the border. The ongoing rise of the Himalaya, as the Eurasian and Indian subcontinental plates crash, leads to geological instability—the rocks grating against one another. It means that the mountains are unstable and prone to earthquakes (Gergan 2017, pp. 490–498). This presents serious obstacles for dam building in the region. Landslides, mud and, heavy rain, though, have long delayed the building of major infrastructure projects on the Brahmaputra. As Saika (2019, pp. 491–492) put it, engineers, surveyors and those working on damming projects 'approached nature as an adversary to be tamed'.

Both Indian and Chinese political elites talked about at the upper reaches of the Brahmaputra River as a peripheral area, that is difficult to reach and govern. They each also came to see the people of the region as 'backward' and in need of development. China's model of governance and development in the region, including the building of dams, has been both more state-led and more efficient. Dams in India are built as a public–private partnership and are subjected to much more local scrutiny. Included in the dam rush is Bhutan, discussed in the previous chapter, which has signed an MoU with India to build ten dams and sell power back to India at a reduced rate (Gamble 2019).

Most dams in China are built by Sinohydro, a state-owned infrastructure development corporation. It has become the largest dam building corporation in the world, operating numerous projects in Africa and South-East Asia. However, its environmental protocols and its treatment of affected populations are not always in line with global best practices (Hensengerth 2013). When operating domestically, it is not bound by international norms of dam building, as it sometimes is when going abroad.

On the Brahmaputra, as discussed in the previous chapter with regards to Lepcha protests against dams on the Teesta, dams have faced substantial resistance from local groups, but are often constructed anyway (Gergan 2017). It is the national security approach to dam building on the Yarlung Tsangpo-Brahmaputra between Tibet and Arunachal Pradesh that matter most for my purposes here. While numerous dams have already been built within China and India, the planned dam rush as part of green energy transformation in the region is accelerating. While

India and China were building dams from independence onwards in the plains, it has taken them comparatively longer to build dams in the hills of the Brahmaputra, partly due to a lack of capacity in their borderlands (Gamble 2019). The World Bank stopped funding dams as green energy projects in 2000, partly because of long-running battles over the Sardar Sarovar Dam on the Narmada River in Gujarat (Davis and Gamble 2020). The *Narmada Bachao Andolan* (Save the Narmada movement) helped to produce anti-dam activism across India (Sharma 2018, pp. 317–333). It was greatly assisted by the World Commission on Dams (WCD) which ultimately concluded that the price paid by local communities and ecologies for dams was not worth it. However, today, through the United Nations Framework Convention on Climate Change (UNFCCC) process, the CDM has begun funding large dams as part of its efforts to prevent catastrophic climate change (Baird and Green 2020, pp. 365–383). Similarly, the World Bank has resumed funding of large dams as part of efforts to limit greenhouse gas emissions, subsidising major dam projects. The CDM can fund both small- and large-scale development projects. Some small-scale hydropower projects, seeking to provide electricity to smaller communities, have been funded in India and Bhutan through these projects, with varying degrees of success (Subbarao and Lloyd 2011, pp. 1607–1608). These smaller projects, aimed at electrifying a village, rather than contributing to a larger grid, have less local environmental impacts.

The region's first large dam projects came online in the early 2000s and were immediately the subject of political wrangling over possible environmental consequences. In 2017, mud and concrete discharge from dams came down the river, sparking local concern (Deka 2021, p. 336). The dams also block silt flows, which detract from the river's ability to replenish agricultural land. Dams in the region regularly fill with silt, which threatens the dams' functionality.[2] There are no transboundary environmental impact assessments (EIAs) performed over the Brahmaputra River basin (Deka 2021, p. 337). At times of conflict, China stops sharing water flow data with India. In India, dams became seen as a matter of national pride, a symbol of state-led development and engineering skill. However, it has taken a long time to master the process of building them at higher altitudes, and on the Brahmaputra's floodplains (Gamble

[2] One of the oldest and largest dams in India, the Bhakra Dam in Himachal Pradesh has particularly suffered from this over its long life-span. See: Singh (2021).

2019). The lack of transboundary EIAs is particularly concerning, when we turn to the current struggle for the region's waters between India and China. The most disturbing example, though, is the dam rush in the transboundary region of Pemakö, where the river flows from Tibet to Arunachal.

Competing Dams on the Brahmaputra: China's Mega-dam and India's Upper Siang Projects

To draw out the connection between dams, rivers and borders, here I look at two key, competing dam projects, examining their geopolitical meaning, their processes for construction, the response by local people, EIAs, and their local environmental impacts. In particular, I look at the Upper Siang hydroelectricity projects in India, and China's mega-dam on the bend of the Brahmaputra. This dam is planned to generate three times the electricity of the Three Gorges Dam, and is core to China's efforts to become carbon neutral. Because these dams are incomplete, though construction has started, it is impossible to explore their full environmental impacts. However, the comparison allows us to understand both the enormous ambition of India and China, their ways of imagining the river system, and the patterns of thought behind the projects.

China's planned dam is for Medog county in Tibet, the last county before the LAC. Unlike the dams built on the plateau, this dam will receive monsoonal rainfalls as it sits at a lower altitude. It therefore could have a greater impact on the flow of the river than previous projects (Modak 2020). Though plans are not currently finalised, the idea behind the dam is remarkable. From one side of the great bend in the river to the other, there is a drop of over 2000m. This bend is situated between two of the tallest mountains of the Eastern Himalaya—Namche Barwa and Gyalha Peri. Here, the river flows through one of the world's deepest canyons. The planned Motuo Hydropower Station, rumours of which have been around since 2010 (Watts 2010), which would rely on a water diversion tunnel under Namcha Barwa (Doman et al. 2021). It requires cutting a tunnel underneath the mountain to divert the water from one side of the great bend to the other.

Namcha Barwa is a sacred site to local communities of the region, the Adi, Pemaköpa, and Tibetans, and this plan requires cutting into their goddesses' heart (Gamble 2022, p. 414). There is no space for the local community's beliefs within the goal to produce such a high level

of hydropower. Although this sounds improbable, according to Chinese press reports a tunnel for access has already been completed, suggesting that this approach to the dam is the preferred one for China (Xinhua News 2021). Remarkably, the project appears in the same place in the fourteenth Five Year Plan as space travel. This tells us of the engineering and technological skill required.

China claims that this will be a 'run of the river' dam—and therefore will not affect the flow of the water into downstream countries. The head of ChinaPower, contracted to build the dam, argued that it was more than a dam project, but a 'project for national security, including water resources and domestic security' (Jie and Xiaoyi 2020) arguing that it will assist with cooperation with downstream neighbours. They hoped here that cooperation mechanisms would such as the Lancang-Mekong would be established to facilitate data sharing and cooperation. This desecuritising move—seeking to reassure other states that this project poses no threat to them stands in stark contrast to the response in India to this project. In an environment where the region's waters are securitised, the water project immediately became subsumed into the idea of 'water wars' and the idea that China wants to divert the river entirely (Deka 2021). Within India then, the river's waters are securitised.

China is used to resettling people displaced by dams, with well-established practices for relocating those affected. The construction of the Three Gorges Dam displaced 1.3 million people (Wilmsen 2016, pp. 41–54). Medog county, however, has a population of just 14,000, making it one of the most sparsely populated regions of the world. The region was only connected to the Chinese highway grid in 2013 (Xinhua News 2017). This shows us that the process of outsiders colonising and transforming the upper reaches of the Brahmaputra basin is still ongoing. Regardless of whether or not the local communities are displaced, the transformation of the river on Chinese side of the border, with a new emphasis on hydropower, tourism and intensive farming is very advanced. There is limited, if any, space for local communities' connection to the land within China's development plans for the region (Gamble 2022).

The dam project is particularly risky, as are all projects in Himalaya, when we think of the threat of earthquakes (Huber 2019). Major earthquakes have taken place in the region. Political tensions, and even earthquakes themselves, has contributed to a dearth of archival source material in the region (Bilham 2019, p. 430). While major earthquakes have occurred across the Himalaya with some regularity, including in

Assam, Bhutan and Arunachal Pradesh, there is considerable uncertainty about the region's tectonic plates. Reviewing the historical and geological data, Bilham concludes that 'distressingly, we are no closer to knowing where the next damaging earthquake will occur than two decades ago' (Bilham 2019, p. 474).

On the Indian side of the border, there are plans for significant expansion as well. As Sanjib Baruah (2017, p. 132) noted, by 2011, the Arunachal Pradesh government had signed 132 memoranda of understanding with developers for hydropower projects. Very few of these have actually been completed, but the figure nonetheless shows the speed and scale at which the plans were drawn up. In particular, the Upper Siang project has been planned by India since 2009 and changed scope several times. These changes are linked to ever-more securitization, as China's own dam building projects have accelerated, and local resistance. Throughout the planning phase, it has seen numerous forms of protest and resistance from the Adi people, and some Tibetan groups, living in the area (Gamble 2019, p. 61). The Siang project, in particular, was securitised from the beginning, even back in 2009 when it was announced. Jairam Ramesh, perhaps the most pro-climate action Environment Minister India has seen to date, decided to 'fast track clearance of projects in the Siang River basin' based on 'its strategic importance in the India–China border issue or give clearances to road works along the India–China border should also be seen in this light' (Ramesh 2015, p. 170). In a letter to PM Manmohan Singh, he recounted being told by his secretary for the Northeast about the security dimension to the Siang project:

> He said that in order to strengthen our negotiating position with China, overriding priority should be given to hydroelectric power projects on the Siang river. There are hydroelectric power projects on other rivers like Subansari and Dibang but from an international point of view, it is the Siang basin projects that are of strategic significance (Ramesh 2015, p. 170).

This urgency led to increasing payments to local people displaced by the dams: 'Clearly, we should take up projects on the Siang River basin as a matter of urgent priority. If this means even more attractive rehabilitation and resettlement (R&R) packages and if this means giving additional incentives to the Arunachal Pradesh government, we should

agree' (Ramesh 2015, p. 170). This is very strong evidence for the securitization of dams leading to worse environmental outcomes.

The broader Siang project initially consisted of two dams on the main channel of the Siang-Brahmaputra. It was to include Siang Upper Stage-I and Stage-II, built on a stretch of the Siang between Gelling and Pasighat. A total of 44 memorandums of understanding have been signed by the government of Arunachal Pradesh for dams to be built (Gamble 2019). Some of these are smaller projects that might power a local community. Others are vast projects aimed at powering all of India. It is these projects that received considerable resistance, though, particularly Adi people. The largest Siang project has been held up in court cases, particularly as the dam's reservoir has been seen as an existential threat to the community (Gamble 2022). However, in 2017, the central government proposed replacing the stage one and two projects, with one mega-project of its own. In response, Tasik Pangkam, leader of the Siang Indigenous Farmers' Forum (SIFF), stated that: 'There is lurking danger of several of our small tribal communities getting wiped out from the face of the earth. Once uprooted, our culture, our language, our heritage will be all lost simply because some people elsewhere require electricity' (Kashyap 2017). He continued on to state that the existence of the villages of Gelling, Tuting, Yingkiong and Geku might be threatened by the dams shifts to the river's flow.

The planned dam, though, has only gotten bigger. This project, now planned for Yingkiong, would store 10 billion cubic metres of water, with a height of 280–300 m (Baruah 2022). Director of the NHPC Abhay Kumar Singh, argued that the dam would provide 'green energy', control floods, develop fisheries for the region, but also act as a catchment for water. This has been driven by the fear that China might one day 'open the gate' so as to flood India (Baruah 2022). The role of securitization of the river's waters, then, with China's upstream projects acceleration, then, is to add size and scope to India's own projects. This approach directly connects the Siang Hydroelectricity Project to the Chinese planned mega-dam.

In 2019, there were some brief signs that the Arunachal Pradesh government might pull back from its expansive hydropower plans, towards pushing for community-level, smaller projects (Karmakar 2019). However, with the Chinese mega-dam plans, the Indian government has doubled down on the need for the Siang project (Gamble 2022). If both projects were to be completed, the level of hydropower extraction

within this small, contested section of the river, would be remarkable. India's anxieties about China diverting the river have led to the securitization of its waters, and contributed to the dam building rush. The sense of urgency was particularly articulated by Jairam Ramesh, but has become commonplace in India. This has contributed to the urgency of building these dams. China attempting to dam the 'great bend' of the river has added to this situation. Given the enormously risky nature of these projects—the likelihood of earthquakes in the region, unexpected consequences of dams, of human error, the displacement of people with local environmental knowledge—this urgency is dangerous. Moreover, previous efforts at damming the Brahmaputra have largely failed to moderate floods, and have even contributed to them (Akhtar 2017). The answer provided to this tends to be more dams. But, this must lead us to the question of whether or not humans and state projects can actually control this particular river, with it is flooding, siltation, earthquakes and topography.

Conclusion: Retheorising and Remaking the Brahmaputra River Basin

In the short to medium term, it is difficult to see the current situation of unchecked development, competitive infrastructure building, and fractured water governance changing. Indian nationalism and development politics are continuing. Local resistance to dams remains, however. In China, the expansion of hydropower is continuing unabated, particularly the plans for a mega-dam on the bend in the Brahmaputra River. The cartographic imagination of the Indian and Chinese states remains seemingly irrevocably locked on the Brahmaputra River basin. If anything, these tensions have only worsened over the last decade, with a series of renewed hostilities occurring across the region.

However, when we look at the situation from an ecological perspective, it becomes clearer that the river basin cannot be controlled or engineered in the fashion imagined by state actors. The relationship between humans and the earth in the Brahmaputra River basin is shifting as political actors undertake a multifaceted contest for its waters. However, this transformation is certainly not absolute. The current state of the Brahmaputra River basin, given the contest for its waters, might at first glance lend itself to a state-based approach examining conflict and cooperation. That style of geopolitical calculus appears to be in operation still between Delhi and

Beijing. Nevertheless, a purely state-centred approach to understanding the issue erases the role the region's environment played in its state-making, and the dispossession of its riverine peoples, and the ongoing role that communities and ecologies still play in the situation. Consequently, the region desperately needs rethinking and retheorising.

Water flows have been a foundational facet to the region's politics. It was the case during the process of state-making. It remains the case today as state actors seek to master the river basin based on their mutual enmity. India and China's preference for large-scale damming projects, state-led development and assertive nationalism continues. The problem the region faces are deeper than an inability to share resources between states. State-based solutions have created the current situation that the Brahmaputra faces. They do not mitigate them. Top-down forms of international cooperation have similarly failed. When put into dialogue with the environmental history of the Brahmaputra River Basin, the continued efforts to 'tame' the river by states actors begin to appear as part of the problem. The river system itself is resisting these efforts, often with disastrous results. This is why IR analyses of the region need to make a conceptual leap to seeing the Himalayan environment as having forms of agency, because it is so intimately connected to its people and its politics.

Contrasting this situation with that explored in Chapter 6 offers us some counterpoints. On the Brahmaputra's main channel, dams have been built on either side of contested borders, seeking to exploit water resources, and control the flow of water. The state-based approach taken to governance, though, does not take into account the multiple scales at which water governance takes place in the region. Some rivers, such as the Teesta, are dammed substantially. Others, such as the Manas, are subjected to far less damming, and flow relatively freely across borders from Bhutan, India and Bangladesh. The process of securitising the Brahmaputra River basin, then, is not complete, and the prevailing state-based logic can still be undone.

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CHAPTER 7

Conclusion: Greening the Himalaya

Introduction: Breaking The Feedback Loops?

Much of analysis presented in this book points towards a long and ongoing process of dispossession and extraction from the Himalaya, created at least in part by the imposition of state borders by geopolitical actors across the region, and buttressed by disputes over these borders. The region's future then, might appear bleak. This colonial bordering logic has been gradually taken to its conclusion by the region's postcolonial states, contributing to the transformation of the Himalayan environment. The region's states often act as colonial governors for their Indigenous and borderland communities. There are, however, examples of where this logic is incomplete, and where it has even been transcended. The region's ecosystems, particularly its rivers, ice caps and creatures, continue to resist this bordering process, and, when looked at through the approach taken here, begin to look like the most powerful actors in the region.

Nevertheless, these feedback loops between state-making, borders, and environmental destruction appear very difficult to break. States desire lineal borders, but disagree on where to draw the line. Contested borders provoke militarization. Militarization requires infrastructure. Infrastructure transforms the mountains, and provokes more suspicion across borders. All of these factors have been accelerating in the Himalaya,

A. E. Davis, *The Geopolitics of Melting Mountains*,
Critical Studies of the Asia-Pacific,
https://doi.org/10.1007/978-981-99-1681-8_7

leading to the transformations examined throughout this book. Ultimately, we do not know what this level of human activity on fragile ice caps will do to the mountains because it has never been tried before. Similarly, the level of hydropower extraction planned for the Brahmaputra has never been tried before. The risks, though, are obvious.

To conclude, I first reflect on what a deep engagement with the international politics of the Himalaya should tell us for IR theory, because the experience of the region points to the need to rethink core theoretical assumptions in the discipline. In particular, it points us towards the deep connections between geopolitics and ecology, humans and the earth, in the region and elsewhere. This leads me to argue for a new research agenda for IR in the Himalaya, as well as consider what the approach means for the discipline elsewhere. Does the approach taken here offer a useful means for thinking through other environmental regions, or is the Himalaya so distinct a region as to require its own theorising?

Following this, with a goal of ending on a more positive note, I compare the three case studies to consider the entanglements between geopolitics and ecology in the Himalaya. I consider the type of policy responses necessary to deal with the multifaceted problems that the Himalaya faces, on the basis of the international political ecology approach developed in this book. I argue in particular that solutions to the region's problems need to emphasise local ecological knowledge, and create cooperation that transcends the global-international-national-local scales. This means building environmental governance from the ground up, the creation of ecological governance that cuts across scales.

Theorising from the Himalaya

The most basic assumptions of the field of IR, that the state is the actor and that states compete in anarchy against one another, are somewhat visible in the Himalaya. There are state actors present, and states are indeed competing for resources and over borders. They are powerful. There are some examples of international cooperation too, which liberal IR theorising would emphasise as the best way to deal with environmental issues.[1] The state, and whether or not they are in conflict in the region, is no doubt this is an important element of the story shown here. However,

[1] I will reflect on the strengths weaknesses of international cooperation further below.

when we read this scenario from an ecologically centred perspective, or question the bordering logic deployed by states in the region, the narrative becomes very different. Recent historical studies of the borders in the region have shown the environmental and colonial assumptions that underpinned this bordering logic across the Himalaya (Guyot-Réchard 2016; Gardner 2019, 2021; Simpson 2021; Gamble and Davis 2023). Its rivers were also an important part of the process of state-making, demonstrating further the role that ice caps and the watershed played in making South and East Asia (Thomas 2017). Perhaps more important than this, though, is that this historical research on the region demonstrates the weakness of this logic, how it displaced Indigenous understandings of borders, and cut off the connectivity of what is fundamentally a distinct environmental region.

The environment of the Himalaya was always alive in its politics, drawing our attention to the interaction between geopolitics and ecology in the region. This is evident across all three case studies discussed here. When read from this perspective, the international experience of this region is so starkly different from that imagined in the world of conventional international relations, that it points towards the need for new and different theorising about the international system. In particular, it points to the agency of the earth, and of Indigenous communities. Purely state-based analyses, at least over water in the case of the Indus and Brahmaputra rivers, tend to enable resource extraction and dispossess local communities.

What theoretical jumps do we need to make in order to understand this region, then? The approach taken in this book, drawing on IR theory and insights from political ecology—offers some further possibilities for the broader study of international politics. First, international politics takes place in a context of a warming planet, where the green energy transition is being rushed due to decades of inaction. This brings with it massive environmental risk, including for Himalayan rivers and communities (Huber 2019). The world is also facing loss of human and non-human diversity in the form of mass extinctions and loss of languages. When we look at the Himalaya, cultures and ecologies are threatened together by increasing nationalism and extractive projects.

It is these interactions—between the Westphalian states system and the deep time historical connections between its ecologies, peoples and flows of the Himalaya—that is the most important element of the region's politics today. To understand this, we need to avoid state-centric thinking

and look at the agency of local peoples. But it requires more than this. It also means thinking of the earth as an agential force in the region's political struggles. We can see this when the deep time history of the Himalaya meets with geopolitical time. The Brahmaputra River offers strong evidence of this, with floods and siltation resisting dam construction. The enormous, life-threatening difficulty faced by the Indian and Pakistani armies in militarising Siachen glacier also points to Himalayan geopolitics as being not just a battle between state actors, but between humans and the earth. But this is not a fight between all peoples. Its combatants are not the communities of the Himalaya, but armies, engineers, and foreign policy elites.

The mainstream theories of IR do not work in this region. Understanding this in the Himalaya means taking on constructivist insights on state identity formation, postcolonial understandings of imperial legacies in contemporary international affairs, green IR's emphasis on environmental destruction and the agency of the earth. What does this say more broadly about the discipline? I am certainly not the first to make this critique of mainstream IR theory—similar arguments have been made before (Burke et al. 2016; Harrington 2016; Seth 2011; Capan 2017). But if we are to theorise about international politics from the Himalaya, the international system looks like a very different place. It is a world in which the key actors are states, communities, international organisations, ecosystems, jungles, rivers and ice caps, tigers and elephants, each engaging with the other, searching for limited space in harsh terrain. Tigers, elephants, rhinos and yaks, in particular, are geopolitical actors, as they transcend boundaries, and contribute to the creation of national parks and conservation corridors. In the case of the dangerous animals, when outside of national parks, they also mark territory that has been less settled by the state. The backdrop for these agents is a state-based international system, global capitalist system, and a warming climate. If we think of the planet this way, we might come to a new understanding of international affairs.

Much of this book is panoramic in nature, seeking to capture the international issues of the Himalaya by connecting IR with political ecology perspectives, and think it through in the context of international border disputes, global warming and the politics of the green energy transition. This is probably normal for an IR audience, but not for a political ecology reader. Even the case studies of particular regions and ecosystems are not focused on specific, smaller scale ecosystems, say, a national

park, a singular dam, a borderland town or city. This was unavoidable, as the book was conceived of and written during a time of Covid border restrictions, detailed fieldwork engaging with local communities was impossible. Many other bodies of knowledge, however, drawn from other disciplines such as ethnographic studies of cultures, borderland studies, political geography, environmental sciences studies of particular ecosystems, plants, animals, glaciers and mountains, tell crucial elements of this story. What is needed, then, is critical IR scholarship that connects with on the ground issues. This requires IR to function as an interdisciplinary field, bridging fields of knowledge while taking the international/global as its point of departure.

In particular, this research agenda needs to be collaborative, with knowledge about the region co-created between scholars and communities. IR studies very much struggle to do this. The discipline remains an outsiders view making panoramic sweeping statement about the region. As explored in Chapter 4, the clashes between Indigenous rights and migrant rights across the region, the linguistic diversity, and various overlapping forms of oppression and dispossession, make it difficult for a broad Himalayan identity to emerge. Nevertheless, co-creating knowledge with Himalayan communities is a particularly important element of this research agenda. Research needs to produce policy options for transboundary environmental governance in the Himalaya that are co-created between local communities and environmental scientists, and underpinned by ecologically centred political research.

What possibilities are there, then, for the synthesis of political ecology and IR deployed here to be used elsewhere? How widely applicable is this theorisation? First, it must be noted that Selby, Daoust and Hoffman (2022) have used a similar theorisation to look at climate change and water in other parts of the world. However, the interaction between geopolitics and ecology in the Himalaya is particularly intense. It is in some ways exceptional for its more-than-human diversity and its ecological importance to the world. In particular, if we make the conceptual leap to seeing the earth as an agential political force, then we can start to apply this approach to other regions. There are numerous potential areas where this approach might be usefully applied. There are some more obvious examples. In the Amazon Rainforest jungles are so dense that invading empires and state actors have not been able to dominate. The region is shared by eight states, and is partly governed by an intergovernmental organisation, the Amazon Cooperation Treaty Organization

(ACTO) (ACTO 2022). There is, however, debate between these states on whether or not the region should be protected or exploited. This region is seeing increasing resource extraction and the advance of the state into the jungles, contributing to the dispossession of Indigenous peoples. Strong Indigenous populations in the Amazon often lead to better conservation outcomes, including less deforestation (Raftopoulos and Morley 2020, pp. 1616–1641). Similarly, in the Arctic, melting ice is leading geopolitical actors to consider what new resource extraction might be possible, and what trade routes might open up. Here, Indigenous peoples are directly integrated into the Arctic Council's governance, though their voices are not always listened to (Rowe 2018, pp. 18–33). In Australia we can absolutely see the same process of intermingled dispossession, resource extraction and environmental destruction. If we think of settlement as an ongoing, historical and geopolitical process, then Australian history becomes another case study for this approach.

If we look elsewhere, less obvious environmental regions might also benefit from a combined IR-political ecology approach. In the South China Sea disputes, perhaps the most written about contest in international politics over the past decade, there are important environmental features of the region that help to define the conflict. Fish stocks and oil deposits, environmental features, have generally been thought of as just resources to be fought over as possible motivations for the conflict. However, the militarization of the region, and building artificial islands, is causing biodiversity loss, disturbing ecosystems and killing coral reefs. Using fishing as a means of justifying territorial claims, has also contributed to the overfishing of the region (McNamara 2022). This, in turn, displaces traditional fishing communities.

The connection between geopolitics and ecology does operate worldwide. It is being felt increasingly around the world as humans dominate more and more of the planet. Many of these examples have, of course, been looked at in detail by political geographers and political ecologists, and I do not claim a particular expertise in any of these areas. I do not wish to claim that this approach taken here is fit for purpose everywhere. However, the approach taken may be particularly helpful for thinking through transboundary environmental regions that are dissected by state actors and militarised. More broadly, however, I am certain that to understand and reckon with climate change, we need far deeper collaboration between IR and more environmentally focused bodies of knowledge.

Returning to Geopolitics and Ecology: What Works and What Does Not

Throughout the case studies in this book, the deep entanglements between geopolitics and ecology in the Himalaya have become evident. Precisely where this unfolding situation is leading, though, is unclear. In order to understand it, it is worth concluding by comparing and contrasting the various forms geopolitical-ecological entanglements take. The most effective forms of environmental governance either come from states ignoring cross border interactions, between split communities, or the careful and slow construction of international-local collaborations that transcend border conflicts. In particular, these have been built by the regional organisation ICIMOD. They have not tended to come from external actors, such as the international dialogues convened over Himalayan water resources (Hanasz 2019). Similarly, UNESCO-driven environmental protections through world heritage certification have to this point followed state-based logics in the region.

The least effective forms of governance in the region occur when the state-based logic of ecosystem management is more fully realised leading to the militarization of fragile ecosystems. These outcomes include the contested high peak borders, and the subjecting of international rivers to state territorial and resource concerns. Similarly, enclosing water within state borders, building large dams in competition with one another, is an unwinnable game that states play in the region. The only way for state actors to succeed in this region long term is to maintain the millennia-old ecosystems that have enabled the enormous population density across South and East Asia.

When we look at liberal IR theorising, which tends to assume that state-level international cooperation is the best way to solve trans-boundary environmental issues, we do not see this reflected in the Himalaya. The closest we see to this in the region is ICIMOD, which is indeed an intergovernmental organisation that seeks to build cooperation. In the Himalayan foothills, this international organisation has been able to produce this type of cooperation in some contexts. But, crucially, it does so by drawing in the concerns of local administrations and representatives, which if anything, is most effective because it is able to negotiate across scales. The most effective forms of international cooperation in the region are not done just by the state, but incorporates local voices as well.

Perhaps the most important lesson from this investigation is that the most successful environmental governance practices in the region all emphasise the importance of local voices in governance. Local action taken by regional administrations is also effective, assuming it brings local people along with it. Dispossession of local people, be it through international negotiations over rivers or militarization leading to loss of autonomy, is fundamentally counter-productive.

Smaller, local-level forms of protection can also be effective. Sikkim's ban on single-use plastic bags has been positive. It is encouraging recyclable water bottles, and the messaging around the Green Sikkim Mission seeks to bring the community along with it. Bhutan's constitution locks in a level of green governance. It enables traditional knowledge systems that helps people to live sustainably within the region to be maintained. This is why militarization and securitization of the Himalaya's most fragile ecosystems is so concerning. It is not just due to the added stress on the ice caps and ecologies caused by infrastructure projects and increased habitation. Militarization leads to regions becoming more directly governed by the state, taking away autonomy from local communities.

While militaries might try to follow environmental protocols and tread as lightly as they can, their presence on ice caps and rivers is still incompatible with green outcomes. In April 2019, the Sikkimese state government also introduced behaviour protocols for the northern, high altitude sector. As the high altitude areas of North Sikkim is heavily militarised, the introduction of this protocol is a good sign, but the ongoing escalation of tensions and increasing military tensions since the introduction of this protocol, make it far harder for these traditional, Indigenous systems to thrive into the future. It is difficult, perhaps impossible, for Indigenous autonomy to side alongside militaries.

We might assume, then, that agreeing a border might fix these issues. No doubt, that would be a significant step forward. It is probably a necessary precursor to other, deeper, changes. But even if that element were to be removed, the states in question would, given the history, still be deeply suspicious of one another. Simply finding the correct borders would not be as effective as returning to the Indigenous Himalayan system of bordering—meeting points on certain high mountain passes. Fixing people, animals, and water in place, forcing them to cohere to state-based logics, is at the very heart of the region's struggles.

What role, then, is there for external actors in this system, and international cooperation? First, perhaps to state the obvious, colonial powers, played a crucial role in constructing the border conflicts that the region faces today. Its postcolonial states have fulfilled this logic. As it stands, the influence of international actors in the region is muted, due to the major state players in the region being unwilling to compromise their sovereign rights in the international system. Efforts by international actors to mitigate these have largely failed. The international dialogues over the Brahmaputra, for example, seek to fund economic development and green energy in the form of dams, or engineering the river to make it more possible for humans to dominate it. This might be done with the purpose of building state-to-state cooperation, and limiting conflict over water (as is the case with, say, the Indus Waters Treaty). This might produce cooperation, though, if we are being honest, it has not yet done so. The type of cooperation imagined, though, would likely be dispossessing to local communities.

Elsewhere, international actors present in the region—the UN, and the World Bank, for example, have good intentions but their interventions ultimately facilitate the unfolding situation. These actors could relatively easily withdraw funding for dams under the CDM. The World Bank has been an important actor in the Himalaya for some time, brokering the Indus Waters Treaty and running dialogues over the Brahmaputra. While this has spurred state-based cooperation, these initiatives have generally been aimed at developing the rivers for state control to improve development outcomes. There are some signs that the World Bank's approach to Himalayan rivers has changed, with a recent World Bank publication including detailed discussion of local cultures and their relationship to the river. The proposed solution, however, including local voices in development projects while continuing to engineer the river, leaves a lot to be desired (World Bank Group 2021). This does not do much for local communities and animals that will be displaced by the enormous dam reservoirs proposed by India on the Brahmaputra. As it stands the record is mixed, and substantial policy changes would have to take place for these kinds of international organisations to produce the types of policy changes needed. Ultimately, the main thing for international organisations, and powerful external states, is to keep global warming to well under the 1.5-degree target.

Two ideas seem the most likely to be successful: demilitarising and deterritorialising the ice caps, and the creation of some kind of Himalayan

environmental treaty organisation. There have been long-running calls to make the ice caps of the Western Himalaya disputed between India, Pakistan and China into a transboundary peace park (Ali 2002, pp. 316–319). Similar calls have been made elsewhere in the Himalaya, such as between China and Nepal to combine the *Qomolangma* and *Sagarmatha* national parks (Gao 2022, p. 449). Their proponents point towards successful cryosphere transboundary national parks the Waterton-Glacier International Peace Park between the US and Canada. These ideas, particularly in the uninhabited, highest altitude, icy regions, are plausible, but require breaking the military logic which has thus far dominated the region. It is comforting to know at least, that such ideas exist and have worked elsewhere.

Borrowing ideas from other cryosphere regions, particularly the Arctic Council, has been a semi-regular point for discussion. Simon Marsden (2019) has advocated for, and thought through, a Himalayan version of the Arctic Council, drawing on international environmental law. This would include environmental experts and local communities within its governance structure. The idea is in some ways appealing. The Arctic Council is an example of novel environmental governance, which, while it has not fully transcended the geopolitics of the region, has had some important successes. Moreover, as with dams in the Himalaya, green technologies such as wind farms in the Arctic have been used to displace Indigenous Saami communities, which they have termed 'green colonialism' (Fjellheim and Carl 2020). The Arctic is an example of both the kinds of political organisation are possible, and the risks of rushing the green energy transition. However, transplanting a system of governance from the outside seems like a flawed way of managing the Himalaya, because the region is so unique. The challenges faced by the Himalayan environment are in part due to increasing state control, and the influences of external actors has generally been destructive (Davis et al. 2019, p. 12).

What is both plausible and promising, is the creation of a treaty organisation that is able to elevate scientifically advised, local-level administration in the region's governance architecture, alongside the empowering of the region's various ethnic communities. This might be accomplished through ICIMOD's approach. Environmental protection is most likely to be achieved when communities are empowered, and the relationship between humans and the earth is respected and understood. This idea is under further discussion and development at the time of writing. Arctic

states hosted a dialogue for Himalayan states at COP27 at Sharm-el-Sheikh. The United Arab Emirates (UAE) Minister of Climate Change and Environment Mariam Al Mheiri hosted the summit and argued that it was crucial 'to convene the leaders of the Himalayan countries together to talk about how we can build, hopefully, a framework around the Third Pole Process' (Quoted in Wu 2023). Having this process backed by a petrostate draws obvious risks of greenwashing. Moreover, Arctic Council collaboration has suffered recently from the war in Ukraine, showing how geopolitical issues elsewhere can stifle transboundary environmental protection.

The Himalaya's experience as an international region is distinctive. Its remarkable environment continues to shape its political organisation. The watershed, the ice caps, and the non-human animals that live within it continue to resist the geopolitical forms being imposed on it by state actors, armies and engineers. Thinking through the plausible policies for unlocking this situation almost seems impossible in this context, even though there are some good environmental outcomes that point the way forward. However, to put forward bold proposals is still worthwhile, given the strangeness of some elements of the present situation. Ultimately, what is needed is increased rights for local communities, demilitarisation of ice caps and glaciers, freer movement of people, particularly cross border communities, and environmental protection that is negotiated and connects across scales. The state needs to recede from the highest altitudes of the region. ICIMOD becoming a more powerful regional actor, reaching the level of a treaty organisation, and brokering similar forms of environmental protections for rivers and ice as it has around Kangchenjunga, is perhaps the most plausible path forward. All of these solutions, though, require the acquiescence of some of the world's most powerful and nationalist states which jealously guard their sovereignty.

Ultimately, though, states are not the most powerful actor in the region. States will not have the final say in this region, or author at the end of this story. The mountains, the ice caps, the watershed are still the most powerful actor in this region. If the region's ecological system breaks down, there will be no winning this game. The state, its armies and engineers may seek to dominate it, but the mountains can shake this off. The region's environment can undo the conflict, and the only way for humans to win is to understand and respect this power, and maintain the mountain's remarkable ecosystem.

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