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Deforestation and Environmental Governance: Comparing Environmentalities in Forest-related Legislation in Peru and Bolivia

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Tiivistelmä - Referat - Abstract <p>Naapurimailla Perulla ja Bolivialla on valtaviens metsävarojen lisäksi myös muita yhteisiä ominaisuuksia: molemmat maat olivat aikanaan espanjalaisten kolonisoimia, ja toisaalta viime vuosikymmenien taloudelliset ja poliittiset myllerrykset ovat olleet hyvin samankaltaisia molemmissa maissa. Myös metsäkato on niin Perussa kuin Boliviassa ollut hälyttävällä tasolla, mutta Boliviassa metsää on erityisesti viimeisten kahdenkymmenen vuoden aikana hävinnyt jopa puolet nopeammin kuin Perussa. Maankäytön muutokset on tunnustettu metsäkadon pääsyyksi kummassakin maassa, mutta kuinka eri metsienhallinnan muodot vaikuttavat metsäkatoon?</p> <p>Tämä tutkimus tarkastelee Perun ja Bolivian vuosien 1974–2023 metsä- ja ympäristölainsäädännössä ilmentyviä, multiple environmentalities -viitekehyksen mukaisia ympäristönhallinnan muotoja ja metsäkadon intensiteetin vaihtelua. Tutkimuksen tavoitteena on selvittää, onko metsiin liittyvässä lainsäädännössä tunnustettavien ympäristönhallinnan muotojen ja metsäkadon voimakkuuden välillä havaittavissa korrelaatioita, ja voisiko mahdolliset eroavaisuudet ympäristönhallinnan muotojen painotuksessa Perun ja Bolivian lainsäädännössä selittää maantieteeltään, historialtaan ja poliittistaloudellisilta olosuhteiltaan samankaltaisten maiden erot metsäkadon voimakkuudessa.</p> <p>Tutkimusaineisto koostuu kahdestatoista Perun ja Bolivian vuosien 1974 ja 2023 aikana säädetyistä metsien hallintaan liittyvistä laeista. Tutkimuksessa toteutettiin lisäksi kirjallisuuskatsaus tarkastellen Perun ja Bolivian yhteiskunnallista kontekstia kuuden viime vuosikymmenen aikana. Analyysimenetelmänä käytettiin vertailevaa analyysia MSSD (most similar system design) lähtökohdasta käsin. Vertailun kohteena oli kokonaisuutenaan Peru ja Bolivia, sekä tutkimukseen temporaalista syvyyttä lisäten kummastakin maasta kolme ajanjaksoa (Peru 1975–1996, 1997–2010 ja 2011–2024; Bolivia 1974–1991, 1992–2011 ja 2012–2024).</p> <p>Tutkimuksen tulokset osoittavat, vaikka molemmissa maissa eri ympäristönhallinnan muotoja on painotettu lainsäädännössä eri vuosikymmenten aikana, selvää korrelaatiota metsäkadon intensiteetin ja ympäristönhallinnan muotojen välillä ei ole havaittavissa Perussa eikä Boliviassa. Ympäristönhallinnan keinojen ja metsäkadon suhdetta voidaan kuitenkin etsiä jatkossa syventymällä yksityiskohtaisemmin metsälainsäädännön sisältöihin tai keskittyen tarkastelemaan muiden kuin valtion organisaatioiden ympäristönhallintaa.</p>		
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Tiivistelmä - Referat - Abstract The neighbors Peru and Bolivia have other things in common besides massive forest resources: both countries were once colonized by Spain, and the economic and political turmoil of recent decades has been very similar in the two nations. Additionally, deforestation has reached alarming levels in both Peru and Bolivia, yet in Bolivia, the rate of deforestation has been up to twice as high as in Peru, especially in the last two decades. Land use changes have been identified as the main cause of deforestation in both countries, but how do different forms of forest governance affect deforestation? This research examines the forms of environmental governance reflected in the forest and environmental legislation of Peru and Bolivia between 1974 and 2023, in accordance with the multiple environmentalities framework, and the variation in the intensity of deforestation. The aim of the research is to determine whether correlations can be observed between the forms of environmental governance and the intensity of deforestation, and could the differences in the emphasis placed on forms of environmental governance in Peruvian and Bolivian legislation explain the differences in the intensity of deforestation in countries that are otherwise similar in terms of geography, history, and political and economic conditions? The research material consists of twelve laws related to forest governance enacted in Peru and Bolivia between 1974 and 2023. The study also included a literature review examining the social context in Peru and Bolivia over the past six decades. The analysis method used was comparative analysis based on the MSSD (most similar system design) approach. The comparison focused on Peru and Bolivia as a whole, and, to add temporal depth to the study, three time periods from each country (Peru 1975–1996, 1997–2010 and 2011–2024; Bolivia 1974–1991, 1992–2011 and 2012–2024). The results of the research indicate that, although the emphasis of each environmentality has differed in the legislation of both countries over the past decades, no clear correlation between the intensity of deforestation and forms of environmental governance can be observed in either Peru or Bolivia. However, the relationship between environmental governance and deforestation can be explored further by examining the content of forest legislation in more detail or by focusing on environmental governance by non-state organizations.		
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1 Introduction

In South America, in the Amazon rainforests, deforestation is accelerating at an alarming rate. This poses a major threat to biodiversity, soil health and water resources, and local smallholder farmers and indigenous communities are also affected by the degradation of the Amazon rainforest (Brandão et al., 2022). Globally, deforestation in the Amazon is exacerbating climate change by contributing to the release of carbon into the atmosphere and the loss of carbon sinks (Brandão et al., 2022; Pereira, 2022).

There are multiple causes for deforestation in the Amazon, although land-use change has been identified as the main one. The control of deforestation is complicated by the fact that the Amazon rainforest is spread across six countries, each with its own forest and environmental legislation (Pereira, 2022). As a result, differences in deforestation intensity vary between the Amazonian countries. In Peru, with 68 million hectares of Amazon rainforest (FAO, 2020a; MINAM, 2016), deforestation has occurred since the mid-20th century and accelerated over the past two decades (e.g. MINAM, 2023; GFW, 2024a; FAO, 2020a). In Peru, the causes of deforestation can be found in the expansion of agriculture and cattle ranching, the construction of infrastructure, as well as in demographic factors and weak control (MINAM, 2022; MINAM, 2016; Smith et al., 2006; Hiedanpää et al., 2011). In Bolivia, meanwhile, deforestation has accelerated since the 1980s, particularly due to the expansion of agriculture and cattle ranching on new land areas (Killeen et al., 2008; Peralta-Rivero, 2020). Bolivia has 20 million hectares of Amazonian rainforest and 30 million hectares of other forest types (FAO, 2020b). The accelerated deforestation in Bolivia has been intense also in a regional context: while deforestation rates in countries such as Brazil, Ecuador and Colombia have remained relatively stable, deforestation in Bolivia has strongly increased throughout the 2000s (Córdova & Navia, 2022; Romero-Muñoz et al., 2019).

In Peru and Bolivia, although both having experienced intense deforestation, Bolivia the deforestation has been statistically even stronger

than in Peru (e.g. FAO, 2020b; GFW, 2024b). Interestingly, although the two countries are similar in terms of natural geography and forest resources, and they also share social similarities, a similar colonial history, and similar economic changes since the late 20th century (Freedom House, 2012; Freedom House, 1992; Freedom House, 2024a; Freedom House, 2024b; IMF, 2024a; IMF, 2024b), the differences in deforestation today are still significant. While Peru lost 2.9 million hectares of tree cover between 2011 and 2024, in Bolivia the loss was 5.2 million hectares over the same period. Between 2000 and 2010, 1,2 million hectares of tree cover vanished in Peru and 2,4 million hectares in Bolivia (GFW, 2024b). What could explain the differences in deforestation rates between two otherwise similar countries? The answer might be found in the way the countries govern their forests.

The various approaches to environmental governance and protection and their effectiveness have been the subject of debate in recent years (Büscher & Fletcher, 2019). The concept of multiple environmentalities, developed by Fletcher (2010;2017), helps to identify forms of environmental governance (Fletcher, 2010; Fletcher, 2017). The multiple environmentalities framework helps to acknowledge what can be identified as the latent causes for environmental degradation and nature loss: lack of awareness (disciplinary environmentalism), lack of economic incentive (neoliberal environmentalism) or lack of rules (sovereign environmentalism) (Chambers et al., 2020).

While many of the causes of deforestation in Peru and Bolivia have been identified, I believe it is important to gain a deeper understanding of the impact of environmental governance approaches on deforestation and its intensity. In this thesis, I argue that the forms of environmental governance identified by Fletcher have had an impact on differences in deforestation intensity between Bolivia and Peru over the past six decades. I examine how neoliberal environmentality, sovereign environmentality, and disciplinary environmentality appear in Peruvian and Bolivian environmental and forest legislation between 1975 and 2023. At the same time, I examine the political-economic and social conditions in the countries over the past decades. My hypothesis is that the economic, social and political developments in Peru and Bolivia have largely followed each other

since the 1970s, but there have been differences in forest governance, which would also explain the differences in the intensity of deforestation.

I use the national forest laws of Peru and Bolivia as well as other national laws affecting forests, such as environmental and nature conservation laws from the 1970s and 2010s (I will refer to this material later as forest-related legislation). I conduct my comparative analysis by constructing a total of six time periods, in three of which I examine the political-economic situation in Peru, the state of civil society and democracy, trends in nature conservation, and environmentalities and deforestation intensity, and in three of which I examine the same variants in Bolivia. I examine whether my hypothesis of similar political-economic and social developments between the two countries holds true, and whether a correlation can be found between certain forms of environmental governance and deforestation rates. I compare the different periods of time in the two countries, and Peru and Bolivia as a whole.

I will begin my thesis by looking in more depth at the multiple environmentalities framework, what it can reveal about environmental governance and how it has been applied in previous studies. I will then open my research question in more detail, followed by a presentation of the structure and starting points of comparative research and its applicability to this thesis, and a more detailed presentation of my data. I will then describe the time periods I have constructed and compare them with each other, as well as the general situation and developments in Peru and Bolivia. In the discussion section, I consider whether my hypothesis about the causality between forest governance forms and deforestation is correct and contemplate on alternative perspectives for research on this topic.

2 Theoretical Background – The Multiple Environmentalities Framework

The multiple environmentalities framework emerged from the concept of ‘governmentality’ and the ‘Multiple Governmentalities’ framework developed by Foucault (e.g. Foucault & Gordon, 1980; Foucault, 1991; Fletcher 2010). The multi-

ple environmentalities framework has been used and developed by, among others, Agrawal (2005), Fletcher (2010; 2017), Chambers et al. (2020) and Persson et al. (2022). Agrawal, who made the concept of environmentality more widely known (Cepek, 2011), uses the term environmentality to describe the relationship between the environment and government, and to examine how and why people in the (Indian) rural region come to care about the environment (Agrawal, 2005). Fletcher uses the multiple environmentalities framework to structure the debate on different approaches to environmental policies and practices, as do Persson et al (Fletcher, 2010; Persson et al., 2022). The framework categorises environmental policy means according to each governance approach (Fletcher, 2010).

One of the environmentalities is a market-based *neoliberal environmentality*, where the idea is to try to influence people's behaviour with external, economic incentives or disincentives, such as subsidy or taxation. Next, we have *disciplinary environmentality* based on the creation of ethical norms and raising awareness, through education, for example. The third environmentality is *sovereign environmentality*, where the focus is on creating and controlling protected areas, and nature conservation is often considered superior to other development goals (Fletcher, 2010; Fletcher, 2017; Chambers et al., 2020).

The fourth environmentality that can be distinguished is *truth environmentality*. Truth environmentality is advocated especially by ecologists and it is based on the close relationship between human and nature. Fletcher defines truth environmentality as a way of managing the environment based on belief systems about the fundamental nature of the universe. This worldview requires people to adopt a submissive attitude towards the environment (Fletcher, 2010).

Fletcher stresses that none of these environmentalities is mutually exclusive, and often more than one environmentality can be identified in a conservation approach, discussion or debate. Different environmentalities can be seen as interrelated concepts which, depending on the context, may alternately merge, compete, contradict or co-exist. Conservation practices that represent combinations of different environmentalities include, for instance, ecotourism, which

uses disciplinary methods, such as educating locals and tourists about the values of local nature, in addition to a neoliberal emphasis on economic incentive (Fletcher, 2010).

Chambers et al. (2020) use the multiple environmentalities framework in their study on conservation projects in the Peruvian Amazon. In their article, Chambers et al. (2020) conceptualise neoliberal environmentality, sovereign environmentality and disciplinary environmentality, arguing that all three environmentalities have built-in assumptions about a particular problem that prevents the success of environmental protection, its solution and its outcome. The neoliberal definition of the problem framework is "lack of resources". For example, poverty forces people to use natural resources unsustainably. The solution is therefore to improve livelihoods through sustainable means, which in turn leads to a reduced need for, for example, deforestation. In disciplinary environmentality, the supposed problem is "lack of awareness". The solution would therefore be to raise awareness of the importance of the environment, leading to an increased desire to protect the forest. Finally, sovereign environmentality identifies the problem as a 'lack of enforcement', i.e. the lack of laws that promote environmental protection and the enforcement of these laws. The solution, according to the sovereign approach, is therefore to increase restrictions, such as bans on logging, which will increase the fear of violating these restrictions, and thus reduce deforestation (Chambers et al., 2020).

Maguire-Rajpaul et al. (2022) use Fletcher's multiple environmentalities framework to carry out a comparative study of Ghana's and Cote d'Ivoire's cocoa and forest governance practices that influence the behaviour of smallholder farmers in the regions. Meguire-Rajpaul et al. (2022) extend the framework temporally to examine changes in governance patterns throughout the history of Ghana and Côte d'Ivoire, and to determine whether environmental governance, within the framework, differs in the current "climate-smart" era from other eras. Using Fletcher's framework and adding a temporal dimension, Maguire-Rajpaul et al. (2022) succeed in showing that despite the different political economies of the countries, in all eras of Ghana and Côte d'Ivoire smallholder farmers' behaviour

has been dominated mainly by overlapping neoliberal and sovereign environmentalities (Maguire-Rajpaul et al., 2022).

The concept of environmentality has also been challenged. Cepek (2011), for example, argues that many researchers using the governmentality conceptual model underestimate the human capacity to be critical and self-aware of socio-ecological change. Cepek questions whether the autonomous perspective of the population is overlooked if the assumption is that people's relationship with the environment is shaped only through governance (Cepek, 2011). A similar critique of the concept of environmentality is provided by Faye (2016). He argues that the relationship with the environment can take shape and change without the individual being involved in a top-down intervention (Faye et al., 2016).

Despite the critique, Fletcher's multiple environmentalities framework has in previous studies been successful in identifying and analysing forms of environmental governance. For example, in nature conservation, and in identifying certain trends in forms of governance over time and across regions. I therefore believe that the framework also works well for analysing legislation. The framework provides a model for classifying forms of governance, which consequently would facilitate a comparison across different cases and over time.

2.1 Comparative Analysis and Comparative Environmental Policy Research

In this study, I used a comparative research method to examine differences in deforestation between Bolivia and Peru over different time periods, the environmentalities found in the forest-related legislation and the political, economic and social factors that may explain these differences.

Comparative research is a useful research method to identify systematic differences and similarities between phenomena, and to develop and test theories and causalities. Better theory, in turn, can lead to better practice (Berg-Schlosser, 2015). An advantage of comparative environmental policy research



is that the results of the study can broaden the mindset of successful policies: if policy X succeeds in place A, why can't it succeed in place B? While comparative environmental policy research helps to test and develop theories, it also allows us to understand and appreciate the policy context of the specific region under study. In turn, identifying the political context and the needs of individual countries helps to understand how these needs interact with global processes (Steinberg & Vandever, 2012).

Comparative policy research distinguishes between *Most Similar Systems Design (MSSD)* and *Most Different Systems Design (MDSD)*. This thesis uses the first model, the *Most Similar Systems Design*. The idea is to select the regions to be compared so that they are as similar as possible in their characteristics, except for the one characteristic that is the subject of the study (Anckar, 2008). For this study, Peru and Bolivia were selected as relatively similar countries geographically and historically, although the latter has experienced a higher rate of deforestation than the former. It is assumed that, despite economic, political and social similarities, differences in environmental governance found in forest-related laws would explain differences in deforestation rates.

The challenge of the Most Similar System Design is, however, that, given the limited number of regions and countries, it is impossible to compare cases where all but one background factors are exactly alike. However, it is also possible to apply the model more loosely, by examining countries that appear to be similar in as many background characteristics as possible, but not all these characteristics need to be systematically matched (Anckar, 2008). Furthermore, the *Most Similar System Design* and the *Most Different System Design* models can also be combined. This was done by De Meur and Berg-Schlosser (1994), who developed the models further by comparing systems that are *Most Different with Same Outcome* and systems that are *Most Similar with Different Outcome* (De Meur & Berg-Schlosser, 1994). In this study, the model matches more closely to the latter, Most Similar with Different Outcome.



3 Research questions

Considering the similarities between Peru and Bolivia in terms of geography, history and society, but also considering the different trends in deforestation intensity over the last decades, I want to investigate the following questions:

How has the intensity of deforestation varied in Peru and Bolivia over the past decades, and what societal changes have taken place during these periods?

If the two countries are indeed so similar in geography as well as political-economic and societal development, can the differences in deforestation rates be explained by the environmental governance embedded in forest-related legislation?

If there is no correlation, could another factor be explaining the differences in deforestation intensity?

4 Materials and methods

4.1 Literature Review

To examine the social, economic and political developments in Peru and Bolivia, I used a wide range of academic publications and articles. Many of these publications were related to Latin American Studies, International Relations, Cultural Studies, Political and Democratic Studies, Political Economy or other social sciences that examined political, economic or other social developments in Peru or Bolivia. In addition, to look specifically at civil society and its evolution, I relied on reports by Freedom House from different years. For economic development, I used reports and data from the International Monetary Fund and

the World Bank. I also made use of two news articles (El País and Mongabay) covering the latest turns in environmental policies.

Through a literature review, I also examined the underlying causes of deforestation in Peru and Bolivia over different decades (e.g. Córdova & Navia, 2022; Killeen et al., 2007; Móstiga et al., 2024). In addition, I used reports published by Peruvian and Bolivian governmental institutions. I obtained figures on the intensity of deforestation and tree cover loss from FAO's country reports for different years (especially deforestation from 1970's to 1990's), as well as from statistics provided by the Global Forest Watch.

When writing the first drafts, I used ChatGTP to summarise the text I had written. This was useful to better outline the information I had already found and to structure it better. However, no AI has been used in the final text.

4.2 Legislative Review

The focus of the study was to examine the laws relating forest governance of Peru and Bolivia from different decades, and to examine the different environmentalities recognised in them. I chose the forestry laws of Peru and Bolivia to include in the analysis, but to expand the sample, I also included other laws that would affect forest use. In addition, I wanted to select laws from both countries that are at least somewhat equivalent. Therefore, in addition to the forestry laws, for both countries I analysed the laws on nature reserves and environmental laws. I also selected supreme decrees from both countries that dealt with forest governance in more detail. I also looked at Peru's 1978 Law on Native Communities and Agrarian Development of the Selva and Ceja de Selva, which focused on the development of rainforest areas, and Bolivia's 2012 Mother Earth Law, which focused on the definition of the nature relation. Thus, six laws from each country were selected for analysis, for a total of twelve (see table 1).

To identify the different environmentalities, I coded citations according to their actions (e.g., economic incentive, fostering research, creating a governing body, prohibitions and regulations, conducting an environmental impact study, etc.),

and thematized the codes using the Multiple Environmentalities framework into the categories of neoliberal environmentalism, disciplinary environmentalism and sovereign environmentalism. I did not include truth environmentalism in the final analysis, since it was so poorly represented. I thus followed the example of Chambers et al. study. A frequency analysis allowed to visualise how many actions in each law fell into each environmentalism group. The coding as well as the visualisation was supported by Alas.TI.

To ensure the coherence of the review, I developed a few ground rules to implement the coding. First, I coded only the clear actions, and so I left the general objectives and principles of the ‘general dispositions’ sections completely unanalysed. I also did not code the responsibilities of the different administrative bodies listed in the laws (e.g. Ministry X is responsible for subject Y), unless it involved a creation of a new administrative body or an implementation of a specific action. Furthermore, as stated earlier, I did not code anything other than articles specifically related to forests. For example, for Forestry and Wildlife laws, I did not focus on articles related to fauna. I went through all the laws several times, and I tried to look at all the laws equally and as objectively as possible.

Table 1: Laws that were included in the analysis.

	Year	Law	No of Articles	General Dispositions	To Note
Peru	1975	No 21147: Forestry and Wildlife Law (<i>Ley Forestal y de Fauna Silvestre</i>)	93	The law establishes the protection of forest and natural resources and lays down systems for the use, transformation and commercialisation of their products.	
	1978	No 22175: Law on Native Communities and Agrarian Development of the Selva and Ceja de Selva (<i>Ley de Comunidades Nativas y de Desarrollo Agrario de la Selva y de Ceja de Selva</i>)	102	The law establishes an agrarian structure that contributes to the integral development of the regions of Selva and Ceja de Selva and its population, especially indigenous communities.	The analysis of the law focused on the aspects related to forests and forest use.
	1997	No 26834: Law on Natural Protected Areas (<i>Ley de Areas Naturales Protegidas</i>)	31	The law regulates matters relating to the management and protection of nature conservation areas.	The law on protected areas is likely to focus on conservation, with a particular emphasis on sovereign environmentalism.
	2000	No 27308: Forestry and Wildlife Law (<i>Ley Forestal y de Fauna Silvestre</i>)	39	The purpose of the law is to regulate and control the sustainable use and conservation of forest resources and wildlife in a manner that is consistent	



				with the use of the environmental services provided by forests and with the social, economic and environmental interests of the nation.	
	2011	No 29763: Forestry and Wildlife Law (<i>Ley Forestal y de Fauna Silvestre</i>)	157	This law regulates matters relating to the use of forest and wild animals.	
	2015	No 018-2015: Supreme Decree That Approves the Regulations for Forest Management (<i>Decreto Supremo que Aprueba el Reglamento para la Gestión Forestal</i>)	217	This Decree approves the Forestry Decree, which aims to regulate the institutional framework for the management of forests and wild fauna and flora.	
Bolivia	1974	No 11686: Ley General Forestal de la Nación	132	This law establishes general regulations for forest use and protection to ensure that the forest sector generates socio-economic benefits for Bolivia.	
	1975	No 12301: Wildlife, National Parks, Hunting and Fishing Law (<i>Ley de Vida Silvestre, Parques Nacionales, Caza y Pesca</i>)	122	The law regulates the protection, exploitation and use of wild animals. The law addresses the use of national parks and other protected areas.	Many articles concerned fishing, hunting and the protection of fauna.
	1992	No 1333: Environmental Law (<i>Ley del Medio Ambiente</i>)	118	The purpose of the law is to protect the environment and natural resources and regulate activities affecting them, and to promote sustainable development to improve the quality of life of the population.	The analysis of the law focused strictly on the aspects related to forests and forest use.
	1996	No 1700: Forestry Law (<i>Ley Forestal</i>)	46	The law aims to regulate the sustainable use and protection of forests and forest land, and to promote ecological, economic and social sustainability.	
	2012	No 300: Framework Law on Mother Earth and Integral Development for Living Well (<i>Ley Marco de la Madre Tierra y Desarrollo Integral para Vivir Bien</i>)	57	This law establishes a regulatory framework to the protection and legal rights for the environment, or 'Mother Earth'	The analysis of the law focused strictly on the aspects related to forests and forest use.
	2016	No 2914: Supreme Decree to create the Programme for Monitoring and Control of Deforestation and Forest Degradation (<i>Decreto Supremo para crear el Programa de Monitoreo y Control de la Deforestación y Degradación de Bosques</i>)	24	The purpose of this decree is to establish a monitoring and control programme for deforestation and forest degradation.	

4.3 Case constructions over historic time spans

Since the intensity of deforestation has varied between Peru and Bolivia in different decades, it is useful to add a temporal dimension to the comparative study, and to divide the analysis of Peru and Bolivia into different time periods.

As mentioned in the chapter on multiple environmentalities framework, a temporal dimension in comparative research has also been used by Maguire-Rajpaul et al. (2022).

I formed the time periods based on the timescale of forest-related laws. Another option would have been to structure the periods according to the intensity of deforestation, but since the idea was to look at the impact of environmental governance on deforestation, it was more logical to structure the periods according to the laws. In Peru, new forest laws were enacted in 1975, 2000 and 2011, which made it simple to create time periods according to these laws. I also tried to form the periods so that the laws analysed would be at the beginning of the time period. This would allow the law to be in force for most of the time period and thus, at least in principle, affect the state of the forests.

In Bolivia, the most recent forestry law in force is from 1996. However, the Environmental Law of 1992 made me decide to set the first timeframe between it and the 1974 Forest Law. In 2012, the laws on Mother Earth entered into force, so it made sense to establish a second and third period around that law. In addition to the laws and deforestation, I considered the political-economic situation, nature conservation trends, and the state of civil society and democracy of each time period as comparative variables.

5 Analysis and Results

Here, I delve into the time periods of Peru and Bolivia. In each period, I focus on five different variables, first three of them being *political-economic situation*, *civil society and the state of democracy*, and *trends in nature conservation*.

My aim is to use these different factors to consider not only the intensity of deforestation but also the social, political and economic context and thus understand what societal changes were taking place during each period. My hypothesis is that these first three variables will closely mirror each other between the

two countries, and the main differences will be found in the fourth and fifth variables: environmentalities in forest-related legislation and deforestation.

Next, I will go into more detail about the different factors in the table. The political-economic situation is compiled with reference to the results of various articles, as well as IMF and World Bank data related to e.g. GDP and inflation rates. Here I will focus on crises and structural changes in the national economy, as well as on national and international political trends and changes in the political climate.

Civil Society and the state of democracy is largely based on Freedom House reports and indicators, as well as the literature on the subject. I also refer to the literature when discussing trends in nature conservation in Peru and Bolivia. This factor helps to verbalize what trends in nature conservation were present at the national level. For example, what was the role of NGOs and how did the state invest in the establishment of nature reserves? Understanding trends in nature conservation helps to understand environmental and forest-related legislation.

The fourth column provides a summarized analysis of the emphasis on the different environmentalities found forest-related legislation of the period. The last column represents deforestation over time, that is, total deforestation during the whole time period and average annual deforestation of the same period. Data on deforestation in Peru 1-2 and Bolivia 1-2 are from FAO reports, and data on deforestation in Peru 3 and Bolivia 3 are from Global Forest Watch due to recent data availability. I compare several FAO reports from different years noting the differences between the data. There is a margin of error in comparing different reports and sources, but trends in deforestation intensity can still be observed.

Table 2: Table structure.

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975-1996)					
Peru 2 (1997-2010)					



Peru 3 (2011–2024)					
Bolivia 1 (1974–1991)					
Bolivia 2 (1992–2010)					
Bolivia 3 (2011–2024)					

5.1 Peru 1 (1975-1996): The Era of Rapid Neoliberalisation

Table 3: Peru 1

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975-1996)	1. Latin American Debt Crisis and hyperinflation caused economic downfall. 2. Mining industry started to develop 3. Implementation of neoliberal reforms	1. Partly free country (Freedom House) 2. Democracy strengthened when dictatorship ended in 1980's, but during Fujimori, authoritarian elements were evident 3. The poverty of the rural population led to civil movements. The power of labour unions was small compared to private companies.	1. Establishment of large nature reserves 2. Foreign investment in nature conservation and active international environmental NGOs	1. The laws emphasised sovereign environmental features in their environmental governance, but neoliberal forms of governance are also evident	1. 3,3 million hectares of forest area lost. (FAO) 2. Annual deforestation of 130 thousand hectares on average. (FAO)

5.1.1. Deforestation in Peru during 1975-1996

According to the FAO's 2010 report, in 1975 the total forest area in Peru was 71.9 million hectares, while in 1995 forests covered 66,6 million hectares of land area. Based on these figures, a total of 5.3 million hectares of forest area were lost over this period, and the average annual deforestation would have been 250 thousand hectares (FAO, 2010a). According to the 1988 report, however, the estimated annual deforestation for the period 1981-1985 in Peru would have been 270 thousand hectares (FAO, 1988). Between 1975 and 1996, therefore, the annual deforestation rate most certainly varied.

5.1.2 Political-economic development in Peru during 1975-1996

During this period, Peru faced many economic instabilities. These included the Latin American debt crisis of 1983 and the hyperinflation in Peru between 1988 and 1990. These events led to deep recessions, unemployment and a sharp fall

in GDP (Klein, 2004). In the 1980s a political shift took place, when the twelve-year dictatorship ended, and civilian rule returned to the country (Freedom House, 2001).

In the 1980s and 1990s, neoliberal turns were taken before leftist politics, and many neoliberal reforms were implemented in Latin American countries (Vergara & Encinas, 2016; Russi, 2008). This included opening to international markets as well as privatisation. Between the 1980s and 1990s, then Peruvian President Fujimori, known for his corrupt and authoritarian administration, was responsible for these neoliberal reforms designed to ease the economic crises of the time. The reforms were implemented rapidly and received a lot of support from the United States (Crabtree, 2020). The integration of international markets and liberalisation policies led to the increase of imports and exports, and exports were seen to increase by 80 % in monetary terms between 1990 and 1997. Additionally, between 1980 and 2000, Peru's mining industry began to develop significantly, building the foundation for the country's economy (Russi, 2008).

5.1.3 Civil society and the State of Democracy in Peru during 1975-1996

In 1980, the Freedom House ranked Peru as a partly free country, and the same rating was given in 1996 (Freedom House, 1980; Freedom House, 1996). In the early 1980s, the state of democracy improved considerably after the end of the dictatorship (Freedom House, 2001). Democracy was undermined in the late 1990s by President Fujimori's presidential-military rule and his stated desire to remain in power longer than the law allowed (Freedom House, 1996).

The economic challenges of the time were reflected in social indicators. In the mid-1980s, an estimated 60% of the Peruvian population lived in poverty (Rosini, 2015). Towards the end of the 1970s, the smallholders living in the rural areas suffered from poverty and the lack of presentation in decision making (Alvarado et al., 2017). The collapse of workers' living standards in the late 1980s was not relieved by labour unions, as the movement was small at the time compared to the power of private companies (Crabtree, 2020). In urban areas, street violence was a major problem: around 20 thousand people were killed

because of political violence in the 1980s (Rossini, 2015). Indigenous peoples still faced many injustices in the 1990s (Freedom House, 2000), and environmental hazards of mining started to be a regular cause of conflict (Russi, 2008).

5.1.4 Nature conservation trends in Peru during 1975-1996

In the 1980s, large number of protected areas were created in Peru. However, later under President Fujimori's administration between 1990 and 2000, fewer protected areas were created. Conversely, the opposite trend was also apparent: in the 1990s, many international environmental NGOs were active in Peru, the Peruvian Law on Protected Areas was enacted in 1997, and many multinational actors invested in protected areas. For example, in 1991 the World Bank provided a loan to finance Peru's new National Fund for the Protection of Protected Areas (Zimmerer, 2011).

5.1.5 Environmentalities in the legislation in Peru during 1975-1996

Of this period, I analysed the 1975 Forest Law (No 21147: Ley Forestal y de Fauna Silvestre) and the 1978 Law on Native Communities and Agrarian Development of the Selva and Ceja de Selva Regions (No 22175: Ley de Comunidades Nativas y de Desarrollo Agrario de la Selva y de Ceja de Selva) The laws emphasized sovereign environmentalism in forest governance, but there are also neoliberal features. In particular, the 1975 Forest Law emphasized the management and regulation of different levels of protected areas (e.g. articles 12, 14-20). The law also focused on imposing strict conditions on the granting of forest use licences (e.g. articles 30, 34, 35, 44, 45) and limited the size of the area to be used (e.g. articles 36, 37). The law also specified the types of violations that would lead to the denial of use permits and other penalties for violations of the Forest Law (e.g. article 40). On the other hand, the 1975 Forest Law also emphasized regular economic valuation of forest resources by the Ministry of Agriculture (article 39). Other neoliberal practices were also introduced in the law. Among other things, forestry enterprises were obliged to use their resources to focus on improving the living conditions of their workers, and the state was required to provide technical and other incentives to support the processing of forestry and its products (e.g. articles 68, 75, 76).

The 1978 Law on Native Communities and Agricultural Development in the Selva and Ceja de Selva regions also imposes clear restrictions and regulations on forest management (e.g. articles 18, 30, 35), which clearly fall within the sovereign environmentalism. However, neoliberalism is relatively strong in this law. For example, it stipulates that the Ministry of Agriculture and Food shall financially support forestry projects that consider the diversity of tree species (Article 87). Farmers and members of indigenous communities are also granted certain financial exemptions (Article 95). Looking at the period 1975-1996 in Peru, it can be said that although the laws emphasise sovereign environmentalism, there are also many neoliberal features.

5.2 Peru 2 (1997-2010): The Era of Strong Neoliberal Governance

Table 4: Peru 1 and Peru 2 compared.

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975-1996)	1. Latin American Debt Crisis and hyperinflation caused economic downfall 2. Mining industry started to develop 3. Implementation of neoliberal reforms	1. Partly free country (Freedom House) 2. Democracy strengthened when dictatorship ended in 1980's, but during Fujimori, authoritarian elements were evident 3. The poverty of the rural population led to civil movements. The power of labour unions was small compared to private companies.	1. Establishment of large nature reserves 2. Foreign investment in nature conservation and active international environmental NGOs	1. The laws emphasised sovereign environmentalism features in their environmental governance, but neoliberal forms of governance are also evident	1. 3,3 million hectares of forest area lost. (FAO) 2. Annual deforestation of 130 thousand hectares on average. (FAO)
Peru 2 (1997-2010)	1. Neoliberal institutions remained strong 2. Strong economic growth: from USD 50 billion to USD 150 billion. Economic structure diversified. 3. External relations (especially with the US) strengthened	1. Free country (Freedom House) 2. Increased political freedom and democracy after Fujimori 3. The emergence of conflicts between citizens and businesses, e.g. on environmental issues and continued public distrust of decision-makers and corruption	1. The creation of new protected areas continued to be driven by international funding 2. Management and control of protected areas was often inadequate	1. The laws emphasise both sovereign environmentalism and neoliberal environmentalism in environmental governance. New neoliberal governance instruments are introduced in the new Forestry Law.	1. 1,2 million hectares of forest area lost. (FAO) 2. Annual deforestation of 120 hectares. (FAO)

5.2.1 Deforestation in Peru during 1997-2010

According to the FAO's 2020 Forest Resources Assessment (FRA) report, the total forest area in Peru in 2000 was 75.3 million hectares and in 2010 74.1 million hectares. According to these figures, the forest area in Peru decreased by 1.2 million hectares during this period, and the annual deforestation would have been 120 thousand hectares (FAO, 2020a). The data on forest cover is very different from the FAO 2010 report, but it can be assumed that even if the calculation methods have changed between the reports, the relative change is still similar. According to Global Forest Watch data, between 2001 and 2010, Peru lost 1.16 million hectares of its tree cover, with an annual average loss of 116 million hectares. The largest loss of tree cover occurred in 2009, when 178 million hectares were lost (GFW, 2024a).

5.2.2 Political-economic development in Peru during 1997-2010

Unlike in many other Latin American countries, the neoliberal institutions established in the 1980s and 1990s remained strong during the 2000s. One of the reasons could be the strong economic growth starting in the 1990s and its continuance in the 2000s (Vergara & Encinas, 2016). The economic growth was strong throughout the entire 2000s, as Peru's GDP was around USD 56 billion in 1997 and around USD 150 billion in 2010 (IMF, 2024a).

Although Peru's economy was still heavily reliant on exports of raw materials, they were becoming more diversified, and domestic consumption was growing. Foreign investment continued to play an important role in Peru, yet Peruvian companies also began to gain a bigger role in the development of economic sectors (Drinot, 2011). Under President Toledo (2001-2006), political and economic cooperation with the United States strengthened. In 2006, the Peruvian Congress approved a trade agreement between Peru and the United States (Burron, 2011). However, though good conditions had been created for foreign investment in Peru, most of the economic benefits were lost abroad (Drinot, 2011).

Although many expressed a need to change the political course of the country, the neoliberal trajectory has not been abandoned, and the "capitalist revolution"

initiated by President Fujimori with his neoliberal reforms continued under President Toledo and President Garcia (2006-2011) (Vergara & Encinas, 2016; Drinot, 2011; Vergara & Watanabe, 2016).

5.2.3 Civil society and the State of Democracy in Peru during 1997-2010

The resignation of Fujimori resulted in more political freedom and human rights. (Freedom House, 2001) Whereas Freedom House had previously classified Peru as a semi-free country, in 2001 Peru was already classified as a free country (Vergara & Watanabe, 2016), and similarly in 2010 (Freedom House, 2010).

However, the state of democracy seemed to be undermined by neoliberal political-economic policies. Instead of consolidating democracy, neoliberal economic reforms were perceived to have created a political climate characterised by corruption, unaccountability and authoritarianism. Peruvians did not feel a sense of trust towards decision-makers (Drinot, 2011).

Violent unrest occurred during the 2000s. In 2009, for example, Peru experienced several violent conflicts and demonstrations attributed to environmental issues and the injustices experienced by local communities (Freedom House, 2010). Corruption remained a serious problem, and public officials were still easily bribed by both citizens and businesses (Freedom House, 2010).

5.2.4 Nature Conservation trends in Peru during 1997-2010

The administrations of President Panigua (2000-2001) and President Toledo designated many new protected areas which had begun to receive international funding in the late 1990s. Between 2000 and 2004, the World Bank and the Inter-American Development Bank financed the creation of new protected areas in Peru with tens of millions of dollars. By 2006, the area of protected areas in Peru had increased by 240% since 1985. It is worth mentioning, however, that the management of protected areas in Peru was at times inadequate. The acceleration of conservation efforts in Peru in the 2000s is also reflected in the creation of

the Servicio de Areas Naturales Protegidas (SERNAP) and the Peruvian Ministry of Environment in 2008 (Zimmerer, 2011).

5.2.5 Environmentalities in the legislation in Peru during 1997-2010

Of this period, I analysed the 1997 Law on Natural Protected Areas (No 26834: Ley de Areas Naturales Protegidas) and the 2000 Forest Law (No 27308: Ley Forestal y de Fauna Silvestre).

The environment and forestry laws of this era emphasise both sovereign and neoliberal environmentalisms. The 1997 Environment Act place more emphasis on sovereign environmental governance, which on the other hand is to be expected given that the Environment Act naturally emphasizes environmental protection and protected area management. The law emphasises protected areas and their establishment, as well as monitoring and control of these areas (e.g. articles 4, 5, 9, 13). The law also focuses on various permits for the use of natural resources (e.g. articles 12, 17, 27). The law also emphasizes cooperation with the private sector in managing nature reserves (see article 17).

In the 2000 Forest Law, on the other hand, neoliberal environmentalism is given considerable weight. Although there are sovereign features, such as the emphasis on permits and the regulation of their conditions (e.g. articles 8, 10, 11), the law introduces several economic (dis)incentives for sustainable forest use. The law encourages the use of more tree species and higher added value for the granting of forest use permits (Article 31). Emphasis is also placed on financial payments for access licences and on environmental impact assessments for the exploitation of forest resources (Articles 16, 18, 25). The law also promotes voluntary certification of commercially managed forests, which provides for a discount on logging fees (Article 32).

To sum up, the laws analysed in this era despite influenced by sovereign environmentalism, also show new neoliberal features in legislation and forest governance.

5.3 Peru 3 (2011-2024): The Continuation of Neoliberalist Governance

Table 5: Peru 1, Peru 2 and Peru 3 compared.

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975-1996)	<ol style="list-style-type: none"> Latin American Debt Crisis and hyperinflation caused economic downfall Mining industry started to develop Implementation of neoliberal reforms 	<ol style="list-style-type: none"> Partly free country (Freedom House) Democracy strengthened when dictatorship ended in 1980's, but during Fujimori, authoritarian elements were evident The poverty of the rural population led to civil movements. The power of labour unions was small compared to private companies. 	<ol style="list-style-type: none"> Establishment of large nature reserves Foreign investment in nature conservation and active international environmental NGOs 	<ol style="list-style-type: none"> The laws emphasised sovereign environmental features in their environmental governance, but neoliberal forms of governance are also evident 	<ol style="list-style-type: none"> 3,3 million hectares of forest area lost. (FAO) Annual deforestation of 130 thousand hectares on average. (FAO)
Peru 2 (1997-2010)	<ol style="list-style-type: none"> Neoliberal institutions remained strong Strong economic growth: from USD 50 billion to USD 150 billion. Economic structure diversified. External relations (especially with the US) strengthened 	<ol style="list-style-type: none"> Free country (Freedom House) Increased political freedom and democracy after Fujimori The emergence of conflicts between citizens and businesses, e.g. on environmental issues and continued public distrust of decision-makers and corruption 	<ol style="list-style-type: none"> The creation of new protected areas continued to be driven by international funding Management and control of protected areas was often inadequate 	<ol style="list-style-type: none"> The laws emphasise both sovereign environmental and neoliberal environmentalities in environmental governance. New neoliberal governance instruments are introduced in the new Forestry Law. 	<ol style="list-style-type: none"> 1,2 million hectares of forest area lost. (FAO) Annual deforestation of 120 hectares. (FAO)
Peru 3 (2011-2024)	<ol style="list-style-type: none"> The economy continued to grow steadily. The 2020s have been marked by political scandals, corruption and frequent changes of power. 	<ol style="list-style-type: none"> From a free country to a partly free country. (Freedom House) Problems of corruption and lack of public trust remain. Citizens' movements have been comparatively weak in the face of business political power. 	<ol style="list-style-type: none"> Initiative-led conservation projects, both NGO-led and government-led The Ministry of Environment has focused in particular on climate change mitigation and biodiversity conservation. The 2023 reforms to the Forestry Law have been criticised. 	<ol style="list-style-type: none"> Strong use of the mixed environmentalities form of governance, where all forms of environmentalities are considered. 	<ol style="list-style-type: none"> 2,9 million hectares of tree cover lost. (GFW) Annual loss of 225 thousand hectares of tree cover. (GFW)

5.3.1 Deforestation in Peru during 2011-2024

According to Global Forest Watch (GFW), between 2011 and 2024 Peru lost 2,93 million hectares of tree cover. The average annual loss of tree area over this period would be 225 million hectares (GFW, 2024a) According to FAO's

2020 report, Peru's forest area in 2010 was 74.1 million hectares and in 2020 72.3 million hectares (FAO, 2020a). The peak in tree cover loss was in 2017, when 303 thousand hectares of tree cover was lost. Another peak was in 2020, with 270 thousand lost hectares (GFW, 2024a).

5.3.2 Political-economic development in Peru during 2011-2024

Peru's economic growth continued its previous steady upward trend through the 2010s (Vergara & Watanabe, 2016) but slowed towards the end of the decade (IMF, 2024a). After the pandemic of the early 2020s, the Peru's economy has been recovering, thanks to an increase in credit creation, public investment and the profitability of the mining sector (World Bank, 2024a).

In the 2020s, Peru's political situation has been spinning its wheels, with frequent changes of power and political scandals. (Freedom House, 2024a) Corruption has also contributed to slowing economic growth at the turn of the 2020s (IMF, 2020).

5.3.3 Civil society and the State of Democracy in Peru during 2011-2024

In 2011 Peru was still classified as a free country by Freedom House (Freedom House, 2011), but in 2024 Peru was classified as a partially free country (Freedom House, 2024a). In the 2010s and early 2020s, Peru's political situation has followed a relatively similar path to that of the early millennium, while the same challenges remain in terms of indigenous rights and corruption. In 2011, the leftist President Humala took office, and during his term he faced protests related to mining, among other issues (Freedom House, 2012).

Although Peru's democracy has been stronger than ever over the last two decades, Peruvians still find themselves dissatisfied (Vergara & Watanabe, 2016). In Peru, recent years have seen a strengthening of business political power, at the expense of civil society, and resistance to neoliberal policies has not been very strong (Crabtree, 2020). Compared to neighbouring countries, there was little civic movement in Peru in the 2010s, apart from individual demonstrations against specific issues (Vergara & Watanabe, 2016). In recent years, political tensions in Peru have been linked to the 2022 scandal in which president Pedro

was accused of corruption and other illegalities. This led to violent and deadly protests, and the removal of the president from power. The credibility of decision-making bodies has been affected by such political corruption scandals (Freedom House, 2024a).

5.3.4 Nature Conservation trends in Peru during 2011-2024

In Peru, as in many other Latin American countries, incentive-based forms of protection have become more common in recent decades. REDD+ (Reducing Emissions from Deforestation and forest Degradation) and PES (Payment for Environmental Services) projects have been actively applied in Peru, both NGO-led and state-led (Montoya-Zumaeta, 2021; Rosa da Conceição, 2015).

At the national level, Peru's environmental protection is the responsibility of the Ministry of the Environment (MINAM), which has focused on climate change management and biodiversity conservation. Forest protection has been promoted through the National Programme for Forest Protection and Climate Change Mitigation, launched in 2010 (Gobierno del Perú, 2024).

In 2023, Peru's forestry law was partially reformed. The law also suspends the obligation to require the zoning of forest areas as a condition for the granting of a forest use permit. This makes it easier for forests to be introduced, and the law reforms have been seen to be detrimental to the forest estate (Mongabay, 2024).

5.3.5 Environmentalities in the legislation in Peru during 2011-2024

Of this period, I analysed the 2011 Forest Law (No 29763: Ley Forestal y de Fauna Silvestre) and the 2015 Supreme Decree (No 018-2015: Decreto Supremo que aprueba el reglamento para la gestión forestal) Both make strong use of the mixed environmentality form of governance, where all forms of environmentalities are considered. Peru's most recent forest law (No 29763) of 2011 is quite diverse in its governance. In line with sovereign environmentality, it emphasizes the role of authority in forest governance (e.g. articles 12 and 13 establishing new institutions) and focuses on protected areas (e.g. articles 27, 31, 39, 67). Licences for forest use are also emphasised (see articles 38, 51,

54, 60). On the other hand, neoliberal features are emphasized to a greater extent than in the previous forest law. Economic incentives and disincentives such as forest use fees are mentioned (e.g. article 61) and the economic value of forests is emphasized. For instance, by showing the intention of the state to invest in the forest sector and the benefits of these investments for the actors in the sector (e.g. articles 134, 135, 136). Forest-related research and education are also presented in this law (e.g. articles 137-141).

The 2015 Supreme Decree (No 018-2015), which approves the regulations on forest management, is also quite diverse in its governance practices. Sovereign environmentalism is well represented: it specified the conditions of the forest use permit, and the rules related to the use of forest resources (e.g. articles 41, 43, 52, 69, 71, 83, 88), as well as the consequences of their violation (e.g. articles 45, 46, 207). The law is also strongly influenced by neoliberal features. The conditions for the payment of fees for forest use permits are well defined (articles 111-120) and other economic incentives (e.g. discounts in articles 182, 184, 185 and encouragement of certification in article 192) and disincentives (e.g. fines in article 209) are also emphasized. The law also emphasizes disciplinary environmentalism, such as the promotion of education and investigation (e.g. Articles 151-167).

5.4 Bolivia 1 (1974-1991): The Era of Neoliberal Reforms

Table 6: Peru 1, Peru 2, Peru 3 and Bolivia 1 compared.

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975-1996)	1. Latin American Debt Crisis and hyperinflation caused economic downfall 2. Mining industry started to develop 3. Implementation of neoliberal reforms	1. Partly free country (Freedom House) 2. Democracy strengthened when dictatorship ended in 1980's, but during Fujimori, authoritarian elements were evident 3. The poverty of the rural population led to civil movements. The power of labour unions was small compared to private companies.	1. Establishment of large nature reserves 2. Foreign investment in nature conservation and active international environmental NGOs	1. The laws emphasised sovereign environmentalism features in their environmental governance, but neoliberal forms of governance are also evident	1. 3,3 million hectares of forest area lost. (FAO) 2. Annual deforestation of 130 thousand hectares on average. (FAO)



<p>Peru 2 (1997–2010)</p>	<p>1. Neoliberal institutions remained strong 2. Strong economic growth: from USD 50 billion to USD 150 billion. Economic structure diversified. 3. External relations (especially with the US) strengthened</p>	<p>1. Free country (Freedom House) 2. Increased political freedom and democracy after Fujimori 3. The emergence of conflicts between citizens and businesses, e.g. on environmental issues and continued public distrust of decision-makers and corruption</p>	<p>1. The creation of new protected areas continued to be driven by international funding 2. Management and control of protected areas was often inadequate</p>	<p>1. The laws emphasise both sovereign environmentalism and neoliberal environmentalism in environmental governance. New neoliberal governance instruments are introduced in the new Forestry Law.</p>	<p>1. 1,2 million hectares of forest area lost. (FAO) 2. Annual deforestation of 120 hectares. (FAO)</p>
<p>Peru 3 (2011–2024)</p>	<p>1. The economy continued to grow steadily. 2. The 2020s have been marked by political scandals, corruption and frequent changes of power.</p>	<p>1. From a free country to a partly free country. (Freedom House) 2. Problems of corruption and lack of public trust remain. Citizens' movements have been comparatively weak in the face of business political power.</p>	<p>1. Initiative-led conservation projects, both NGO-led and government-led 2. The Ministry of Environment has focused in particular on climate change mitigation and biodiversity conservation. The 2023 reforms to the Forestry Law have been criticised.</p>	<p>1. Strong use of the mixed environmentalism form of governance, where all forms of environmentalities are considered.</p>	<p>1. 2,9 million hectares of tree cover lost. (GFW) 2. Annual loss of 225 thousand hectares of tree cover. (GFW)</p>
<p>Bolivia 1 (1974–1991)</p>	<p>1. Democracy was strengthened and public institutions reinforced 2. Economic crises due to the Latin American debt crisis and hyperinflation 3. Implementation of neoliberal reforms and opening of markets 4. Agricultural sector was strengthened</p>	<p>1. From a partly free country to a free country (Freedom House) 2. Democracy was strengthened after the end of the dictatorship at the turn of the 1970s and 1980s. 3. Labour movements and peasant organisations were active. Neoliberal reforms were opposed, especially in the late 1990s, due to their negative impact on people's livelihoods.</p>	<p>1. Systematic nature conservation began in the 1970s and 1980s. The first nature conservation areas were established. 2. Nature conservation was strongly promoted by NGOs</p>	<p>1. Sovereign environmentalism particularly emphasised. However, disciplinary environmentalism and neoliberal environmentalism forms of governance also somewhat represented</p>	<p>1. No reliable figure on forest cover change. 2. Average annual deforestation of about 190 thousand hectares. (FAO)</p>

5.4.1 Deforestation in Bolivia during 1974-1991

In 1980, Bolivia's total forest area was 66,8 million hectares, according to FAO's 1988 estimate (FAO, 1988). Estimates from earlier reports differ considerably, with the FAO's 1970 report stating that Bolivia's forest area was last estimated in 1938, when it was reported to be 47.3 million hectares (Persson, 1970). FAO's 2015 estimate of forested area in Bolivia in 1995 was 61,4 million hectares (FAO, 2015). If one compares the figures from the 1988 and 2015 reports, one can calculate that deforestation between 1980 and 1995 was 5.4 million

hectares. This is however not a very realistic number, given that the FAO reports also show that estimated annual deforestation in the first half of the 1980's was 117,000 ha (FAO, 1988), and in the early 1990's the figure would have been 270 000 ha (FAO, 2015).

5.4.2 Political-economic development in Bolivia during 1974-1991

In the late 1970s, Bolivia moved towards more democratic governance, in line with regional trends. Yet, there have been changes in the state of democracy since then, such as the military dictatorship of Luis Garcia Meza in 1980–1981 (Malloy, 1991). The economic situation underwent ups and downs in the 1970's and 1980's. Bolivia did not avoid the economic crisis in the region in the early 1980s and, in addition to huge amount of foreign debt, the country suffered years of negative growth (Malloy, 1991). Living standards fell and tens of thousands of miners and other mining-dependent workers were left unemployed as interest rates rose and hyperinflation accelerated (Malloy, 1991; Redo et al., 2011). Bolivia's response to the economic crisis, as in many other Latin American countries, was to implement neoliberal reforms (Redo et al, 2011; World Bank, 1991). Compared to Peru, in Bolivia the reforms were implemented gradually over the years, with no sudden change in economic policy (Crabtree, 2020). In addition, to stabilise the economy, markets were liberalised, and public institutions were strengthened (World Bank, 1991). Efforts were also made to stimulate the economy by strengthening the agricultural sector and increasing cash crop production (Redo et al., 2011).

5.4.3 Civil society and the State of Democracy in Bolivia during 1974-1991

In 1980, the Freedom House defined Bolivia as a partly free country. The end of the militarist regime at the turn of the 1970s and 1980s increased democracy and civil liberties in Bolivia and in the late 1970s, peasant and labour union organisations were active (Freedom House, 1980). This was also since Bolivia's rich elite were still relatively small at the time, and unable to prevent social movements. During the period of political instability in the 1980s, trade unions had to fight for power with the military (Crabtree, 2020).

In 1992, Bolivia was defined by Freedom House as a free country. During President Paz's administration, privatisation efforts were attempted to be prevented by workers' strikes (Freedom House, 1992).

5.4.4 Nature Conservation trends in Bolivia during 1974-1991

In the 1970s, Bolivia established a forest school and the La Paz Institute of Ecology, marking the beginning of systematic research into the country's flora and fauna, and this was supported by other international institutions. In the 1980s, nature conservation became even more concrete, with, for example, the establishment and declaration of the biological status of Beni as a UNESCO protected area. Other protected areas were also established (Ibisch et al., 2005). Between 1985 and 2004, the total area of protected regions in Bolivia increased by a staggering 664%, from 44 000 square kilometres to 337 000 square kilometres. The promotion of biodiversity conservation was driven by NGOs, as the national government was perceived to be inadequate to carry out conservation activities (Ibisch et al., 2005).

5.4.5 Environmentalities in the legislation in Bolivia during 1974-1991

Of this period, I analysed the 1974 general forestry law (No 11686: Ley General Forestal de la Nación) and the 1975 law on Wildlife, National Parks, Hunting and Fishing (No 12301: Ley de Vida Silvestre, Parques Nacionales, Caza y Pesca).

The 1975 law places a strong emphasis on sovereign environmentality in forest governance. The law focuses on the management of national parks, and it is therefore not surprising that this environmentality is particularly emphasised.

The 1974 General Forest Law emphasises sovereign environmentality when viewed through the multiple environmentalities framework. Yet, neoliberal and disciplinary environmentalities are also present significantly. The law places considerable emphasis on the designation of protected areas and the zoning of forest areas (e.g. articles 9-13), on the request for use permits (e.g. articles 17, 24, 25) and on other rules and prohibitions on forest use (e.g. articles 20, 38, 46). However, the law also emphasises various economic incentives for certain

forestry enterprises (articles 95-109) and the promotion of education and research (articles 110-115). In other words, although the law emphasises prohibitions and penalties in forest management, it could be said that it is still quite diverse in terms of the governance of forests.

5.5 Bolivia 2 (1992-2011): From Hybrid Neoliberal Period to Postneoliberalism

Table 7: Peru 1, Peru 2, Peru 3, Bolivia 1 and Bolivia 2 compared.

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975-1996)	1. Latin American Debt Crisis and hyperinflation caused economic downfall 2. Mining industry started to develop 3. Implementation of neoliberal reforms	1. Partly free country (Freedom House) 2. Democracy strengthened when dictatorship ended in 1980's, but during Fujimori, authoritarian elements were evident 3. The poverty of the rural population led to civil movements. The power of labour unions was small compared to private companies.	1. Establishment of large nature reserves 2. Foreign investment in nature conservation and active international environmental NGOs	1. The laws emphasised sovereign environmental features in their environmental governance, but neoliberal forms of governance are also evident	1. 3,3 million hectares of forest area lost. (FAO) 2. Annual deforestation of 130 thousand hectares on average. (FAO)
Peru 2 (1997-2010)	1. Neoliberal institutions remained strong 2. Strong economic growth: from USD 50 billion to USD 150 billion. Economic structure diversified. 3. External relations (especially with the US) strengthened	1. Free country (Freedom House) 2. Increased political freedom and democracy after Fujimori 3. The emergence of conflicts between citizens and businesses, e.g. on environmental issues and continued public distrust of decision-makers and corruption	1. The creation of new protected areas continued to be driven by international funding 2. Management and control of protected areas was often inadequate	1. The laws emphasise both sovereign environmental and neoliberal environmental governance. New neoliberal governance instruments are introduced in the new Forestry Law.	1. 1,2 million hectares of forest area lost. (FAO) 2. Annual deforestation of 120 hectares. (FAO)
Peru 3 (2011-2024)	1. The economy continued to grow steadily. 2. The 2020s have been marked by political scandals, corruption and frequent changes of power.	1. From a free country to a partly free country. (Freedom House) 2. Problems of corruption and lack of public trust remain. Citizens' movements have been comparatively weak in the face of business political power.	1. Initiative-led conservation projects, both NGO-led and government-led 2. The Ministry of Environment has focused in particular on climate change mitigation and biodiversity conservation. The 2023 reforms to the Forestry Law	1. Strong use of the mixed environmental form of governance, where all forms of environmentalities are considered.	1. 2,9 million hectares of tree cover lost. (GFW) 2. Annual loss of 225 thousand hectares of tree cover. (GFW)



			have been criticised.		
Bolivia 1 (1974–1991)	<p>1. Democracy was strengthened and public institutions reinforced</p> <p>2. Economic crises due to the Latin American debt crisis and hyperinflation</p> <p>3. Implementation of neoliberal reforms and opening of markets</p> <p>4. Agricultural sector was strengthened</p>	<p>1. From a partly free country to a free country (Freedom House)</p> <p>2. Democracy was strengthened after the end of the dictatorship at the turn of the 1970s and 1980s.</p> <p>3. Labour movements and peasant organisations were active. Neoliberal reforms were opposed, especially in the late 1990s, due to their negative impact on people's livelihoods.</p>	<p>1. Systematic nature conservation began in the 1970s and 1980s. The first nature conservation areas were established.</p> <p>2. Nature conservation was strongly promoted by NGOs</p>	<p>1. Sovereign environmentalism particularly emphasised. However, disciplinary environmentalism and neoliberal environmentalism forms of governance also somewhat represented</p>	<p>1. No reliable figure on forest cover change.</p> <p>2. Average annual deforestation of about 190 thousand hectares. (FAO)</p>
Bolivia 2 (1992–2010)	<p>1. The attempt to transform neoliberal political-economic practices into socialist practices by President Morales at the turn of the 2000's.</p> <p>2. The economic recession of the early 2000's was replaced by strong GDP growth, thanks to nationalisation of hydrocarbon sector.</p>	<p>1. From a free country to a partly free country (Freedom House)</p> <p>2. The new Constitution of 2009 was more explicit about human rights and the rights of indigenous communities. Poverty was also significantly reduced.</p> <p>3. Human rights problems, corruption and public mistrust persisted.</p>	<p>1. Many nature reserves were created, especially during the 1990s, when the Bolivian Ministry of the Environment was also established.</p> <p>2. International support and funding for the creation of protected areas was provided. During Morales, the state took a tighter grip on international actors in the country.</p>	<p>1. The laws of this period represent the most dominant combinations of neoliberal and sovereign environmentalities in terms of environmental governance, with sovereign environmentalism being the most represented form of governance.</p>	<p>1. 5 million hectares of forest area lost. (FAO)</p> <p>2. Annual deforestation of 280 thousand hectares on average. (FAO)</p>

5.5.1 Deforestation in Bolivia during 1992-2011

In 1992, Bolivia's total forest area was 62.3 million hectares, and 57.2 million hectares in 2010. Over this period, Bolivia would have lost over five million hectares of forest (FAO, 2015).

Between 1993 and 2000, according to FAO, the annual deforestation in Bolivia was 270 thousand hectares. Between 2004 and 2007 annual deforestation would have reached 302 thousand hectares (FAO, 2010b). According to Global Forest Watch, between 2001 and 2011, the average annual tree cover loss in Bolivia was 247 thousand hectares (GFW, 2024b).

5.5.2 Political-economic development in Bolivia during 1992-2011

President Lozada (first term 1993-1997) oversaw the privatisation process of Bolivia's state-owned companies. However, this was followed by widespread public unrest from the mid-1990s onwards (Freedom House, 2001). The social and political conflicts of the turn of the millennium were also fuelled by the economic downturn of the time (Kehoe et al., 2019). When elected president, Evo Morales (2006-2019) and his party MAS (Movimiento al Socialismo), sought to change the economic structure of the country away from Western models towards a more neostructuralist model based on solidarity and diversity, with the state as the main actor in economic activity (McNelly, 2020).

In 2009, the Morales administration drafted a new constitution for Bolivia, which changed the country's name to 'Plurinational State of Bolivia' to reflect the indigenous peoples and their way of life (Aldermar, 2021). *Vivir Bien* or Living Well ideology, that embraces the idea of living in harmony with nature, also regained a higher profile in Bolivia under Morales, and the concept was incorporated not only into the Constitution but also into the 2006 National Development Programme and other laws and strategies of the time (Aldermar, 2021; Ranta, 2017).

In this period, Bolivia began to experience clear economic growth for the first time. From a GDP of USD 5,6 billion in 1992, Bolivia's GDP reached USD 24.1 billion in 2011, with economic growth accelerating particularly from the mid-2000s onwards (IMF, 2024b). Economic growth was driven by high raw material prices and the nationalisation of the hydrocarbon sector (Kehoe et al., 2019). However, the mining industry, crucial to Bolivia's economy, was still largely dominated by foreign companies (McNelly, 2020). The economic growth benefited the social agenda of President Morales (Centellas, 2011). It is questionable, however, whether the Morales administration was ultimately that distinct from neoliberal policies, and Gautreau & Bruslé (2019) argue that the purpose of the Morales administration was not so much to reject neoliberal structures altogether, but to increase the role of the state in regulating them (Gautreau & Bruslé, 2019). Neostructuralist policies in Bolivia have been largely based on

the extraction of primary natural resources, rather than on economic diversification or increased employment (McNelly, 2020).

5.5.3 Civil society in Bolivia during 1992-2011

In the late 1992s, Freedom House defined Bolivia as a free country (Freedom House, 1992). The new constitution of 2009 took extensive account of human, civil and political rights, yet the human rights situation in the country remained weak, due to political acts of violence, for instance. However, the rights of indigenous peoples were improved (Centellas, 2011).

In 2010, Bolivia was defined as a partly free country by Freedom House (Freedom House, 2010). Even though by the end of the decade many of the social problems that Bolivia had faced in the past, such as high rates of poverty, had improved, polarised politics, corruption, public distrust of the just system and attacks on the government by the press persisted (Centellas, 2011).

5.5.4 Nature Conservation trends in Bolivia during 1992-2011

Under President Lozada's administration, the total area of protected regions grew significantly, and SERNAP (in 1998) and the Ministry of Sustainable Development (in 1993) were created. International organizations such as WWF have been heavily involved in the support, financing and management of protected areas in Bolivia. In the 1990s, European actors also funded agricultural development with an environmental management focus (Zimmerer, 2011).

Since the beginning of President Evo Morales' administration (2006-2019), Bolivia has continued to receive international support for its protected areas (Zimmerer, 2011). Under the Morales administration, NGOs continued to operate in Bolivia, but the government now had a tighter grip on their activities and funding. In 2009, a new government agency, the Forest and Land Administration (Autoridad de Fiscalización y Control Social de Bosques y Tierra or ABT), was created under the authority of the Ministry of Environment and Water. Moreover, although President Morales' policies sought to break neoliberal models, this development was not necessarily observed in environmental governance, and the

same laws from the late 20th century remained in force (Gautreau & Bruslé, 2019).

5.5.5 Environmentalities in the legislation in Bolivia during 1992-2011

Of this period, I analysed the 1992 Environmental Law (No 1333: Ley del Medio Ambiente) and the 1996 Forest Law (No 1700: Ley Forestal).

The 1992 Environmental Law, viewed through the multiple environmentalities framework, emphasise neoliberal and sovereign environmentalities. Sovereign features are particularly related to the definition and management of environmental protection and protected areas (e.g. articles 10, 47) and various prohibitions and regulations on the use of forests and forest resources (e.g. articles 43, 66, 73). Neoliberal environmentality features are associated with the emphasis on the economic valuation of forest resources (Article 49) and the setting of incentive mechanisms for reforestation (Article 50). There is also a general call for responsible economic exploitation of forest resources (Article 46).

The 1996 forest law, and the latest forest law in force in Bolivia, is the most sovereign in its emphasis on environmental governance, but neoliberal environmentality and disciplinary environmentality are also present. Sovereign governance features are particularly related to the management and zoning of (protected) areas (Articles 12, 13, 20, 39, 40), the establishment of various prohibitions and restrictions on forest use (e.g. articles 16, 18, 22), the regulation of use permits (Articles 28, 35) and the emphasis on monitoring forest use (e.g. articles 25, 33). Neoliberal features are also found in abundance, despite sovereign environmentality being the dominant form of environmental governance. The law introduce various disincentives to limit forest use (e.g. progressive and accumulative fines in article 13) and, on the other hand, incentives such as discounts on forest use permits in certain forest areas (article 17) Disciplinary environmentality is represented by an emphasis on certain forest management and use plans (articles 27, 29, 30), rather than on promoting education or research, but nevertheless on promoting environmentally beneficial activities.

In summary, the laws of this period represent the most dominant combinations of neoliberal and sovereign environmentalities in terms of environmental governance, with sovereign environmentality being the most represented form of governance.

5.6 Bolivia 3 (2012-2024): The Continuance of Postneoliberalism

Table 8: All periods compared.

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975-1996)	<ol style="list-style-type: none"> Latin American Debt Crisis and hyperinflation caused economic downfall Mining industry started to develop Implementation of neoliberal reforms 	<ol style="list-style-type: none"> Partly free country (Freedom House) Democracy strengthened when dictatorship ended in 1980's, but during Fujimori, authoritarian elements were evident The poverty of the rural population led to civil movements. The power of labour unions was small compared to private companies. 	<ol style="list-style-type: none"> Establishment of large nature reserves Foreign investment in nature conservation and active international environmental NGOs 	<ol style="list-style-type: none"> The laws emphasised sovereign environmentality features in their environmental governance, but neoliberal forms of governance are also evident 	<ol style="list-style-type: none"> 3,3 million hectares of forest area lost. (FAO) Annual deforestation of 130 thousand hectares on average. (FAO)
Peru 2 (1997-2010)	<ol style="list-style-type: none"> Neoliberal institutions remained strong Strong economic growth: from USD 50 billion to USD 150 billion. Economic structure diversified. External relations (especially with the US) strengthened 	<ol style="list-style-type: none"> Free country (Freedom House) Increased political freedom and democracy after Fujimori The emergence of conflicts between citizens and businesses, e.g. on environmental issues and continued public distrust of decision-makers and corruption 	<ol style="list-style-type: none"> The creation of new protected areas continued to be driven by international funding Management and control of protected areas was often inadequate 	<ol style="list-style-type: none"> The laws emphasise both sovereign environmentality and neoliberal environmentality in environmental governance. New neoliberal governance instruments are introduced in the new Forestry Law. 	<ol style="list-style-type: none"> 1,2 million hectares of forest area lost. (FAO) Annual deforestation of 120 hectares. (FAO)
Peru 3 (2011-2024)	<ol style="list-style-type: none"> The economy continued to grow steadily. The 2020s have been marked by political scandals, corruption and frequent changes of power. 	<ol style="list-style-type: none"> From a free country to a partly free country. (Freedom House) Problems of corruption and lack of public trust remain. Citizens' movements have been comparatively weak in the face of business political power. 	<ol style="list-style-type: none"> Initiative-led conservation projects, both NGO-led and government-led The Ministry of Environment has focused in particular on climate change mitigation and biodiversity conservation. The 2023 reforms to the Forestry Law 	<ol style="list-style-type: none"> Strong use of the mixed environmentality form of governance, where all forms of environmentalities are considered. 	<ol style="list-style-type: none"> 2,9 million hectares of tree cover lost. (GFW) Annual loss of 225 thousand hectares of tree cover. (GFW)



			have been criticised.		
Bolivia 1 (1974–1991)	<p>1. Democracy was strengthened and public institutions reinforced</p> <p>2. Economic crises due to the Latin American debt crisis and hyperinflation</p> <p>3. Implementation of neoliberal reforms and opening of markets</p> <p>4. Agricultural sector was strengthened</p>	<p>1. From a partly free country to a free country (Freedom House)</p> <p>2. Democracy was strengthened after the end of the dictatorship at the turn of the 1970s and 1980s.</p> <p>3. Labour movements and peasant organisations were active. Neoliberal reforms were opposed, especially in the late 1990s, due to their negative impact on people's livelihoods.</p>	<p>1. Systematic nature conservation began in the 1970s and 1980s. The first nature conservation areas were established.</p> <p>2. Nature conservation was strongly promoted by NGOs</p>	<p>1. Sovereign environmentalism particularly emphasised. However, disciplinary environmentalism and neoliberal environmentalism forms of governance also somewhat represented</p>	<p>1. No reliable figure on forest cover change.</p> <p>2. Average annual deforestation of about 190 thousand hectares. (FAO)</p>
Bolivia 2 (1992–2010)	<p>1. The attempt to transform neoliberal political-economic practices into socialist practices by President Morales at the turn of the 2000's.</p> <p>2. The economic recession of the early 2000's was replaced by strong GDP growth, thanks to nationalisation of hydrocarbon sector.</p>	<p>1. From a free country to a partly free country (Freedom House)</p> <p>2. The new Constitution of 2009 was more explicit about human rights and the rights of indigenous communities. Poverty was also significantly reduced.</p> <p>3. Human rights problems, corruption and public mistrust persisted.</p>	<p>1. Many nature reserves were created, especially during the 1990s, when the Bolivian Ministry of the Environment was also established.</p> <p>2. International support and funding for the creation of protected areas was provided. During Morales, the state took a tighter grip on international actors in the country.</p>	<p>1. The laws of this period represent the most dominant combinations of neoliberal and sovereign environmentalities in terms of environmental governance, with sovereign environmentalism being the most represented form of governance.</p>	<p>1. 5 million hectares of forest area lost. (FAO)</p> <p>2. Annual deforestation of 280 thousand hectares on average. (FAO)</p>
Bolivia 3 (2011–2024)	<p>1. Economic growth continued relatively strong, yet Bolivia's public finances remain indebted, and the country is still dependent on fossil fuel production and international commodity market prices.</p> <p>2. After the end of Morales' presidency, Arce, who pursues more moderate policies, took power.</p>	<p>1. Partly free country (Freedom House)</p> <p>2. Democracy was weakened by corruption scandals in the late 2010s. Active labour and peasant unions continue to have a significant influence on the country's politics.</p>	<p>1. Despite 'Buen Vivir' policies, many environmentally damaging measures were taken.</p> <p>2. In response to large-scale forest fires, regulations on burning and clearing of forests were tightened.</p>	<p>1. Among the forms of environmental governance, a combination of sovereign environmentalism and disciplinary environmentalism is particularly well represented.</p>	<p>1. 5,2 million hectares of tree cover lost. (GFW)</p> <p>2. Annual loss of 437 thousand hectares of tree cover. (GFW)</p>

5.6.1 Deforestation in Bolivia during 2012-2024

In Bolivia, as in Peru, deforestation has been particularly intense over the last two decades. According to FAO's 2020 estimate, the total forest area in Bolivia in

2015 was 52.0 million hectares, while in 2020 it was 50.8 million hectares: in other words, 1,2 million hectares were lost in only five years (FAO, 2020b).

According to Global Forest Watch, between 2012 and 2023 Bolivia lost 2,9 million hectares of humid primary forest and 5,2 million hectares of tree cover. Between 2012 and 2023 the average annual deforestation was 437 thousand hectares per year. The absolute historical peak in tree cover loss was in 2019, when 852 thousand hectares of forest were lost, yet 59% of all tree cover loss was due to forest fires occurring that year (GFW, 2024b).

5.6.2 Political-economic development in Bolivia during 2012-2024

During this period, Bolivia's economic growth continued to be quite strong, and in 2023 Bolivia's GDP was already 45.5 billion USD (compared to 24.1 billion USD in 2011) (IMF, 2024b). Since the mid-2010s, however, Bolivia's public debt has increased, and the pandemic that started in 2020 worsened the economic situation, although it recovered quickly. In the 2020s, rising prices for Bolivia's exports have boosted the economy, yet the country remains dependent on international commodity prices and fossil fuels, which makes it rather economically vulnerable (World Bank, 2024b).

Throughout the 2010s, Bolivia's politics and governance continued to be marked by corruption, which contributed to the country's economic development (Freedom House, 2015). The 2019 election rigging scandal led to violent protests and the end of Morales' long presidency (Freedom House, 2024b). Bolivia's president from 2020 onwards, Luis Arce is a member of the same MAS party as his predecessor. Arce has presented himself as a more moderate leader, with experience in public administration and a desire to balance the economy (Quiroga & Pagliarone, 2023).

5.6.3 Civil society in Bolivia during 2012-2024

In 2012, Bolivia was defined as a partly free country by Freedom House, and the same applied in 2024 (Freedom House, 2012; Freedom House, 2024b). Political violence in 2019 destabilized the political situation in the country and forced labour as well as child labour remain challenges in Bolivia, particularly in the mining and agricultural sectors, as well as in drug trafficking (Freedom House, 2024b; Freedom House, 2015). In Bolivia, however, trade unions and peasant unions are still a major force in the country's politics in the 2010s and 2020s (Freedom House, 2015; Crabtree, 2020).

5.6.4 Nature Conservation trends in Bolivia during 2012-2024

While the objectives for the protection of nature were praised during his administration, many environmentally damaging actions were taken during Morales' term of office (Romero-Muñoz et al., 2019; Córdova & Navia, 2022). These included the construction of dams, the unsustainable development of the tourism sector, the 2015 law allowing the clearing of small and communal properties of up to 20 hectares for agriculture or livestock farming, the permission to search for hydrocarbons in protected areas and the legalisation of biofuel production (Córdova & Navia, 2022).

During the 2010s and 2020s, Bolivia has experienced widespread forest fires. Córdova & Navia argue that the implementation of the law on the use of burning explain the peak of deforestation of 2019, when more than 850 000 hectares of forest area were lost, most of this due to forest fires (Córdova & Navia, 2022). The 2019 forest fires sparked widespread popular movements and protests, and the fires also increased the popularity of Mother Earth thinking (Barié & Zuazo, 2022). In 2024, the Arce administration declared a state of emergency due to the forest fires and banned controlled burning in agricultural and forest areas. In addition to deliberate burning, the administration prohibited the authorities from issuing any other permits for deforestation of up to 20 hectares. These permits date back to the Morales administration, when the aim was to promote agricultural productivity (El País, 2024).

5.6.5 Environmentalities in the legislation in Bolivia during 2012-2024

Of this period, I analysed the 2012 Framework Law on Mother Earth and Integral Development for Living Well (No 300: Ley Marco de la Madre Tierra y Desarrollo Integral para Vivir Bien) and the 2016 Supreme Decree (No 2914: Decreto Supremo para crear el Programa de Monitoreo y Control de la Deforestación y Degradación de Bosques) Sovereign environmentality and disciplinary environmentality were particularly prominent during this period.

The forest related aspects of the 2012 Mother Earth Law focused on sovereign environmentality and disciplinary environmentality forms of governance. The law placed much emphasis on enforcing good forest management and making management plans (e.g. article 25: 1, 2) and promoting education (Article 54 Part 2: 3). The law also provided for prohibitions and regulations related to forests and their monitoring (e.g. article 54 part 2: 5, 6, 8). The 2016 Supreme Decree, like the 2013 law, focused on sovereign environmentality and disciplinary environmentality forms of governance. In particular, the importance of authority and monitoring in forest governance was emphasized (e.g. articles 6, 7[2], 9[2] and [3], 14[2] and [3]). On the other hand, the role of education and environmental assessments and studies was significant (Articles 12[3], 12[2], 16[2]).

5.7 Comparing Peru and Bolivia

Looking at the different time periods of Peru and Bolivia, it can be seen that their political and economic development has followed a very similar path, especially before the turn of the millennium (Compare Peru 1 and Bolivia 1). After the end of the dictatorship and the consolidation of democracy, both countries suffered economic crises in the 1980s, which were addressed by neoliberal reforms. These reforms created the conditions for economic growth and the development of different economic sectors. On the other hand, democracy has been subject to deterioration, and presidents in both Peru and Bolivia have sought to extend their limits of power.

Nature conservation trends before the turn of the 2000s were also quite similar between Peru and Bolivia. There was a focus on nature reserves and foreign support for their establishment and maintenance. NGOs played a major role in promoting nature conservation.

Differences between Peru and Bolivia before the beginning of the 2000s can be found between civil society and the civil movement: in Bolivia, the civil movement has been stronger for many decades, while in Peru the private sector has had more visible political power.

If one compares the forms of environmental governance, based on the multiple environmentalities framework, of forest-related legislation in Peru and Bolivia before the 2000s, one can note that while sovereign environmentality is the strongest form of governance in both countries, neoliberal and disciplinary environmentality are also present. Disciplinary environmentality is particularly evident in Bolivian legislation. The level of deforestation was already slightly, but not much, higher in Bolivia before the 2000s, but since the figures for deforestation before 2000 are somewhat unreliable, it is difficult to make a strong comparison. Thus, this does not yet allow us to draw any conclusions about the relationship between the form of environmental governance and deforestation.

As we enter the 21st century, apparent differences in the political and economic situations in Peru and Bolivia are beginning to emerge (compare Peru 2 and Bolivia 2). While in Peru neoliberal institutions remained strong and relations with other countries, especially the United States, were strengthened, in Bolivia a movement began to shift from neoliberalism towards neostructuralism. In Bolivia, this narrative was strongly promoted by President Morales. However, in both countries, economic growth continued strong. The state of democracy was strong at the turn of the 2000s, and both countries sought to strengthen human rights and general freedom. However, various conflicts and human rights restrictions were evident in both countries. In Peru, the unfairness felt towards corporations led to protests, and in Bolivia, distrust towards the authorities remained strong, as it did in Peru.

From the turn of the millennium onwards, in both Peru and Bolivia, nature conservation areas were established at a rapid pace, and nature conservation became more systematic. However, international support continued to have a significant impact on nature conservation. In Bolivia, international nature conservation activities were under closer scrutiny during the Morales era, but international NGOs remained active.

When comparing the forms of environmental governance in the forest-related legislation from the 2000s, in both Peru and Bolivia, neoliberal and sovereign environmentalities are most strongly represented. In Peru in particular, however, neoliberalism took on new characteristics and new forms of neoliberal governance began to appear in legislation. Greater differences in the intensity of deforestation are more apparent when comparing Peru 2 and Bolivia 2. In Bolivia, deforestation has now clearly intensified, whereas in Peru the intensity of deforestation is at about the same level as in the previous period.

The 2010s and 2020s in Peru and Bolivia are broadly similar in terms of their political-economic situation (compare Peru 3 and Bolivia 3). In Peru and Bolivia, economic growth has been strong and steady. The turn of the 2020s in both countries was politically turbulent and there were significant changes of government. In both countries, corruption scandals undermined democracy. In Peru, civic participation has continued to be significantly lower than in Bolivia.

In Peru, environmental protection has been promoted through incentive-based projects, driven by both the state and NGOs. In Bolivia, the Buen Vivir approach was strongly promoted at the state level, giving nature legal rights and seeking to fundamentally change the relationship with nature. However, in Bolivia the environment has been degraded by laws that have facilitated the use of natural resources. In Peru, too, the reforms of the Forest Law in 2023 were widely criticised for facilitating the use of forest resources.

From the 2010s, the environmental governance approach of Bolivia's forest-related legislation has placed a strong emphasis on sovereign environmentality and disciplinary environmentality. In Peru, on the other hand, the environmental

governance approach has been diverse, with sovereign, neoliberal and disciplinary environmentalities represented. In Bolivia, deforestation has been more severe than in Peru, although Peru has also experienced a marked increase in deforestation compared to previous periods. In Bolivia, however, deforestation has clearly intensified after each era.

Table 9: Overlined in red is the accelerated deforestation compared to the previous period. The most prevalent form of environmental governance is highlighted in yellow.

	Political-economic situation	Civil Society and the state of democracy	Trends in nature conservation	Environmentalities in forest-related legislation	Deforestation (total loss of forest area and annual deforestation)
Peru 1 (1975–1996)	1. Latin American Debt Crisis and hyperinflation caused economic downfall 2. Mining industry started to develop 3. Implementation of neoliberal reforms	1. Partly free country (Freedom House) 2. Democracy strengthened when dictatorship ended in 1980's, but during Fujimori, authoritarian elements were evident 3. The poverty of the rural population led to civil movements. The power of labour unions was small compared to private companies.	1. Establishment of large nature reserves 2. Foreign investment in nature conservation and active international environmental NGOs	1. The laws emphasised sovereign environmentality features in their environmental governance, but neoliberal forms of governance are also evident	1. 3,3 million hectares of forest area lost. (FAO) 2. Annual deforestation of 130 thousand hectares on average. (FAO)
Peru 2 (1997–2010)	1. Neoliberal institutions remained strong 2. Strong economic growth: from USD 50 billion to USD 150 billion. Economic structure diversified. 3. External relations (especially with the US) strengthened	1. Free country (Freedom House) 2. Increased political freedom and democracy after Fujimori 3. The emergence of conflicts between citizens and businesses, e.g. on environmental issues and continued public distrust of decision-makers and corruption	1. The creation of new protected areas continued to be driven by international funding 2. Management and control of protected areas was often inadequate	1. The laws emphasise both sovereign environmentality and neoliberal environmentality in environmental governance. New neoliberal governance instruments are introduced in the new Forestry Law.	1. 1,2 million hectares of forest area lost. (FAO) 2. Annual deforestation of 120 hectares. (FAO)
Peru 3 (2011–2024)	1. The economy continued to grow steadily. 2. The 2020s have been marked by political scandals, corruption and frequent changes of power.	1. From a free country to a partly free country. (Freedom House) 2. Problems of corruption and lack of public trust remain. Citizens' movements have been comparatively weak in the face of business political power.	1. Initiative-led conservation projects, both NGO-led and government-led 2. The Ministry of Environment has focused in particular on climate change mitigation and biodiversity conservation. The 2023 reforms to the Forestry Law have been criticised.	1. Strong use of the mixed environmentality form of governance, where all forms of environmentalities are considered.	1. 2,9 million hectares of tree cover lost. (GFW) 2. Annual loss of 225 thousand hectares of tree cover. (GFW)
Bolivia 1 (1974–1991)	1. Democracy was strengthened and public institutions reinforced	1. From a partly free country to a free country (Freedom House)	1. Systematic nature conservation began in the 1970s and 1980s. The first nature	1. Sovereign environmentality particularly emphasised. However,	1. No reliable figure on forest cover change. 2. Average annual deforestation of



	<p>2. Economic crises due to the Latin American debt crisis and hyperinflation</p> <p>3. Implementation of neoliberal reforms and opening of markets</p> <p>4. Agricultural sector was strengthened</p>	<p>2. Democracy was strengthened after the end of the dictatorship at the turn of the 1970s and 1980s.</p> <p>3. Labour movements and peasant organisations were active. Neoliberal reforms were opposed, especially in the late 1990s, due to their negative impact on people's livelihoods.</p>	<p>conservation areas were established.</p> <p>2. Nature conservation was strongly promoted by NGOs</p>	<p>disciplinary environmentality and neoliberal environmentality forms of governance also somewhat represented</p>	<p>about 190 thousand hectares. (FAO)</p>
<p>Bolivia 2 (1992–2010)</p>	<p>1. The attempt to transform neoliberal political-economic practices into socialist practices by President Morales at the turn of the 2000's.</p> <p>2. The economic recession of the early 2000's was replaced by strong GDP growth, thanks to nationalisation of hydrocarbon sector.</p>	<p>1. From a free country to a partly free country (Freedom House)</p> <p>2. The new Constitution of 2009 was more explicit about human rights and the rights of indigenous communities. Poverty was also significantly reduced.</p> <p>3. Human rights problems, corruption and public mistrust persisted.</p>	<p>1. Many nature reserves were created, especially during the 1990s, when the Bolivian Ministry of the Environment was also established.</p> <p>2. International support and funding for the creation of protected areas was provided. During Morales, the state took a tighter grip on international actors in the country.</p>	<p>1. The laws of this period represent the most dominant combinations of neoliberal and sovereign environmentalities in terms of environmental governance, with sovereign environmentality being the most represented form of governance.</p>	<p>1. 5 million hectares of forest area lost. (FAO)</p> <p>2. Annual deforestation of 280 thousand hectares on average. (FAO)</p>
<p>Bolivia 3 (2011–2024)</p>	<p>1. Economic growth continued relatively strong, yet Bolivia's public finances remain indebted, and the country is still dependent on fossil fuel production and international commodity market prices.</p> <p>2. After the end of Morales' presidency, Arce, who pursues more moderate policies, took power.</p>	<p>1. Partly free country (Freedom House)</p> <p>2. Democracy was weakened by corruption scandals in the late 2010s. Active labour and peasant unions continue to have a significant influence on the country's politics.</p>	<p>1. Despite 'Buen Vivir' policies, many environmentally damaging measures were taken.</p> <p>2. In response to large-scale forest fires, regulations on burning and clearing of forests were tightened.</p>	<p>1. Among the forms of environmental governance, a combination of sovereign environmentality and disciplinary environmentality is particularly well represented.</p>	<p>1. 5,2 million hectares of tree cover lost. (GFW)</p> <p>2. Annual loss of 437 thousand hectares of tree cover. (GFW)</p>

6 Discussion

As suggested in the hypothesis and set in the MSSD comparative model, the political-economic and social situations in Peru and Bolivia have had similar features over the last decades, although differences in the political economy can

be identified, especially during the 2000s and 2010s. However, the efforts to break away from neoliberal structures in Bolivia may have remained rather limited. In reality, the developments in Peru and Bolivia are rather similar in this respect. In broad terms, therefore, the hypothesis that Peru and Bolivia are similar in terms of societal development is valid. The same is true regarding the hypothesis on more intense deforestation in Bolivia.

However, the link between increased deforestation and environmentalities remains questionable. In the Peru 3 period, deforestation increased significantly compared to Peru 1 and Peru 2, and the laws analysed during this period showed a strong use of the mixed environmentality form of environmental governance. In Bolivia, on the other hand, deforestation intensified between all periods. Both Peru 1 and Bolivia 1 and Peru 2 and Bolivia 2 followed fairly similar trends in the environmentality of the legislation, yet between Bolivia 1 and Bolivia 2 annual deforestation intensified, while between Peru 1 and Peru 2 deforestation remained at a similar level. In Bolivia 3 sovereign and disciplinary environmentalities were emphasised, while in Peru 3 sovereign, disciplinary and neoliberal environmentalities were all represented. Thus, no clear correlation between the emphasis on different environmentalities and the intensity of deforestation can be identified from the results.

Nevertheless, the literature review reveals other possible reasons for the variation in the intensity of deforestation between Peru and Bolivia. The regional overview and the descriptions of the time periods highlight the most significant causes of deforestation identified, such as agricultural expansion, infrastructure expansion and mining activities. However, in Peru, for example, as Aguirre et al. (2021) suggest, the relative decline in deforestation has been due to the expansion of protected areas (Aguirre et al., 2021). However, in Bolivia, where the extent of protected areas has been very large, the exploitation of natural resources in protected areas has been facilitated by legislation during the 2000's. So, could differences in protected area governance give us an answer to the different level of deforestation? Another phenomenon that emerged from the literature review, both in Peru and in Bolivia, is the recurrence of various political scandals and protests. At the same time, both countries have experienced

strong economic growth largely at the expense of natural resources. Maybe to avoid protests and to guarantee the satisfaction of the citizens, economic growth is to be maintained at a high level, even at the expense of the natural resources such as forests? The literature review also shows that the civil movement in Bolivia is stronger than in Peru. Is it possible that in Bolivia social injustices provoke a greater reaction from the population, and this is why there is a desire to keep forest resources available to as many people as possible, to guarantee livelihoods and satisfaction? These correlations can only be speculated upon, but the literature review suggests that they could be examined in more depth.

The multiple environmentalities framework was useful in examining the forms of environmental governance in legislation. The framework allowed a clear distinction to be made between the emphases of different forms of governance in different laws and in different periods. I would suggest that in almost all laws, sovereign environmentality is most strongly emphasised, as the laws themselves are state-imposed, i.e. top-down regulations on how (in this case) forests should be used and protected. So, should the framework be applied more widely also to the work of NGOs in Peru and Bolivia, for example? This would allow a broader analysis of forest-related environmental governance and a more reliable identification of possible correlations between environmental governance and deforestation. Nonetheless, the multiple environmentalities framework made it possible to identify forms of incentive governance, and activities more focused on education and research.

It should be noted, however, that a different analytical framework could have identified more pronounced differences in emphasis between the Peruvian and Bolivian forest-related laws. Rather than conducting an analysis of only the environmentalities identified in the legislation using the Multiple Environmentalities Framework, it could have been interesting to conduct a content analysis looking at specific tools of governance, such as the incentives, fines, authorisation processes and research efforts identified in the legislation. Could the frequency of a particular governance tool have been linked to deforestation? On the other hand, in addition to identifying the forms of environmental governance, it would

have been interesting to look more closely at the structure and wording of the laws. Additionally, if one is motivated to find the explanation for the differences in deforestation intensity between Peru and Bolivia, it might be useful to look at the forms of forest management or forest conservation mentioned in forest-related legislation, rather than the forms of forest governance. An analytical framework such as content analysis or a freer thematic approach might be suitable.

On the other hand, although the multiple environmentalities framework did not allow to examine forest-related legislation at a more detailed level, the comparative environmental policy research approach was nevertheless quite effective in identifying the specificities of Peru and Bolivia in terms of social development, forest legislation and deforestation intensity. The countries were sufficiently similar for the analysis to be meaningful. Additionally, the temporal dimension added depth to the analysis and helped to better understand the current state of deforestation.

One must also consider the success of the data selection. Could the analysis have focused more on the laws on agriculture and its development, or on mining, for example? Or perhaps the analysis could have focused on nature conservation only and analysed the different forms of environmental governance in this area. If the sample had been even larger, would the differences in emphasis between the different environmentalities have become more apparent?

Another issue worth considering is the extent to which corruption in the Peruvian and Bolivian administrations affects the extent to which well-drafted laws are enforced. Is it worth exploring the hypothesis of the impact of laws and environmental governance on deforestation rates if in reality, laws are not properly enforced? On the other hand, both Peru and Bolivia have had high levels of corruption for many decades, so it is reasonable to assume similar levels of enforcement of laws.

In the future, it would be interesting to investigate in more detail the reasons for the differences in deforestation rates between Peru and Bolivia. Future studies



could look at forest-related laws using a different framework, so that the characteristics of the laws become even more detailed. It would also be worthwhile to examine other policies and laws affecting forests. It would be important to look for reasons for differences in the intensity of deforestation based on the causes of deforestation already identified. For example, what are the differences between farming or mining activities in Peru and Bolivia? And how does the level of corruption in each country affect the control of illegal logging? How do forest conservation objectives differ between Peru and Bolivia? The differences in the intensity of deforestation between these historically, geographically and socially similar countries can certainly be explored in future studies.

6.1 Positionality

In analysing the realisation of the research, it is good to recognise my own position in relation to the subject. I did my undergraduate degree in Geography, which is why it seems natural to look at phenomena in their regional context. In both Geography and master's studies in Global Sustainability, my perspective has been focused on the social sciences and on social phenomena in the Global South. South America is a region with which I am personally familiar, having spent four months in Peru as a volunteer and travelled in the rainforest regions of the country, albeit from the perspective of a tourist, not a researcher. I have also had close contact with current topics in South America during my traineeship at the Ministry for Foreign Affairs of Finland's Unit of Latin America and the Caribbean. All these factors have influenced my research background and knowledge of the social situation in Peru and Bolivia, and my reading of the similarities and differences between the two countries.

6.2 Limitations

There are a few limitations to this study that are worth mentioning. First, there are language limitations. Although I was able to utilize my knowledge of Spanish in

writing this study, some nuances in legal texts and literature may have been overlooked. Second, the data on deforestation used in this study was sourced from both the FAO and GFW. The FAO data in particular should be treated with caution, as it is an estimate of deforestation rather than an absolute measured figure. The comparison between the GFW and FAO data should also be treated with caution.

It should also be noted that the study focused on comparisons between countries rather than, for example, comparisons at a more local level, which could have opened up entirely new perspectives on comparing the intensity of deforestation. However, other data on forest governance rather than national legislation might have been more appropriate for this purpose. In addition, the table could have been based on any factors that could be compared, even though the information obtained from the literature and other sources suggested the selection of these factors. Taking different variables into account could have revealed other interesting information beyond what is included in this study.

7 Conclusions

This study examined the claim that the forms of environmental governance identified by Fletcher - neoliberal environmentality, reconciling environmentality and disciplinary environmentality - are represented in forest-related legislation in Peru and Bolivia and that these forms of governance correlate with the intensity of deforestation.

Although the Amazon rainforest knows no national boundaries, state-imposed forest governance and societal trends affect the overall condition of the Amazon rainforest and thus the global climate. The forest resources of Peru and Bolivia hold great importance for biodiversity and the climate. It is therefore important to identify whether any form of environmental governance is the most effective

way to mitigate deforestation. I looked at both forest-related legislation and deforestation between 1975 and 2023. In addition, my aim was to test the hypothesis that the societal trajectories of Peru and Bolivia have been quite similar from the 1970s to the present day, and therefore the causes of the deforestation rate are to be found within forest governance.

The multiple environmentalities framework is a useful tool for identifying forest-related legislation in Peru and Bolivia. Using the framework, it was possible to recognize the fact that legislation between the 1970s and the 2020s embodies all forms of environmentalities, neoliberal, sovereign and disciplinary, and especially combinations of these forms of governance. It can be stated that no one form of governance stood out to any significant extent.

As predicted, deforestation has accelerated in both countries from the 1970s to the 2020s, but FAO and GFW indicators show that deforestation in Bolivia has accelerated extremely sharply with each decade, while in Peru the increase in deforestation has been relatively steadier.

A comprehensive literature review of the economic, political and social development trajectories of Peru and Bolivia showed that although the main national policy narratives of the two countries diverged quite a bit, especially in the 2000s, the trajectories of the two countries have been quite similar from the 1970s to the 2020s. The strong economic growth and the strengthening of democracy in Peru and Bolivia have been the most significant drivers of societal change. However, internal challenges have not been avoided and public trust towards political decision-makers has been under pressure in both countries.

When comparing the results of the literature review and the indicators of deforestation with the forms of environmental governance identified in forest-related legislation, it becomes clear that there has been no direct correlation between forest governance in and the intensity of deforestation over the last six decades.

Since no correlation was found between forest governance and deforestation intensity, what could explain the differences in deforestation intensity between Peru and Bolivia over the last decades? I suggest that the research could be further



developed to look in more depth at the tools of governance, not just the general forms, and the specific forest management and conservation methods that are found in the legislation and compare these results between the two countries.

Beyond the governmental perspective, it would be interesting to examine, for example, the forms of environmental governance used by environmental organizations, and how they differ from governmental legislation. Identifying forms of environmental governance that could help to control deforestation remains an important task for the future.

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