

MASTER THESIS

A Comparative Study of Environmental Policies: A Case of the Kyrgyz
Republic and Zambia

Sipiwe Zulu

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GLODEP 2022

Declaration

“I herewith declare that this Master Thesis entitled “A Comparative Study of Environmental Policies: A Case of the Kyrgyz Republic and Zambia” is my original work for the Erasmus Mundus Joint Master's Degree in International Development Studies GLODEP. I confirm that the work contained herein is my own, except where explicitly stated otherwise in the text through references or acknowledgements. Furthermore, I declare that the submitted written (bound) copies of the present thesis and the version submitted on a data carrier are consistent with each other in contents.”

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Zásady pro vypracování

Following the World Commission on Environment and Development in 1987, the concept of Sustainable development has been at the helm of many countries' agenda. Environmental consideration and conservation remain a challenge in many countries more specifically developing countries which depend largely on the environment for their development. The primary objective of this study is to make a comparison between the environmental security policies of the Kyrgyz republic and Zambia. The study uses qualitative methodology to reach its aims. Thematic analysis of different policy documents will be employed to identify the similarities and the differences between the policies in both countries. To understand the policy development process and methodology, interviews will be conducted with officials from the various Governmental bodies responsible for the formulation of Environmental Policies. In identifying the differences and similarities between the policies of the two countries, recommendations for improving on already existing policies will be created in light of the just ended COP26 summit which both countries were a part of.

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Abstract

In the 1900s, environmental degradation and resource exploitation were some of the biggest environmental concerns. The more recent years have seen the trend towards sustainable development has grown on a national, regional and global scale. Governments are contributing to this by creating policies and laws that protect and govern the environment. Landlocked Developing Countries (LLDCs) are some of the most vulnerable countries to the consequences of the anthropogenic activities that results in global warming and climate change. Additionally, their geographical location results in a tendency towards using natural resources sustain the economy as trade is usually limited. This paper makes a comparison of between the environmental policies of the Kyrgyz Republic and Zambia using the What's the Problem Represented to be? (WPR) approach as a basis for identifying the similarities and differences of the same. Additionally, the paper examines how the countries respond to their commitments of the 2015 Paris Agreement by reviewing their Nationally Determined Contributions (NDC).

Keywords: Environmental Policies; Kyrgyz Republic; NDC; MEAs; WPR; Zambia

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List of Abbreviations

ADB	Asian Development Bank
BSAC	British South Africa Company
CES	Concept of Ecological Safety
COP	Conference of Parties
DDT	Dichlorodiphenyltrichloroethane
DA	Document Analysis
GRZ	Government of the Republic of Zambia
GHG	Green House Gases
GDP	Gross Domestic Product
IEA	International Energy Agency
IUCN	International Union For Conservation of Nature
LLDC	Landlocked Developing Countries
MDG	Millennium Development Goals
MEA	Multilateral Environmental Agreements
NPE	National Policy on Environment
NDC	Nationally Determined Contributions
PMRC	Policy Monitoring and Research Center
SDG	Sustainable Development Goals
UN	United Nations
UNECE	United Nations Economic Commission for Europe
USSR	United Soviet Socialist Republic
WRM	Water Resources Management
WPR	What's the Problem Represented to be?
WHO	World Health Organization
ZESCO	Zambia Electricity Supply Corporation
ZNBC	Zambia National Broadcasting Corporation

CHAPTER 1: INTRODUCTION

1.1 Overview of the Chapter

The introductory chapter provides the motivation behind the study of environmental policies. It begins by introducing the topic and context of this study. The chapter unfolds by delving into the focus and the spatial scope of the study. It further gives an overview of the countries being compared which is important as it highlights the rationale behind the choice of the selected countries which are the Kyrgyz Republic (also known as Kyrgyzstan) and Zambia. A background of the study is then provided showing the relevance of this study and its addition to literature.

1.2 Topic and Context of the Study

The topic of this study is based on the premise that the environmental policies of the countries of study are ‘similar and have crucial differences, yet they may turn out to have surprising commonalities’ (Walk, 1998). The environment is defined as the totality of all the external conditions affecting the life, development and survival of an organism (OECD, 2005). This definition is important as throughout this study, the use of the word environment encompasses all aspects of what affects the survival of an organism. Environmental concerns and policies can be classified as global, regional and local or national (Rehbinder and Rose-Acherman, 1997). However, this study focuses on global and national policies. Additionally, because policy analysis provides a way for understanding how and why governments enact certain policies, and their effects (Blackmore and Lauder, 2005; Browne, et al., 2019), this study aims to understand the problems represented in the enactment of selected environmental policies. However, the study will not cover the effects of the enactment of these policies.

1.3 Focus and Scope of the Study

The concept of policy can be traced back to the second half of 13th century. Policy comes from the word *policie* which is a Middle English term that means ‘government’ or ‘civil administration’ (Hoppe, 2019). From the time that the word policy was coined, policies have served and continue to serve as the boundaries within which governments

can operate (Agamben, 2009). Policies provide guidance, consistency, accountability, efficiency, and clarity on how countries should operate. They govern different aspects of a country ranging from the economy to health, environment, social security, and general well-being of the citizens among many other aspects (Simeon, 1976). Policies provide guidelines for not only governments but also citizens and non-citizens to operate within. Usually, governments have punishments for those entities who do not abide by the established policies.

This study pays specific focus to environmental policies as the recent years have seen governments' place a greater emphasis on environmental sustainability (Dernbach and Mintz, 2011). The emphasis on environmental sustainability is reflected in the increasing number of multilateral meetings that are held every so often to discuss various environmental concerns such as the rising temperatures, melting polar regions and how countries can contribute to reducing the speed at which these temperatures are rising (IPCC, 2007; Conference of Parties, 2015). Other issues being discussed in these meetings such as the Conference of Parties (COP) are the reduction in emission of Green House Gasses (GHG) (IPCC, 2021). Many of the countries that are a party to such meetings usually formulate policies after the conclusions of these meetings as well as following their commitments that they make during such meetings.

The purpose of this study is to make a comparison between the environmental policies of the Kyrgyz Republic and Zambia. This study contributes to literature as a comparison between the environmental policies of the two countries has not yet been done before. The countries are comparable because they are both classified as Landlocked Developing Countries (LLDCs). LLDCs have a tendency towards having natural resource-based economies (UN-OHRLLS, 2013) as will be elaborated concerning both countries in the next part of this chapter. Another characteristic of the LLDCs is that they are under threat of potential permanent and serious threat of climate change, desertification and land degradation as they are least prepared and most vulnerable in confronting these challenges (UN-OHRLLS, 2013). With this background, the study seeks to understand the policy interventions implemented in these countries to safeguard the environment. The study aims to highlight the differences and similarities between the policies in the countries under study and will briefly address the policy formulation processes in both countries for the sole purpose of comparison.

Furthermore, the study aims to provide recommendations for improvement of the policies of both countries. In addition to this, the findings of the study will provide multilateral organizations a point of reference with regards helping the countries further develop their environmental policies.

1.4 Overview of the Case Study Countries

Overview of the Kyrgyz Republic

Figure 1. Map of the Kyrgyz Republic



Source: Maps of world.¹ Date accessed 24.05.2022

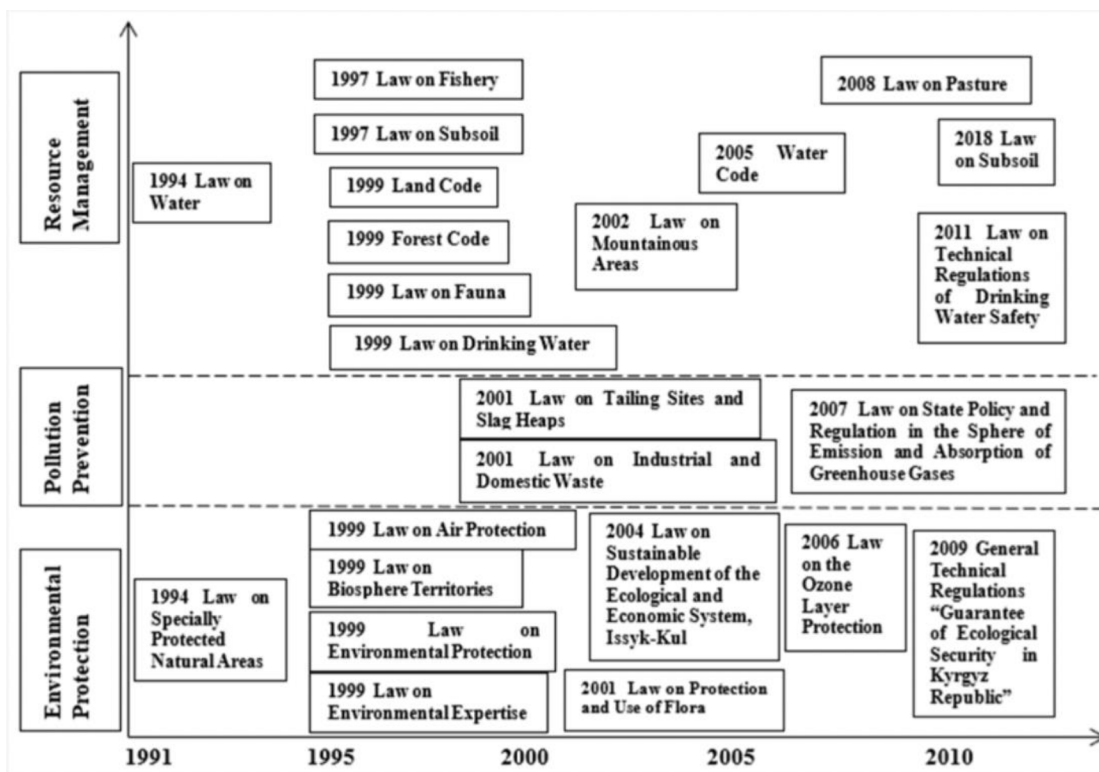
The Kyrgyz Republic is a land-locked, lower-middle-income country located in Central Asia. As depicted in figure 1, it has borders with Kazakhstan to the north, Uzbekistan to the west and southwest, Tajikistan to the southwest and China to the east and southeast. Figure 1. Also shows that the country is largely mountainous and hosts the Tian Shan Mountain ranges which are the largest in Central Asia (Aizen et al., 1997). In 2002, the Government passed a piece of legislations called the ‘Law of the Kyrgyz Republic about the mountain territories of the Kyrgyz Republic.’ The law was created to create social, economic and legal base for the sustainable development and rational

¹ <https://www.mapsofworld.com/answers/tag/kyrgyzstan/#>

use of mountain territories in the country (Kyrgyz Republic Government, 2002). Another prominent physical feature of the country based on figure 1 are the rivers and lakes. Water bodies are governed by the ‘Water Code’ which will be discussed at length in chapter 4 of the study. As of 2020, the country had a population of 6.6 million with a life expectancy at birth of 71.6 years. The GDP of the Kyrgyz Republic is \$7.7 billion and the GDP per capita is \$1,166.7 (World Bank, 2022). The economy of the Kyrgyz Republic is largely dependent on remittances which makes up 25% of the GDP as well as gold mining which makes up 10% of the GDP and 40% of the exports (World Bank, 2018). Kyrgyzstan has 26 types of ecosystems and 160 types of landscapes that are populated by more than 50,000 species (Economic Commission for Europe, 2013).

According to the Kyrgyz Republic Constitution, the Kyrgyz Republic, also referred to as Kyrgyzstan is an independent, sovereign, democratic, unitary country, governed by the rule of law, secular and social state. In addition to this, the country independently conducts its domestic and foreign policies (Asanbekova et al., 2021). Prior to the 1990s, the Kyrgyz Republic along with 14 other republics was a member of the Union of Soviet Socialist Republics (USSR) (Klein, 2022). During this period, the country followed the environmental policies of the Soviet Union. Between 1924 and 1926, 139 laws on environmental protection were enacted however, the Soviet Government neglected the implementation of these laws (Maggs et al, 2020). Langrind (1990) describes these policies as “environmentally unsound policies” and provides further evidence of the decline of the effectiveness of environmental policies because no measure had been put in place regarding enforcement.

Figure 2. Road map of the Kyrgyz Republic eco-environmental laws and regulations until 2010



Source: Hao et al. (2019)

The trajectory of the formulation of environmental laws followed by the Kyrgyz Republic after the collapse of the Soviet Union in 1991 is shown in figure 2. While the timeline only shows policies until 2010, not many policies have been enacted beyond then (Hao et al, 2019). Klein (2022) mentions that after the collapse of the USSR, initially, the Kyrgyz Republic stood out as one of the most democratically oriented countries in Central Asia. This would explain why the country began to develop a lot of environmental policies in this period (Congleton, 1992). Figure 2 shows that the first laws on environmental issues were created in 1994 and they mainly focused on Specially Protected Natural Resources and Laws on water. Yang et al., (2019) break down the development of ecological laws and regulations in the Kyrgyz Republic into three phases as shown below:

- First phase (1991–2000) – Shaping the legislation structure
- Second phase (2001–2008) – Pollution prevention and sustainable development

- Third phase (2009–present) – Ecological security and green economy

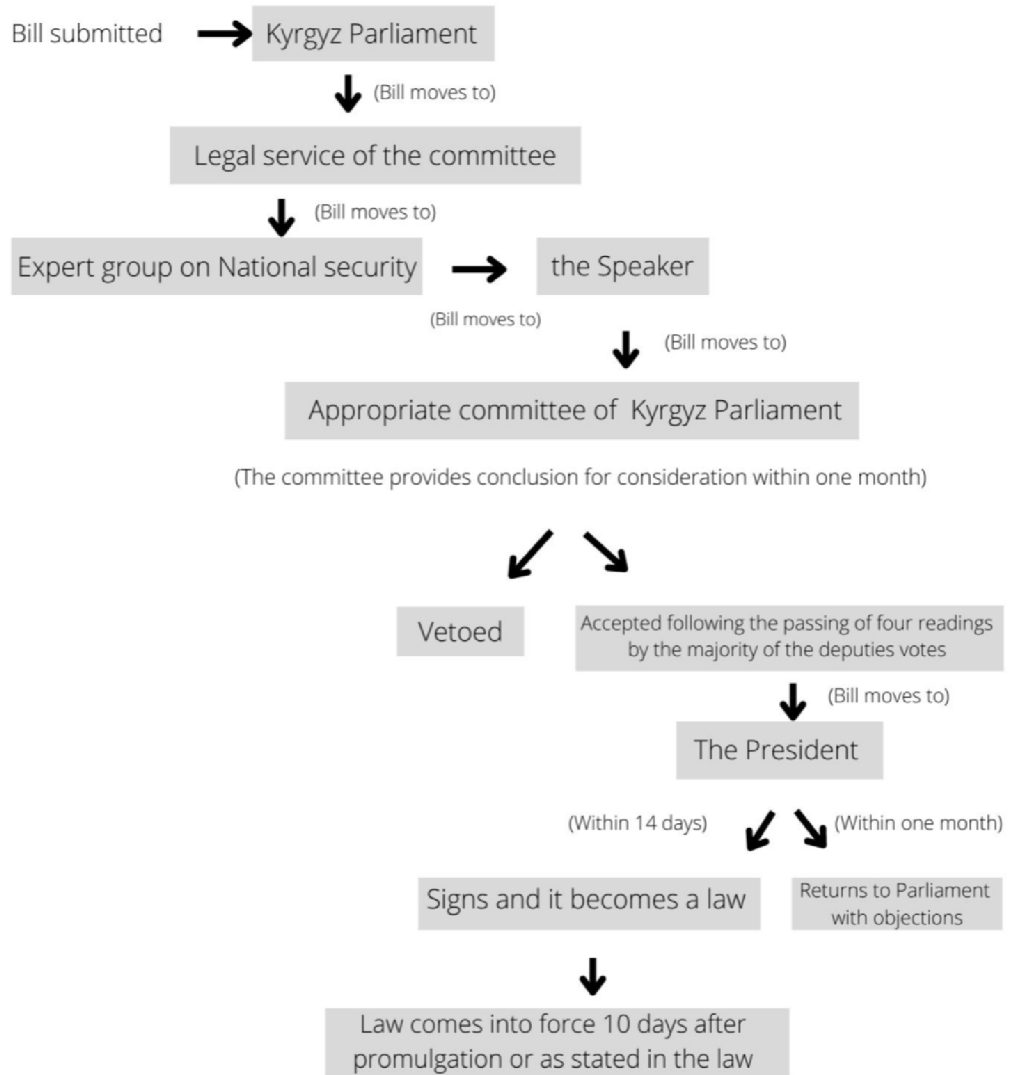
In 1999, the United Nations Economic Commission for Europe (UNECE) produced the first Environmental Performance Review of Kyrgyzstan. As can be seen from figure 2 the Kyrgyz Government responded to the recommendations of the review by creating different kinds of environmental policies. At that time, the Kyrgyz Republic was under ‘command-and-control’ type of environmental policies (Hao et al, 2019). This type of environmental policy will be addressed in more detail in chapter 2. However, what this meant for Kyrgyzstan is that the policies were implemented from the top-down implying that the government created the laws with little or no input from the citizenry.

In 2000, the United Nations created what was known as the Millennium Development Goals (MDGs). Goal number 7 was ‘ensure environmental sustainability’. Countries party to the United Nations Millennium Declaration were required to make strategies to ensure that these goals were met (WHO, 2018). In response to the country’s commitment to Goal 7 of the MDGs, some of laws created beyond 2000 like the ‘2007 Law on State Policy and Regulation in the Sphere of Emission and Absorption of Greenhouse Gases’ (UNDP Kyrgyzstan, 2010). While the laws created after the 2000s may not have been made because of the country’s commitment to the MDGs, they were formulated with due consideration to goal seven of the MDGs.

Policy formulation in the Kyrgyz Republic then evolved into the second phase of the evolution which focused more on market-based environmental policies. Krutov et al. (2018) use the example of the institutionalization of water payments that were introduced following the promulgation of the Water Code in 2005. The third and current phase of the environmental policy evolution focuses on implementation and regulations (Hao et al., 2019). In addition to this, policies now moved towards increased participation of the local community and stakeholders in the legislation improvement process (Kasymov and Hamidov, 2017).

Development of policies in the Kyrgyz Republic

Figure 3. Authors visualization of the policy development process of the Kyrgyz Republic



Source: Besultanov and Khasnov (2021)

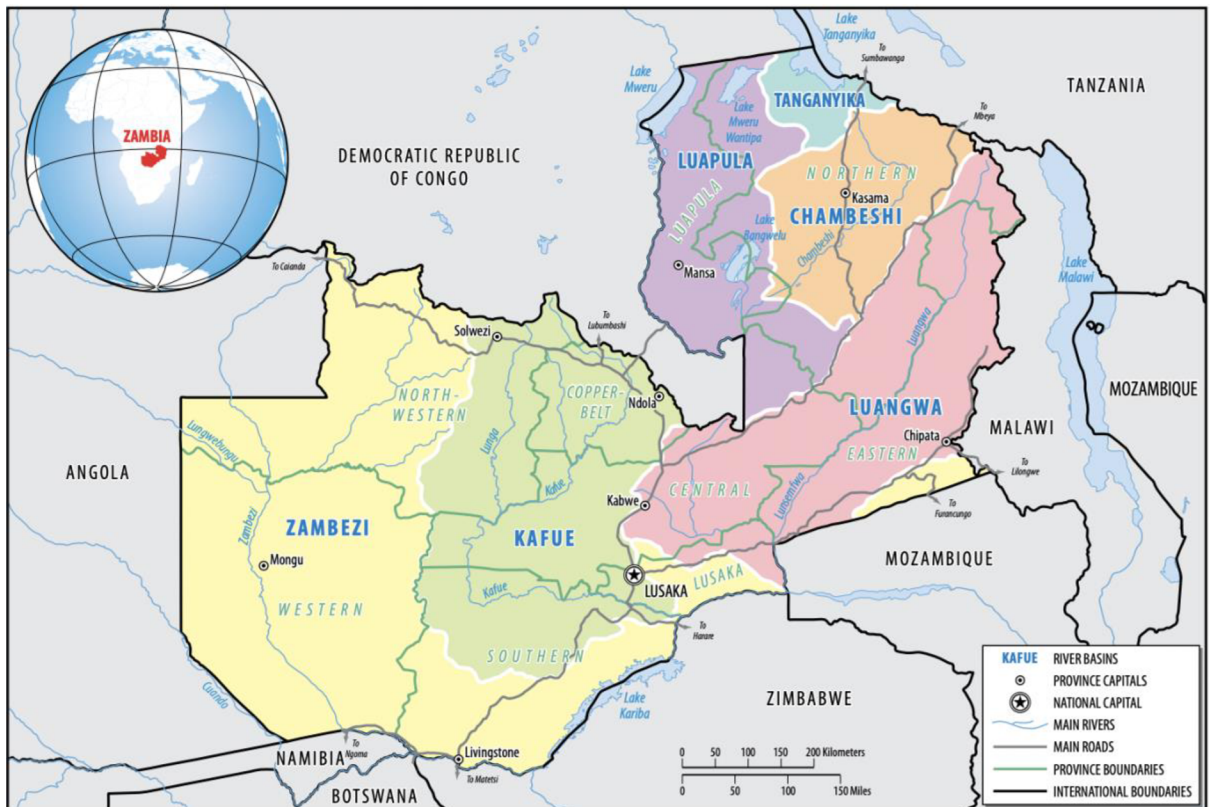
Article 3 of the Constitution of the Kyrgyz Republic provides that the right of legislative initiative belongs to; 10000 voters (popular initiative), the deputies in the Kyrgyz Parliament² and the government. The Parliament of the Kyrgyz Republic is made up of 120 deputies elected for a five-year term from party lists and have priority in making important government decisions (Asanbekova et al, 2021). The authors add that the Kyrgyz Parliament is the highest representative body of the country and it exercises legislative power. Prior to 2010, the Kyrgyz Republic was a presidential republic, however, following a nationwide referendum in the same year, it was defined as a

² The Kyrgyz Parliament is also known at the Jorgoku Kenesh

parliamentary one (Asanbekova et al., 2021; Besultanov and Khasnov, 2021). Figure 3 shows the process a bill³ undergoes before it can be enacted as a law in the Kyrgyz Republic. The bill is first introduced to the parliament and then undergoes five different stages before it can be passed as a which happens when the president signs it.

Overview of Zambia

Figure 4. Map of Zambia



Source: World Bank Date (2009)

Zambia is also a land-locked, lower-middle income country. The country has borders with Malawi and Tanzania to the North-East, Mozambique to the East, Botswana and Zimbabwe to the South-East, Namibia to the South-West, Angola to the West and the Democratic republic of Congo (DRC) to the North. It is in the center of Southern Africa. As can be seen from figure 4, Zambia has a lot of lakes and rivers and 40% of the water in Central and Southern Africa pass through the country (USAID, 2017). Despite facing challenges in the management of water resources that has resulted in pollution,

³ A bill is the name of an act before it is passed as a law (PMRC, 2016)

inadequate information for decision making and inefficient use of water resources (Global Water Partnership, 2015). The country also has notable national parks and game management areas. The Wildlife Act of 2015 provides the legal framework for the management and protection of wildlife in the country. Zambia's population is estimated to be about 17.9 million with the larger proportion of the population being young. Zambia's GDP for 2020 was \$18.11 billion and the GDP per capita \$985.132 (World Bank, 2022).

According to article 4 of the Constitution of Zambia (amended 2016), Zambia is a sovereign republic under a constitutional form of governance. Section 3 of article 4 further identifies Zambia as a democratic state in which the citizens of the country are at liberty to choose a president at their own discretion. This however has not always been the case as the country was once a British Protectorate and a member of the Central African Federation of Rhodesia (Banda, 2010). In 1889, the British South Africa Company (BSAC) was formed by John C. Rhodes which secured him unchecked mineral rights in the Federation of Rhodesia (Harlech and Walker, 1945). The acquisition of the mining rights gave the BSAC involvement in the complex political and economic mechanism of colonial rule as the Royal Charter of 29th October, 1889 empowered the company to exploit colonial resources as well as enlarge the British Empire (Kitagawa, 1983). What this entailed is that Zambia, then known as Northern Rhodesia, followed the environmental policies of the British Protectorate. Zambia was an extractive colony as the goal of the British empire was to extract the raw materials found in the country and transport them back to Britain (Shoemaker, 2015). This implied that little or no regard would be paid to the environment in Zambia as maximum exploitation of copper, lead and zinc was the goal of the Protectorate. This is reflected in some environmental policies such as the Smoke Damage Prohibition Act of 1938 which exempted mining companies from prosecution for air emissions which was only repealed in the mid-1990s (Dixon et al., 2001). In addition to this, the colonial laws had two dominant characteristics. Firstly, the laws focused on sectoral regulation of natural resources and were largely 'use-oriented' and the legislation was primarily concerned with allocation and exploitation of natural resources rather than their management and secondly, the laws were 'rule-oriented' (Ogolla, 1995). Zambia gained its independence in 1964. Subsequently, the country begun to undergo reforms and environmental issues were not a main consideration at that point in time. The focus was on what the then

president Kenneth Kaunda cited as ‘humanism’. (Skewat, 2000). At this time, there was no emphasis placed on environmental preservation and management.

Figure 5. Zambia’s key pieces of Environmental legislation and regulations until 2013

Table 1. Zambia’s Key Pieces of Environmental Legislation and Regulations.

Year	Environmental Component Target /Objective
1970	*Natural Resources Act/Nature Conservation.
1971	*Game Parks and Birds Act/Wildlife Conservation.
1974	National Fisheries Act/ Protection.
1978	*Public Health Act/ Waste Management & Environment
1982	Ratified the 1972 World Culture and Heritage/Eco-tourism Statutes of International Union for the Conservation of Nature and Natural Resources (IUCN).
1985	Petroleum Exploration & Production Act/Pollution Control National Conservation Strategy/Sustainable use of resources
1986	*Local Administration Act (Trade Effluents)/ Pollution Control.
1987	Zambezi River Authority Act/ Water Resources Management
1988	National Heritage Act/Conservation Tourism.
1990	*Enacted Environmental Protection and Pollution Control Act/Integrated Pollution Control and leads to the establishment of Environmental Council of Zambia in 1992.
1991	*Forestry Act (Amended in 1999) and currently under review Ratified Montreal Protocol and Vienna Convention.
1991	*Zambia Wildlife Act (Amended 1998).
1993	Ratified Ramsar and Bonn Convention; and the Endangered Species of Wild Fauna and Flora (CITES) Convention on Biodiversity.
1993	**Water Pollution Control Regulations (Effluent and Waste SI No. 72).
1994	Ratified Basel Convention/Transboundary hazardous waste; and Pesticides and toxic substances Regulations (SI No. 20)/Agriculture and Environment.
1995	Town and Country Planning Act 1995 (approval and revocation of development plans). The Energy Regulations Act (Cap 436; SI No. 16 of 1995)/Energy and Environment.
1996	**Air Pollution Control (Licensing and Emissions Standards) Regulations (SI No. 141).
1996	Ratified UN Framework Combating Desertification.
1997	Environmental Impact Assessment Regulations (SI. 28).
2000	**Hazardous Waste Management Regulations (SI No. 125).
2001	**Ozone Depleting Substances Regulations (SI No. 27)
2003	*Water Act: applies to water rights, impounds for irrigation.
2006	Ratified Kyoto Protocol-UNFCCC.
2008	Launched the first Environmental Policy
2011	Environmental Management Act No.12/ Repeals Environmental Protection and Pollution Act of 1990. More and stiffer penalties to violators.
2011	Water Resources Management Act/Repeals Water Act of 2003.
2013	Environmental Management (Licensing Regulations) SI No. 112/ Repeals all Regulations except for regulations 1997, SI No 28. To make stringent all environmental regulations.

*Repealed Acts or regulations. ** Repealed specifically by Environmental Management (Licensing Regulations) SI. No. 112 of 2013.

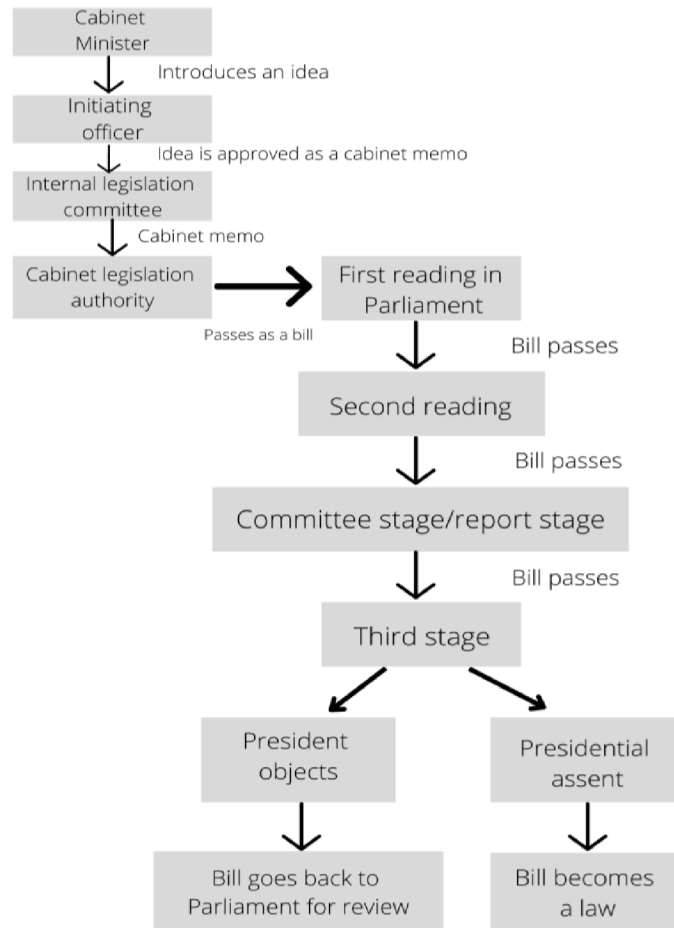
Source: Cuthbert Makondo et al., (2015)

Following the emergence of ‘resource-oriented’ legislation of the African continent between 1950 and 1970 (Ogolla 1995) figure 4 above shows Zambia’s response to this emerging trend as it was not until 1970 that the first environmental policy was passed in the country. The Natural Resources Act of 1970 was aimed at the long-term management and sustainable use of resource management. The government continued to reform the environmental policies of Zambia and in 1990 saw the creation of the Environmental Council of Zambia which was mandated to provide advisory services to

the government concerning environmental issues. Environmental policies have continued to be created beyond 2013.

Law making process in Zambia

Figure 6. Law making process in Zambia



Source: Authors visualization based on the process given by Policy Monitoring and Research Center Zambia (2018)

In Zambia, the key actors in the policy process are ministries, cabinet secretariat, cabinet committees and the cabinet and the (Kaunda et al., 2016). The Policy Monitoring and Research Center (PMRC) defines a governmental policy as any course of action which intends to change a certain situation. Before a policy is formulated in Zambia, it is first introduced in the ministry which the idea concerns, for example, the Ministry of Green Economy and Environment for environmental issues such as natural

resource management as a cabinet memo. It is then reviewed by an initiating officer who oversees policy making in the ministry and acts as a medium between the ministry and those who draft the bill. Following confirmation that the cabinet memo meets the criteria to be a bill it is submitted to the internal legislation committee as shown in figure 6. Having passed three readings in parliament, the bill gets sent to the president for ascent or veto. If the president ascends it because a law and if he vetoes, it goes back to the parliament for reexamination (PMRC, 2018).

1.5 Background of the Study

This study seeks to understand the environmental policies of the Kyrgyz Republic and Zambia. The results of the exploration will be used to undertake a comparison of the policies of the two countries. The two countries are similar in that they are both landlocked countries and they are both heavily endowed with natural resources, that is, gold, extractive minerals and ores in the Kyrgyz Republic (Fumagalli, 2015) and copper in Zambia (Unceta, 2021). The Kyrgyz Republic was a part of the United Soviet Socialist Republic (USSR) and Zambia is a former colony of the British Empire. This piece of information is particularly important because during the colonial periods, intense over-exploitation of the natural resources was done in the 1900s (Ajtmatova, 2001; Ndulo, 1986). The mining activities were conducted for almost 100 years in the Kyrgyz Republic (Torgeoev et al., 2002) and about 75 years in Zambia (Parpart, 1983). Despite both countries having attained independence, they continue to suffer the consequences of these activities (Peša, 2020). Currently, mining contributes 14% to Zambia's GDP (OXFAM, 2021) and 70% of the country's foreign exports earnings (PMRC, 2021). For the Kyrgyz Republic, the GDP as of 2020 is mainly composed of agriculture accounting for 13.51%, industry 29.46% and the service sectors contribution of about 49.63% (O'Neil, 2022). Following the revelations of the resource extractions that took place prior to the attainment of freedom of both countries, the study is motivated by an interest to gain and understanding of some of the environmental policy reforms that may or may not have taken place after the independence of the countries under study.

1.6 Aims of the Study

The main aim of the study is to establish and analyze the similarities and differences between the environmental policies of the Kyrgyz Republic and Zambia. The aim is not necessarily to find which of the countries has better policies but rather to establish wherein the differences and similarities lie in how environmental challenges are addressed by environmental policies and to make recommendations on how each country can improve their environmental policies.

1.6.1 Objectives

The objectives of this research are to:

- gain understanding of the policy formulation process in the Kyrgyz Republic and Zambia.
- study the similarities and differences of the problem representation of the environmental policies in the Kyrgyz Republic and Zambia.
- examine the response of Zambia and the Kyrgyz Republic to commitments made to achieving the aims of the Paris Agreement.

1.6.2 Research questions

The research questions are as follows:

- What is the policy formulation processes in the Kyrgyz Republic and Zambia?
- What are the similarities and differences in the problem representation of the environmental policies in the Kyrgyz Republic and Zambia?
- How are Zambia and the Kyrgyz Republic responding to the stipulations in the MEAs they are a party to?

CHAPTER 2: LITERATURE REVIEW

2.1 Overview of the Chapter

This section explores various existing pieces of literature that build on the subject matter of the study. The first part of the chapter will focus on the definition and history of policy. The importance of this is to create unison about the understanding of environmental policies as they will be explored in this paper. The next part of this chapter seeks to study and make a case for already existing studies that have been made concerning environmental policies. This is followed by an introduction of the history of environmental policies as well as a brief introduction to the policies in the Kyrgyz Republic and Zambia. The chapter will be closed by a theoretical framework that will be proposed to undertake this study.

2.2 Environmental Policy Defined

In his book, *The Origins of Policy*, Page (2008) makes the proposition that the definition of policy is not precisely known therefore, the meaning of the word policy is possibly derived from the context within which it is being used. Many authors also propose definitions of the word policy for example, Easton (1953, pp. 129) defines policy as ‘the authoritative allocation of values through the political process, to groups or individuals in the society’. Following this definition, it can be assumed that societies in general are recipients of policies rather than active participants in the policy making process. The definition by Easton almost counters the definition proposed by Hogwood and Gunn (1984, pp. 23-24). The authors define policy as ‘a series of patterns of related decisions to which many circumstances and personal, group and organizational influences have contributed.’ This definition supposes that many parties beyond the scope of the political spheres are involved in policy formulation process and thus policy in general. Perhaps a more comprehensive definition of the word policy that addresses the shortcomings of the above definitions and the problem in defining policy is that policy is ‘a relatively stable, purposive course of action followed by an actor or a set of actors in dealing with a problem or issue of concern’ (Anderson, 2000, pp. 4). This definition although not addressing in-depth the ‘policy formulation process’ addresses not just the creation of policy but also what it is - the intent, as well as policy as an action. The various definitions proposed above reveal that policy is from the

government to the people, in some cases representative of the views of the citizens and it is a set of actions to deal with a problem or issue of concern in a country. This paper follows the definition of policy given by Anderson (2000) as it holistically endeavors to address the intents and actors in policy.

Lundqvist (1996) proposes that environmental policy can be based on function, institution and purpose. The function-based environmental policies are those that affect the environment. Institutional environmental policies are those undertaken by a certain set of institutions such as an environmental ministry or designated agency as environmental policy. In defining environmental policy based on purpose, Lundqvist (1996) defines environmental policy as courses of action which are intended to affect society – in terms of values and beliefs, action and organization – in such a way as to improve, or to prevent the deterioration of policy instruments. Benson and Jordan (2015) view environmental policy as being the primary way to govern the relationship between humans and the natural environment in a mutually beneficial manner.

2.3 Historical Background of Environmental Policies

It is important to gain an understanding of the historical background of environmental policies as it creates a point of reference with regards the creation of such policies within the countries under study. As the environment is a common aspect of every country, anthropogenic activities and human interference are a recurring theme which mostly negatively impact the environment. However, these activities have been reasons of concern for different countries at differing times in history. Ruttan (1993) makes a very interesting summary of what he calls the ‘three waves of environmental concern.’ According to him, each wave had a set of its own environmental concerns with differing specific issues in each wave. The table below illustrates a summary of the waves as proposed by Ruttan (1993).

Figure 7. Waves of Environmental Concern

Wave	General Concern	Specific Issues
First Wave: 1940s and 1950s	Limited natural resources	Inadequate food production Exhaustion of nonrenewable resources
Second Wave: 1960s and 1970s	By-products of production and consumption	Pesticide and fertilizer use Waste disposal Noise Air and water pollution Radioactive and chemical contamination
Third Wave: 1980s and 1990s	Global environmental change	Climate change Acid rain Ozone depletion

Source: Ruttan (1993)

The first wave was mainly concerned with the limited natural resources which was resulting in inadequate food production and supply as well as the exhaustion of nonrenewable resources (Whitaker, 1940). It was around this period that Thomas Malthus came with what is known today as the ‘Malthusian Theory’ (Waterman, 1987). The Malthusian theory argues that left unrestrained, population growth would eventually be limited by fixed natural resources. Following Malthus’ theory on population growth and natural resources otherwise known as the Malthusian theory, the first wave of environmental concern was triggered by the growing population around the period of the 1940s and the 1950s (Pebley, 1998). On May 8th 1945, World War II came to an end and the countries saw an increase in the growth of the population. The end of the war saw an improvement in medical and public health innovations which resulted in significant health improvements around the world thus having a growing population consequently resulting in less resources to cover the needs of the growing population (Chafe, 2021). In 1948, the International Union for Conservation of Nature (IUCN) was established⁴. The IUCN was the first global environmental union which brought governments and civil societies together with a shared goal to protect nature.

In 1962, Rachel Carson published the book ‘Silent Springs’ which although not being her main intention triggered the environmental movements that resulted in the first Earth Day ever as well as the banning of DDT pesticide (Griswold, 2013). Subsequently, the United Nations Environment Program was formed in 1972. It

⁴ <https://www.iucn.org/about/iucn-a-brief-history>

has been the global authority that sets the environmental agenda, promotes coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment. It was not until the second wave of environmental concern was triggered that international conventions such as the Ramsar Convention on Wetlands (1971), the World Heritage Convention (1972) just to mention a few begun to be formulated.

The third wave of environmental concern which was triggered by Global Environmental concern saw the convergence of countries on a multilateral basis to address these global environmental changes. This was because environmental issues were no longer affecting individual countries but the world at large. It was between the second and the third wave that the first ever international meeting was held to address environmental concerns. In 1972, The first ever United Nations Conference on the Environment was held in Stockholm (Linnér and Selin, 2021). Following this meeting, the participants adopted a series of principles for sound management of the environment including the Stockholm declaration and Action Plan for the Human environment and several resolutions⁵. From the figure 6 above, it can be observed that the second and third waves of environmental concerns have been build-ups to the concerns proposed in the first wave.

Following the United Conference on the Environment, many other global conferences have been held with a very notable one being the World Conference on Sustainable Development led by Harlem Brundtland (Egelston, 2014). In addition to this, more international treaties and MEAs have been signed by many nations across the globe as can be seen from the next section of this chapter. Today the United Nations has continued to host conferences and summits on the environment such as the United Nations Summit on Sustainable development.⁶

2.4 Multilateral Environmental Agreements

⁵ <https://www.un.org/en/conferences/environment/stockholm1972>

⁶ <https://www.un.org/en/conferences/environment>

As environmental issues have become more cross-national and there is an increase in the concerns about global environmental change, there is a tendency towards internationalization of environmental policies (Cocklin, 2009) this has resulted in Multilateral Environmental Agreements (MEAs). Both countries under study are party to several MEAs as well as regional and global organizations. On the other hand, there are some agreements that only one country is party to and not the other. Listed below are the major MEAs that both the Kyrgyz Republic and Zambia are a party to:

- Basel Convention (1992)
- Cartagena Protocol (2000)
- Convention on biological diversity (1993)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)
- Kyoto Protocol (1997)
- Montreal Protocol (1987)
- Nagoya Protocol (2010)
- Paris Agreement (2015)
- Ramsar Convention (1971)
- Rotterdam Convention (2004)
- Stockholm Convention (2001)
- The Beijing Amendment (1999)
- The Copenhagen Amendment (1992)
- The Kigali Amendment (2016)
- The Montreal Amendment (1997)
- United Nations Framework Convention on Climate Change (1994)
- Vienna Convention (1980)
- United Nations Convention to Combat Desertification (1996)

The list below shows only the MEAs that the Kyrgyz Republic is party to that Zambia is not party to:

- Aarhus Convention (1998)
- Convention on Migratory Species (1979)
- Espoo Convention (1997)
- Convention on Long-range Transboundary Air Pollution (1979)

The list below shows only the MEAs that Zambia is a party to which the Kyrgyz Republic is not a party to:

- Minamata Convention on Mercury (2013)
- United Nations Convention on the Law of the Sea (1994)

It is important to have knowledge of these MEAs that both countries are party to because one of the aims of the paper is to establish whether the countries are making efforts to fulfil their obligations by tailoring some of their policies to the MEAs that they are party to.

2.5 Environmental Policy Instruments

Environmental Policy Instruments are measures taken by governments to address the pollution of air, water, solid waste and the depletion of natural resources and to achieve environmental governance (Mickwitz, 2003). Market-based instruments (also known as economic instruments) and command-and-control instruments (also known as regulatory instruments) were initially the only classifications of environmental policy instruments (Lindenburg, 1992). More recently, in wake of environmental governance practices voluntary approaches and education and information have emerged as environmental policy instruments (Cocklin, 2009; Vedung, 1998). This study follows the classification of environmental policy instruments as three namely: command-and-control, market-based and information-based instruments. Command-and-control instruments prohibit or limit the number of certain pollutants or methods to control production processes consequently affecting the behavior of the polluters. This is done using laws, regulations, bans, permits, restrictions and standards etc. (Bergquist et al., 2013). Mickwitz (2003) defines regulations as aimed at modification of the set of options open to agents. Market-based instruments are aimed at internalizing the externalities of environmental pollution, controls and they govern environmental pollution through sewerage charges, environmental subsidies, emissions trading and other market means (Bergquist et al., 2013). These types of instruments are aimed at altering the benefits and/or costs of the agents (Mickwitz, 2003). Some examples of these instruments include grants and subsidies, taxes and charges and market creation (OECD, 1994). Stavins (2005) further categorizes market-based policies into four:

charge systems, tradable permits, market fiction reductions and government subsidy reductions. Information-based environmental policy instruments are aimed at altering the priorities and significance agents attached to environmental issues (Mickwitz, 2003). Liao (2017) mentions that information-based policy instruments are informal regulations and they do not have mandatory enforcement requirements. Information-based policies refer to the specific types of information enterprises are required to provide to the government concerning emissions of pollutants on a corporate scale, determination of environmental threats among other aspects (Lindenburg, 1992). The environmental policy instruments are not mutually exclusive as they all rely to some extent on education and information provision (Cocklin et al., 2007).

2.6 The Importance of Environmental Policies

Environmental policy is needed because it addresses the market and policy failures that are linked to the evolution of property rights (Sterner, 2003). Environmental policies address externalities such as soil erosion which are side effects of production and/or consumption. In addressing the importance of environmental policies, Detlef Sprinz and Tapani Vaahtoranta (1993) propose the “Interest Based Explanation of Environmental Policies.” They postulate that because the international system lacks a central authority to foster environmental protection, despite the evidently growing international environmental interdependence, many countries have opted to adopt different policies to reduce international environmental problems. The authors further go on to add that environmental policies in most cases are a response to environmental concerns. With this said, it can be inferred that environmental policies are important in helping countries address environmental problems. Some of the world’s current environmental issues are food waste, biodiversity loss, plastic pollution, deforestation, air pollution, melting ice caps and sea level rise, agriculture, food and water insecurity, ocean acidification and fast fashion and textile waste. It is important to have an idea of the environmental issues that affect the world today as it will set the tone for understanding and the exploration of the environmental policies to be studied in this paper.

In 1983, the Bruntland commission was established to enquire about ways to save human development, natural resources and prevent deterioration of economic and social development (Borowy, 2013). The commission observed that anomalies were

increasing within and among nations, increasing poverty, especially in developing countries, depleting the ozone layer and causing global warming, depleting natural resources and endangering some species of animals and plants, and causing water and air pollution, and so forth, sustainable development came about as an effort to change the way of thinking about the planet (Brundtland, 1987). This is one of the reasons environmental policies are important. They provide guidelines and regulations which in turn help countries contribute to the fight against climate change and global warming.

Sprinz and Vaahtoranta (1993) add that countries seek to avoid vulnerability to air pollutants and states are more inclined to participate in environmental protection when the costs of compliance are relatively minor hence the need for environmental policies. The spillover effects of not having environmental policies are too costly for governments. Mitchell and Pizzi (2020) show that connection between environmental change, migration and conflict should be treated urgently as the frequency and intensity of the occurrence of natural disasters increases. Therefore, environmental policies serve as safeguards to reducing the risks of natural disaster occurrence.

2.7 Policy Analysis Orientations

Policy analysis is “an applied social science discipline which uses multiple methods of inquiry and arguments to produce and transform policy-relevant information that may be utilized in political settings to resolve policy problems” (Dunn, 1981; pp. 35). Policy analysis involves a concern with explanation rather than prescription which implies a rigorous search for the causes and consequences of policies to accumulate reliable research findings of general relevance (Dye, 1976). Colebatch (2006) proposes that the way policy is ‘mapped’ by governments shapes the way in which the policy process is understood and appropriate forms of action are identified. Authoritative choice (Dye, 1972; Lasswell, 1971), structure interaction (Howard, 2005) and social construction (Lasswell, 1971) are the three maps distinguished by the degree to which the focus is on how policy is? Formed (Colebatch, 2006). Under the authoritative choice, ‘advice goes up, choices are made and handed down to be implemented if there exists no implementation problems’ (Hill and Hupe, 2002). The structured interaction involves

various voices both inside and out of the government all lobbying for responses to the issues affecting them (Colebatch, 2006). On the other hand, Graham (1971) proposes that analysis of the policy process entails the use of three perspectives which are: government is seen as a single rational actor; loose assembly of agencies pursuing their own agenda in mutual ignorance and an area where agencies compete. These perspectives almost mirror the maps proposed by Colebatch (2006); however they have a stronger closeness in meaning to the authoritative choice as Dye (1972: pp. 2) describes policy ‘as what a government chooses to do or not to do.’ Understanding these perspectives and maps is important as it contributes to the basis for the comparison of the two countries under study.

Various literature sources provide frameworks upon which policy analysis processes can be conducted (Peters and Zittoun, 2016). However, in order to establish the framework that attempts to make the most comprehensive comparison between the environmental policies of the countries under study, this study explores Browne et al. (2019) reflections on Colebatch (2006) three broad orientations to policy which are; traditional, mainstream and interpretive as well as Bacchi (1999) epistemological assumption underpinning the management of policy problems. Using the interactions of the theories proposed by Colebatch (2006) and Bacchi (1999), the authors constructed a three-element topology framework shown in figure 7. Below which highlights the interaction of the orientations to policy analysis as proposed by Colebatch (2006) and the analytical focus presented by Bacchi (1999) which distinguishes these orientations based on the focus of inquiry which are comprehensive rationalist (facts as focus of policy making); political rationalist (values reflected in policy) and interpretivist (how is meaning created) (Browne et al, 2019).

Figure 8. Comparison of the major orientations to policy analysis

Orientations to policy analysis	Analytical focus	Type of research questions	Theoretical frameworks	Data sources and methods
Traditional	Facts	Outcome questions How can this policy problem be solved; what is the optimal solution?	Economic frameworks; Basic scientific models; Behavioural psychology	Quantitative modelling; economic analyses; cost-benefit analysis; nudge politics; policy cycle model
Mainstream	Values Actors Political rationality	Interaction questions What values are at stake; whose voices are heard? How is political priority generated?	Policy cycle; policy triangle; punctuated equilibrium; multiple stream theory; advocacy coalition framework	Interviews; document analysis; surveys
Interpretive	Meanings	Representation questions How is the policy problem defined or constructed; what assumptions underpin the problem framing?	What's the problem represented to be; framing; governmentality	Interviews; document analysis; ethnographic methods; historical methods; discourse analysis; narrative analysis

Source: Browne et al. (2019)

Traditional policy analysis involves the use of a rational comprehensive approach to problem solving in a world that is objectively knowable (Browne et al., 2019). Based on the figure 7, this type of analysis leans more towards a scientific approach to identifying and solving problems. Traditional policy analysis views policy as authoritative and it follows a linear, stage problem-solving activity that provides optimal solutions to policy problems (Colebatch, 2006).

When considering the mainstream policy analysis orientation, policy is not conceptualized as a comprehensively rational, linear process but broadly seen as the interaction of values, interests and resources guided through institutions and mediated through politics. (Davis et al., 1993). This orientation incorporates studies of policy networks, processes and agenda setting (Browne et al., 2019). Under the interpretive policy analysis, the policy process is understood as a process of discourse and argumentation (Hastings, 1998).

The Interpretive Approach

This study uses the interpretive approach to policy analysis because this approach contributes to the realization of the objective of understanding the similarities and

differences of the environmental policies in the case study countries. The interpretive approach focuses on engaging more with the stakeholder values and meaning (Weible et al., 2021). Its core questions is ‘how is the policy issue being framed by the various parties to the debate?’ (Yanow, 2000, pp. 11). This approach to policy analysis has been adopted by Methmann et al., (2015) in the book *Interpretive Approaches to Global Climate Governance*.

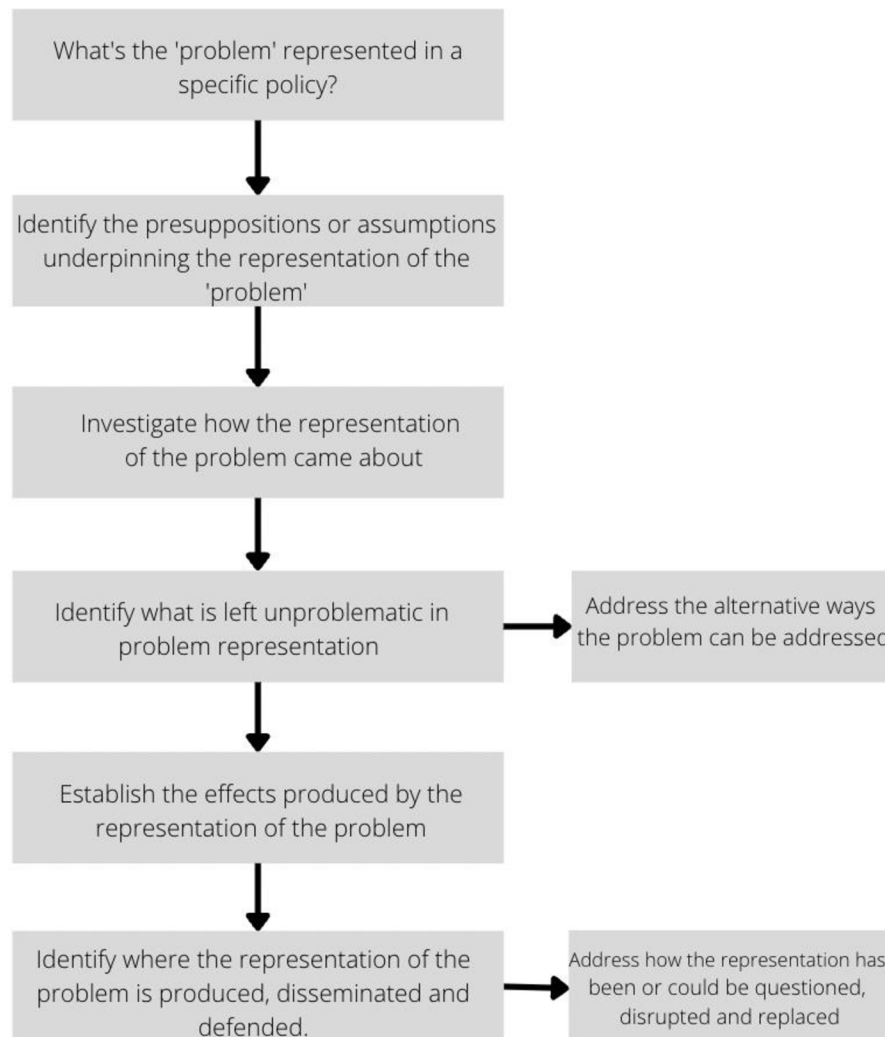
2.8 Theoretical Framework

The theoretical framework provides a basis upon which the comparison of the environmental policies of the two countries under study will be conducted. It provides a better understanding of the theories underpinning policy formulation and comparative analysis. The interpretive policy analysis approach proposes some theoretical frameworks that can be used in policy analysis which include ‘what’s the problem represented to be’ (Bacchi, 1999), frame reflexive policy analysis (Rein and Schön, 1993), narrative policy analysis (Roe, 1994), argumentative discourse analysis (Hajer, 1995; Hajer, 2006) and governmentality (Martson and McDonald, 2006).

2.7.2 What’s the Problem Represented to be? Framework

This study bases the analysis of the environmental policies on the ‘What’s the Problem Represented to be?’ (WPR) framework. This framework is concerned with the deep conceptual premises upon which policies are built rather than identifying gaps between the terms of a specific policy and what is delivered (Bacchi, 2009). The task in a ‘WPR’ analysis is to read policies with an eye to discerning how the ‘problem’ is represented within them and to subject this problem representation to critical scrutiny (Bletsas and Beasley, 2013).

Figure 9. Authors visualization of the 'What's the Problem Represented to be ?
Framework



Source: Bletsas and Beasley (2013)

The WPR framework is built on the belief that policies are created to 'fix' things (Bell and Russell, 2002) which implies that there is a problem which can be but is not always explicitly elaborated. Therefore, the framework supports the exploration of policies in identifying this implicit notion of policy (Bacchi, 2009). The WPR approach recommends 'working backwards' from the already established policy to reveal what is represented to be the problem in these policies (Tawell and McCluskey, 2022). It is important to note that this approach uses a definition of the word problem in a unique way to how it is used within the field of policy (Geva-May, 1997; Weiss, 1989). It is defined as 'the kind of change implied in a particular policy proposal' (Bacchi, 2009). By replacing the word problem with the definition of the word given by Carol Bacchi,

a better understanding of the objective of the approach is given; What's the 'kind of change implied in a particular policy proposal' Represented? The implication of this is that the 'solutions' provided by these policies addresses activities rather than real concerns. Additionally, this approach considers policies as problematizing activities (Osborne, 1997), that is, they are constructed based on how issues are problems.

CHAPTER 3 : METHODOLOGY

3.1 Overview of the Chapter

This chapter discusses the methodology employed in making the comparison between the Environmental Policies of the Kyrgyz Republic and Zambia which is the topic of this study. The first part of the chapter begins by explaining the methodological approach used in this study which is the qualitative approach. The second part of the chapter goes on to discuss the sample selection methods employed in identifying what approach was taken as well as a justification of the choices made. The discussion of the methods of analysis which was based on the What is the Problem Represented to be? (WPR) Approach follows next in the chapter. This chapter closes by discussing the limitations that were faced in conducting the study.

3.2 Methodological Approach

This section explains the in detail the methodological approach used in the study.

3.2.1 Qualitative Approach

As this paper aimed at making a comparative study between the Environmental Policies of the Kyrgyz Republic and Zambia; qualitative approach was employed. This approach was selected because it offers deeper insight and detail into analysis of data (Jervis and Drake, 2014) which is important in the fulfilment of the objectives of this study. Research is called qualitative if it is about determining “what things ‘exist’ rather than to determine how many such things are” (Walker, 1985a, pp. 3). The choice of this approach is also influenced by the interpretive orientation of policy analysis explained in chapter 2 part 7 of this paper. Interpretive policy analysis is more directed towards deriving meanings from values, feelings and beliefs as opposed to technically seeking to understand human values (Yanow, 2000). In order to effectively do this, qualitative methods are the most efficient as Bekwitz and Inui (1998) describe these methods as used to observe information that is not quantified.

Qualitative methods of research have been used in the field of environmental policy analysis by (Thow et al., 2018; Wilkinson, 2010). Furthermore, the aim of the study was not to quantify the environmental policies of the countries but rather to understand

their differences and similarities. Following the above explanations of qualitative approach as well as understanding the research aims and objectives of the study shows that qualitative approach was the best methodology to be used to achieve the best results. The study made use of secondary data in the form of already written country environmental policies. Furthermore, MEAs also serve as a source of information to investigate the efforts being made by the case study countries in satisfying their obligations and commitments to the content of these agreements.

3.3 Sample Selection

This section addresses the types of materials used and how they were selected.

3.3.1 Types of Material Analyzed

To gain deeper understanding of the environmental policies and the processes in the formulation of these policies, the study used already existing pieces of environmental legislation in both the Kyrgyz Republic and Zambia. The targeted documents were ratified policies, laws, acts as well as statutory instruments. Papers that have been drafted but not yet officially approved were not used as they run the risk of not being approved thereby rendering any information used from such kind of documents redundant. To avoid this, information from such documents was not used. In addition to this, governmental websites played a huge role in providing the policies and the processes in coming up with the policies used in the paper. Some of these websites are:

- For the Kyrgyz Republic:

Water Resources Service of the Kyrgyz Republic - Water.gov.kg⁷

This website is from the Water Resources Service of the Kyrgyz Republic. However, it also houses information about different aspects of the environment such as agriculture, public health, mountainous territories and so on and so forth. The official language of the Kyrgyz Republic is Russian as such the website is in the Russian language. To overcome the language barrier, the author enlisted the assistance of a master's degree student who is a native Russian language speaker and fluent in the English language.

⁷https://www.water.gov.kg/index.php?option=com_content&view=article&id=233&Itemid=1281&lang=ru

- For Zambia:

There were many different websites that the information was drawn from the parliament website being the main source.

- PMRC – Policy monitoring and Research Center - Pmrczambia.com⁸
- National Assembly of Zambia – parliament.gov.zm⁹

3.3.2 Data collection and selection

This section addresses the how the country specific policies and the NDC's were selected.

3.3.2.1 Overarching National Environmental Policies

To begin the sample selection and identification, it was important to identify the overarching environmental policy documents that govern both countries. This was important because these documents show the priorities of the government and provided a direction to be followed with regards to identifying which policies would be compared. The host professor, Kyialbek Akmoldoev at the University of Ala-Too assisted in identifying that the key environmental strategies for the Kyrgyz Republic are:

- Concept of Environmental Security 2007-2020 (Kyrgyz Republic Government, 2007)
- A Concept of Transition to Sustainable Development (CTSD) for 2009 – 2035

The Concept of Environmental Security was adopted in this paper as the main policy document for the Kyrgyz Republic because it had the longest tenure and was an officially recognized document in the country. Despite have a longer tenure, the Concept of Transition to Sustainable Development was not chosen because it is still a draft document.¹⁰

It is important to note that because the official language of the Kyrgyz Republic consequently the Concept of Environmental Security was originally written in Russian language. As this language is foreign to the author, google translate was employed to

⁸ <https://pmrczambia.com/>

⁹ <https://parliament.gov.zm/>

¹⁰ <https://www.adb.org/sites/default/files/linked-documents/cps-kgz-2013-2017-ena.pdf>

translate the language to English. A master's degree student and Kyrgyz national in Ala-Too University who is a native Russian speaker and fluent English speaker checked through the documents to ensure that nothing was lost in translation and the authenticity of the content of the document was preserved. The CES identified the key environmental issues in different geographical sub-categories. These are: global, regional and national.

The Global problems include:

- Global climate change
- Destruction of the ozone layer
- Desertification
- Biodiversity

The regional issues were identified as:

- High anthropogenic load on the environment
- Fragility of local ecosystems in remote areas
- Poor infrastructure at high density population
- Poverty and ethnic disputes
- Mining of uranium, heavy metals and mercury
- Accumulation of waste from past mining activities

The national problems are:

- Air pollution
- State of water resources
- State of land resources
- State of forest resources
- Mountain ecosystems
- Waste pollution (historical waste, industrial waste, municipal solid waste)
- Man-made and natural phenomena

Following the same search for Zambia, the main policy document was identified to be the National Policy on Environment (NPE) (GRZ, 2009). The document was created by the GRZ to create a framework for effective natural resource utilization and environmental conservation (GRZ, 2009). The National Policy on Environment for Zambia listed the key environmental challenges as:

- Deforestation
- Land degradation

- Desertification
- Wildlife depletion
- Soil erosion
- Loss of productivity
- Inadequate sanitation
- Air pollution
- Water pollution
- Natural resource exploitation

The NPE further listed the economic sectors that provided the baseline for formulation of the NPE as:

- Agriculture sector
- Fisheries sector
- Tourism sector
- Forestry sector
- Wildlife sector
- Mining sector
- Water sector
- Energy sector
- Heritage sector

The lists provided above for both countries are a representation of the environmental concerns that were pertinent at the time the documents were created. Neither of the countries have updated their documents nor created new ones. However, these issues remain of concern in both countries today

3.3.2.2 Specific Country Environmental Policies

The identification of the specific policies to be compared was made based on the main environmental concerns affecting the world at large today and the issues affecting the countries as highlighted in the overarching policy documents. These environmental issues were identified using articles, books and journals from social science databases such as research gate, jstor, scopus among others. The question researched was “*What are the main Environmental concerns affecting the world today?*” Zimmermann (2016) identified air pollution and climate change, deforestation, species extinction, soil degradation and overpopulation as the main environmental concerns today. In addition

to this, Antweiler (2014), lists non-renewable sources of energy, lack of access to freshwater sources as well as reducing water quality and quantity, waste management and transportation as grave environmental issues today. Additionally, Robinson (2022) cites global warming from fossil fuels, poor governance, food waste, plastic pollution, melting ice caps and sea level rise, ocean acidification, agriculture, food and water insecurity and fast fashion and textile waste as sources of environmental concern today. Following the Millennium Development Goals of 2000, the United Nations launched the 17 Sustainable Development Goals (SDGs) in 2015¹¹. The Sustainable Development Goals are Multilateral Agreements that member countries agreed to. Therefore, consideration was made concerning whether the concerns listed above are captured in the SDGs. This was used as criteria of selection for the sample documents used in the study.

Another characteristic of the document that was to be fulfilled for the policy to be considered part of the sample selection was that the documents must be produced by the government and governmental agencies. Possible consideration was made for documents that were made under bilateral agreements however, it was most important for the government to be a major stakeholder in the policy formulation process. However, all the documents used were solely produced by the parliaments of both countries of study.

The table in Appendix A was created by the author to create a summary of the necessary characteristics to be fulfilled for a policy document to be considered as part of the sample for the study which were had to address a global environmental concern as well as one or more SDGS and had to have been produced by the government. A total of 24 policies were identified, 12 for each country.

3.3.2.4 Temporal Considerations on Specific Policies

The time dimension was the final aspect considered when deciding on the sample documents to be analyzed in the study. Time was chosen because to make the policies more comparable, they would have had to have been enacted around the same period.

¹¹ <https://sdgs.un.org/goals>

In this context, the maximum time difference between the creation of policies considered as part of the sample was five years. Appendix B shows the final selection of the policies that were compared in the study.

Following the sample selection criteria, these policies were decided on for comparison:

- Energy: The Kyrgyz policy is called the ‘Law of the Kyrgyz Republic about Energy’ and the Zambian one is called ‘The National Energy Policy’.
- Water: The Kyrgyz policy is called ‘Water Code’ and the Zambian one is called the ‘National Water Policy’
- Agriculture: The Kyrgyz policy on agriculture is called the ‘Law of the Kyrgyz Republic on |Development of Agriculture’ and the Zambian one is called the Zambia National Agricultural Policy.

The implication of this selection is that six policies were studied. What that entailed is that three policies were compared with each other according to the aspect of the environment that was identified above. The approach to analysis employed was the What is the Problem Represented to be? proposed by Bacchi (2009) which is discussed in Chapter 2 of this study. And the steps followed are explained in the next part of this chapter. Appendix C of this paper provides the objectives of the selected policies.

3.3.2.3 National Determined Contribution

In addition to the policies selected for comparison above, the author further identified the Nationally Determined Contributions (NDCs). Document analysis was then used on these documents to address the third research objective of the study. The NDC’s for both countries were obtained from the ‘documents and decisions’ section of the United Nations Framework on Climate Change website¹². As the parties to the Paris Agreement are required to update their documents every five years and the fifth year has elapsed since the creation of the first NDC, the 2nd edition of the document was used.

3.4 Methods of Analysis

This section addresses the methods of analysis.

¹² <https://unfccc.int/documents>

3.4.1 Analysis of the Specific Country Environmental Policies

The theoretical framework that underpins the analysis of the environmental policy is the WPR theorized by Carol Bacchi (2009) as mentioned in part 2.7.2 of this study. This framework was selected because it provides a structure, script and system for coding in analysis which allows for there to be a relationship between discourse and other social elements such as power, institutions, etc. (Tawell and McCluskey, 2021). The WPR framework uses six questions to examine the presuppositions and assumptions of policies as well as gives direction to understand how policies provide representation of the problems being addressed by these policies (Bacchi, 1992).

The questions that follow explain the structure followed by the author in analyzing the selected policies.

Q1. What's the problem represented to be in a specific policy?

In addressing this question, skimming was conducted to create familiarization with the policies of both countries. This was followed by in-depth reading and thereafter document analysis was carried out to establish what solutions were proposed by the policy documents. Document analysis (DA) involves the studying of source data to create meaning and gain understanding of what is being communicated as well as for the development of empirical knowledge (Corbin and Strauss, 2008). DA was chosen because this approach is useful for contextualizing data (Bowen, 2009) which in this case is the identification of the way that the problems are represented in the policy. The identification of the problem(s) being addressed in the policies was made based on the identification of the solutions and measures put in place by the governments in the documents. Consequently, the author worked backwards using inductive analysis (Thomas, 2006) to establish the implied problems from the policies which is explained in more detail subsequently.

To answer Q1, the author created a table with two columns titled: 'policy solutions' and 'problem representations' to show the link between the two. This was done for each policy document. The policy solutions were numbered with counting numbers (1, 2, 3... etc.) and the corresponding problem representation were labelled with the alphabetical equivalent of the number of the policy solution. Thus, if a policy solution

was numbered '1', its corresponding problem representation was identified as 'a'. One noteworthy point is that the policy solutions were identified by the author from the policy documents of the individual countries. Once the solutions were identified, the author used their mental judgment to establish what the government was hoping to change (Bacchi, 2009) by providing this solution. This was then called the problem representation. This process was repeated for all six policy documents that were studied and the results are published in chapter 4 of this study.

Questions 2-4 are probing questions that were used to investigate the proposed measures and solutions in order to establish the rationale for these proposals as well as the deep seated presuppositions that lay the foundation for the proposed measures (Bacchi, 2009; Tawell and McCluskey, 2021).

Q2. What presuppositions or assumptions underlie the representation of the problem?

Answering this question seeks to identify those assumptions lodged within the proposals or solutions provided in the policy (Bacchi, 2009). This meant that analyzing the policies required putting meaning(s) about what gave ground for the proposal to be made; whether it's existence or non-existence (Doty, 1993). To answer this question, the author used the questions proposed by Bacchi (2009) 'what is assumed, what is taken for granted and what is not questioned' within the proposals in the policy document that underpin the identified problem representations in Q1. To do this, it was cardinal for the author to draw on the basic and/or fundamental worldviews necessary to identify (unconscious) and arrive at assumptions based on their own reflexivity that were taken for granted when certain measures solutions were propagated. For this, the author capitalized on the experiences and knowledge gained while living in both countries under study and interacting with these proposed solutions. Scholarly articles prepared by other researchers also provided a good source of information about presuppositions that underlay the problem representations. At this point, the focus was more on the policy representation, therefore, information from the actual policy documents was not used primarily as in addressing Q1.

Each policy document had an average of about five problem representations with the least being three in the case of the Law of the Kyrgyz Republic on renewable energy.

Consequently, at least one assumption/presupposition was made about each problem representation. The author made use of a table showing the problem representation in the left column and the right column containing the presuppositions of the problem representations. At least two of the presuppositions of the problem representations were explained in detail for each of the policies. These were selected by identifying the most comparable between the two countries policies.

Q3. How has this representation of the problem come about?

The third question seeks to establish the conditions that allow a particular problem representation to take shape and assume dominance as well as the representation of this problem over time (Bacchi, 2009, pp. 11). In addressing this question, the author drew on the information provided in the overview of the countries explained in part 1.4 as well as the history of environmental policies explained in part 2.6 of this study. Additionally, the author used deep reflection concerning the specific developments and decisions that contributed to the formulation of the problem representation. To build on consistency, the author focused on the two problem representations that were discussed in more detail in Q2.

Q4. What is left unproblematic in this problem representation?

Having understood the underlying implicit assumptions that underpin the representation of the problem and reflecting on how this representation came about, the author subsequently used the responses to both questions to raise for reflection and consideration issues and perspectives silenced in identified problem representation (Bacchi, 2009; Taswell and McCluskey, 2021). Using document analysis, the author identified what was not addressed either by how a measure was proposed or how nothing was mentioned concerning a measure that could be proposed.

Q5. What effects are produced by this representation of the problem?

The main goal of this question according to Bacchi (2005) is to ‘identify the effects of specific problem representations so that they can be critically assessed.’ As the objectives of this paper do not include the assessment or evaluation of the effectiveness of the policies, this question was not addressed because it is beyond the scope of this objectives and aims of this study.

Q6. How? Where is this representation of the problem produced, disseminated and defended? How could it be questioned, disrupted and replaced?

Building on the policy formulation process in part 1.4 of this paper as well as the use of the information from the governmental websites on which the sample documents were obtained, the author established the point of production of the problem as well as how the policies were disseminated. The study however did not address how the policies were defended as that was not within the confines of the study objectives.

The discussion of the results was conducted in such a way that the questions 1, 2, 3, 4 and 6 were discussed concerning each countries policies and a comparison made were possible. The alternating method, also known as the point-by-point pattern was employed in the discourse. What this implied is that the environmental policy was introduced, then the questions 1 to 6 were applied on this policy (except for question 5). For each question, the Kyrgyz policy was first discussed then the Zambian policy. A discussion of the emerging similarities and differences from the responses given was made after all questions had been asked concerning the policy.

3.4.2 Exploration of the Nationally Determined Contribution

The goal of the exploration of the NDC's was to get an understanding of the country's responses to the expectations of their commitment to achieve the aims of the Paris Agreement. To conduct this, the author employed the use of Document Analysis. The underpinnings of DA have already been discussed in Q1 above. In approaching this exploration, the author begun by getting and understanding of what was required of the Parties in coming us with their NDCs. There are three important aspects to an NDC; the definition of the target and how to achieve it, the elaboration of systems to monitor and verify progress of the goals set out and a detailed financing strategy¹³. Prior to the exploration of any of the aspects, the identification of the main goal of the NDC was provided to give context. Following the main parameters, the author then read the country NDC's in depth and provided the country's response to these parameters. As

¹³ <https://www.un.org/en/climatechange/all-about-ndcs> - :~:text=Simply put, an NDC, or,update it every five years.

the objective of this exploration was not to yield the similarities and the differences, these were not provided.

3.5 Limitations

- The Kyrgyz Republic has the Russian language as its official language. Consequently, all the policy documents are written in the Russian language. To circumvent the language barrier, the author employed 'google translate' to translate the information from Russian to English. With the help of a master's degree student (in the Ala-Too university in Bishkek, Kyrgyzstan) who is native in Russian and fluent in English, the translated content was verified as close to the original as possible.
- As the countries have different priorities and different ways in which they approach different aspects of the environment, the policy documents have differing names which was expected. However, the papers are being compared based on closely related themes.

CHAPTER 4 : DISCUSSION AND RESULTS

4.1 Overview of the Chapter

This chapter presents the discussions and results of the comparison of the environmental policies based on the responses to the questions proposed by the What's the Problem Represented? to be approach. Following the methods of analysis listed in part 3.4 of the paper, this section provides the similarities and differences of the country policies based on the similar problem representations of the policy solutions. Additionally, this chapter addresses the compliance of the case study countries to their commitment of achieving the terms of the Paris Agreement by analyzing the countries Nationally Determined Contributions. Parts 4.2, 4.3 and 4.4 take into account the objectives of the policies which are contained in Appendix C.

4.2 Policies on Energy

The objectives of the energy policies of the two countries are similar to some degree however their focus is different. Both objectives propose solutions for clean and renewable energy sources however, the Kyrgyz Republic's policy proposes solutions that aim at the transition to renewable energy sources while Zambia's energy policy addresses the lack of access to clean energy.

Q1. What's the problem represented to be energy in the Kyrgyz Republic and Zambia? Tables 1 and 2 show the problem representation of the policy solutions that were derived from the countries policies on energy. The problem representations are quite different from each other, possibly because the objectives are different. However, they both show that accessibility to non-renewable resources is easier, something that neither of the policies address.

Table 1. Problem representation in Law of the Kyrgyz Republic on Renewable Energy

Policy Solutions	Problem Representations
1. Promotion of the use of renewable energies.	a. Non-renewable sources of energy are more accessible than renewable energy sources.
2. Improved information and scientific support of renewable energy activities.	b. The use of renewable sources of energy is not common knowledge for the citizens. There is no sensitization about renewable energy sources.
3. Creation of a state register of energy resources and statistics.	c. Non-renewable energy resources can easily be used without any repercussions.

Source: Authors compilation of the policy solution and problem representation

Table 2. Problem representation in Zambian National Energy Policy

Policy Solutions	Problem Representation
1. Provision of reliable, accessible and affordable clean energy.	a. The costs of accessing reliable, clean and affordable energy are too high for the average Zambian.
2. Implementation of cost reflective tariff mechanisms in pricing energy.	b. The tariff mechanism of pricing energy is not cost reflective.
3. Re-alignment of institutional mandates.	c. Institutions overseeing energy affairs do not have aligned mandates.
4. Increased multiplicity of players in the energy sector (to enhance delivery and access to quality energy).	d. The energy sector is driven by monopolization and lacks diversity of players.
5. Mainstreaming of gender in efficient allocation of resources.	e. The allocation of energy resources is a social and welfare problem.
6. Promotion of alternative energy sources and technologies.	f. There is easy access (possibly cheaper) to non-sustainable energy sources

Source: Authors compilation of the policy solution and problem representation

Q2. What are the presuppositions or assumptions underpinning the representation of the problem in this policy?

Following the methods of analysis elaborated in section 3.4.1, Q2, the presuppositions underlying the identified problem representations in Q1 were identified as shown in tables 3 and 4.

Table 3. The presuppositions/assumptions that give meaning to the problem representations observed in the Law of the Kyrgyz Republic on Renewable Energy

Problem Representations	Presupposition or assumption underpinning the representation of the problem. (What is assumed, what is taken for granted and what is not questioned?)
a. Non-renewable sources of energy are more accessible than renewable energy sources.	i. The low wages of citizens are not put into consideration.
b. The use of renewable sources of energy is not common knowledge for the citizens. There is no sensitization about renewable energy sources.	ii. The low levels of education of the population and the proximity to the cities where such technologies are more popular are not considered.
c. Non-renewable energy resources can easily be used without any repercussions.	iii. The levels of corruption are not put into account.

Source: Authors compilation of the problem representation and the presupposition of the problem representation

The presupposition of problem representation C (in table 3) is that the levels of corruption in the country are taken for granted (France and Kukutschka, 2019). Yrysov (2021) proposed that corruption is the main and only problem of the Kyrgyz energy sector of Kyrgyzstan is the weak management which leads to corruption and consequently resulting in ineffectiveness of tariffs. Additionally, problem representation A (in table 3) assumes the infrastructural capacity for the transition to renewable energy resources exists. However, as of 2021, the International Energy Agency showed that the country had no projects to exploit solar, biogas and wind sources of energy as well as aged infrastructure (IEA, 2021).

Table 4. The presuppositions/assumptions that give meaning to the problem representations of the Zambian National Energy Policy

Problem Representation	Presupposition or assumption underpinning the problem representation. (What is assumed, what is taken for granted and what is not questioned?)
a. The costs of accessing reliable, clean and affordable energy are too high for the average Zambian.	i. The high cost of living within the country is not considered.
b. The tariff mechanism of pricing energy is not cost reflective.	ii. The high cost of living within the country is not considered.
c. Institutions overseeing energy affairs do not have aligned mandates.	iii. Assumably explains why the energy sector is crumbling.
d. The energy sector is driven by monopolization and lacks diversity of players.	iv. Assumes that the barriers to entry for other energy providers are not questioned.
e. The allocation of energy resources is a social and welfare problem.	v. The patriarchal system in Zambia is not questioned/put into consideration.
f. There is easy access (possibly cheaper) to non-sustainable energy sources	vi. Assumably explains why people prefer these kinds of technologies. Does not consider the large population living in rural areas that does not have access to these kinds of technologies.

Source: Authors compilation of the problem representation and the presupposition of the problem representation

The presupposition of the problem representations A, B and E seems to be that addressing the lack of access to clean energy requires addressing the inequality that the country is currently faced with (Cheelo et al., 2022). This inequality evident from the table 4 above shows that it is not only restricted to economic measures of inequality but it also encompasses social inequality. The Gender Assessment and Action Plan (AfDB, 2018) shows that despite having proposed the intersection of gender, energy access and energy systems development, the policies do not provide detailed actions to propel this agenda. The assumptions of the problem representation are that the barriers to market entry are low and other energy companies can easily be established.

Q3. How did the problem representations come about?

In the beginning of the 1900s, the Kyrgyz Republic had 27 coal mines which supplied the whole Central Asia with coal (Rogalsky, 2019). However, since gaining independence in 1991, the coal industry in the Kyrgyz Republic went into a state of collapse only four of fourteen state mines were considered economically viable (Jefferson Institute, 2009). The country resorted to hydropower which accounts for two-thirds of energy production (Chen, 2022) which despite being green energy is not enough to meet to growing energy demand in the country. Consequently, during the wintertime the country depends on imports of oil and gas for more than half of its energy needs (IEA, 2021). Due to the reducing water levels and increasing oil and gas prices, the country is now resorting to the use of coal for generation of heat in the winter (Pannier, 2021).

The colonial and early post-colonial times set the trajectory for inequality in the energy sector as the supply of the hydropower was prerogative of the areas close to the mining towns where industries and main companies were situated (Schultz, 2018). Presently, the difference in access to electricity between urban and rural areas is substantial: most urban households (74.8 %) access electricity through the national grid, yet most rural households (88.1 %) have no access to any kind of electricity source (World Bank, 2019). Between 2015 and 2018 Zambia experienced an energy crisis in which the hydropower stations were not generating as much electricity there only the middle and upper were able to stay 'on-the grid' while the lower class which is the majority were cut off (Schultz, 2018).

Q4. What is left unproblematic in the problem representation?

The Kyrgyz policy is silent about public-private partnerships unlike the Zambian document. Which is key because the private sector has a high capacity to invest more renewable energy resources (ADB, 2013). Additionally, article 9 of the Law on the Kyrgyz Republic about renewable energy repealed the licensing of renewable energy activities, perhaps with the plan to encourage the population to adapt these types of energy. This repeal creates a large discrepancy with regards what the rights and responsibilities concerning invest in renewable energy. The transition to renewable

energy though preferable comes with a plethora of challenges such as noise pollution for wind energy, distraction of social infrastructure for the setting up of solar farms as well as wind turbines, aesthetic beauty being destroyed as well as environmental challenges like change in landscape (Elliot, 2000). Following the response to Q1 above concerning corruption in the country, not having licenses creates the opportunity for many to disguise their illicit activities as investment into renewable energy.

The Zambian policy does not address the repercussions of the people and companies who will be found violating the provisions of the policy. Furthermore, unlike the Kyrgyz policy, the Zambian policy has no provisions that mention who would be responsible for the financing of the implementations of the solutions provided. The policy also does not discuss the rights and responsibilities of the population with regards water use. Given that 70% of energy consumed by households in Zambia is generated from biomass (that is, firewood and charcoal) (PMRC, 2013) as well as hydropower the policy does not mention any alternative sources the country's energy sector will be adopting.

Q6. Where is the representation of the problem produced and disseminated?

Despite having a vibrant media, Esengul (2014) shows that access to government and governmental agencies held information is not easily accessible and does not allow for the public to participate in policy making and implementation processes. Additionally, all traditional media is controlled by the government (Reporters Without Borders, 2022) but strides are being made by the privately owned outlets to address the representation of the problem with policies like the Law of the Kyrgyz Republic on Energy.

By the same token, in Zambia the main way by which the representation of the problem is disseminated is through the media. There exists both public and private players in the media with the national Broadcaster, the Zambia National Broadcasting Corporation (ZNBC) being the largest TV, having print and radio channels of communication. The government has no interference with the media (Reporters Without Borders, 2022). The challenge with this is that English being the official language and the main medium of communication yet not spoken and understood by most of the population limits the conveyance of the message (Mulauzi, 2013).

4.3 Policies on Water

The policies on water for the case study countries are similar in the sense that they both have an objective to ensure the sustainable utilization of water resources in the country. Therefore, the problem representations appear to be similar as can be seen in table.

Q1. What's the problem represented to be regarding environmental protection in the Kyrgyz Republic and Zambia?

Tables 5 and 6 show the problem representations of the Kyrgyz and Zambian policies on water respectively.

Table 5. Problem representations of the policy solutions in the Kyrgyz Water Code

Policy Solutions	Problem Representations
1. The establishment of defined competences of state bodies in management of water resources.	a. There is a 'governance' problem in the management of water resources.
2. The creation of systems for developing the National Water Strategy and plans on water resources use.	b. There isn't a strategy and/or plans in place to govern water resources use.
3. The regulation of the use and payment of surface and ground water resources.	c. Over exploitation of water resources is a consequence of water being easily accessible to the population.
4. Identification of measures on protection of water resources from pollution and depletion.	d. There is a lack of measures to protect water resources from pollution and depletion.
5. Introduction of provisions for responses to emergency situations that belong to water resources and dam safety.	e. Pre-planned responses to emergency situations are not already put in place.
6. Establishment of State Water Inspectorate	f. There is a 'governance' problem in the management of water resources. ¹⁴
7. Regulation of water economy and irrigation sectors.	g. The water economy and irrigation sectors are not regulated .

Source: Authors compilation of the policy solution and problem representation

¹⁴ Bacchi (2009) suggested that sometimes policy solutions can have the same problem representations. Therefore, this is not a conflict of interest or cause for concern.

Table 6. Problem representations of the policy solutions in the Zambia National Water Policy

Policy Solutions	Problem Representation
1. The establishment of a comprehensive legal, institutional and regulatory framework for water resource management (WRM).	a. There is a 'governance' problem in the management of water resources.
2. Ensuring supply of water under varying conditions.	b. Water supply is a conditional problem which shows inequality. Not everyone has the same opportunities to access water and therefore contribute to over-exploitation of the resource.
3. Raise awareness about sustainable water conservation measures.	c. WRM is an ignorance problem. Caused not necessarily because people choose to overuse the resource but because they do not know better.
4. Protection of water resources and aquatic environment.	d. Aquatic life and water resources are not protected.
5. Monitoring the impact of tourism on water resources.	e. The impact of tourism on water resources is not monitored.
6. Integrated planning of water resources which affect wildlife.	f. There is a lack of integrated planning of water resources which affect wildlife.
7. The collection and management of data and information on water.	g. There isn't a data and information collection and management system.

Source: Authors compilation of the policy solution and problem representations

Q2. What are the presuppositions or assumptions underpinning the representation of the problem in this policy?

Table 7. The presuppositions/assumptions that give meaning to the problem representations of the Kyrgyz Water Code

Problem Representations	Presupposition or assumption underpinning the problem representation. (What is assumed, what is taken for granted and what is not questioned?)
a. There is a 'governance' problem in the management of water resources.	i. Assumes that water exploitation is a leadership problem. Takes for granted the levels of corruption within the country that weaken governance systems.
b. There isn't a strategy and/or plans in place to govern water resources use.	ii. Assumes that water exploitation is a leadership problem.
c. Over exploitation of water resources is a consequence of water being easily accessible to the population.	iii. It does not question and takes for granted the cross-sectorial nature of water. Takes for granted the meaning of the term 'water as a common resource.'
d. There is a lack of measures to protect water resources from pollution and depletion.	iv. Takes for granted the impact of the USSR on the water sector of the country.
e. Pre-planned responses to emergency situations are not already put in place.	v. Does not consider the lack infrastructure and capacity to respond to emergency situations.
f. There is a 'governance' problem in the management of water resources. ¹⁵	vi. Same as i above.
g. The water economy and irrigation sectors are not regulated.	vii. It takes for granted the interconnected/cross-sectorial nature of water.

Source: Authors compilation of the problem representation and the presupposition of the problem representation

In addressing the problem representation D (in table 6), the underlying presupposition the seems to take for granted that the country had a history as a part of the USSR as was established in part 1.4 of this paper. During this period as Tolmazin (1988) demonstrates, the water affairs of the Soviet Union was under a depleted and degrade state which continued into the independence era of the country. Another underlying assumption of problem representation C is that water is considered as a common resource that the entire population has unlimited access to. During the Soviet Union

¹⁵ Bacchi (2009) suggested that sometimes policy solutions can have the same problem representations. Therefore, this is not a conflict of interest or cause for concern.

era, the phrase “Obuzdat stikhiu!” (“harness the elements!”) was the operative slogan that backed the leaderships quest to development based on unlimited natural resource ‘elements’ exploitation without consideration for environmental consequences (Rozenfurt et al., 1989). Gendzeir (1979) proposes that colonialism results in the manipulation of the consciousness of the colonized therefore, moving a population towards sustainable practices would require more than just changing administrative systems.

Table 8. The presuppositions/assumptions that give meaning to the problem representations of the Zambia National Water Policy

Problem Representation	Presupposition or assumption underpinning the problem representation. (What is assumed, what is taken for granted and what is not questioned?)
a. There is a ‘governance’ problem in the management of water resources.	i. It is assumed that WRM is a legislative problem. There is no legal, institutional and regulatory framework for WRM. Corruption amongst government officials in taken for granted.
b. Water supply is a conditional problem which shows inequality. Not everyone has the same opportunities to access water and therefore contribute to over-exploitation of the resource.	ii. The patriarchal system in Zambia is not questioned/put into consideration. The creation of the water and sanitation system during the colonial era is taken for granted.
c. WRM is an ignorance problem. Caused not necessarily because people choose to overuse the resource but because they do not know better.	iii. Takes for granted the lack of unified understanding of the term ‘water as a common resource.’ It does not consider the knowledge of rural farmers in Zambia.
d. Aquatic life and water resources are not protected.	iv. Takes for granted the lack of capacity and infrastructure
e. The impact of tourism on water resources is not monitored.	v. Takes for granted the lack of capacity and infrastructure
f. There is a lack of integrated planning of water resources which affect wildlife.	vi. It takes for granted the interconnected/cross-sectoral nature of water.
g. There isn’t a data and information collection and management system.	vii. Takes for granted the lack of unified understanding of the term ‘water as a common resource.’

Source: Authors compilation of the problem representation and the presupposition of the problem representation

Turning to the Zambian policy, the presupposition of problem representation A seems to be that corruption amongst government officials (Rahman, 2020) causes the legislative process to not have effect in governing water resources therefore resulting in over-exploitation of water resources. Additionally, a presupposition that is similar to the Kyrgyz one problem representation B in table 8. The Zambian policy takes for granted the roots of inequality in the development of the water and sanitation sector during the colonial period (Padfield, 2011). A characteristic that stood out during this period was ‘differential access’ (Kazimbaya-Senkwe, 2005) which entailed the European population receiving higher-quality water services compared to the basic quality provided for the African population. In addition to the compromised quantity of water that the African population received, the quantity was also regulated to ensure that the European population received more water than the Africans (Padfield, 2011). Following the explanation provided by Gendzeir (1979) above, the presupposition of the problem representation is that preventing over-exploitation of water resources is more than a legislative problem.

What stands out is that despite having different policy solutions and therefore somewhat different problem representations, both policies have similar presuppositions that underlie the problem representation. This is possibly because of their shared history of colonialism these observations arise.

Q3. How did the representations of the problem come about?

Q1 above provides a brief background of how over-exploitation of water resources came to be. The economy of the USSR was growing very rapidly and this put a strain on the water resources (Becker and Ray, 1984). During this period, Kyrgyzstan was both one of the poorest countries and the most economically dependent on the center (Dabrowski and Antczak, 1994). Following the dissolution of the Soviet Union, Central Asian governments agreed on sharing water resources however due to not being able to link water with the energy sector, the countries decided to work unilaterally to increase self-sufficiency in the resource management (Pohl et al., 2017). Following independence, the country has since tried to regulate the use of water, however, this requires a holistic and multisectoral approach to make it successful.

As has been established in Q2 above, water resource over-exploitation begun in the colonial era. However, following the independence of Zambia, the attempts to create equality on the water use sector proved to be futile as the spatial fragmentation and differential created during the colonial periods left a dent too deep and expensive for the sector to recover from (Padfield, 2011). Corruption continues to be rampant in the country making legislation not as effective (Rahman, 2020).

Q4. What is left unproblematic in the problem representation?

A holistic approach to addressing over exploitation of water resources in the Kyrgyz Republic is missing in the Water Code. Q1 above shows that the relationship between Central Asian countries was not fruitful because of their lack of ability to link the energy and the water sectors. This should have been a learning point for the Kyrgyz parliament which oversees law creation in the country. On the other hand, Zambia makes a strong case for the holistic approach by trying to reduce over-exploitation of resources. In chapter 1 of this paper the mountainous nature of the Kyrgyz Republic is introduced, however the policy does not speak to the preservation of the water resources that flow from the mountains when the winter has passed.

Zambia's policy provides a list of problems the water is currently facing; however, it does not provide solutions to these challenges. The inequalities that limit access to water among some people and over-exploitation by others are not addressed in this policy. Another problematic issue that is not addressed in the policy are the challenges of the Water Act that was enacted in 1949, before the country even attained independent. It only highlights the problems with that act such as lack of elaboration on modern water resources management practices and so on but does not provide solutions.

Q6. Where is the representation of the problem produced and disseminated?

The channels of dissemination for these policies are the same as those outlined in Q6 under the 'Policies on energy' section above.

4.4 Policies on Agriculture

The case studies country's policies on agriculture as can be seen in appendix A are both aimed at the sustainable growth of the agriculture sector. Therefore, the problem representation is the countries have unsustainable agricultural sectors.

Q1. What's the problem represented to be regarding environmental protection in the Kyrgyz Republic and Zambia?

Tables 9 and 10 show the problem representations of the proposed solutions.

Table 9. Problem representations of the proposed solution in the Kyrgyz Law on the development of agriculture

Policy Solutions	Problem Representation
1. State regulation of agri-food markets.	a. State regulation is lacking in the agri-food markets/program.
2. Crediting in the agri-food sector of the economy.	b. Access to financial credit in the agri-food sector is limited (or non-existent).
3. Ensuring veterinary and phytosanitary safety.	c. There is a lack of veterinary and phytosanitary safety.
4. Technical support of the agri-food sector of the economy.	d. The agri-food sector does not receive technical support.
5. State agricultural (agri-food) program.	e. State regulation is lacking in the agri-food markets/program.

Source: Authors compilation of the policy solution and problem representation

Table 10. Problem representations of the proposed solutions in the Zambia National Agricultural Policy

Policy Solutions	Problem Representations
1. Promotion of sustainable increase in crop productivity.	a. Sustainable increase is not being promoted.
2. Improving efficiency of agricultural input and product markets.	b. The input and product markets are inefficient.
3. Increasing agricultural exports.	c. There is a lack of agricultural exports.
4. Improving access to productive resources and services for small scale farmers in outlying areas.	d. Small-scale farmers who live in outlying areas have limited access to productive resources and services.

Source: Authors compilation of the policy solution and problem representation

Q2. What are the presuppositions or assumptions underpinning the representation of the problem in this policy?

Table 11. The presuppositions/assumptions that give meaning to the problem representations of the Law of the Kyrgyz Republic on Agriculture Development

Problem Representation	Presupposition or assumption underpinning the problem representation. (What is assumed, what is taken for granted and what is not questioned?)
a. State regulation is lacking in the agri-food markets/program.	i. Does not question how corruption supports the commercial farmers and disadvantages the small-scale farmers.
b. Access to financial credit in the agri-food sector is limited (or non-existent).	ii. Takes for granted the lack of motivation by commercial banks to give credit to small-scale farmers.
c. There is a lack of veterinary and phytosanitary safety.	iii. Takes for granted the high prices of veterinary and phytosanitary services for the small-scale farmers.
d. The agri-food sector does not receive technical support.	iv. Assumes that lack of modern farming technologies results in reduced growth of farmers.
e. State regulation is lacking in the agri-food markets/program.	v. Does not question how corruption supports the commercial farmers and disadvantages the small-scale farmers.

Source: Authors compilation of the problem representation and the presupposition of the problem representation

The presuppositions of the problem representation in B and C (in table 11) take for granted that 70% of the poorest population is in the rural areas (WFP, 2022). This population makes up most of the farmer population despite not having access to developed methods of farming and veterinary and phytosanitary services (Stuble, 2018). Furthermore, problem representation B (table 11) takes for granted that because of the risk that comes with agriculture, a lot of commercial banks are not keen on lending to farmers, especially on a micro-level when they have no proof of capacity to repay the loans (Uremadu, 2018).

Table 12. The presuppositions/assumptions that give meaning to the problem representations of the Zambia National Agricultural Policy

Problem Representations	Presupposition or assumption underpinning the problem representation. (What is assumed, what is taken for granted and what is not questioned?)
a. Sustainable increase is not being promoted.	i. Assumes equality in the level of knowledge of farmers about sustainable farming practices.
b. The input and product markets are inefficient.	ii. Takes for granted the lack of credit services for farmers to invest in more efficient inputs.
c. There is a lack of agricultural exports.	iii. Assumes this explains farmers resistance to sustainable farming practices.
d. Small-scale farmers who live in outlying areas have limited access to productive resources and services.	iv. Takes for granted the underdeveloped transportation and communication sector that does not create an equal ground for farmers.

Source: Authors compilation of the problem representation and the presupposition of the problem representation

The presupposition of the problem representation B (in table 12) is like that of problem representation B (in table 11). Additionally, the presupposition of problem representation D (in table 12) takes for granted the underdeveloped transportation and communication in the country that consequently affect the agriculture sector. A study by Mwaya (2019) showed that only 14.1% of small-scale farmers had access to credit implying that sustainable agriculture is inputs and products services are inefficient because the farmers do not have access to funds.

Q3. How did the representation of the problem come about?

Following the dissolution of the USSR, agriculture did not receive support from the government (Christensen and Pomfret, 2007). By 1998, the output and input prices of agriculture were left unregulated and the state procurement system was eliminated. The introduction of private ownership of land was not met with reforms in the institutional framework and infrastructure for this developed sector thereby leaving the small-scale

farmers with no support as the previous agricultural regime was built towards large-scale farmers (Lerman and Sedik, 2009). This remains a challenge today as the reforms suggested have not been implemented (Zhunusova, 2017).

In Zambia, small-scale farmers have always been at a disadvantage even when the United National Independence Party introduced agricultural subsidies in the 1970s. This was because of the rising inflation costs and the flat rate of agricultural inputs (Scott, 1978). Additionally, the government has always delayed giving farmers their payments thus leaving them under severe constraints Kunduza (1991). Today the high costs of inputs, poor rural infrastructure and lack of capital continue to plague the small-scale farmers (IFAD, 2020)

Q4. What is left unproblematic in the problem representation?

About 75% of the arable land in the Kyrgyz Republic which makes more than 80% of the country's agricultural output belongs to the private sector (FAO, 2014). The law on agriculture has no provisions for the regulation of the private sector therefore, they are left with no repercussions for their actions.

The lack of clear direction with regards financing the agriculture sector remains unclear in the documents. Both countries policies do not define what sustainable agriculture means this creates the opportunity for it to be defined in whatever way.

Q6. Where is the representation of the problem produced and disseminated?

The channels of dissemination for this policy are the same as those outlined in Q6 under the 'policies on energy' section above.

4.5 Multilateral Environmental Agreements

Nationally Determined Contribution

Following the Conference of Parties COP 21 in Paris in 2015, the Paris Agreement was created. The main goal of this agreement is to limit global warming to significantly below 2 with a strong preference to 1.5 degrees Celsius. Article 4, paragraph 2 of the

Agreement calls for the creation of Nationally Determined Contributions (NDCs) which are member nations mitigation measures to achieving this goal (UNFCCC, 2015). The NDCs are to be created successively every five years (World Bank, 2016). Five years has elapsed since the first NDCs were created and prior to COP 16 which was held in Glasgow, countries already submitted their updated NDCs.

Kyrgyz Republic Nationally Determined Contribution

The overall mitigation goal of the Kyrgyz Republic is to unconditionally reduce GHG emissions by 16.63% by 2025 and by 15.97% by 2030, under the business-as-usual scenario. Should international support be provided, GHG emissions will be reduced by 2025 by 36.61% and by 2030 by 43.62%, under the business-as-usual scenario (Kyrgyz Government, 2021: pp. 5).

- **Plans to achieve the set targets**

The Kyrgyz NDC proposes achieving their set contribution by creating mitigation actions in the energy, agriculture, forestry and other land use sectors (Kyrgyz Government, 2021).

- **Systems of monitoring and verification of progress**

The NDC proposes the creation of a National System of Monitoring, Reporting and Verification by 2025 in fulfilment of the requirement to assess the effectiveness of implemented measures.

- **Financial Strategy**

The overall estimated cost of achieving the plans of this NDC are estimated to cost about 10 billion USD with 37% coming from country resources and 63% coming from international financial assistance (Kyrgyz Government, 2021).

Zambia's Nationally Determined Contribution

“As of 30th July 2021, is Zambia intends to reduce its greenhouse gas emissions by 25% (at Business as Usual (BAU) level of international support prevailing in 2015) and towards 47% (with substantial international support) compared to 2010 levels.” (GRZ, 2021: pp. 2).

- **Plans to achieve the set targets**

To achieve these set plans the country out the country selected the following sectors to cut down GHGs: energy, agriculture, forestry and other land uses, waster, transport and coal.

- **Systems of monitoring and verification of progress**

The Zambian NDC is silent about the systems of monitoring and verification of progress.

- **Financial Strategy**

The Zambian NDC makes no mention about the financing plans to achieve the set goals mentioned above.

Following the criteria for examination in part 3.4.2 in this study, the Zambian NDC does not meet the full the requirements due to the missing information and the systems of monitoring and verification of progress as well as the financial strategy.

Conclusion of results and discussion

Overall, building on Chapter 2, part 5 of this paper, both countries have adopted a mix of policy instruments in trying to achieve their goals concerning energy, water and agriculture. However, the Kyrgyz policies lean more towards an information-based policy and briefly hints at market-based instruments being used in achieving these goals. The Zambian policy on the other hand observes a mix of all three types of policy instruments being used in achieving its objectives.

CHAPTER 5 : CONCLUSION

This study was guided by three objectives a) to understand the policy and legislation formulation process in the Kyrgyz Republic and Zambia, b) to understand the similarities and differences between the environmental policies in the countries of study and c) to study the compliance of the countries stipulations of the conditions of the 2015 Paris Agreement. The undertaking of this study revealed that the countries have similar policy formulation processes. They are both parliamentary democracies. Due to the difference in priorities of the governments of the country under study, the foci of the policies in the identification of the problem representations; assumptions; what was left unproblematic and so on was not well aligned. This created a bit of a challenge however, the author was able to circumvent this by focusing on the aspects of the policies that were similar and could make them more comparable. Basing the comparison on chapter 2.2 of this paper both countries policies have a component of function, institution and purpose. However the Kyrgyz policies are more institutional and function based whereas the Zambian policies are more purpose based.

Additionally, the results of the study revealed that the premise upon which the comparison was based according to chapter 1.2 is true; the countries policies are indeed similar despite having crucial differences. Using the WPR, it was revealed that the problem representations of the countries are similar in that they are strongly influenced by the colonial histories of the country which does not seem to be taken for granted in the policies created. Finally, both countries adhere to their commitments in the Paris Agreement which is reflected in the creation of the most recently updated NDCs. The Zambian NDC fell short of addressing how it plans to monitor the progress towards its commitment as well as its plans to finance its goals.

Recommendations

1. Further studies on the comparison of the policies of the two countries should include the interviews with government officials and representatives of those agencies responsible for the creation of policies. This would have for deeper exploration of the policies from aspects that document analysis would not afford.

2. The WPR approach has proved to be useful in comparing the policies of the two countries. A point of interest would be to study the policies of the countries at country level rather than cross-country level using this same approach. This would provide guidance for policymakers to improve on addressing the real problem rather than focusing on how problems are represented.

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Appendix A

Table showing the selection of environmental policies based on SDGs and environmental concerns.

Environmental Concern ¹⁶	Sustainable Development Goal	Kyrgyz Republic	Zambia
(Air) Pollution	3. Good Health and Well being 11. Sustainable Cities and Communities	Law of the Kyrgyz Republic on Environmental Protection	Environmental Protection and Pollution Control Act
Climate change and global warming	13. Climate Action	Law of the Kyrgyz Republic on Environmental Protection	Zambia National Policy on Climate Change
Deforestation	15. Life on Land	Forest code of the Kyrgyz Republic	National strategy to reduce deforestation and forest degradation
Species extinction	15. Life on land	Law of the Kyrgyz Republic on the Protection and Use of Flora	Zambia's Second National Biodiversity and Action Plan
		Law of the Kyrgyz Republic about the Fauna	
Soil degradation	15. Life on Land	Law of the Kyrgyz Republic on Subsoil	Zambia National Action Program for Combating Desertification & mitigating serious effects of drought in the context of the United Nations convention to combat desertification
Overpopulation	11. Sustainable Cities and Communities	N/A	N/A
Non-renewable sources of energy	7. Affordable and clean energy	Law of the Kyrgyz Republic about Energy	The National Energy Policy
Water (mis)management	6. Clean water and sanitation	Water Code	National water policy
Waste management	12. Responsible Consumption and Production	Law of the Kyrgyz Republic on Production and Consumption Waste	The Solid Waste Regulation and Management Act
Transportation	7. Affordable and clean energy 11.Sustainable cities	Law of the Kyrgyz Republic about Transportation	National Transport Policy
Agriculture	3. Good Health and Wellbeing	Law on the Development of Agriculture of the Kyrgyz Republic	Zambia National Agricultural Policy
Plastic pollution	11. Sustainable Cities and Communities	N/A	N/A

Source: Authors compilation of policies to be compared based on global environmental concerns and SDGs

¹⁶ The environmental concerns were identified from the books, articles and websites mentioned in the opening paragraph of this section of the paper.

Appendix B

Table showing the time consideration in the selected of policies to be analysed.

Kyrgyz Republic	Year	Zambia	Year
Forest code of the Kyrgyz Republic	1999	National Strategy to Reduce Deforestation and Forest Degradation	2015-2030
Law Of the Kyrgyz Republic on The Protection and Use of Flora	2001	Zambia's Second National Biodiversity and Action Plan	2015-2025
Law of the Kyrgyz Republic about the Fauna	2002		
Law of the Kyrgyz Republic about Energy	2008 amended 2019	The National Energy Policy	2008 amended in 2019
Water Code	2005	National Water Policy	1994 amended 2010
Law of the Kyrgyz Republic on Production and Consumption Waste	2001	The Solid Waste Regulation and Management Act	2018
Law of the Kyrgyz Republic about Transportation	1998	National Transport Policy	2019
Law on the Development of Agriculture of the Kyrgyz Republic	2009 amended 2021	Zambia National Agricultural Policy	2012-2030

Source: Authors compilation of policies to be compared based on temporal considerations

Appendix C

The objectives of the policies are shown in the tables below:

1. The objective of policies on energy is...

Kyrgyz Republic	Zambia
The purpose of this Law is the development and use of renewable energy sources, improving the energy structure, diversifying energy resources, improving the social status of the population, ensuring the energy security of the Kyrgyz Republic, environmental protection and sustainable economic development.	... to Universal access to clean, reliable and affordable energy at the lowest total economic, financial, social and environmental cost consistent with national development goals by 2030.

2. The objectives of the policies on water is...

Kyrgyz Republic	Zambia
To regulate water relations in the field of use, protection and development of water resources for guaranteed, adequate and safe supply of water for the population of the Kyrgyz Republic, protection of the environment and promotion of the rational development of the water fund of the country.	To optimally harness water resources for the efficient and sustainable utilisation of this natural resource to enhance economic productivity and reduce poverty.

3. The objective(s) of the policies on agriculture are...

Kyrgyz Republic	Zambia
<p>1) Ensuring food security of the state</p> <p>2) Ensuring sustainable economic and social development of the agri-food sector of the economy of the Kyrgyz Republic</p> <p>3) creation of conditions for economic and scientific support to produce competitive agricultural products and products of their processing</p> <p>4) Development of social and other infrastructure in rural areas and creation of favourable living conditions for the rural population.</p>	<p>1) Promote sustainable increase in agricultural productivity of major crops with comparative advantage</p> <p>2) Continuously improve agricultural input and product markets to reduce marketing costs and increase profitability and competitiveness of agribusiness</p> <p>3) Increase agricultural exports as a way of fully utilising the preferential markets (regional and international) and increase contribution to foreign exchange earnings</p> <p>4) Improve access to productive resources and services for small scale farmers, especially women and young farmers</p> <p>5) Continuously strengthen public and private sector institutional capabilities to improve agricultural policy implementation, resource mobilisation, agriculture research, technology dissemination, and implementation of regulatory services.</p>