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The Human Rights Dimension of Climate Change

Dissertation

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I declare that I wrote the submitted dissertation independently and that all the sources were duly stated and that the dissertation has not been used to attain another or the same degree.

Furthermore, I declare that the actual text of the dissertation, including footnotes, has 343 956 characters including spaces.

Xin Li

Student

In Prague on 20 February 2025

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Introduction

It has become increasingly evident that once perceived primarily as an environmental challenge, climate change has profound implications for the enjoyment of fundamental human rights. The Office of the United Nations High Commissioner for Human Rights (OHCHR) has recognized that changes in the global climate undermine a broad range of civil, political, and socio-economic rights, including the rights to life, health, food, water, and housing.¹ Similarly, the Intergovernmental Panel on Climate Change (IPCC) has underscored that climate change's adverse effects—rising sea levels, extreme weather events, droughts, and heat waves—undermine individuals' and communities' ability to exercise their rights fully.² Against this backdrop, understanding climate change's human rights dimension has become a legal and moral imperative in international, regional, and domestic legal orders.³

Recent scholarship has illuminated how environmental harms disproportionately affect vulnerable groups—such as indigenous peoples, women, and low-income communities—whose rights are especially at risk.⁴ Although international human rights treaties were not drafted initially with environmental protection in mind, their provisions have increasingly been interpreted in ways that address ecological threats.⁵ This expanding interpretation recognizes that a degrading environment compromises the essence of human dignity, thus linking environmental integrity to fulfilling human rights obligations.⁶ Given these developments, examining whether climate change constitutes an environmental crisis, a societal challenge, or a human rights problem par excellence is instructive.

Accordingly, this dissertation investigates the extent to which human rights norms and mechanisms apply to the challenge of climate change and whether the latter can be addressed more effectively by integrating human rights considerations into climate-related legal frameworks. Chapter 1 clarifies how climate change can be conceptualized as an environmental problem—manifested in ecological degradation and biodiversity loss—and as a societal and

¹ UNITED NATIONS. OHCHR. *Understanding Human Rights and Climate Change*, 2015, p.6.

² LÖSCHKE, Sina, MINTENBECK, Katja, POLOCZANSKA, Elvira (eds.). *How Climate is Impacting Life on Earth. Summary for All*. IPCC AR6 Working Group II, 2022, p. 17.

³ BOYLE, Alan. Human Rights and the Environment: Where Next?. *European Journal of International Law*, Volume 23, Issue 3, August 2012, p. 617.

⁴ DONNELLY, Jack. *Universal Human Rights in Theory and Practice*, Cornell university press, 2013, p. 1–35.

⁵ SHELTON, Dinah L. Human Rights and the Environment: Substantive Rights. In: SHELTON, Dinah L. (ed.). *Human Rights and the Environment. Volume I*. Edward Elgar Publishing, 2011, p. 265.

⁶ KNOX, John. H. *Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment*. United Nations, 2016, p.5.

civilizational challenge, reshaping how human community's function.⁷ Through examining historical developments, this chapter situates climate change in the broader narrative of human societal evolution, highlighting why climate change poses an existential threat to modern civilization.

In addressing the intersections between human rights and climate change, Chapter 2 explores the conceptual basis, sources, and legal frameworks that underpin human rights protections. Beginning with foundational definitions and the three generations of human rights, it examines global, regional, and national sources while highlighting mechanisms for defending these rights against violations. Subsequent sections focus on the relationship between human rights and environmental safeguards in international and domestic legal instruments, including the Universal Declaration of Human Rights, the Aarhus Convention, and the European Convention on Human Rights. Ultimately, this chapter considers environmental rights essential to the broader human rights discourse, particularly amid escalating climate challenges.

Building on this theoretical foundation, Chapter 3 examines the intricate relationship between human rights protection and climate change within the framework of international law. The discussion first outlines the limited incorporation of human rights considerations in key international climate agreements—namely the UNFCCC, the Kyoto Protocol, and the Paris Agreement—and then evaluates emerging efforts toward a more integrated approach. Next, it explores the intersection between international human rights law and climate change, considering historical developments and the broad range of rights impacted by environmental degradation. Finally, it addresses the growing attention devoted to climate-related issues by relevant human rights bodies and non-state actors, highlighting their role in shaping a holistic and rights-based climate governance regime.

And then chapter 4 analyses the rising phenomenon of climate litigation as a vital mechanism for advancing human rights protections in the face of escalating environmental challenges. It commences by defining the nature and relevance of climate litigation, tracing the progression of key trends and illustrating how cases—primarily adjudicated at the national level—have increasingly incorporated human rights arguments. The discussion then evaluates the growing potential for international human rights litigation, emphasizing various legal theories and remedies and the foundational elements of liability for climate-related harms. By exploring the broader significance of these cases for international human rights norms and

⁷ UNITED NATIONS ENVIRONMENT PROGRAMME. *Emissions Gap Report 2020*. UNEP, Nairobi, 2020, p. 3.

climate governance, the chapter demonstrates the pivotal role of judicial interventions in enhancing state and corporate accountability. The analysis culminates in a focused examination of *Verein Klima Seniorinnen Schweiz and Others v. Switzerland*, an exemplary case before the European Court of Human Rights highlighting the transformative power of human rights-based climate litigation.

Finally, Chapter 5 compares how the Paris Agreement, as a landmark climate accord, influences the domestic laws of China and Germany.⁸ It explores divergent legal interpretations of the Agreement's unity and validity, investigates China's evolving climate legislation—such as its Air Pollution Prevention Law—within the broader context of economic development, and examines Germany's more robust domestic climate policy. Particular attention is paid to why the Paris Agreement exerts a stronger direct impact on German law and jurisprudence, while China's approach remains shaped by developmental priorities and legislative gaps. This comparative chapter underscores those human rights arguments, although globally recognized, are differently integrated into national legal frameworks depending on constitutional structures, political will, and the influence of international norms.

Through this structure, the dissertation aims to illuminate the multifaceted character of climate change and its intricate interplay with human rights obligations across international and domestic legal spheres.

⁸ This section incorporates parts of my previously published research article: LI, Xin. *Critical Comparison of the Impact of Paris Agreement on Chinese and German Domestic Laws*. Charles University in Prague Faculty of Law Research Paper No. III/4, 2022, SSRN (14 Nov 2022), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4275032.

1. Climate Change, an Environmental and Societal Problem

Climate change has evolved from a purely scientific concern into a multifaceted legal challenge that intersects environmental, societal, and human rights dimensions. Under international law, governments have recognized the urgent need to address rising global temperatures, extreme weather events, and related socio-economic disruptions, as embodied in key instruments such as the United Nations Framework Convention on Climate Change and the Paris Agreement. Nevertheless, divergent legal perspectives persist regarding the scope and nature of state obligations, the role of non-state actors, and the precise avenues for enforcing climate-related rights and duties. This chapter explores the legal characterization of climate change as an environmental, societal, or human rights problem, examining how existing frameworks accommodate—or fail to accommodate—the global complexities of this crisis. Section 1.1 focuses on climate change as a problem for the environment, emphasizing the physical basis of climate phenomena and their ecological repercussions. Section 1.2 then turns to climate change as a broader challenge to human civilization, analysing its implications for societal structures and collective welfare.

1.1. Climate Change, a Problem for the Environment

Section 1.1 delves into the environmental dimensions of climate change, offering a legal and scientific foundation for understanding its causes and consequences. Subsection 1.1.1 examines the physical basis of climate change by discussing the scientific consensus on greenhouse gas emissions, global temperature rise, and related phenomena. This overview underscores the importance of scientific evidence as a cornerstone for developing robust legal and policy responses. Subsection 1.1.2 addresses how climate change impacts natural systems and biodiversity, highlighting threats like habitat loss, species migration, and ecosystem degradation. These environmental harms have become focal points in international environmental law, prompting regulatory efforts and cross-border cooperation. By elucidating both the physical underpinnings of climate change and its ecological ramifications, Section 1.1 establishes a critical context for evaluating the legal tools available—and the challenges faced—in safeguarding the planet's environmental integrity.

1.1.1. Physical Basis of Climate Change

Climate change represents one of the most significant environmental challenges of our time. This section establishes a foundational understanding of climate change's physical basis. It begins by clarifying the concept of climate change, providing a concise definition and distinguishing it from related phenomena. Subsequently, it explores the various causes, both natural and anthropogenic, that drive climatic shifts. Finally, it examines the far-reaching impacts of these changes on ecosystems, economies, and human societies. This overview sets the stage for a deeper legal and policy analysis in the subsequent chapters.

A. *The definition of climate change*

From Oxford Learner's Dictionaries, climate change means,

*“Changes in the earth’s weather, including changes in temperature, wind patterns and rainfall, especially the increase in the temperature of the earth’s atmosphere that is caused by the increase of particular gases, especially carbon dioxide.”*⁹

The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as

*“A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere, and which is in addition to natural climate variability observed over comparable time periods.”*¹⁰

In other words, the term climate change refers to long-term shifts in temperatures and weather patterns. While these shifts can be natural, current climate change is caused by human activity and is understood as such by the UNFCCC.

B. *Causes of climate change*

Climate change can be caused by natural processes or by artificial changes to atmospheric composition. Scientific studies from the Intergovernmental Panel on Climate Change (IPCC) have identified changes in solar radiation, changes in the Earth's orbit, volcanic activity, and atmospheric and oceanic circulation as natural factors contributing to global climate change.¹¹

⁹ OXFORD LEARNER'S DICTIONARIES. Climate Change. In: *Oxford Learner's Dictionaries*. [online]. 2022. [Accessed 1 November 2022]. Available at: <https://www.oxfordlearnersdictionaries.com/definition/english/climate-change?q=climate+change>.

¹⁰ UNFCCC, art.1 para.1.

¹¹ IPCC. *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

Since the industrial revolution, however, human activities, especially fossil energy consumption, are the leading cause of climate change, which tends to be mainly characterised by global warming. The principal driver of contemporary climate change is the amplified greenhouse effect. This effect arises when the natural greenhouse mechanism—vital for sustaining the Earth's habitable temperature—intensifies due to elevated concentrations of greenhouse gases (GHGs) in the atmosphere, predominantly resulting from human activities.¹²

The greenhouse effect operates by retaining solar energy within the Earth's atmosphere. Solar radiation penetrates the atmosphere and warms the Earth's surface, which subsequently emits this energy as infrared radiation. Naturally occurring GHGs, such as carbon dioxide (CO₂), methane (CH₄), and water vapour, absorb and re-emit this infrared radiation, inhibiting heat escape into space. This process maintains an average global temperature of approximately 15°C, facilitating diverse ecosystems.¹³ However, anthropogenic activities—particularly since the onset of the Industrial Revolution—have significantly elevated concentrations of these key GHGs, intensifying the heat-trapping process and causing global temperatures to rise.

Among anthropogenic GHGs, CO₂ is the most consequential, accounting for approximately 76% of global GHG emissions.¹⁴ It is primarily emitted through fossil fuel combustion in energy production, transportation, and industrial operations. Historical records indicate that atmospheric CO₂ levels have increased from approximately 280 parts per million (ppm) in pre-industrial times to over 420 ppm in 2023.¹⁵ According to data from the Intergovernmental Panel on Climate Change (IPCC), this unprecedented rise correlates closely with a global temperature increase of about 1.1°C above pre-industrial levels.

Although methane is less abundant than CO₂, it exhibits a significantly higher global warming potential (GWP)—approximately 28–34 times greater over a 100-year time horizon.¹⁶ Methane emissions are primarily attributable to agricultural practices, especially

¹² UNFCCC. *How human activities produce greenhouse gases*. [online]. 19 July 2022. [Accessed 22 January 2025]. Available at: <https://unfccc.int/cop3/fccc/climate/fact22.htm>.

¹³ UCAR. *The Greenhouse Effect*. [online]. [Accessed 22 January 2025]. Available at: <https://scied.ucar.edu/learning-zone/how-climate-works/greenhouse-effect>.

¹⁴ CENTER FOR CLIMATE AND ENERGY SOLUTIONS. *Global emissions*. [online]. [Accessed 22 January 2025]. Available at: <https://www.c2es.org/content/international-emissions/#:~:text=CO2%20accounts%20for%20about%2076,are%20expressed%20in%20CO2%2Dequivalents>.

¹⁵ EPA. *Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases*. [online]. 25 January 2025. [Accessed 26 January 2025]. Available at: <https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases#:~:text=Carbon%20dioxide%20concentrations%20have%20increased,is%20due%20to%20human%20activities>.

¹⁶ GLOBAL METHANE INITIATIVE. *Global Methane Initiative (GMI) Policymaker Framework for Addressing Methane Emissions*. [online]. [Accessed 22 January 2025]. Available at: <https://globalmethane.org/pmf/>.

livestock farming, which generates methane through enteric fermentation in ruminant animals. Additionally, inadequate waste management (notably the decomposition of organic waste in landfills) and specific industrial processes, such as fossil fuel extraction and refining, contribute substantially to methane emissions. These sources are often underemphasized in policy discourse yet play a critical role in exacerbating climate change.

A comprehensive understanding of the amplified greenhouse effect necessitates examining the cumulative impacts of these various gases. While CO₂ can remain in the atmosphere for centuries, methane persists for roughly 12 years but exerts a disproportionately large warming effect during its shorter lifespan.¹⁷ This interplay underscores the importance of targeted mitigation measures that address short-lived and long-lived climate pollutants.

Recent NASA reports include visual data that further clarify these processes. Graphs demonstrating the sharp increase in GHG concentrations since the mid-nineteenth century and corresponding global temperature anomalies provide compelling evidence linking human activities to climate change.¹⁸ These findings reinforce the urgent need for robust international legal frameworks governing GHG emissions, such as the Paris Agreement, which aims to limit global temperature increases to below 2°C. Such legal mechanisms must prioritize not only reductions in CO₂ but also comprehensive strategies to mitigate methane emissions through sustainable agricultural practices, improved waste management, and industrial reforms.

¹⁷ IEA. *Methane and climate change*. [online]. [Accessed 22 January 2025]. Available at: <https://www.iea.org/reports/global-methane-tracker-2022/methane-and-climate-change>.

¹⁸ NASA. GLOBAL CLIMATE CHANGE. *A World of Agreement: Temperatures Are Rising*. [online]. [Accessed 22 January 2025]. Available at: https://climate.nasa.gov/climate_resources/253/a-world-of-agreement-temperatures-are-rising/.

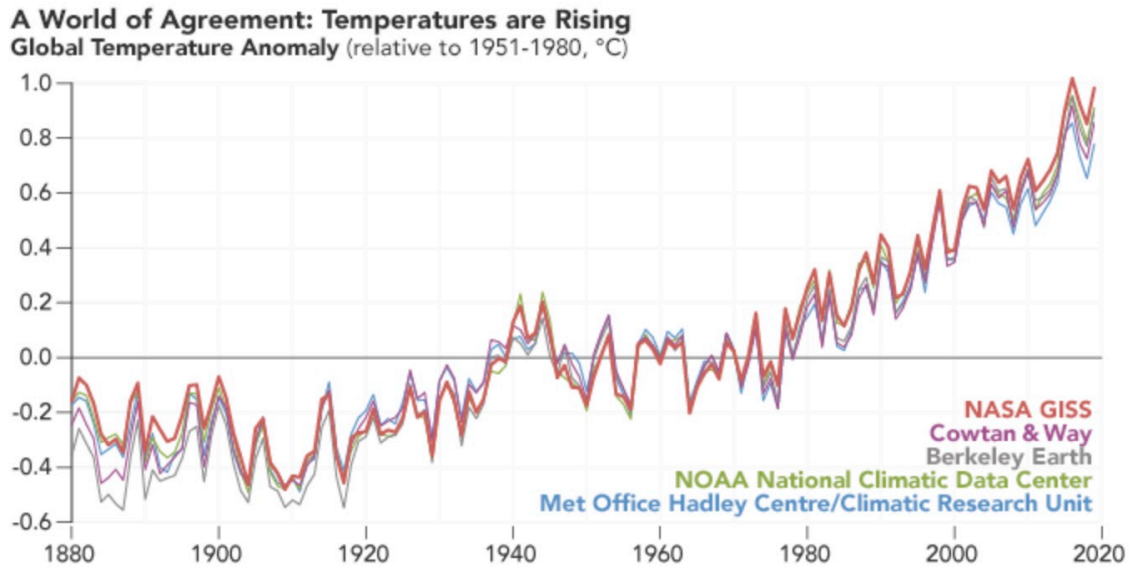


Figure 1: A World of Agreement: Temperatures are Rising¹⁹

In conclusion, the intensified greenhouse effect, driven by human-induced GHG increase, constitutes the core mechanism underlying current climate change. Effectively addressing this crisis requires a multidisciplinary approach integrating scientific research, technological innovation, and enforceable legal instruments to curb emissions and ensure long-term global environmental sustainability.

C. *The impacts of climate change*

Climate change tends to be causing temperature rises, sea-level rise and extreme weather events, posing severe challenges to human survival and development. Rising sea levels will result in the erosion of many of the Earth's coastlines and the submersion of many islands, threatening the lives of the island and coastal communities. The frequency of extreme weather events such as tropical storms and hurricanes will seriously damage infrastructure and threaten human life. Extreme heat events are often accompanied by natural disasters such as droughts and floods, with serious implications for agriculture. In addition, as a result of global warming, the spread of many infectious diseases transmitted through insects, food and water would increase, threatening human health.²⁰

¹⁹ Ibid.

²⁰ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE. *IPCC 2007, Summary for Policymakers, in Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK, 2018, p.18.

Failure to effectively control global warming, with temperatures rising above a critical threshold to be 2 degrees Celsius, will lead to an irreversible rise in global temperatures with devastating effects on the living environment.²¹

1.1.2. Climate Change Impacts on Natural Systems and Biodiversity

According to the IPCC's Sixth Assessment Report released between 2021 and 2023, climate change is already causing significant damage and increasingly irreversible losses in terrestrial, freshwater, coastal and pelagic marine ecosystems.

Among others, climate change has played a role in the extinction of the Eastern Ringtail Possum and Bramble Cays Melomys in Australia. This rat is endemic to the vegetated coral mounds at the northern end of the Great Barrier Reef. The report also explained that climate change has led to the extinction of the Golden Toad in Costa Rica. The report added that a study of 976 species of plants and animals found that 47% of the causes of plant and animal extinctions were linked to climate change.²²

According to the report's findings, a quarter of the world's natural lands are experiencing longer fire seasons due to rising temperatures and drought. There is evidence that human-caused climate change has led to a doubling of the area burned by wildfires in the western United States since the 1980s. Climate change tends to be also increasing the spread of wildlife diseases and zoonotic diseases. Rising temperatures and more brutal extreme weather events are paving the way for the spread of new diseases. Declining species reduce the capacity of ecosystems to provide services and their ability to adapt to climate change. Moreover, frequent fires and reductions in ecosystem carbon storage may dramatically increase the release of terrestrial carbon into the atmosphere, triggering an ever-increasing vicious cycle for both climate change and ecosystems.²³

At 1.5°C, the proportion of all terrestrial and freshwater species at very high risk of extinction may reach 9% (maximum 14%). The risk rises to 10% (maximum 18%) at 2°C and 12% (maximum 29%) at 3°C. The report adds that insects (especially pollinators), amphibians and flowers face the most significant risk of extinction at mid-level of warming(3.2°C).²⁴

²¹ WORLD BANK. *Turn Down the Heat: Why a 4°C Warmer World Must Be Avoided*. World Bank, 2012, p.38.

²² IPCC. *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2022, p. 1606-1607.

²³ *Ibid.*, p.2883-2886.

²⁴ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE. *IPCC Sixth Assessment Report*, 2022, p.221-223.

With the current climate change trends, more frequent and intense extreme events would push sensitive species and ecosystems to tipping points, which means it would represent a change beyond ecological and evolutionary adaptive capacity, and the damage would be sudden and irreversible. The report explains that even a temporary increase in temperature of more than 1.5°C over a few decades, followed by a return to below-warming levels, could push many species beyond their physiological tolerance limits. These changes could lead to ecosystem collapse or a transition to a new ecological state, resulting in biodiversity loss, including extinction and loss of ecosystem services.²⁵

The report said that at global warming of 4°C, more than a third (35%) of the global land surface could experience changes in biomes. If temperatures remain below 2°C, this could be limited to less than 15%. This level of warming could lead to the conversion of large areas of the Amazon rainforest to drier, less dense vegetation, the further conversion of boreal forests to arctic tundra and mountain forests to alpine grasslands.²⁶ In addition, if an area is at risk from land use change and climate change, the risk of biome change could be twice or three times higher.

As a result, the IPCC estimates that the risk of biodiversity loss due to climate change could be moderate to high for many ecosystems, including forests and other terrestrial ecosystems, coral reefs, and other marine ecosystems, and those dependent on Arctic Sea ice, where biodiversity is declining rapidly. The impact of climate change on natural systems could be huge from all angles. The report recommends protecting about 30 to 50% of the planet's land, freshwater and oceans, which would help preserve biodiversity and the resilience of ecosystem services. Nevertheless, until now, less than 15% of the world's land, 21% of its freshwater and 8% of its oceans have been protected.

1.2. Climate Change, a Problem for Human Civilization

The Breakthrough National Centre for Climate Restoration, an Australian think-tank, has released a report that characterizes climate change as a hazard to human civilization in the short and medium term. The report posits that the planet's liveability will be compromised by mid-century unless mitigative measures are promptly implemented, culminating in the disruption of national and international order.²⁷ Climate change has historically influenced human

²⁵ Ibid., p.447-449.

²⁶ Ibid., p.1708.

²⁷ BREAKTHROUGH NATIONAL CENTRE FOR CLIMATE RESTORATION. *What does Australia's first climate and security risk assessment say?*. [online]. [Accessed 23 January 2025]. Available at: https://www.breakthroughonline.org.au/_files/ugd/148cb0_81f46d11e2b2400caf41eefd61010e0f.pdf.

societies globally, and the forthcoming sections of this study will examine its effects on economic systems, migration patterns and displacement, political instability, and sociocultural spheres.

1.2.1. Economic Impacts

The World Economic Forum (WEF) convened its annual meeting in Davos, Switzerland, in January 2023, where the WEF published its Global Risks 2023 report. This report identified several areas where the global community had reached a critical juncture, including climate-related hazards threatening the global economy. According to the report, over 50% of the current top 10 global risks emanate from environmental factors, encompassing but not limited to natural disasters, extreme weather phenomena, resource depletion, and the degradation of biodiversity and ecosystems.²⁸ The impact of climate change on the economy tends to be not only in industry, but also in agriculture, banking, tourism and many other areas, thus affecting the global gross domestic product (GDP).

A. *The impact of climate change on GDP*

In the article *The GDP-Temperature relationship: Implications for climate change damages*, Richard examines the connection between economic output and temperature. Published in the *Journal of Environmental Economics and Management*, the study finds that high temperatures statistically negatively affect agricultural GDP in low-income nations but not wealthy nations and non-agricultural production. Although the estimated impacts of climate change on GDP may appear modest, even a 1% decrease in global GDP, which amounts to US\$800 billion in current terms, could rise 5 to 12 times by 2100 with an annual economic growth rate of 2 to 3%.²⁹

²⁸ WORLD ECONOMIC FORUM. *The Global Risks Report 2023. 18th Edition*, 2023, p.7.

²⁹ NEWELL, Richard G., PREST, Brian C., SEXTON, Steven E. The GDP-Temperature relationship: Implications for climate change damages. *Journal of Environmental Economics and Management*, Vol. 108, July 2021, p.39.

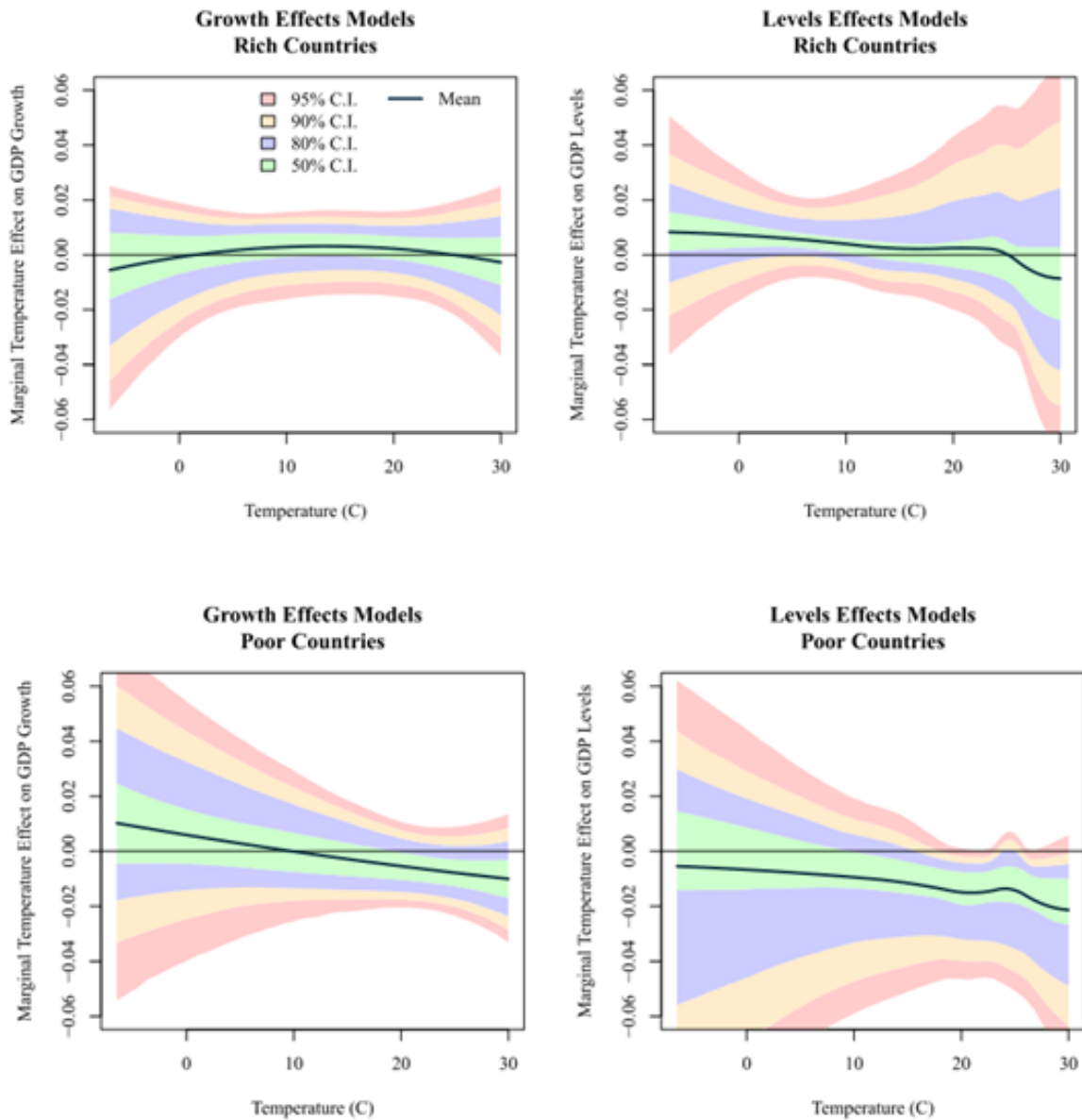


Figure 2: Growth Effects Models for Rich and Poor Countries³⁰

Figure 2 indicates that the relationship between GDP and temperature could be nonlinear for wealthy and low-income countries, suggesting climate change has far-reaching effects on economic growth. The results demonstrate that GDP levels and growth rates in high-income nations do not respond to temperature in a statistically or economically significant manner, even at temperatures that have been historically observed. The growth model within the 50% confidence interval suggests no effect whatsoever. In low-income countries, the average marginal growth effect of temperature shows a monotonic and nearly linear decline across the temperature range, indicating a quadratic temperature function. However, the estimates of the

³⁰ Ibid., p.22-25.

marginal temperature effect on economic growth in low-income countries are imprecised. To be more precise, the marginal range effect on GDP levels for low-income countries is negative across the entire temperature range, suggesting that even the coldest annual temperatures observed during the historical study period can be harmful. The 95% confidence interval for typical temperatures in large economies ranges from -1% to +2% of GDP at the narrowest point of the horizontal model.³¹

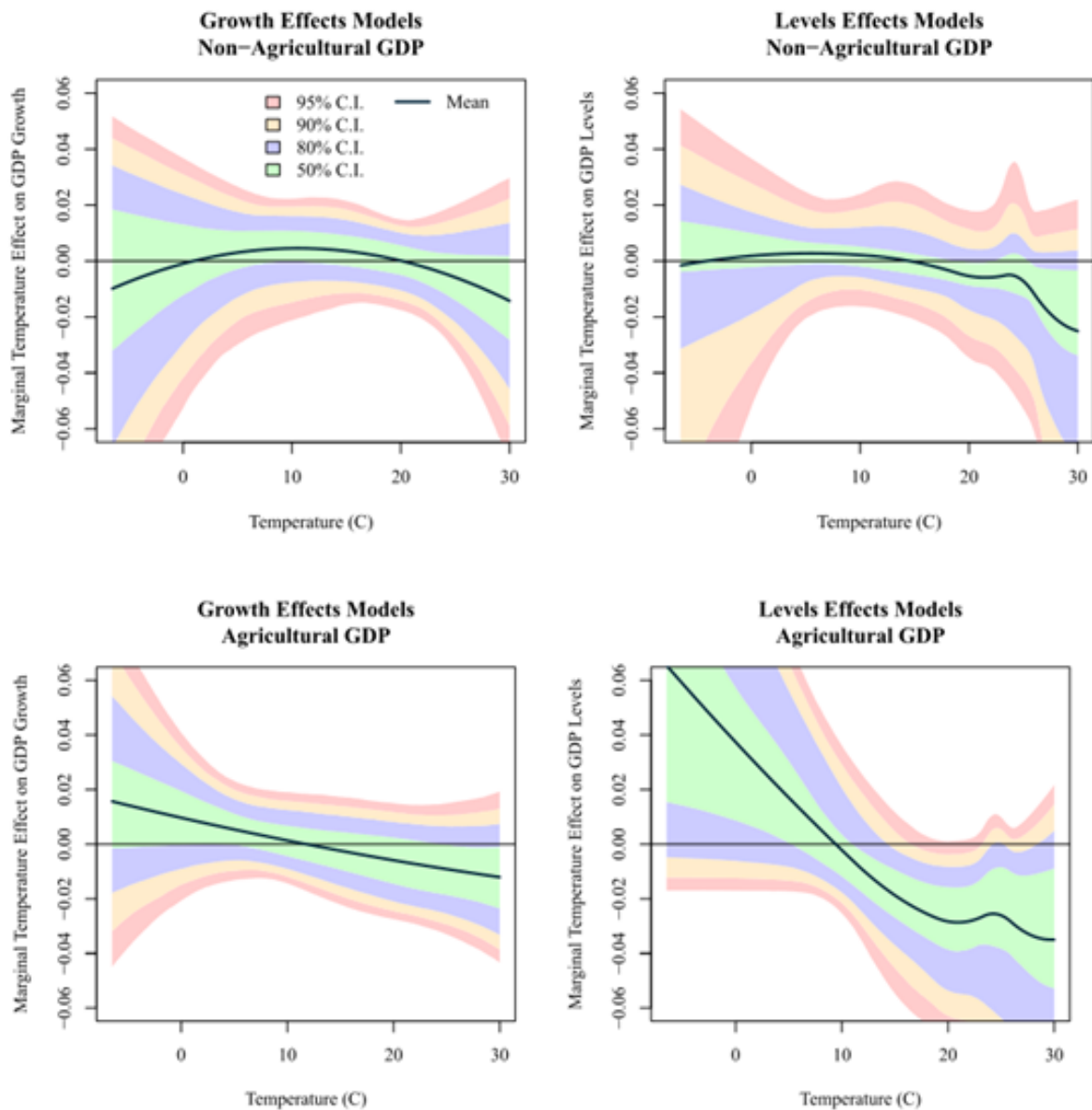


Figure 3: Growth Effects Models for Agricultural and non-Agricultural GDP³²

According to Richard's article, temperature exerts a material influence on agricultural GDP. In particular, the slope of the average marginal effect for agricultural GDP may be more

³¹ Ibid., p.31.

³² Ibid., p.58.

pronounced than that observed for overall GDP or any other disaggregated economic measure. Empirical evidence further indicates that, for temperatures exceeding 15°C, this effect attains a level of statistical significance at or above the twenty-percent threshold, thus supporting the conclusion that the impact could be not zero.³³

The Climate Vulnerability Monitor report has identified that global warming significantly impacts the world economy, economic impact of global warming is costing the world more than \$1.2 trillion a year, wiping 1.6% annually from global GDP.³⁴ Additionally, a United Nations Environment Programme report predicts that the cost of adapting to climate change in developing countries will increase to between US\$280 billion to US\$500 billion per year by 2050. The United Nations Development Programme highlights that by 2030, the GDP of 43 countries will be directly impacted by global warming, with Asian and African countries expected to experience particularly pronounced economic losses.³⁵ All of the above literature shows that climate change has a range of direct and indirect impacts on GDP.

B. The impact of climate change on different sectors of the economy

Climate change tends to be projected to have a significant impact on global food production. A study by McKinsey reveals that crop yields are expected to decline by approximately 20% by 2050, which would not suffice to meet the needs of a growing global population.³⁶ The Australian Climate Commission predicts that the cumulative cost of climate change on agriculture and productivity in Australia could amount to A\$4.2 trillion by 2100. Additionally, high temperatures resulting from climate change may impair the performance of power systems worldwide. The severity of extreme heat (above 48°C) may reduce air travel, potentially affecting up to 185,000 passengers annually by 2050, which is about 23 times the current figure. Meanwhile, severe weather events like hurricanes pose a risk to key infrastructure such as offshore structures and transportation systems, causing damage due to changing environmental conditions. The estimated value of assets at risk of damage due to flooding is expected to increase to US\$1.6 trillion globally by 2050, with approximately

³³ Ibid., p.47.

³⁴ DARA CLIMATE VULNERABLE FORUM. *2nd Edition Climate Vulnerability Monitor. A Guide to the Cold Calculus of a Hot Planet*, 2012, p.17.

³⁵ UNITED NATIONS. *UNEP report: Cost of adapting to climate change could hit \$500B per year by 2050*. In United Nations [online]. 2018 March 22. [Accessed 31 January 2023]. Available at: <https://www.un.org/sustainabledevelopment/blog/2016/05/unep-report-cost-of-adapting-to-climate-change-could-hit-500b-per-year-by-2050/>.

³⁶ AMINETZAH, Daniel et al. *Agriculture and climate change Reducing emissions through improved farming practices*. McKinsey & Company, 2020, p. 24-25.

US\$1.2 trillion at risk in Asia.³⁷ The figures above are a direct indication of the economic costs of climate change on food production and infrastructure.

In addition to its impact on global GDP, food production, and infrastructure, climate change poses a significant threat to the real economy by impairing corporate balance sheets. For instance, the 2021 cold snap in Texas led to the bankruptcy of Brazos Electric Cooperative, the state's largest power company, resulting in a financial loss of US\$195 billion.³⁸ Insurance companies have also been affected by more frequent and severe natural disasters than anticipated, leading to unexpectedly high claims.

The Swissers's statistics indicate that extreme weather events cost insurers worldwide US\$112 billion in 2021, marking the worst insurance loss for the same period since 2011 (when the Japan and New Zealand earthquakes occurred) and the second-largest loss on record. Climate change can also lead to collateral devaluation in affected areas, lowering the quality of bank loans.³⁹ For instance, floods can significantly reduce house prices in affected communities, depreciate certain assets, disrupt related business operations, and increase the likelihood and severity of defaults and default losses on bank loans.

Financial institutions, particularly banks, may experience short-term liquidity constraints and refinancing difficulties as climate-induced shocks impair their balance sheets. According to the Network for Greening the Financial System,⁴⁰ these disruptions can be amplified by other market participants, thus exacerbating the risk of overall credit tightening. Furthermore, the complexity of climate change presents significant challenges for monetary authorities, as sudden climate-related shocks or policy shifts introduce additional uncertainties. These uncertainties can disrupt the *monetary policy transmission process*—namely, the channels through which central banks' policy tools (such as interest rate adjustments or asset purchase programs) influence financial conditions, investment, consumption,⁴¹ and ultimately inflation

³⁷ CLIMATE COUNCIL OF AUSTRALIA. *Updating the Authority's Previous Advice on Meeting the Paris Agreement*, 2019, p.13-14.

³⁸ WITTE, Kathleen. *Brazos Electric files for bankruptcy after winter storm, 'cannot and will not' pass ERCOT prices to consumers*. In KBTX [online]. 1 March 2021. [Accessed 31 January 2023]. Available at: <https://www.kbtx.com/2021/03/01/brazos-electric-files-for-bankruptcy-after-winter-storm-cannot-and-will-not-pass-ercot-prices-to-consumers/>.

³⁹ SWISSRE RE GROUP. *Global insured catastrophe losses rise to USD 112 billion in 2021, the fourth highest on record, Swiss Re Institute estimates*. In SWISSRE [online]. 14 December 2021. [Accessed 31 January 2023]. Available at: <https://www.swissre.com/media/press-release/nr-20211214-sigma-full-year-2021-preliminary-natcat-loss-estimates.html>.

⁴⁰ NETWORK FOR GREENING THE FINANCIAL SYSTEM. *The macroeconomic and financial stability impacts of climate change: research priorities*, 2020, p.8-9.

⁴¹ BATTEN, Sandra, SOWERBUTTS, Rhiannon, TANAKA, Misa. *Let's talk about the weather: The impact of climate change on central banks*. Staff Working Paper No. 603, Bank of England, May 2016, p. 24-25.

and economic output.⁴² Misjudgements in assessing the timing or magnitude of climate-related risks could therefore constrain the effectiveness of monetary policy, with potentially adverse consequences for macroeconomic stability.

In economic globalization, climate change risks will also be transmitted through trade, industrial chains, and financial channels. The damage caused by climate change to some countries can spread to other countries and regions with economic ties through a chain reaction and connection, possibly leading to a systemic and global financial turmoil.

1.2.2. Migration and Displacement

According to a 2020 report on climate-change-induced emergencies by the United Nations High Commissioner for Refugees (UNHCR), figures indicate an annual average displacement of 21.5 million individuals due to climate change over the past decade.⁴³ This surpasses the number of individuals displaced by conflicts and violence, more than doubling it. Meanwhile, Sean's article suggests that there could be 1.2 billion climate “refugees” worldwide by 2050.⁴⁴ Most relevant to climate migrants are the questions of where these people will go and how they can legally live there, among other social issues arising from climate change.

⁴² BOLTON, Patrick et al. *The green swan: Central banking and financial stability in the age of climate change*. Bank for International Settlements, 2020, p. 15.

⁴³ GAYNOR, Tim. ‘*Climate change is the defining crisis of our time and it particularly impacts the displaced*’. In *UNHCR* [online]. 30 November 2020. [Accessed 31 January 2023]. Available at: <https://www.unhcr.org/news/latest/2020/11/5fbf73384/climate-change-defining-crisis-time-particularly-impacts-displaced.html>.

⁴⁴ McALLISTER, Sean. *There could be 1.2 billion climate refugees by 2050. Here’s what you need to know*. In *ZURICH* [online]. 13 January 2023. [Accessed 2 February 2023]. Available at: <https://www.zurich.com/en/media/magazine/2022/there-could-be-1-2-billion-climate-refugees-by-2050-here-s-what-you-need-to-know>.

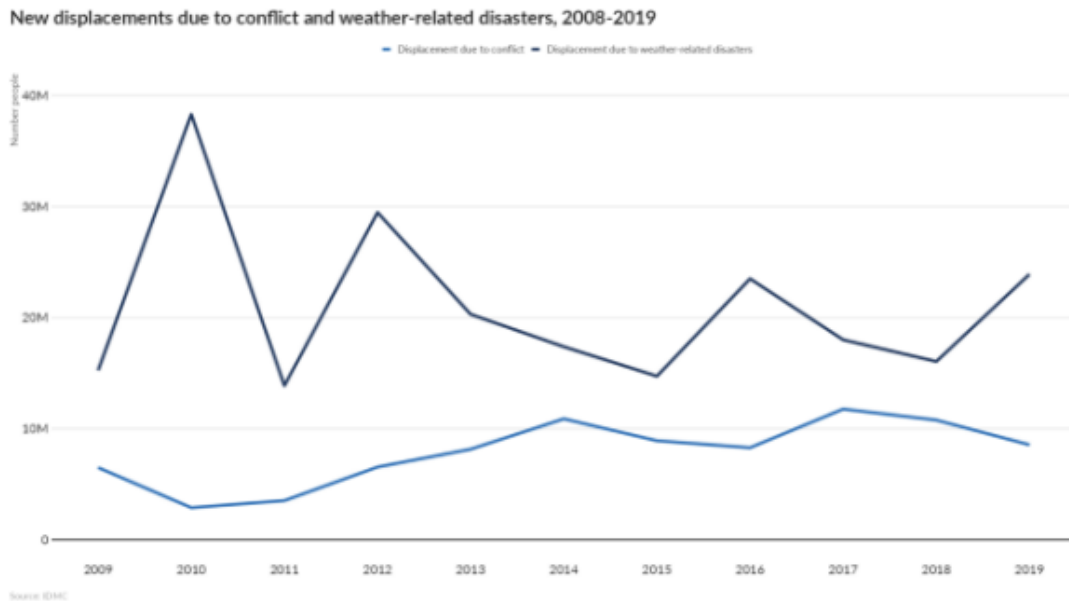


Figure 4: New displacements due to conflict and weather-related disasters, 2008-2019⁴⁵

A. Refugees

In recent years, the global issue of refugees has gained increasing attention due to natural disasters and conflicts. The Convention Relating to the Status of Refugees⁴⁶ and the Protocol Relating to the Status of Refugees,⁴⁷ signed within the United Nations in Geneva in 1951 and in New York in 1966, respectively, provide a strict definition of a refugee. According to these documents, a refugee is an individual who can demonstrate a well-founded fear of persecution based on his/her race, religion, nationality, membership in a particular social group, or political opinion and who is unable or unwilling to return to his/her own country or avail himself/herself of its protection. Additionally, the definition includes stateless persons who remain outside the country of their former habitual residence due to the same reasons mentioned above. It is clear from the above that persons who are forced to leave their place of habitual residence for environmental reasons do not meet the definition of a refugee under applicable international law. However, it must be said that the term "refugee" well describes the urgency of their situation and is understandable to the general public.

⁴⁵ Ibid.

⁴⁶ Convention Relating to the Status of Refugees. Adopted on 28.07.1951, entered into force on 22.04.1954.

⁴⁷ Protocol relating to the Status of Refugees. Adopted on 16.12.1966, entered into force on 04.10.1967.

B. *Environmental refugees/environmentally displaced persons*

The term environmental refugee was first introduced in 1985 in an official paper by UNEP expert Essam.⁴⁸ While there tends to be currently no universal definition of an environmental refugee, it could be interpreted as a person who has been compelled to leave his/her place of origin or habitual residence for a prolonged period due to environmental degradation that can no longer sustain his/her livelihood. As noted above, however, these persons should more accurately be referred to as environmentally displaced persons/people (EDPs), a term that respects the fact that they are not legally refugees in the true sense of the word.⁴⁹

Various factors contribute to creating environmentally displaced persons, including land drought, expanding desertification, floods, deforestation, and rising sea levels.⁵⁰ For instance, climate change has displaced millions of individuals in sub-Saharan Africa due to increasing drought and desertification. Hurricane Katrina flooded New Orleans in the US in 2005, causing many individuals to flee the city permanently. In extreme cases, if environmental conditions worsen, it is conceivable that even every individual within a country will become an “environmental refugee”; examples include low-lying island states whose entire territory may become uninhabitable due to rising sea levels.

According to relevant organizations, there are currently at least 25 million environmentally displaced persons worldwide, with projections indicating that this number will rise to 500 million by 2010 and 1.5 billion by 2050.⁵¹ As such, these “environmental refugees” are now considered the new group of forcefully migrating people, and their numbers are increasing rapidly. “Climate refugees”, who have been forced to leave their homes due to the consequences of climate change, can be considered a subcategory of “environmental refugees” (the reservation of the legally problematic use of the term “refugee” applies to them as well, of course; it would be more accurate to speak of climate-induced migration and climate migrants).⁵² There is however no international consensus on the definition of climate refugees/migrants, and no one has yet been granted citizenship in another country due to climate change impacts.

⁴⁸ UNITED NATIONS DIGITAL LIBRARY. *Environmental refugees/by Essam El-Hinnawi*. [online]. [Accessed 22 January 2025]. Available at: <https://digitallibrary.un.org/record/121267?v=pdf>.

⁴⁹ ZETTER, Roger. *Environmentally displaced people*. [online]. [Accessed 22 January 2025]. Available at: <https://www.rsc.ox.ac.uk/policy/environmentally-displaced-people>.

⁵⁰ BLACK, Richard. *Environmental refugees: myth or reality?* New Issues in Refugee Research, Working Paper No. 34, March 2001, p. 2.

⁵¹ OIL, Brown. *Migration and Climate Change*. IOM International Organization for Migration, January 2008, p. 12.

⁵² APAP, Joanna, HARJU, Sami J. *The concept of 'climate refugee'. Towards a possible definition*. Briefing, European Parliament, October 2023, p. 4.

An example of a country whose existence is threatened by climate change is Kiribati, a small nation (approx. 100 000 inhabitants) whose land territory consists of 35 coral islands spread across 3.4 million square kilometres in the Pacific Ocean. South Tarawa, the capital of the Republic of Kiribati, tends to be a notable case of island overcrowding caused by neighbouring uninhabitable islands, resulting in a dramatic increase in population from 1,671 residents in 1947 to over 50,000 by 2010. The resultant population growth has led to violence and challenges related to insufficient fresh water and agricultural resources. Kiribati officials, including its former President Anote Tong, have acknowledged the likelihood of the country's inundation by the sea even with the implementation of emission reduction measures by other countries in the next 30-50 years. In response, the Kiribati government has developed a plan for dignified migration, which entails supporting citizens to travel to Australia and New Zealand for professional and skills training, allowing for merit-based migration when the time comes for permanent relocation.⁵³ Scientists have indicated that rising sea levels may soon result in the existential crisis of large islands and continents worldwide, citing examples such as Hawaii, Japan, and the Arctic.⁵⁴

Climate change tends to be an issue that transcends national boundaries, and the forced displacement of individuals resulting from its effects is a product of greenhouse gas emissions emanating from every corner of the world. The uprooting of people from their homes due to climate change is a pressing global issue that demands immediate attention and decisive action to mitigate the risk of escalating conflict. While a direct causal connection between climate change and migration has yet to be established, the volume of climate-related migration is expected to grow significantly, heightening the urgency of proactive measures to address this phenomenon.

1.2.3. Political Instability

Climate change not only influences national politics—intensifying ideological divisions and sparking debates on policy priorities—but also generates complex global political challenges, resulting in a surge of legal disputes. This rise in climate change litigation reflects broader factors such as growing public awareness, evolving legal frameworks, and advancing scientific evidence. At the same time, these lawsuits raise critical political questions concerning

⁵³ PEDDLE, Barry, LACEY, Geoff, McKAY, Russel. *Kiribati Skills for Employment Program (SfEP)*. Investment Design Document, Australian Government Department of Foreign Affairs and Trade, January 2015, p. 6-7.

⁵⁴ LOCKE, Justin T. Climate Change-Induced Migration in the Pacific Region: Sudden Crisis and Long-Term Developments. *The Geographical Journal*, Vol. 175, No. 3, September 2009, p.173-174.

governmental responsibility, regulatory authority, and intergenerational equity. Consequently, while the number of climate lawsuits continues to climb, the associated political implications become increasingly apparent in both domestic and international spheres.

As the urgency of climate change propels it to the forefront of global policy agendas, it also emerges as a strategic arena for international political manoeuvring. In particular, relations between the United States and China demonstrate how climate cooperation and commitments can be leveraged as political instruments. For instance, following US House Speaker Nancy Pelosi's visit to Taiwan in August 2022—a move that China deemed a provocation—China promptly suspended its bilateral climate change talks with the United States. Shortly thereafter, the US Senate passed the Inflation Reduction Act (IRA) of 2022, valued at approximately \$740 billion, whose climate-related provisions could significantly affect Chinese investments and the stability of China's domestic industrial supply chains.⁵⁵ These events underscore that climate policies and negotiations may serve broader geopolitical objectives in the evolving US-China relationship even beyond their environmental impact.

The Inflation Reduction Act resulted in several ramifications under President Trump :

Take the climate legislation enacted by the Biden administration in 2021—the Inflation Reduction Act (IRA)—as an example. Although on January 21, 2025, Trump ordered federal agencies to "immediately suspend" the funding of the IRA, it remains one of the most iconic climate laws of the Biden administration. Initially, the act aimed to accelerate the United States' transition to a green energy economy through approximately \$400 billion in new spending, tax incentives, and credits.⁵⁶ IRA illustrates how ostensibly environmental measures may simultaneously serve broader strategic objectives, particularly by incentivizing domestic production and reducing reliance on non-allied supply chains. As an example, the law's provisions on photovoltaics, wind power, and electric vehicle manufacturing—such as stringent local-content requirements and the exclusion of batteries sourced from countries lacking free trade agreements with the US—carry far-reaching economic implications for China, which currently dominates key segments of the clean energy supply chain.⁵⁷ This may erode China's longstanding advantage in sectors ranging from solar panel materials to lithium-

⁵⁵ THE ASSOCIATED PRESS. *China halts climate and military dialogue with the U.S. over Pelosi's Taiwan visit*. [online]. 5 August 2022. [Accessed 23 February 2023]. Available at: <https://www.npr.org/2022/08/05/1115878668/china-taiwan-pelosi-climate-military>.

⁵⁶ NORONEN, Visa. *Trump takes subsidies away from US hydrogen industry*. [online]. 21 January 2025. [Accessed 21 January 2025]. Available at: <https://www.both2nia.com/en/news/trump-takes-subsidies-away-hydrogen-industry>.

⁵⁷ BARRETT, Eamon. *The U.S. and Australia want to cut China out of its wind and solar supply chains*. [online]. Fortune, 2022. [Accessed 23 February 2023]. Available at: <https://fortune.com/2022/07/13/china-green-tech-supply-chain-us-biden-climate-goals>.

ion battery components and natural gas imports, while bolstering domestic industries within the US and its allies.⁵⁸ If a future administration under President Trump or another leader modifies or intensifies these measures, the role of climate policies as tools of geopolitical leverage could expand further, underscoring that climate actions can, in practice, serve both environmental and economic-strategic ends.

The United States (13 %) and China (31.49 %), the data for fossil carbon dioxide emissions in 2023, are pivotal players in addressing the global climate crisis.⁵⁹ Their collaborative efforts towards mitigating climate change are of paramount significance for the world. Nevertheless, political challenges associated with climate change have impeded political cooperation between the two nations over the years.

Jeffrey Sachs, Professor and Director of the Centre for Sustainable Development at Columbia University, said at the 3rd Hong Kong China-US Forum Beyond Differences, Towards Cooperation, that China has established itself as a global leader in various decarbonisation technologies, such as low-cost photovoltaics, low-cost wind power, large-scale hydropower, long-distance high-voltage direct current transmission, 5G, smart grids, electric vehicle batteries, and electric vehicles. The United States also has the potential to excel in decarbonisation technologies. Rather than engaging in a US-initiated technology war, which would be futile,⁶⁰ it would be more beneficial for both countries to engage in collaborative efforts to advance the global decarbonisation agenda.

⁵⁸ EIA.GOV. *Annual Energy Outlook - U.S. Energy Information Administration (EIA)*. [online].2022. [Accessed 23 February 2023]. Available at: <https://www.eia.gov/outlooks/aeo/>.

⁵⁹ STATISTA. *Distribution of fossil carbon dioxide emissions worldwide in 2023, by select country*. [online]. 2023. [Accessed 22 January 2025]. Available at: <https://www.statista.com/statistics/271748/the-largest-emitters-of-co2-in-the-world/>.

⁶⁰ HONG KONG FORUM ON U.S.- CHINA RELATIONS. *Beyond Differences Towards Cooperation*. [online].2022. [Accessed 3 February 2023]. Available at: <https://www.chinausfocus.com/magazine/v33/China-US-Focus-Digest-v33.pdf>.

1.2.4. Social and Cultural Impacts

Climate change's societal and cultural implications tend to be profound, influencing present conditions and shaping historical and cultural trajectories. The following part examines how climate change has impacted cultural heritage and historical narratives while addressing its contemporary effects on urban social dynamics. It delves into the challenges posed to human health, urban planning, land use, infrastructure, and the urban environment. By exploring these interconnected issues, this part aims to provide a nuanced understanding of how climate change reshapes urban communities' social and cultural fabric.

A. The impact of climate change on history and culture

The effects of climate change, including rising sea levels and extreme weather events, severely threatens historical and cultural heritage sites. For instance, the ancient city of Chan Chan in Peru, renowned for its earthen brick city structure, has suffered damage from altered rainfall patterns caused by the El Niño phenomenon.⁶¹ Similar threats are also prevalent in historic cities in Europe, Africa, and the Middle East, where floods can cause erosion and salt crystallization of building surfaces, soil subsidence, and even destabilise fragile building foundations. Additionally, fluctuating river levels can create challenges for preserving cultural and historical sites along coastlines. Given the already fragile state of many of these sites, changes in moisture and soil temperatures caused by climate change could further exacerbate the challenge of preserving them for future generations.

According to a report co-published by the United Nations Environment Programme and UNESCO, climate change has considerably impacted religious and cultural heritage sites,⁶² such as the ancient ruins of Sukhothai and Ayutthaya in north-eastern Thailand, which have suffered extensive damage from flooding. In addition, the acidification of the air resulting from increased levels of carbon dioxide poses a potential threat to stone sculptures and murals worldwide, particularly if accompanied by rising humidity levels due to climate change.

Preserving precious works of art and historical documents tends to be essential as they are vulnerable to deterioration due to various environmental factors. Materials such as canvas, wood, paper or leather, commonly used to create artwork, are susceptible to mould, micro-organisms and insects in warm and humid environments. Such environments can accelerate the

⁶¹ UNESCO. *Preventing climate-related impacts in the Chan Chan Archaeological Zone (Peru)*. [online] 2023. [Accessed 3 February 2023]. Available at: <https://whc.unesco.org/en/canopy/chanchan/>.

⁶² UNESCO. *Climate Change and World Heritage. Report on predicting and managing the impacts of climate change on World Heritage and Strategy to assist States Parties to implement appropriate management responses*. World Heritage Reports 22, May 2007, p. 24.

deterioration process and ultimately lead to the loss of precious art. Similarly, historical documents, including bamboo scrolls and codices, are prone to mould or moth damage in warm and humid climates, while dry climates can cause them to dry out and crack.⁶³

Furthermore, environmental pollution can also cause damage to art and historical artefacts. Increased levels of carbon dioxide and acidic particulate matter can lead to air acidification, causing the corrosion of ancient relics and buildings. To ensure the long-term preservation of these precious works of art and historical documents, it tends to be crucial to implement proper environmental controls, including regulating temperature, humidity, and air quality. In the context of climate change, all these factors require increased attention and potentially changes in existing approaches.

B. The impact of climate change on urban social life

a. Impacts on human health

Climate change tends to be expected to negatively affect the health of people, especially those living in urban areas. This includes hotter summers and prolonged heat waves, increasing discomfort and risk of heat stroke and related diseases, especially among vulnerable parts of the urban population. Expanding pests to higher latitudes and altitudes may also increase the risk of vector-borne diseases. From Bloom's research, elevated concentrations of carbon dioxide can also lead to changes in the nutrient composition of agricultural products, which can upset the nutritional balance of food consumed by humans.⁶⁴ Rising atmospheric carbon dioxide (CO₂) levels substantially threaten global food security and public health, as evidenced by the findings from Professor Samuel at Harvard University's School of Public Health. Elevated CO₂ concentrations have been shown to diminish essential micronutrients and proteins in staple crops. According to Cm's research, approximately two billion people already suffer from iron and zinc deficiencies—deficiencies that are especially detrimental to infants and pregnant women. Alarming data indicate that wheat grown under high CO₂ conditions exhibits a 9% reduction in zinc content, a 5% reduction in iron, and a 6% reduction in protein. Rice similarly demonstrates a 3% decline in zinc, a 5% decline in iron, and an 8% decline in protein under elevated CO₂ levels. At the same time, maize and soy also show marked decreases in zinc and iron, albeit with minimal changes to protein content. Laboratory experiments further

⁶³ MUÑOZ-GONZÁLEZ, Carmen M., LEÓN-RODRÍGUEZ, Ángel L., SUÁREZ-MEDINA, Rafael C., RUIZ-JARAMILLO, Jonathan. Effects of future climate change on the preservation of artworks, thermal comfort and energy consumption in historic buildings. *Applied Energy*, Vol. 276, 15 October 2020, p. 22-23.

⁶⁴ BLOOM, Arnold J. As Carbon Dioxide Rises, Food Quality Will Decline without Careful Nitrogen Management. *California Agriculture*, 63(2), 2009, p. 67.

reveal that increased atmospheric CO₂ hampers nitrate assimilation, limiting cereal grains' and non-leguminous plants' overall nitrogen uptake.⁶⁵

From a legal perspective, the adverse impact of elevated CO₂ levels on crop quality raises urgent questions about states' obligations under international human rights and environmental treaties. The right to adequate food, recognized by instruments such as the International Covenant on Economic, Social and Cultural Rights, becomes jeopardized as the nutritional profile of staple crops deteriorates. Moreover, current estimates suggest that nearly 63 million people die each year from complications related to iron and zinc deficiencies—numbers likely to surge as CO₂ concentrations continue to rise.⁶⁶ These findings underscore the imperative for robust legal measures that address greenhouse gas emissions, agricultural practices, and public health imperatives. International agreements, including the Paris Agreement, must integrate nutrient security into emission reduction and adaptation strategies. By adopting legally binding policies that target both climate change mitigation and agricultural innovation, the international community can better safeguard the fundamental right to food and protect vulnerable populations worldwide. Even if warming tends to be expected to have positive impacts on the health of people in alpine regions or at higher altitudes, specifically by reducing their vulnerability to winter diseases and frostbite, this cannot offset the overall negative direct and indirect impacts on human health related to climate change.

b. Impacts on urban planning and land use

Climate change is expected to bring about various changes to resource and environmental conditions in different regions. For instance, warmer and drier climates are expected to experience increasing water scarcity. At the same time, riverine areas will likely experience increased flooding, which may limit urban expansion and population carrying capacity.⁶⁷ Conversely, cities in regions with more favourable climatic conditions may experience an influx of people migrating. To mitigate the urban heat island effect, cities must allocate more land for greenery and water.

⁶⁵ MYERS, Samuel S., ZANOBETTI, Antonella, KLOOG, Itai et al. Increasing CO₂ threatens human nutrition. *Nature*, 510, 2014, p. 140-142.

⁶⁶ Ibid.

⁶⁷ PENG, Jiaying, ZHENG, Yuhang, LIU, Cenjie. The Impact of Urban Construction Land Use Change on Carbon Emissions: Evidence from the China Land Market in 2000–2019. *Land* 2022, 11, 1440, p. 2.

c. *Impacts on urban infrastructure*

For instance, urban drainage systems in many Asian cities are designed to handle only occasional heavy rainfall or semi-annual flooding. Adverse weather conditions often lead to severe traffic congestion and frequent water and electricity restrictions during the summer months.⁶⁸ In extreme weather events, the damage or paralysis of a city's critical infrastructure can have severe consequences.

d. *Impacts on the urban environment*

The phenomenon of climate change has had a profound impact on the composition and health of vegetation and ecosystems in urban green spaces, necessitating the implementation of species-specific management and nurturing practices. Municipalities have adopted drought-resistant tree varieties in response to water scarcity and reduced the frequency and volume of water replenishment for water features. Rising temperatures have caused an increase in microbial growth in eutrophic water bodies, leading to elevated pollution levels. Climate change has also influenced the prevalence of pests and diseases in urban gardens, resulting in more significant damage to green spaces.⁶⁹ Furthermore, in addition to anthropogenic factors, climate change has contributed to a decline in global wind speeds and solar radiation, leading to a surge in haze pollution and a reduction in dust storm damage in various urban areas. Articles by Zeng et al.⁷⁰ and Wang et al.⁷¹ suggest that climate change tends to be contributing to noticeable reductions in both global wind speeds and solar radiation levels. These changes could carry significant implications for air pollution, meteorological phenomena, and environmental regulatory regimes. Declining wind speeds limit the dispersion of airborne pollutants, thus facilitating the accumulation of particulate matter and exacerbating smog conditions—particularly in densely populated urban areas. Simultaneously, diminished solar radiation can alter atmospheric chemistry and weaken certain natural cleansing processes, further aggravating pollution episodes. Nevertheless, lower wind speeds have also been associated with a relative decline in the frequency and severity of dust storms in certain city regions, as insufficient wind force hinders the mobilization and transport of large dust particles.

⁶⁸ IPCC. *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2022, p. 985.

⁶⁹ KUMAR, Prashant. Climate Change and Cities: Challenges Ahead. *Frontiers in Sustainable Cities*, Vol. 3, 25 February 2021, p.5.

⁷⁰ ZENG, Zhenzhong, ZIEGLER, Alan D., SEARCHINGER, Timothy et al. A reversal in global terrestrial stilling and its implications for wind energy production. *Nature Climate Change*. 9, 2019, p. 1-5.

⁷¹ WANG, Kaicun, MA, Qian, LI, Zhijun, WANG Jiankai. Decadal variability in global terrestrial solar radiation from 1982 to 2015, *Journal of Geophysical Research: Atmospheres*. Vol. 120, no.13, 2018, p.1-4.

Solar radiation is the principal energy source within the Earth's climate system. Variations in its intensity and distribution exert profound effects on global temperature patterns. When solar radiation intensifies, the Earth absorbs more energy, raising temperatures; conversely, decreased solar radiation generally leads to cooling trends.⁷² Additionally, shifts in Earth's orbital characteristics—including eccentricity, axial tilt, and precession—modify the total amount of solar energy the planet receives, precipitating cyclical climatic fluctuations.⁷³ Thus, a comprehensive understanding of climate change must account not only for anthropogenic greenhouse gas emissions but also for the complex interplay of solar influences and global wind patterns.

From a legal standpoint, these multifaceted climate interactions underscore the necessity for adaptable regulatory frameworks. Policymakers must consider how declining wind speeds may exacerbate air quality problems, how falling solar radiation could alter long-term climate trajectories, and how certain weather-related disasters (such as dust storms) may decrease in frequency yet potentially intensify in other respects. Any effective policy response—whether through international agreements like the Paris Agreement or domestic legislation—should integrate scientific data on these evolving dynamics. In doing so, legal instruments can more accurately address emerging challenges related to air quality control, public health safeguards, and sustainable land management, thereby advancing environmental protection and climate resilience.

Climate change has been linked to the collapse of past human civilisations, as evidenced by historical events such as the disappearance of the Norse Viking settlements in Greenland during the Little Ice Age (14th-16th century), the fall of the Khmer Empire due to decades of severe drought and floods in the 14th-15th centuries, and the abandonment of cities along the Indus Valley river basin during a 200-year-long drought that began in 2000 BC. These examples underscore the vulnerability of human societies to climate variability and change and highlight the urgent need for global action to mitigate the impacts of climate change on human civilisation and to adapt to those that cannot be avoided.

⁷² Ibid.

⁷³ MILANKOVIC, Milutin. *Canon of Insolation and the Ice-Age Problem*. Jerusalem, Israel Program for Scientific Translations; [available from U.S. Dept. of Commerce, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va.], 1969, p.130.

2. Human Rights, a Concept Not Created for, but Relevant for Climate Change Effects

While historically conceived to safeguard fundamental freedoms and dignities, human rights have become increasingly relevant in addressing the complex impacts of climate change. This chapter examines how human rights norms and principles can respond to environmental challenges that were not foreseen at the inception of the modern human rights system. Section 2.1 lays the groundwork by elucidating the basics of human rights, tracing their philosophical underpinnings and evolution over time. Building on this foundation, Section 2.2 explores the intricate relationship between human rights and the environment, identifying how ecological degradation can undermine the ability to exercise fundamental rights. In particular, it highlights the growing recognition of a right to a healthy environment at the national level and the diverse approaches international and regional bodies take to integrate environmental considerations into human rights frameworks. Finally, Section 2.3 explains the development of environmental rights under international conventions and the content of environmental rights at different national levels. Section 2.3.3 discusses the human rights positioning of environmental rights.

2.1. Basics of Human Rights

Section 2.1 offers a foundational overview of human rights, examining their conceptual basis and historical progression. Subsection 2.1.1 focuses on the definition of human rights, considering both universalist and culturally relative perspectives. Subsection 2.1.2 discusses the three generations of human rights—civil and political rights, economic and social rights, and collective or solidarity rights—exploring how they derive from global, regional, and national sources. These layers of authority reflect the dynamic nature of human rights, adapting to emerging global concerns while still grounded in core principles. Subsection 2.1.3 identifies the primary human rights sources, including key international treaties, constitutional provisions, and judicial precedents. By outlining the essential features and authoritative bases of human rights, Section 2.1 establishes a critical platform for analysing their applicability to contemporary challenges—most notably, the far-reaching consequences of climate change addressed in subsequent sections.

2.1.1. Definition Of Human Rights

The Oxford Dictionary of Law defines human rights as follows:

*"Rights and freedom to which every human being is entitled. Protection against breaches of these rights committed by a state (including the state of which the victim is a national) may in some cases be enforced in international law. It is sometimes suggested that human rights (or some of them) are so fundamental that they form part of natural law, but most of them are best regarded as forming part of treaty law."*⁷⁴

As a universal political concept, human rights were first understood by the European Enlightenment thinkers of the 17th and 18th centuries, from Voltaire's Legal rights to Rousseau's popular sovereignty. This concept was first put into practice in French and American law thanks to the continuous work of representatives of the independence movement.

Article 1 of the French Declaration of the Rights of Man and of the Citizen of 1789 (Déclaration des droits de l'homme et du citoyen):

*"Les hommes naissent et demeurent libres et égaux en droits. Les distinctions sociales ne peuvent être fondées que sur l'utilité commune."*⁷⁵

The American Declaration of Independence of 1776 puts it this way.

*"We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."*⁷⁶

The American Declaration of Independence was the first to use a political document to materialize the idea of human rights as legal rights, which inspired the American people to fight for freedom and independence. The French Declaration of the Rights of Man and of the Citizen directly affirmed the concept of human rights in law, which drove the French Revolution.⁷⁷ However, at that time the concept of human rights still had major limitations, such as gender discrimination, age discrimination and racial discrimination. Examples include the subsequent French Constitution of 1791 and the United States of America's Constitution of 1787.

⁷⁴ OXFORD UNIVERSITY PRESS, Oxford Dictionary of Law. 9th edn, Jonathan Law, 2018, p.334.

⁷⁵ In English: "All human beings are and always have been born free and with equal rights. Differences in social attributes can only be based on the public interest." (Declaration of the Rights of Man and of the Citizen, art. 1).

⁷⁶ American Declaration of Independence of 1776, para. 2.

⁷⁷ AUSTRALIAN HUMAN RIGHTS COMMISSION. *Human Rights Explained: The Emergence of Rights in Law*. [online]. [Accessed 3 February 2023]. Available at: <https://humanrights.gov.au/our-work/education/human-rights-explained-emergence-rights-law>.

2.1.2. Three Generations of Human Rights

In 1979, Karel Vašák, then a legal advisor to UNESCO's Division of Human Rights and Peace, introduced the concept of three generations of human rights, drawing inspiration from the French Revolution's three watchwords of Liberty, Equality, and Fraternity. This framework is used to categorize human rights as follows: the first generation comprises civil and political rights (linked to Liberty), the second generation encompasses economic, social, and cultural rights (reflecting Equality), and the third generation covers collective or solidarity rights (representing Fraternity).⁷⁸ By grouping rights in this manner, Vašák provided a historical and conceptual structure that continues to influence how international human rights law is developed.

With civil and political rights at its core, the first generation of human rights was formed in the 18th century during the European human rights movement and was based on the theory of legal rights and the purpose of freedom. The main theme was that the individual's freedom must be achieved by limiting the rights of the state. The first-generation human rights include the right to life, the right to liberty and security of the person, the right to private property, the right to vote and to be elected, the freedom of speech, press, assembly and association, and the freedom of thought and religion.⁷⁹

With economic, social and cultural rights at their core, the second generation of human rights was formed in the late 19th and early 20th centuries, influenced by the Russian revolution and the concept of the 'welfare state', with 'equality' as its purpose. These rights include the rights to work, social security, education and health.⁸⁰ They were first expressed at the international level in the Universal Declaration of Human Rights promulgated by the United Nations on 10 December 1948 (which established the 10 December as International Human Rights Day) and subsequently, in 1966, in the legally binding International Covenant on Economic, Social and Cultural Rights (ICESCR). The Universal Declaration of Human Rights of 1948 as the first document to anchor the first-generation human rights at the global level, albeit not in a binding way and then the International Covenant on Civil and Political Rights of 1966 as the first global human rights document that has the form of a binding international treaty.

⁷⁸ LAW PUNDITS. *Three generations of human rights*. [online]. [Accessed 3 February 2023]. Available at: <https://lawpunditsglobal.com/media/uploads/2014/03/Three-Generations-Of-Human-Rights1.pdf>.

⁷⁹ DOMARADZKI, Spasimir, KHVOSTOVA, Margaryta, PUPOVAC, David. Karel Vasak's Generations of Rights and the Contemporary Human Rights Discourse. *Human Rights Review*, Vol. 20, 2019, p.424-425.

⁸⁰ Ibid.

The third generation of human rights, with collective human rights at their core, also known as social solidarity rights, includes the right of peoples to self-determination, the right to development, the right to a clean/healthy environment, the right to peace and security, and the right to inheritance of the common heritage of mankind. The third generation of human rights tends to be ground-breaking and controversial compared to the first and second generations; it tends to be more abstract and less likely to be backed up by real legal coercion.⁸¹ Because the third generation gives more emphasis on collective rights, which are owned by a people, a community or even a whole country, it tends to be at risk of political abuse.

Although the three-generation human rights framework has drawn criticism—Donnelly notably argues that the concept of “generations” tends to be misleading,⁸² given that biological generations follow a strict chronological order whereas human rights often do not—it remains a useful heuristic tool. Historically, primarily civil and political, first-generation rights gained prominence during the American and French Revolutions, when protections for personal liberties such as freedom of speech, assembly, and due process took centre stage. Subsequently, in the mid-twentieth century, economic, social, and cultural rights were increasingly recognized as essential for ensuring that individuals enjoy freedoms from state interference and positive entitlements such as education, healthcare, and social welfare. These so-called second-generation rights reflect that the state bears obligations to fulfil basic social needs.⁸³

In modern human rights law, first- and second-generation rights are understood to coexist and complement one another; they form part of a single, interdependent framework of protection. The third generation, sometimes referred to as “solidarity rights” (for example the right to development, a healthy environment, or peace), tends to be more contentious.⁸⁴ These rights are often not enshrined in binding international treaties in the same manner as the first two generations. Instead, their legal recognition tends to derive from soft law instruments, such as UN General Assembly resolutions, and from the interpretations of international or regional courts, which employ evolving jurisprudential methods to accommodate emerging claims.

Thus, while Donnelly’s critique underscores the potential pitfalls of viewing human rights as a strictly linear progression, the three-generation model can still illuminate how historical

⁸¹ COUNCIL OF EUROPE. *The evolution of human rights*. [online]. [Accessed 10 February 2023]. Available at: <https://www.coe.int/en/web/compass/the-evolution-of-human-rights>.

⁸² DONNELLY, Jack. Third Generation Rights. In BRÖLMANN, Catherine, LEFEBER, René, ZIECK, Marjoleine (eds.). *Peoples and Minorities in International Law*. Brill, 1993, p.132.

⁸³ DAYS OF LAW: THE CONFERENCE PROCEEDINGS. ADRIAN VASILE CORNESCU. *The generations of human rights*, 2009, p.10.

⁸⁴ DOMARADZKI, Spasimir, KHVOSTOVA, Margaryta, PUPOVAC, David. Karel Vasak’s Generations of Rights and the Contemporary Human Rights Discourse. *Human Rights Review*, Vol. 20, 2019. p.440.

movements and shifting priorities have expanded the content and scope of rights over time. Today, rather than existing in neat chronological tiers, these rights often intersect and mutually reinforce one another, reflecting the dynamic nature of human rights as a continually evolving legal and moral construct. Based on the theory of three generations of human rights, the next paragraphs will discuss the basic content of human rights.

2.2. Main Sources of Human Rights

The sources of human rights can be broadly classified into three levels: global, regional, and national.⁸⁵ Within each level, instruments may be legally binding (treaties, conventions, constitutions) or non-binding (declarations, principles, guidelines). Despite variations in form and enforceability, these sources collectively shape the normative framework of international and domestic human rights law.

2.2.1. Global Sources

The foundational framework for modern human rights at the global level primarily revolves around instruments developed under the auspices of the United Nations (UN).⁸⁶ One of the most pivotal milestones tends to be the Universal Declaration of Human Rights (UDHR), adopted by the UN General Assembly on 10 December 1948 (Resolution 217 A (III)) in Paris. Although the UDHR is not a legally binding treaty, its profound influence can be observed in numerous subsequent international agreements and national constitutions, rendering its principles nearly universal.⁸⁷ Drafted by the Commission on Human Rights (a body established by the UN Economic and Social Council), the UDHR's formulation was led by figures such as Eleanor Roosevelt, René Cassin, Charles Malik, and P. C. Chang. This collaborative process aimed to consolidate a global consensus on fundamental human rights following the atrocities witnessed during World War II.

⁸⁵ LAWTEACHER. *The Sources of Human Rights*. [online]. 22 September 2021. [Accessed 10 February 2023]. Available at: <https://www.lawteacher.net/free-law-essays/constitutional-law/the-sources-of-human-rights-constitutional-law-essay.php#:~:text=The%20primary%20sources%20of%20Human,States%2C%20the%20European%20Union%20etc.>

⁸⁶ UNITED NATIONS. *The Foundation of International Human Rights Law*. [online]. [Accessed 10 February 2023]. Available at: <https://www.un.org/en/about-us/udhr/foundation-of-international-human-rights-law>.

⁸⁷ GLENDON, Ann Mary. The Rule of Law in the Universal Declaration of Human Rights. *Northwestern Journal of International Human Rights*, Vol. 2, Issue.1, 2004, p.4.

Moving beyond declarations to binding treaties, two key covenants were adopted by the General Assembly in 1966⁸⁸ and entered into force in 1976: the International Covenant on Civil and Political Rights (ICCPR) (Resolution 2200A (XXI)) and the International Covenant on Economic, Social and Cultural Rights (ICESCR) (Resolution 2200A (XXI)).⁸⁹ These instruments, often referred to collectively with the UDHR as the International Bill of Human Rights, impose legal obligations on their State Parties. The ICCPR mandates respect for a range of civil and political rights—such as the right to life, freedom of expression, and due process—while the ICESCR focuses on economic, social, and cultural rights, including the right to work, education, and an adequate standard of living. Both covenants require States to submit periodic reports to the respective UN treaty bodies (the Human Rights Committee for the ICCPR and the Committee on Economic, Social and Cultural Rights for the ICESCR), thereby ensuring ongoing compliance scrutiny and enabling an evolutionary interpretation of the treaties’ provisions.

In addition to these cornerstone instruments, the UN has spearheaded a range of specialized treaties that address particular groups or issues. One key example is the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), adopted in 1979 (Resolution 34/180) by the General Assembly and in force since 1981. CEDAW’s adoption in New York demonstrated the international community’s rising commitment to recognizing and enforcing women’s rights.⁹⁰ Likewise, the Convention on the Rights of the Child (CRC), adopted in 1989 (Resolution 44/25) and entering into force in 1990, is notable for being one of the most universally ratified treaties; it reinforces special protections and welfare measures for children in areas like education, healthcare, and freedom from abuse. Another significant text is the Convention on the Rights of Persons with Disabilities (CRPD), adopted in 2006 and effective in 2008, which affirms and clarifies the rights of persons with disabilities to participate fully in society.⁹¹

⁸⁸ UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER. *International Covenant on Economic, Social and Cultural Rights*. [online]. 16 December 1966. [Accessed 10 February 2023]. Available at: <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights>.

⁸⁹ UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER. *Background to the International Covenant on Civil and Political Rights and Optional Protocols*. [online]. [Accessed 10 February 2023]. Available at: <https://www.ohchr.org/en/treaty-bodies/ccpr/background-international-covenant-civil-and-political-rights-and-optional-protocols>.

⁹⁰ WARNER, Ann. Recognizing rights promoting progress. *International Center for Research on Women*, 2016, p.4.

⁹¹ UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER. *Convention on the Rights of Persons with Disabilities*. [online]. 16 December 2006. [Accessed 10 February 2023]. Available at: <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities>.

All these global instruments were developed, discussed, and adopted in various forums primarily centred around the UN General Assembly and its specialized agencies or committees. Negotiations typically involve Member States, non-governmental organizations (NGOs), and civil society stakeholders that provide expert input and advocacy. The participatory nature of such processes reflects the UN's broader commitment to inclusive policymaking. Over time, many of these treaties have been complemented by optional protocols—legal instruments that introduce additional obligations or monitoring mechanisms. For instance, the Optional Protocol to the ICCPR (adopted in 1966 and in force since 1976) empowers the Human Rights Committee to receive individual complaints,⁹² significantly enhancing the enforceability of the ICCPR.

Furthermore, the UN's soft law instruments—such as General Comments issued by treaty bodies, guidelines, and declarations—also play a critical role. Although these documents may not be formally binding, they shape the interpretation of treaty obligations by elaborating on states' duties and the practical implementation of rights. In many jurisdictions, national courts and legislators increasingly reference these soft law materials to align domestic frameworks with evolving global standards.⁹³ The robust interplay between legally binding treaties, declarations, and interpretative materials underscores the dynamic nature of international human rights law, which continually adapts to new challenges such as digital privacy, climate change-induced displacement, and global health emergencies.

Crucially, the onus remains on states to ratify and incorporate these global standards into domestic laws, ensuring actual implementation. Compliance monitoring at the international level occurs through treaty bodies, periodic universal reviews (via the Universal Periodic Review mechanism of the Human Rights Council), and the work of Special Procedures (for example, independent experts, rapporteurs, and working groups). Thus, the global system could lay out a comprehensive set of rights and obligations and fosters an environment where international scrutiny can bring attention to violations and catalyse reforms.

⁹² UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER. *Optional Protocol to the International Covenant on Civil and Political Rights*. [online]. 16 December 1966. [Accessed 10 February 2023]. Available at: <https://www.ohchr.org/en/instruments-mechanisms/instruments/optional-protocol-international-covenant-civil-and-political>.

⁹³ OLIVIER, Michele. The relevance of 'soft law' as a source of international human rights. *The Comparative and International Law Journal of Southern Africa*, Vol. 35, Issue. 2, 2002, p.305.

2.2.2. Regional Sources

Regional human rights frameworks complement and reinforce global standards,⁹⁴ offering context-specific approaches that often resonate more directly within particular cultural, political, or historical environments. Two significant instruments stand out in Europe: The European Convention on Human Rights (ECHR) and the Charter of Fundamental Rights of the European Union (CFREU).⁹⁵ The ECHR was adopted in 1950 under the aegis of the Council of Europe and came into force in 1953. Its oversight body, the European Court of Human Rights, is pivotal in interpreting and enforcing the Convention among Member States. It provides a supranational judicial mechanism that individuals can access once domestic remedies are exhausted. Meanwhile, the CFREU was proclaimed in 2000 and became legally binding in 2009 with the entry into force of the Lisbon Treaty.⁹⁶ It applies primarily to EU institutions and EU Member States when implementing EU law, extending fundamental rights to social rights (for example, worker protections), data protection, and bioethics.

Turning to Africa, the African Charter on Human and Peoples' Rights, also known as the Banjul Charter, was adopted in 1981 under the Organization of African Unity (OAU, now the African Union) and entered into force in 1986.⁹⁷ The Charter notably integrates collective or "peoples' rights," reflecting the continent's emphasis on unity, shared heritage, and anti-colonial struggles. Supervision is undertaken mainly by the African Commission on Human and Peoples' Rights, and later developments saw the establishment of the African Court on Human and Peoples' Rights (operational since 2006). These bodies collectively strive to interpret the Charter, adjudicate alleged violations, and recommend measures for redress.⁹⁸ While the African system has sometimes grappled with enforcement challenges, it remains a crucial forum highlighting regional perspectives on self-determination, development, and economic rights.

The Inter-American system may provide another notable model. The American Declaration of the Rights and Duties of Man was adopted in 1948 by the nations of the

⁹⁴ UNIVERSAL RIGHTS GROUP. *A Rough Guide to the Regional Human Rights Systems*. [online]. [Accessed 2023-02-10]. Available at: <https://www.universal-rights.org/human-rights-rough-guides/a-rough-guide-to-the-regional-human-rights-systems/>.

⁹⁵ VILJANEN, Jukka. The Role of the European Court of Human Rights as a Developer of International Human Rights Law, *Cuadernos constitucionales de la Catedra Fadrique Furio Ceriol*, 2011, p.249.

⁹⁶ EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS. *EU Charter of Fundamental Rights*. [online]. [Accessed 10 February 2023]. Available at: <https://fra.europa.eu/en/eu-charter>.

⁹⁷ UNITED NATIONS ENABLE. *The Regional Human Rights System*. [online]. [Accessed 10 February 2025]. Available at: <https://www.un.org/esa/socdev/enable/comp303.htm>.

⁹⁸ CHEKOL, Amare, T. DOGAN, Ilyas. Championing Human Rights: Normative Insights into the African Charter on Human and Peoples' Rights. *Beijing Review*. 15, 2024, p.1600.

Americas during the Ninth International Conference of American States in Bogotá, Colombia—interestingly predating the UDHR by a few months. While originally non-binding, it formed the foundation for the American Convention on Human Rights.⁹⁹ It was adopted in 1969 at the Inter-American Specialized Conference on Human Rights in San José, Costa Rica, and entered into force in 1978. The Inter-American Commission on Human Rights (IACHR), formed in 1959, and the Inter-American Court of Human Rights (established in 1979) serve as key enforcement and interpretive bodies in this system. Together, they handle individual petitions, produce reports on state practices, and issue binding judgments against state parties accepting the Court’s jurisdiction. This mechanism has been instrumental in addressing enforced disappearances, extrajudicial killings, and other human rights violations in the region, particularly during authoritarian regimes in Latin America in the late 20th century.¹⁰⁰

In the Middle East and North Africa (MENA) region, the Arab Charter on Human Rights has evolved through multiple iterations. The original version was adopted by the Council of the League of Arab States in 1994, but it was never ratified. A revised version was adopted in 2004 and came into force in 2008, aiming to harmonize universal human rights principles with the distinctive cultural and religious contexts of Arab states.¹⁰¹ Oversight tends to be provided by the Arab Human Rights Committee, which reviews periodic state reports. Though its practical impact and enforcement mechanisms are relatively limited compared to other regional systems, the Charter signals an important step toward region-specific recognition of fundamental rights such as the right to life, prohibition of torture, and gender equality.

Beyond these treaty-based systems, regional human rights mechanisms also may take other forms. In Southeast Asia, for instance, the Association of Southeast Asian Nations (ASEAN) adopted the ASEAN Human Rights Declaration in 2012. However, it remains non-binding and subject to critique for perceived limitations and weak enforcement.¹⁰² Nonetheless, bodies like the ASEAN Intergovernmental Commission on Human Rights (AICHR) aim to facilitate dialogue and cooperation on human rights issues in a region characterized by diverse political systems.

⁹⁹ ROMANO, Cesare P.R. The Origins of the Right to Science: the American Declaration on the Rights and Duties of Man. *Loyola Law School, Los Angeles Legal Studies Research Paper, No. 2020-12*, 2020, p.20-21.

¹⁰⁰ CERNA, M Christina. The History of the Inter-American System’s Jurisprudence as Regards Situations of Armed Conflict. *International Humanitarian Legal Studies 2 (2011) 3–52*, 2011, p.17.

¹⁰¹ ALMUTAWA, Ahmed. The Arab Court of Human Rights and the Enforcement of the Arab Charter on Human Rights. *Human Rights Law Review*, Vol. 21, Issue. 3, 2021, p.507-508.

¹⁰² BANGUN, Hermawan Budi. ASEAN Intergovernmental Commission on Human Rights and Effectiveness of Fulfilling Human Rights Obligations of ASEAN Members States. *Jambe Law Journal*, Vol.1, No.2, 2018, p.232.

Regional instruments and mechanisms demonstrate the complex interplay between universal principles and local realities. Whether through binding conventions enforced by supranational courts or non-binding declarations interpreted by commissions, these frameworks help tailor human rights standards to specific cultural and political contexts, broaden awareness, and sometimes provide additional avenues for redress beyond national courts. Moreover, regional bodies can pioneer innovative approaches—such as socio-economic class actions or collective redress—that later influence global norms. Despite ongoing challenges in enforcement and political will, regional mechanisms remain critical for the holistic advancement of human rights and often serve as vital complements to the global system.

2.2.3. National Sources

At the national level, constitutional documents, legislation, and judicial interpretations form the immediate and tangible sources through which individuals experience human rights protection (or violation). In many countries, constitutions codify fundamental rights and freedoms, often drawing on commitments made under international treaties. These domestic legal frameworks “localize” human rights principles, making them directly enforceable through courts and administrative bodies.¹⁰³ Yet, the extent and manner of this incorporation vary widely depending on each nation’s legal traditions, political structures, and historical evolution.

In the Czech Republic, for instance, the modern constitutional framework dates back to the Constitution of the Czech Republic (adopted in 1992, coming into effect in 1993, upon the dissolution of Czechoslovakia) and the Charter of Fundamental Rights and Freedoms (originally part of the Czechoslovak constitutional order in 1991, retained by the Czech Republic thereafter). These documents reflect the country’s post-communist transition and integrate human rights standards that the Council of Europe and the European Union advanced.¹⁰⁴ The Czech Constitutional Court plays a pivotal role in interpreting these rights, reviewing legislation, and adjudicating individual complaints where constitutional rights are at stake. Through such mechanisms, international norms—especially those in the ECHR—are consistently woven into domestic jurisprudence, showcasing the interplay between national and regional human rights sources.

¹⁰³ PIETERSE, Marius. *Urbanizing Human Rights Law: Cities, Local Governance and Corporate Power*. Cambridge University Press, 2022, p.1215.

¹⁰⁴ HURDIK, Jan, SELUCKA, Marketa. The influence of the human rights on private law in the Czech Republic. *The Lawyer Quarterly*, Vol.4, No.2, 2014, p.112.

Turning to China, the current Constitution was adopted in 1982 (with several amendments in subsequent years, building on earlier constitutions of 1954, 1975, and 1978). It enumerates fundamental rights, including the right to vote, freedom of speech, and personal liberty. However, the practical scope of these rights tends to be often shaped by supplementary legislation, regulations, and government policies. While China has ratified or signed various international treaties (such as it signed the ICCPR in 1998 but has not ratified it), the principle of “socialist rule of law” allows the state to interpret constitutional provisions and domestic statutes in a manner consistent with broader national policy goals. Enforcement mechanisms for constitutional rights in China differ from many Western models; there tends to be no direct constitutional complaint mechanism for individuals, although there are administrative and judicial avenues for certain rights-based claims.¹⁰⁵ Revisions over time, such as constitutional amendments referencing “*respect and safeguards of human rights*” (added in 2004),¹⁰⁶ reflect an ongoing, albeit gradual, process of integrating international norms with domestic legal culture.

Another example is the United States, the Bill of Rights (the first ten amendments to the U.S. Constitution, ratified in 1791) and subsequent amendments (for example the Civil War Amendments—13th, 14th, and 15th—adopted between 1865 and 1870, and later expansions such as the 19th Amendment granting women’s suffrage in 1920) establish and expand a wide array of civil liberties. Judicial review by federal and state courts, especially the U.S. Supreme Court, has interpreted these rights in landmark cases that shape the national discourse. For instance, decisions on freedom of speech (for example *Brandenburg v. Ohio*, 1969), privacy rights (for example *Roe v. Wade*, 1973), and equality (for example *Brown v. Board of Education*, 1954) reflect an evolving jurisprudence.¹⁰⁷ While the U.S. has engaged in numerous international human rights treaties, the doctrine of “dualist” incorporation requires specific legislative acts to implement treaty obligations at the domestic level. Consequently, the U.S. Supreme Court rarely invokes international treaties directly unless Congress has explicitly made them part of federal law.

Within the European Union context, many EU Member States embed fundamental rights in their constitutions, ensuring that rights recognized at the EU level (for example in the

¹⁰⁵ WANG, Evelyn. Environmental Constitutionalism in China: A Constitution without Constitutionalism?. *Journal of Environmental Law*, Vol. 36, Issue.2, 2024, p.198-199.

¹⁰⁶ PEOPLE’S DAILY ONLINE. CHANG JIAN. *China achieves steady progress in human rights*. [online]. 11 November 2024. [Accessed 9 February 2025]. Available at: <http://en.people.cn/n3/2024/11/11/c90000-20239802.html>.

¹⁰⁷ ACLU. *The Bill of Rights: A Brief History*. [online]. 4 March 2002. [Accessed 9 February 2024]. Available at: <https://www.aclu.org/documents/bill-rights-brief-history>.

CFREU) resonate in national legislation.¹⁰⁸ For example, Germany’s Basic Law (*Grundgesetz*), adopted in 1949, includes robust protections for human dignity, personal freedom, and equality, which have shaped the country’s approach to fundamental rights and have influenced the development of the EU rights framework. Meanwhile, newer EU members often revised or drafted constitutions post-transition from authoritarian regimes (for example post-communist Eastern European states) to align with European and international human rights standards. Judicial bodies, such as constitutional or supreme courts, frequently engage in “judicial dialogue” with supranational institutions like the European Court of Human Rights, reinforcing multi-layered protection.

Beyond constitutions and judicial decisions, statutory laws (for example anti-discrimination acts, data protection regulations, and criminal procedural safeguards) are critical in operationalizing rights. Specialized agencies—such as national human rights institutions, ombudspersons, or equality bodies—often serve as accessible forums for complaints and advocacy.¹⁰⁹ Civil society organizations also play a significant watchdog role, highlighting systemic issues and promoting legislative reforms.¹¹⁰ In many jurisdictions, domestic debates around human rights intersect with global trends, prompting legislative updates to address emerging challenges (for example digital surveillance or climate change) that drafters of older constitutions did not fully contemplate.

National sources remain the most immediate guarantors of human rights protections for individuals, but their strength and reach depend on domestic political will, institutional capacity, and civic engagement.¹¹¹ Constitutional and legislative norms, bolstered by judicial interpretation, operate in tandem with international obligations to create a robust—albeit not always seamless—system for safeguarding rights. Where domestic mechanisms falter, regional and global systems sometimes offer additional recourse. As states continue to ratify new treaties and revisit older ones, the national legal landscape remains a dynamic arena in which

¹⁰⁸ UNITED NATIONS. *Human rights in Europe*. [online]. [Accessed 9 February 2024]. Available at: <https://europe.ohchr.org/human-rights/what-are-human-rights/human-rights-europe>.

¹⁰⁹ UNITED NATIONS. *Protect human rights*. [online]. [Accessed 9 February 2024]. Available at: <https://www.un.org/en/our-work/protect-human-rights>.

¹¹⁰ ICELAND LIECHTENSTEIN NORWAY ACTIVE CITIZENS FUND. *Strengthened civil society advocacy and watchdog role*. [online]. [Accessed 9 February 2024]. Available at: <https://acfslovakia.sk/en/themes/strengthened-civil-society-advocacy-and-watchdog-role/>.

¹¹¹ INTERNATIONAL SERVICE FOR HUMAN RIGHTS. *States – Governments and public authorities*. [online]. [Accessed 9 February 2024]. Available at: <https://ishr.ch/about-human-rights/who-protects-human-rights/states/>.

global ideals of human rights are tested, adapted, and ultimately realized—or contested—in everyday life.¹¹²

2.2.4. Defence Mechanisms in the Event of Human Rights Violations

By distinguishing between binding and non-binding sources at the global, regional, and national levels, it becomes clear that human rights protections operate within a multi-layered legal framework.¹¹³ States are generally responsible for implementing and enforcing these rights through national constitutions, legislation, and judicial review. Simultaneously, international and regional mechanisms offer additional avenues for accountability and protection, underscoring the interplay between diverse legal sources in the ongoing evolution of human rights law.

In addition to asserting human rights violations through domestic legal remedies, individuals in certain jurisdictions may also seek recourse at the international or regional level by submitting complaints (often referred to as “communications” or “petitions”) to specialized bodies. For instance, under the Optional Protocol to the International Covenant on Civil and Political Rights (ICCPR), the Human Rights Committee is competent to receive and consider individual complaints against States that have ratified the Protocol. Once a complaint is found admissible, the Human Rights Committee examines the merits of the case, and issues views that, while not formally binding on States, carry significant legal and moral authority.¹¹⁴

Beyond the UN system, several regional human rights mechanisms afford similar avenues of redress. Notably, the European Court of Human Rights (ECtHR) allows individuals to bring claims alleging rights violations protected under the European Convention on Human Rights; its judgments are legally binding on Member States of the Council of Europe. The Inter-American Commission and Inter-American Court of Human Rights operate comparably within the Organization of American States (OAS). In Africa, the African Commission and the African Court on Human and Peoples’ Rights accept complaints from individuals and non-governmental organizations concerning alleged human rights violations under the African

¹¹² JENSEN, Steven L.B., LAGOUTTE, Stephanie, LORION Sebastien. The Domestic Institutionalisation of Human Rights: An Introduction. *Nordic Journal of Human Rights*, Vol.37, No.3, 2019, p.174.

¹¹³ POLAKIEWICZ, Jorg. Europe’s multi-layered human rights protection system: challenges, opportunities and risks. *Directorate of Legal Advice and Public International Law*. [online]. 14 March 2016. [Accessed 9 February 2024]. Available at: https://www.coe.int/en/web/dlapil/speeches-of-the-director/-/asset_publisher/ja71RsfCQTP7/content/europe-s-multi-layered-human-rights-protection-system-challenges-opportunities-and-risks.

¹¹⁴ JOSEPH, Sarah, CASTAN, Mellisa. The International Covenant on Civil and Political Rights. *Oxford University Press*, 2013, p.128.

Charter on Human and Peoples' Rights once the relevant admissibility requirements have been met.¹¹⁵

Moreover, other UN treaty bodies—such as the Committee on the Elimination of Discrimination against Women (CEDAW Committee), the Committee on the Rights of Persons with Disabilities (CRPD Committee), and the Committee on Enforced Disappearances (CED)—may receive individual communications against States that have accepted the relevant optional protocols or competences. These procedures often share standard features: the requirement to exhaust available domestic remedies, compliance with deadlines or time limits,¹¹⁶ and adherence to the principle of non-duplication (for example ensuring the same matter is not concurrently examined in another international forum).

These international and regional complaint mechanisms provide individuals with a supplementary layer of protection when domestic legal remedies prove insufficient or ineffective. They also encourage States to enhance their human rights frameworks and remedies at the national level, thereby strengthening the overall system of human rights protection.

¹¹⁵ PLAGIS, Misha A.. *Jurisdiction and Admissibility: African Court on Human and Peoples' Rights (ACtHPR)*. [online]. Oxford Public International Law, March 2021. [Accessed 11 February 2024]. Available at: <https://opil.ouplaw.com/display/10.1093/law-mpeipro/e3760.013.3760/law-mpeipro-e3760#:~:text=The%20seven%20admissibility%20criteria%20for,may%20not%20only%20be%20based.>

¹¹⁶ EUROPEAN COURT OF HUMAN RIGHTS.PRESS UNIT. *Exhaustion of Domestic Remedies*. [online]. January 2023. [Accessed 11 February 2024]. Available at: https://www.echr.coe.int/documents/d/echr/press_q_a_exhaustion_domestic_remedies_eng.

3. The Relationship between Human Rights Protection and Climate Change

Chapter 3 investigates the evolving interplay between human rights and climate change, underscoring the growing acknowledgement that environmental considerations alone are insufficient to address the broader socio-legal consequences of a warming planet. Section 3.1 explores the historical development of international climate law—covering foundational instruments such as the UNFCCC, the Kyoto Protocol, and the Paris Agreement—and examines how much a human rights dimension has been integrated. Section 3.2 then addresses how international human rights instruments, over time, have responded to climate impacts on a spectrum of rights, including the right to life, a healthy environment, and adequate living conditions. In Section 3.3, the focus shifts to the role of key human rights organizations, such as the UN Human Rights Council, the Office of the High Commissioner for Human Rights, and non-state actors, which collectively advocate for strengthened rights-based climate frameworks. Finally, Section 3.4 provides an in-depth discussion on incorporating human rights principles into climate change mitigation and adaptation policies. This comprehensive analysis demonstrates how such integration can enhance policy equity, promote sustainable development, and bolster international cooperation, ultimately laying the groundwork for equitable and effective responses to one of the most pressing global challenges.

3.1. Evolving Human Rights Dimensions in International Climate Law

The intersection of human rights considerations and international climate law remains contentious, particularly when examining the key legal instruments governing global responses to climate change. Over the past three decades, three principal binding treaties have shaped the international framework for combating climate change: the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, and the Paris Agreement.¹¹⁷ A closer look at their origins, core provisions, and treatment (or lack thereof) of human rights provides valuable insight into why the human rights dimension of climate action was often overlooked in earlier years and how this approach has begun to evolve more recently.

¹¹⁷ MAIZLAND, Lindsay, FONG, Clara. *Global Climate Agreements: Successes and Failures*. [online]. Council on Foreign Relations, 21 January 2025. [Accessed 27 January 2025]. Available at: <https://www.cfr.org/background/paris-global-climate-change-agreements>.

3.1.1. United Nations Framework Convention on Climate Change (UNFCCC)

Adopted at the Earth Summit in Rio de Janeiro on 9 May 1992 and entering into force on 21 March 1994, the United Nations Framework Convention on Climate Change (UNFCCC) laid the groundwork for global cooperation on climate-related challenges. Negotiated under the auspices of the United Nations, its primary objective, codified in Article 2, is to stabilize greenhouse gas concentrations at a level that would prevent *"dangerous anthropogenic interference with the climate system."*¹¹⁸The Convention established essential principles such as common but differentiated responsibilities and respective capabilities (CBDR-RC). It recognized the unique needs and circumstances of developing countries, tiny island states and those most vulnerable to the adverse effects of climate change.

Despite the UNFCCC's pioneering role in framing the climate challenge, explicit references to human rights are notably absent. The text focuses on scientific, technical, and economic aspects, emphasizing the reduction of greenhouse gas emissions, technology transfer, and financial assistance as core pathways to address climate change. It does not, however, articulate any legal obligation to safeguard or promote human rights in the context of environmental protection or climate action. Most references to social concerns are indirect; for instance, Article 4(1)(f) mentions the need for parties to employ *"appropriate methods [...] to minimize adverse effects on the economy, on public health and the quality of the environment,"* yet it does not directly address the human rights implications of environmental harm.

The absence of a precise human rights dimension in the UNFCCC can be explained partly by its historical context. In the early 1990s, political and diplomatic energy was directed at forging consensus on the scientific reality of climate change and establishing an overarching legal structure. States were wary of introducing topics that might complicate negotiations, such as environmental justice or the differential impacts on marginalized communities. As a result, the UNFCCC provided a framework for future protocols and agreements but left the link to human rights largely unexplored.

3.1.2. Kyoto Protocol

The Kyoto Protocol was adopted on 11 December 1997 at the third Conference of the Parties (COP3) in Kyoto, Japan, and entered into force on 16 February 2005. Building directly

¹¹⁸ UNFCCC, art.2.

upon the UNFCCC, the Protocol represented the first attempt to set legally binding emissions reduction targets for industrialized countries (UNFCCC Annex I Parties). Under the Protocol's initial commitment period (2008–2012), these states agreed to collectively reduce their greenhouse gas emissions by at least 5% below 1990 levels.¹¹⁹ The Kyoto Protocol also introduced market-based mechanisms, such as the Clean Development Mechanism (CDM), Joint Implementation (JI), and emissions trading (the so-called carbon markets), to help countries meet their targets flexibly.

From a human rights perspective, the Kyoto Protocol similarly remains silent.¹²⁰ Its focus is almost exclusively on quantifiable, market-oriented solutions to achieve emissions cuts most cost-effectively. While the Protocol aimed to incentivize greener development pathways—for example, by channelling investments into sustainable projects in developing countries through the CDM—it did not incorporate provisions on human rights protections or considerations for local communities affected by CDM activities. In practice, some CDM projects were criticized for potential adverse impacts on indigenous peoples and vulnerable populations. However, the Kyoto framework provided no direct recourse for individuals whose rights might be harmed by poorly managed climate projects.

Legal scholars have noted that the Kyoto Protocol's market-based mechanisms may inadvertently sideline human rights if project developers and host governments place financial gains or national economic interests over environmental and social safeguards.¹²¹ Nevertheless, many governments defended this limited scope because Kyoto's primary goal was reducing global emissions, with human rights or environmental justice issues presumably addressed through other channels in international law. This "compartmentalization" of climate and human rights concerns contributed to a broader disconnect that hindered the development of integrated solutions, leaving civil society organizations and human rights advocates to push for more extraordinary accountability measures.

3.1.3. Paris Agreement

Adopted on 12 December 2015 at COP21 in Paris and entering into force on 4 November 2016, the Paris Agreement marked a significant shift in the global climate regime. It replaced

¹¹⁹ Kyoto Protocol, art. 3(1).

¹²⁰ LAWYERS RESPONDING TO CLIMATE CHANGE. *Human Rights under the UNFCCC regime*. [online]. 25 June 2019. [Accessed 27 January 2024]. Available at: <https://legalresponse.org/legaladvice/human-rights-under-the-unfccc-regime/>.

¹²¹ CULLET, Philippe. *The Kyoto Protocol and Vulnerability: Human Rights and Equity Dimensions*. Cambridge University Press, 2010, p.190-191.

the Kyoto Protocol's top-down, binding targets for a handful of industrialized nations with a more inclusive and flexible bottom-up approach.¹²² Nationally Determined Contributions (NDCs) became the centrepiece: each party is expected to submit its own mitigation and adaptation plans, subject to periodic review and ratcheting up of ambition. In contrast to its predecessors, the Paris Agreement attempts to be universal and forward-looking, aiming to keep global warming well below 2°C above pre-industrial levels while pursuing efforts to limit the temperature increase to 1.5°C.¹²³

Although not immune to critiques, the Paris Agreement contains the most explicit acknowledgement of human rights within international climate law. Its preamble underscores that Parties should "*respect, promote and consider their respective obligations on human rights*" when taking action to address climate change. The same paragraph highlights gender equality, women empowerment, and intergenerational equity, underscoring a new awareness that climate change threatens the environment and social and cultural rights.¹²⁴

However, the substantive sections of the Agreement fall short of establishing direct, enforceable obligations related to human rights.¹²⁵ The operative provisions largely continue to centre on national emissions reduction pledges and measures to increase resilience in vulnerable countries. Issues like loss and damage receive more attention than in previous instruments, but the explicit link to human rights—beyond the preamble—remains tenuous. This discrepancy has led many commentators to characterize the Paris Agreement's human rights language as emblematic of a broader "soft" turn—symbolically powerful yet limited in practical effect. Civil society organizations nevertheless see its inclusion as an opening wedge, a potential foundation upon which future negotiations or domestic legislation can build stronger protections and remedial mechanisms for those harmed by climate change.¹²⁶

¹²² TAMZIL, Fediva Cazadira. 'Bottom Up' Paris Agreement and the New Era of Climate Actions. *IR-UI Commentaries*, Vol.2, No.2, 2021, p.2-3.

¹²³ Paris Agreement, art. 2(1)(a).

¹²⁴ OHCHR. *OHCHR guidance on integrating human rights in the new collective quantified goal (ncqg) on climate finance*. 2021, p. 1.

¹²⁵ STANKOVIC, Tatjana, HOVI, Jon, SKODVIN, Tora. The Paris Agreement's inherent tension between ambition and compliance. *Humanities & Social Sciences Communications*, 2023, p.3.

¹²⁶ UNITED NATIONS. *Civil society vital to drive momentum on Paris Agreement targets*. [online]. 9 November 2016. [Accessed 4 March 2023]. Available at: <https://www.un.org/sustainabledevelopment/blog/2016/11/civil-society-vital-to-drive-momentum-on-paris-agreement-targets/>.

3.1.4. Toward an Integrated Approach?

Taken as a whole, the UNFCCC, the Kyoto Protocol, and the Paris Agreement illustrate a historical progression in which human rights considerations, initially marginalized or absent, have begun to enter the lexicon of international climate law. Early efforts concentrated on scientific consensus-building, emissions targets, and market-based mechanisms, often sidelining climate action's socio-economic and distributive implications.¹²⁷ Over time, growing pressure from developing states and civil society has prompted the recognition that climate change endangers fundamental human rights, particularly for the most vulnerable communities worldwide and indigenous people.

However, the question remains whether this incremental progress will suffice. Many legal experts argue that human rights concerns risk remaining peripheral without explicit and enforceable commitments. They call for stronger mechanisms—such as independent monitoring bodies, integrated grievance procedures, and binding guidance on climate policy's social and cultural dimensions—to ensure that climate actions do not violate rights but promote equitable and just transitions.¹²⁸ Others warn that an overemphasis on human rights rhetoric might dilute urgent targets for emissions reductions, given the complexity of balancing development needs and climate imperatives.¹²⁹

In sum, the "absence of human rights considerations" in international climate law tends to be not an absolute void but a reflection of decades-long tension between environmental goals and the recognition of their profound social consequences. The UNFCCC and Kyoto Protocol exemplified a narrow approach, framing climate change primarily in techno-economic terms. Although more mindful of human rights, the Paris Agreement relies heavily on states' self-determination through NDCs and offers few concrete accountabilities guarantees. Whether future climate treaties or amendments to existing instruments will meaningfully integrate human rights into their core operative text remains to be seen. Nonetheless, the growing global discourse—amplified by UN human rights bodies, civil society groups, and vulnerable states—suggests that ignoring climate action's social and human dimensions is no longer tenable in the contemporary international legal landscape.

¹²⁷ SAVARESI, Annalisa. Climate Change and Human Rights: Fragmentation, Interplay and Institutional Linkages. *Forthcoming, Routledge Handbook of Human Rights and Climate Governance* edited by Sébastien Duyck, Sébastien Jodoin, and Alyssa Johl. 2017, p.17-18.

¹²⁸ AMOAKUH, Konadu. Climate Change Litigation and Rights-Based Strategies: Why International Human Rights Approaches to Climate Change Are Not Easily Transplanted to the American Legal System. 41 *Stan. Envtl. L. J.*, 2022, p.230-231.

¹²⁹ MARTIN, Craig. Drops in the Ocean: The Hidden Power of Rights-Based Climate Change Litigation. *Case Western Reserve Journal of International Law*, 2024, p.230.

3.2. Dealing with Climate Change Considerations in International Human Rights Instruments

The intersection of international human rights law and climate change tends to be a dynamic and increasingly pertinent area of legal analysis. This section provides a historical perspective on a dynamic and increasingly relevant area of legal analysis. This section offers a historical perspective integrating climate concerns into the human rights framework, charting the evolution of key principles and doctrines. It further examines how recognized human rights—such as the right to life, adequate living conditions, social security, equality and non-discrimination, and liberty and security—are being challenged and reshaped by the impacts of climate change. By exploring these dimensions, this section highlights the critical role of international human rights law in responding to climate-induced vulnerabilities.

3.2.1. Historical Perspective

The nexus between climate change and human rights gained significant attention in 2005 when the Inter-American Commission on Human Rights (IACHR) received a petition from the Inuit community. This petition, a landmark moment in the history of climate change and human rights, urged the United States to address the adverse impacts of climate change. Supported by the Centre for International Environmental Law (CIEL) and Earth Justice, it alleged that the United States' policies and carbon emissions were responsible for infringing upon the Inuit's rights to subsistence, health, and cultural preservation.¹³⁰ Despite its ultimate dismissal, this petition marked a pivotal moment as the international community began recognizing climate change-induced human rights violations within the international human rights law framework.

In 2007, the Centre for International Environmental Law (CIEL) took a proactive stance in advocating for a rights-based approach to climate action. They partnered with the Government of Maldives to launch the Human Dimensions of Climate Change Initiative. This initiative aimed to incorporate human rights considerations into global climate change policies. Through platforms such as the Alliance of Small Island States (AOSIS), they championed the Male Declaration on the Human Dimension of Global Climate Change,¹³¹ which highlighted the interdependence between climate change impacts and human rights.

¹³⁰ ORGANIZATION OF AMERICAN STATES. *Annual Report of The Inter-American Commission on Human Rights 2005*. [online]. [Accessed 4 March 2023]. Available at: <https://cidh.oas.org/annualrep/2005eng/toc.htm>.

¹³¹ Male Declaration on the Human Dimension of Global Climate Change. 2007.

Another important step tends to be resolution 7/23 on “Human Rights and Climate Change” that was adopted by the United Nations Human Rights Council (UNHRC) on 28 March 2008.¹³² This Resolution represented a pivotal development in recognizing the interlinked nature of climate change and human rights at the international level.¹³³ Although the Human Rights Council is not a legislative body, and its resolutions are not legally binding like international treaties, Resolution 7/23 carries significant normative weight. It articulates a framework that encourages states and other stakeholders to address the adverse impacts of climate change within the broader rubric of human rights obligations.

From a historical and procedural standpoint, Resolution 7/23 emerged from a growing international consensus that the impacts of climate change—from rising sea levels and extreme weather events to food insecurity—have profound implications for the enjoyment of a wide array of human rights. These include but are not limited to the right to life, the right to the highest attainable standard of health, adequate housing, and – as far as collective rights are concerned – right of peoples to self-determination. Before this Resolution, various bodies acknowledged the link between environmental issues and human rights. However, Resolution 7/23 was groundbreaking in being one of the first UN Human Rights Council instruments to highlight this relationship explicitly in a focused manner.

Among its main achievements, Resolution 7/23 recognized that climate change may pose “*an immediate and far-reaching threat to people and communities around the world and has implications for the full enjoyment of human rights.*”¹³⁴ It also emphasized the need for all states to cooperate in addressing the challenge of climate change, mindful of their obligations under international human rights law.¹³⁵ In particular, the Resolution called upon states to integrate human rights considerations into their climate change mitigation and adaptation strategies. Such an approach underscores the principle that environmental policies must be developed in a manner that is consistent with the international human rights framework, ensuring that affected populations—especially vulnerable and marginalized groups—are adequately protected.

Furthermore, through Resolution 7/23, the Human Rights Council requested the Office of the United Nations High Commissioner for Human Rights (OHCHR) to conduct a detailed

¹³² United Nations Human Rights Council (UNHRC) on 28 March 2008, UN Doc. A/HRC/RES/7/23.

¹³³ LIMON, Marc. *FOR PEOPLE; FOR PLANET. The long and winding road to United Nations recognition of the universal right to a clean, healthy, and sustainable environment.* Universal Rights Group, 2023, p.10.

¹³⁴ HUMAN RIGHTS COUNCIL. *Resolution 7/23 human rights and climate change.* 2008.

¹³⁵ OHCHR. *Human rights informed climate action: Paris and beyond.* [online]. 10 December 2015. [Accessed 4 March 2023]. Available at: https://www.ohchr.org/sites/default/files/Documents/Issues/Environment/Breakfast_10Dec_MRFCJ.pdf.

analytical study on the relationship between climate change and human rights. The subsequent OHCHR report (A/HRC/10/61) presented in 2009 provided a more comprehensive articulation of how climate change impacts specific rights protected by international conventions. Although resolutions such as 7/23 do not impose new, binding international legal duties on states, they serve as authoritative interpretive instruments, clarifying how existing human rights obligations can and should extend to contexts shaped by environmental degradation and global warming.

Regarding legal character, UNHRC Resolutions are formal expressions of the Council's position. While they are not treaties or binding international agreements, they carry persuasive and interpretive authority. This means states and international bodies often rely on such resolutions to clarify, operationalize, and implement pre-existing treaty obligations and customary international law norms. Resolution 7/23 also paved the way for subsequent UNHRC resolutions and statements that further developed the nexus between climate change and human rights. These later instruments have underscored states' duty to respect, protect, and fulfil human rights in all climate-related actions.

The Resolution's contribution can thus be seen in both its symbolic and practical influence on climate governance. Symbolically, it signalled the global community's growing awareness and recognition of the human rights dimensions of climate change, providing a moral and political impetus for further action.¹³⁶ Practically, Resolution 7/23 has played a role in shaping state policies, guiding international cooperation, and informing the work of civil society actors who advocate the rights-based approach to climate action. It also bolstered the argument that climate change, far from being merely an environmental or developmental concern, must be addressed within the broader context of upholding and promoting fundamental human rights.

Resolution 7/23 tends to be a milestone in international human rights jurisprudence and policymaking. It illuminates how states might interpret their legal obligations under international human rights law in the face of climate change's evolving challenges.¹³⁷ While not legally binding, it remains a key reference point for states, international organizations, and non-governmental stakeholders seeking to advance a rights-based climate agenda. By highlighting the inherent link between climate stability and human dignity, the Resolution has

¹³⁶ RUIZ LIARD KRYSA, Magdalena, PLOUG PETERSEN, Maria. Human rights obligations and adaptation to climate change: an analysis of recommendations to states from international human rights mechanisms. *The Danish Institute for Human Rights*, 2024, p.7.

¹³⁷ LADOR, Vyes. Fighting Climate Change: The Contribution of the Human Rights Council. *Friedrich Ebert Stiftung*, p.3.

helped shape a legal and normative environment where human rights considerations cannot be overlooked in discussions of global environmental crises.

In response to these developments, scholarly inquiry has flourished, exploring the intricate relationship between climate change and human rights from legal, political, and developmental perspectives. This interdisciplinary dialogue underscores the imperative of addressing climate change through a human rights lens, reflecting the evolving nature of international law in confronting global environmental challenges.

3.2.2. Recognized Rights Affected by Climate Change

As detailed in the report of the Office of the United Nations High Commissioner for Human Rights (OHCHR, 2009), the implications of climate change on human rights are profound and alarming.¹³⁸ The negative impacts on a range of human rights, including the right to life, the right to adequate living conditions, the right to social security, the right to environment of a certain quality, the rights to equality and non-discrimination, and the right to liberty and security, are particularly severe and demand immediate attention.

A. The right to life

The right to life has traditionally been understood in a narrow sense as the right not to be arbitrarily deprived of one's life.¹³⁹ This conception reflects a primarily negative obligation on states: they must refrain from unjustly taking life or allowing life-threatening harm. However, legal and scholarly discourse has gradually recognized that the right to life extends beyond mere protection from arbitrary killing. In its broader sense, it imposes positive obligations on states to ensure the conditions for a dignified and sustainable existence, including measures to combat malnutrition, disease, and other threats to human survival.

Various United Nations bodies, including the former Commission on Human Rights, have endorsed this more expansive interpretation. One of its interpretative statements clarified that the phrase "inherent right to life" must not be construed restrictively, emphasizing that states should adopt proactive strategies to reduce infant mortality and raise overall life expectancy.

¹³⁸ UNITED NATIONS. HUMAN RIGHTS COUNCIL. *Annual report of the United Nations high commissioner for human rights and reports of the office of the high commissioner and the secretary-general. Report of the Office of the United Nations High Commissioner for Human Rights on the relationship between climate change and human rights.* A/HRC/10/61, 2009.

¹³⁹ UNITED NATIONS. CCPR. *General comment No. 36 on article 6: right to life.* [online]. [Accessed 9 February 2024]. Available at: <https://www.ohchr.org/en/calls-for-input/general-comment-no-36-article-6-right-life>.

Such measures underscore the dual nature of the right to life, functioning both as a negative right (prohibiting arbitrary deprivation) and a positive right (requiring states to promote and safeguard quality of life).

Historically, the United States became one of the earliest countries to entrench the right to life at the constitutional level. The Fifth Amendment to the U.S. Constitution (1791) provides that *"No person shall be ... deprived of life, liberty, or property, without due process of law,"* underscoring the fundamental importance of legal procedures before depriving any individual of life. Internationally, adopting the Universal Declaration of Human Rights (UDHR) in 1948 marked a watershed moment. Article 3 of the UDHR states, *"Everyone has the right to life, liberty and security of person."* Further, Article 6(1) of the International Covenant on Civil and Political Rights (ICCPR) reinforces that *"Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life."* These documents not only prohibit arbitrary deprivation of life but also signal the evolving consensus that governments bear affirmative duties to protect and promote the well-being of all individuals. By recognizing both negative and positive dimensions of the right to life, contemporary human rights law aspires to ensure that the "inherent right to life" is enjoyed by every person to the fullest extent possible.

Climate change poses an escalating threat to the right to life by increasing the frequency and severity of extreme weather events and environmental hazards. Floods, heatwaves, hurricanes, and droughts lead to immediate loss of life and undermine long-term survival by destabilizing ecosystems and limiting access to essential resources.¹⁴⁰ Vulnerable populations—such as those living in low-lying coastal areas—are at heightened risk of displacement or mortality from rising sea levels and storm surges.¹⁴¹ In this context, States have an obligation to adopt climate policies and measures that prevent foreseeable threats to human life and ensure proactive adaptation strategies.¹⁴²

¹⁴⁰ IPCC. *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2022, p.32.

¹⁴¹ OHCHR. 2009. *Report on the relationship between climate change and human rights*, A/HRC/10/61.

¹⁴² UNITED NATIONS. HUMAN RIGHTS COUNCIL. *Report of the Special Rapporteur on human rights and the environment*,. A/HRC/37/59, 2018.

B. *The Right to a Healthy Environment*

The right to a healthy environment has evolved significantly in international law and policy, although it remains absent from many binding global human rights instruments.¹⁴³ Its earliest formal acknowledgement at the international level can be traced to the 1972 Stockholm Declaration, adopted at the United Nations Conference on the Human Environment. Principle 1 of the Declaration states that:

“Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being...”

However, as a non-binding document, the Stockholm Declaration did not create enforceable obligations for states and was limited to aspirational language rather than legally binding commitments.¹⁴⁴

In the subsequent decades, the United Nations and other international bodies undertook various initiatives to strengthen environmental protection within the broader human rights discourse. Despite such efforts, the right to a healthy environment has not been explicitly inserted into any universally binding human rights treaty at the global level.¹⁴⁵ Indeed, core human rights instruments such as the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR) do not explicitly enshrine this right. However, environmental concerns can intersect with existing rights (for example the right to life, health, and adequate living conditions). The failure to codify the right to a healthy environment in legally binding universal treaties reflects, in part, the persistent tension between environmental priorities and other economic or political interests in the international community.

Nevertheless, binding recognition has materialised at the regional level in three principal human rights instruments, each displaying notable limitations. First, the African Charter on Human and Peoples’ Rights (often called the Banjul Charter) guarantees the right to a *“generally satisfactory environment favourable to their development.”* However, it is framed primarily as a collective “people’s” right, raising uncertainties about whether individuals can

¹⁴³LHOTSKY, Jan. The (Missing) Right to a Healthy Environment in International Human Rights Law, especially the European Convention on Human Rights. *Czech Yearbook of Public & Private International Law*, Vol. 12, No. 1, 2021, p.247.

¹⁴⁴ Stockholm Declaration of the United Nations Conference on the Human Environment (A/CONF.48/14/Rev.1), p.4.

¹⁴⁵ LHOTSKY, Jan. The (Missing) Right to a Healthy Environment in International Human Rights Law, especially the European Convention on Human Rights. *Czech Yearbook of Public & Private International Law*, Vol. 12, No. 1, 2021, p.252.

directly invoke it.¹⁴⁶ Second, the Protocol of San Salvador—the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights—recognises environmental rights but does not grant individuals comprehensive avenues for bringing direct complaints before the relevant enforcement bodies.¹⁴⁷ Similarly, the Arab Charter on Human Rights includes the right to a healthy environment yet does not provide a robust individual complaint mechanism, thus limiting its practical utility for affected parties. While progressive in their acknowledgement of environmental rights, these regional frameworks illustrate the piecemeal manner in which such rights have been codified and the enforcement challenges that persist.

In response to these shortcomings at the international level, numerous states have taken proactive steps to embed the right to a healthy environment within their national constitutions.¹⁴⁸ Constitutional recognition confers normative weight and judicial enforceability in domestic legal systems, enabling citizens to seek remedies for environmental harm that threatens their enjoyment of fundamental rights. Consequently, national courts in various jurisdictions have interpreted constitutional provisions on environmental protection as inclusive of broader entitlements to a healthy environment, thereby underscoring the potential for domestic systems to compensate for the absence of a universal treaty-based right.

A pivotal development occurred in 2022 when the United Nations General Assembly adopted Resolution A/76/L.75, recognising the human right to a clean, healthy, and sustainable environment as crucial to enjoying all human rights. The Resolution explicitly highlights climate change as one of the most urgent and significant threats to this right, particularly for present and future generations.¹⁴⁹ In doing so, it strengthens the normative framework that links environmental protection and human rights on a global scale. While the Resolution, like the Stockholm Declaration, is not strictly legally binding, it carries substantial persuasive authority and can catalyse further integration of environmental concerns into human rights mechanisms. It also reflects the growing international consensus that climate-related phenomena—ranging from rising temperatures and sea levels to extreme weather events—jeopardise the ability of individuals and communities to effectively enjoy rights to life, health, and an adequate standard of living.

¹⁴⁶ KIWANUKA, Richard N. The Meaning of “People” in the African Charter on Human and Peoples’ Rights. *Cambridge University Press*, Vol. 82, No. 1, 2017, p.89.

¹⁴⁷ CHALABI, Azadeh. A New Theoretical Model of the Right to Environment and its Practical Advantages. *Human Rights Law Review*, Vol.23, Issue. 4, December 2023, p.6.

¹⁴⁸ BOYD, David R. *The Constitutional Right to a Healthy Environment*. [online]. [Accessed 14 February 2023]. Available at: <https://www.lawnow.org/right-to-healthy-environment/>.

¹⁴⁹ UN General Assembly, Resolution A/76/L.75 (28 July 2022).

These advances mark a clear trajectory toward broader acceptance of the right to a healthy environment as a cornerstone of international and domestic legal regimes. However, the continued reliance on soft law instruments and regional treaties, combined with uneven enforcement mechanisms, underscores the urgency of more robust global action.¹⁵⁰ The expanding normative recognition of this right—evidenced most recently by the UN General Assembly resolution—foreshadows the possibility of future binding obligations. In an era of escalating environmental crises, including climate change, the right to a healthy environment is an essential legal principle that unites ecological stewardship with the protection of fundamental human rights.

C. *The right to adequate living conditions*

This right is derived from the provisions of Article 25 of the Universal Declaration of Human Rights.

“Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.”

Adequate living conditions encompass rights to housing, food, water, health, and sanitation, all of which are susceptible to climate-induced disruptions.¹⁵¹ Prolonged droughts and shifting rainfall patterns can reduce agricultural yields, thereby undermining food security.¹⁵² Extreme heat and unpredictable water supplies strain public health systems and exacerbate communicable diseases, disproportionately affecting low-income and marginalized communities.¹⁵³ Consequently, States are increasingly called upon to integrate climate resilience measures—such as drought-tolerant crop varieties and infrastructure upgrades—into their social and economic planning.¹⁵⁴

¹⁵⁰ CIMA, Elena. The right to a healthy environment: Reconceptualizing human rights in the face of climate change. *RECIEL, Special Issue: Human Rights and the Climate Change Crisis*, Vol:31, Issue:1, 2022, p. 47-48.

¹⁵¹ Committee on Economic, Social and Cultural Rights General Comments. 2021.No. 12 and No. 15.

¹⁵² FAO, IFAD, UNICEF, WFP and WHO. *The State of Food Security and Nutrition in the World 2024 – Financing to end hunger, food insecurity and malnutrition in all its forms*. FAO, 2024, p. 220.

¹⁵³ IPCC. *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2022, p. 61.

¹⁵⁴ OHCHR. *Analytical Study on the Relationship Between Climate Change and the Human Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental Health*. A/HRC/32/23, 2016.

D. *The right to social security*

This right is derived from the provisions of Article 22 of the Universal Declaration of Human Rights. “*Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.*”

Climate change can strain social protection systems by triggering unemployment, internal displacement, and economic instability.¹⁵⁵ For instance, widespread crop failures force subsistence farmers to relocate, placing additional demands on social welfare and housing services in urban areas.¹⁵⁶ As weather extremes intensify, States must consider extending or reconfiguring social security benefits—such as unemployment assistance, disaster relief funds, and agricultural insurance—to ensure vulnerable populations can recover from climate-induced shocks and maintain a minimum standard of living.¹⁵⁷

E. *The right to equality and non-discrimination*

The Universal Declaration of Human Rights and the two International Covenants on Human Rights have repeatedly enshrined the right to formal and substantive equality. Under modern conditions, nations and peoples, different people and individuals, should enjoy equal rights, both *de inure* and *de facto*. UDHR article 7 proclaims that

“*All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination.*”

Marginalized groups—including women, children, Indigenous peoples, minorities, and low-income communities—disproportionately bear the brunt of climate change impacts.¹⁵⁸ Rising temperatures, diminished agricultural production, and water scarcity can amplify existing social inequalities, forcing at-risk populations to rely on precarious livelihoods or unsafe migration.¹⁵⁹ International human rights law obligates States to ensure that climate

¹⁵⁵KÄLIN, Walter, SCHREPFER, Nina. *Protecting People Crossing Borders in the Context of Climate Change: Normative Gaps and Possible Approaches*. UNHCR, Division of international protection, 2012, PPLA/2012/01.

¹⁵⁶ INTERNATIONAL LABOUR ORGANIZATION. . *World Employment and Social Outlook – Trends 2021*. ILO, 2021.

¹⁵⁷ UN ECONOMIC AND SOCIAL COUNCIL. COMMITTEE ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS. *General Comment No. 19. The Right to Social Security (art. 9)*. E/C.12/GC/19, 2008.

¹⁵⁸ UN HUMAN RIGHTS COUNCIL. *Climate change and poverty. Report of the Special Rapporteur on extreme poverty and human rights*. A/HRC/41/39, 2019.

¹⁵⁹ UN HUMAN RIGHTS COUNCIL. *The parlous state of poverty eradication. Report of the Special Rapporteur on extreme poverty and human rights*. A/HRC/44/40, 2020.

policies, from carbon reductions to adaptation plans, incorporate the principles of equality and non-discrimination and that any benefits from climate action are shared fairly across society.¹⁶⁰

F. The right to liberty and security

While many recognized human rights are directly affected by climate change, interference with others may be caused indirectly and secondarily. An example is the right to liberty and security that is enshrined in the Universal Declaration of Human Rights (UDHR). Article 3 of the UDHR states that,

“Everyone has the right to life, liberty and security of person,”

while Article 9 adds that

“No one shall be subjected to arbitrary arrest, detention or exile.”

This right has also been recognised by the International Covenant on Civil and Political Rights (ICCPR); Article 9 establishes that

“Everyone has the right to liberty and security of person. No one shall be subjected to arbitrary arrest or detention. No one shall be deprived of his liberty except on such grounds and in accordance with such procedure as are established by law.”

Climate-induced displacement and conflicts over diminishing resources can endanger personal liberty and security. When severe weather events destroy homes or livelihoods, communities may face forced relocation or protracted displacement, which increases their vulnerability to human trafficking, violence, or other forms of exploitation.¹⁶¹ Additionally, tensions arising from resource shortages can spark inter-community conflicts, compromising personal security and often leading to state-imposed measures that restrict movement or assembly.¹⁶² To uphold the right to liberty and security, States must integrate climate risk assessments into disaster preparedness, conflict prevention, and migration policies, ensuring robust legal protections for displaced populations and conflict-affected individuals.¹⁶³

¹⁶⁰ UNFCCC Decision 1/CP.21.

¹⁶¹ UNHCR. Legal Considerations Regarding Claims for International Protection Made in the Context of the Adverse Effects of Climate Change and Disasters. *International Journal of Refugee Law*, Volume 33, Issue 1, March 2021, p. 7.

¹⁶² INTERNATIONAL COMMITTEE OF THE RED CROSS. *When Rain Turns to Dust: Understanding and Responding to the Combined Impact of Armed Conflicts and the Climate and Environment Crisis on People's Lives*. July 2020.

¹⁶³ UN HUMAN RIGHTS COUNCIL. *Report of the Special Rapporteur on the human rights of internally displaced persons*. A/HRC/38/39, 2018.

3.3. Attention Paid to Climate Change by Relevant Human Rights Organisations

Section 3.3 delves into the heightened attention to climate change by key human rights institutions and actors. It begins by examining the UN Human Rights Council's evolving role in spotlighting how climate shifts threaten a wide range of fundamental rights, thus encouraging States to adopt more comprehensive and protective legal frameworks. The discussion then turns to the Office of the High Commissioner for Human Rights and the Special Rapporteur on Human Rights and the Environment, outlining their complementary mandates and ongoing efforts to integrate environmental concerns into broader human rights agendas. By highlighting the collaborative nature of their work, this section underscores both the progress achieved, and the persistent challenges encountered, particularly in ensuring coordinated action among diverse stakeholders. Finally, it considers the significant contributions of non-state actors, whose advocacy, litigation, and policy interventions continue to shape the global discourse on human rights and climate change.

3.3.1 UN Human Rights Council

The United Nations Human Rights Council, a key player in the global response to climate change, consistently emphasizes the direct and indirect impacts of climate change on human rights. It acknowledges that climate change can lead to food and water scarcity, health and living conditions compromises, social disparities, and rights infringements on vulnerable groups, including women, children, the impoverished, and minorities.

Furthermore, in its proactive stance, the Human Rights Council routinely adopts resolutions and declarations on the nexus between climate change and human rights.¹⁶⁴ These pronouncements not only urge member States to undertake specific measures to safeguard the rights of affected individuals but also proffer recommendations to bolster regulatory frameworks and foster international collaboration, instilling a sense of reassurance in the audience about the commitment to human rights protection.

The Human Rights Council regularly convenes special sessions to deliberate on the repercussions of climate change on human rights and pertinent issues concerning safeguarding and promoting human rights. These sessions furnish a platform for member States to exchange

¹⁶⁴ FREEDMAN, Rosa. New Mechanisms of the UN Human Rights Council. *Netherlands Quarterly of Human Rights*, Vol.29, Issue.3, 2011, p.293.

best practices and insights and explore avenues for enhancing the protection of individuals affected by climate change.

In addition, the Human Rights Council has appointed several special rapporteurs and expert advisory panels tasked with investigating and monitoring the impact of climate change on human rights.¹⁶⁵ These experts conduct research, disseminate reports, and furnish recommendations to the Human Rights Council to advance the protection and well-being of affected persons.

The Human Rights Council takes a proactive stance by issuing resolutions and declarations that urge member states to mitigate the human rights implications of climate change.¹⁶⁶ These actions may include enacting stringent environmental conservation legislation, strengthening regulatory frameworks, and enhancing communities' adaptive capacities.

The Human Rights Council, in a spirit of collaboration, works closely with other United Nations bodies, such as the United Nations Environment Programme (UNEP) and the United Nations Framework Convention on Climate Change (UNFCCC), to address the human rights ramifications of climate change. This collaborative effort, fostering the exchange of information, integration of resources, and coordination of policies, instils a sense of hope in the people about the collective response to climate change and protecting the rights of affected individuals.

The UN Human Rights Council plays a pivotal role in international climate change negotiations as a global entity. It not only encourages member states to undertake more ambitious measures to curtail greenhouse gas emissions and safeguard the rights of individuals impacted by climate change but also encourages member states to include assessments of the human rights implications of climate change in their periodic human rights reviews and to offer recommendations and suggestions accordingly.¹⁶⁷ Additionally, the Human Rights Council may establish dedicated accountability mechanisms to monitor the fulfilment of States' commitments to the rights of individuals affected by the repercussions of climate change, empowering the audience with the potential for change.

¹⁶⁵ Ibid.

¹⁶⁶ VIEGAS E SILVA, Marisa. *The United Nations human rights council. Six Years On*. [online]. International Journal on Human Rights, Issue 18, June 2013 [Accessed 9 April 2024]. Available at: <https://sur.conectas.org/en/united-nations-human-rights-council/>.

¹⁶⁷ HARPER, Erica, UBUSHIEVA, Baina. *Environmental human rights as a tool in early warning and conflict prevention: the role of the Human rights council*. Research Brief, Geneva Academy, 2024, p.6.

3.3.2 UN High Commissioner for Human Rights and Special Rapporteur on Human Rights and the Environment

A. Role of the UN High Commissioner for Human Rights

The United Nations High Commissioner for Human Rights (High Commissioner) serves as the principal human rights official of the United Nations and is mandated to promote and protect human rights globally. Acting under the authority of the General Assembly and guided by the Human Rights Council, the High Commissioner provides leadership in mainstreaming human rights considerations into all areas of the UN's work, including environmental policy and climate governance.¹⁶⁸ Concerning climate change, the High Commissioner's office has consistently underscored that deteriorating environmental conditions lead to disproportionate impacts on vulnerable groups, such as indigenous peoples, small-island communities, and populations in developing countries.

In recent years, the High Commissioner has issued public statements, policy briefings, and thematic reports that articulate how environmental degradation, particularly climate-induced phenomena, negatively affects the enjoyment of internationally recognized rights.¹⁶⁹ These communications frequently call on States to respect, protect, and fulfil their obligations under core human rights treaties—such as the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights—by taking substantive actions to reduce emissions, conserve ecosystems, and ensure the participation of affected communities in decision-making processes. Furthermore, the High Commissioner has advocated that States incorporate human rights safeguards into their Nationally Determined Contributions (NDCs) under the Paris Agreement,¹⁷⁰ thereby aligning climate commitments with a rights-based framework.

On a procedural level, the High Commissioner collaborates with other UN bodies and agencies to integrate human rights norms into broader international climate discussions. For example, by submitting expert opinions or participating in negotiations at the Conference of

¹⁶⁸ UNITED NATIONS. *High Commissioner*. [online]. [Accessed 5 March 2024]. Available at: <https://www.ohchr.org/en/about-us/high-commissioner>.

¹⁶⁹ UNITED NATIONS. *High Commissioner for Human Rights: the Environment is Dying and the Right to Food is Comprehensively Threatened by Climate Change - the World Demands Action Now*. [online]. 3 July 2023. [Accessed 5 March 2024]. Available at: <https://www.ohchr.org/en/news/2023/07/high-commissioner-human-rights-environment-dying-and-right-food-comprehensively>.

¹⁷⁰ CENTER FOR INTERNATIONAL ENVIRONMENTAL LAW/OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS. *Integrating human rights in nationally determined contributions (NDCs). Toolkit for practitioners*. November 2022, p.4.

the Parties (COP) under the UN Framework Convention on Climate Change (UNFCCC), the OHCHR ensures that these fora acknowledge the human rights dimensions of climate policies. This engagement helps to consolidate the notion that States must do so consistently with the obligations they have accepted under international human rights law in fulfilling their international environmental commitments.

B. Special Rapporteur on Human Rights and the Environment

A related yet distinct mechanism is the mandate of the Special Rapporteur on human rights and the environment. Established by the Human Rights Council, this Special Procedure tends to be charged with studying the human rights obligations relating to the enjoyment of a safe, clean, healthy, and sustainable environment and identifying good practices. The Special Rapporteur's mandate encompasses a broad range of activities, including undertaking country visits, issuing thematic reports, sending communications to governments and private actors regarding alleged violations, and advocating to clarify States' environmental responsibilities under human rights law.¹⁷¹

In the context of climate change, successive Special Rapporteurs have underlined that the adverse effects of global warming significantly interfere with the realization of multiple rights, particularly for marginalized and indigenous communities. Through annual reports to the Human Rights Council and the General Assembly, the Special Rapporteur offers detailed legal and policy analyses on how States should respond to the climate crisis in line with their international human rights obligations. Such guidance often includes recommendations that States ensure access to information, public participation in environmental decision-making, and effective remedies for climate-related harm—principles rooted in international environmental law and the core human rights treaties.¹⁷²

Moreover, the Special Rapporteur has increasingly focused on the plight of environmental defenders, who frequently operate at the front lines of climate activism¹⁷³ Recognizing that these individuals are at heightened risk of intimidation and violence, the mandate holder advocates for stronger protections and underscores that safeguarding the right to freedom of

¹⁷¹ NAPLES-MITCHELL, Joana. Perspectives of UN special rapporteurs on their role: inherent tensions and unique contributions to human rights. *The International Journal of Human Rights*, Vol. 15, Issue.2, 2011, p.233.

¹⁷² UNITED NATIONS. *About the mandate. Special rapporteur on climate change*. [online]. [Accessed 5 March 2024]. Available at: <https://www.ohchr.org/en/specialprocedures/sr-climate-change/about-mandate>.

¹⁷³ CENTER FOR INTERNATIONAL ENVIRONMENTAL LAW. *Background Note on the Establishment of a UN Human Rights Council's Special Rapporteur on Human Rights and Climate Change*. [online]. August 2020. [Accessed 5 March 2024]. Available at: https://geneva.fes.de/fileadmin/user_upload/documents/2020/2020_09_28_UNSR-Climate_Rights.pdf.

expression and peaceful assembly tends to be paramount for environmental advocacy. This focus dovetails with the broader UN priorities to support civil society and enhance accountability for violations committed against environmental human rights defenders.

Another critical contribution of the Special Rapporteur's work is clarifying the right to a healthy environment.¹⁷⁴ Although not universally codified in a binding international instrument, this emerging right is gaining momentum in various national constitutions and regional legal systems. The Special Rapporteur's thematic reports frequently explore how recognizing and operationalizing this right can serve as a foundation for more robust climate action, urging States to integrate such recognition into domestic law and policy frameworks. This approach aligns with the High Commissioner's perspective that human rights principles—such as equality, non-discrimination, and meaningful participation—must be integral to climate governance processes.

C. Complementary roles and ongoing challenges

Although the OHCHR and the Special Rapporteur on Human Rights and the Environment serve different functions, their mandates are mutually reinforcing. They collectively contribute to elevating the climate crisis to a matter of international human rights concern, offering normative guidance and practical recommendations to States, private actors, and civil society. Their efforts address ongoing challenges, including inadequate legal frameworks, limited enforcement mechanisms, and insufficient attention to the most vulnerable communities affected by climate-induced disasters.

These two institutions have helped shape the evolving discourse by consistently voicing the message that climate change is not merely an environmental or developmental issue but a fundamental human rights challenge. However, significant gaps remain, particularly in ensuring that international commitments translate effectively into national and subnational implementation. As the climate crisis escalates, the advocacy and oversight provided by the OHCHR and the Special Rapporteur will likely prove even more critical, urging governments, international organizations, and businesses alike to align their policies and practices with human rights standards.

¹⁷⁴ SAVARESI, Annalisa. *The UN HRC recognizes the right to a healthy environment and appoints a new Special Rapporteur on Human Rights and Climate Change. What does it all mean?*. [online]. EJIL: Talk! Blog of the European Journal of International Law, 12 October 2021. [Accessed 5 March 2024]. Available at: <https://www.ejiltalk.org/the-un-hrc-recognizes-the-right-to-a-healthy-environment-and-appoints-a-new-special-rapporteur-on-human-rights-and-climate-change-what-does-it-all-mean/>.

In summarising the attention paid to climate change by key human rights organisations, it becomes evident that these entities play pivotal yet distinct roles in intertwining human rights with environmental sustainability. The UN Human Rights Council has been instrumental in framing climate change as an urgent human rights issue, encouraging global and national actions. Meanwhile, the efforts of the UN High Commissioner for Human Rights and the Special Rapporteur on human rights and the environment have been crucial in advocating for specific policy changes and amplifying the voices of affected communities. On the other hand, non-governmental organisations have served as both watchdogs and partners in implementation, holding states and international bodies accountable while pushing for grassroots and local solutions.

3.3.3 Role of Non-state Actors

With the global proliferation of climate-related challenges, the climate governance landscape has transitioned from a singularly focused mechanism to a complex array of diverse and decentralized structures.¹⁷⁵ This multifaceted governance framework comprises two primary components: intergovernmental governance established under the UNFCCC and its affiliated outreach institutions and the heightened integration among non-state and sub-state actors. This integration, a testament to the power of collective action, has given rise to various transnational networks, cooperation initiatives, and low-carbon governance organizations, including emerging entities such as transnational low-carbon policy networks, transnational climate governance initiative networks, climate partnerships, and experimental climate governance networks.

The Lima Conference (COP20) in 2014 marked a pivotal juncture in international climate negotiations by explicitly acknowledging the nexus between climate action and the protection of human rights. This, in turn, laid the groundwork for frameworks such as the Lima Work Programme on Gender, to advance gender balance and integrate gender considerations into the work of Parties. This integrated approach facilitated broader participation by both public and private stakeholders in building resilient governance networks. It underscored the critical role of human rights norms in shaping equitable and effective responses to climate change. This network, with its potential to bridge the emissions gap between national greenhouse gas reduction targets and the ultimate achievement of the 2°C target outlined in international climate agreements, offers a beacon of hope.¹⁷⁶ The Lima Conference yielded the Lima Paris Action Agenda (LPAA), which advocates for both individual and collective climate actions by subnational and non-state actors. Additionally, the Convention Secretariat established the Non-State Actors' Zones for Climate Action (NAZCA) platform, encompassing 77 transnational cooperation mechanisms among international non-governmental organizations (INGOs), cities, regions, businesses, investors, and civil society organizations. This platform, a testament to the

¹⁷⁵ LEIVA ROESCH, Jimena, NOBRE ALMEIDA, Julia. Strengthening the Current Climate Governance System: Mapping Leading States and Initiatives. *A GCF Report. Stockholm: Global Challenges Foundation, 2021, p.11.*

¹⁷⁶ UNITED NATIONS. CLIMATE CHANGE. *Global Business Community Comes to Paris with Solutions for Taking on the Climate Challenge Across the Board.* [online]. 8 December 2015 [Accessed 5 March 2023]. Available at: <https://unfccc.int/news/lpaa-focus-on-business-global-business-community-comes-to-paris-with-solutions-for-taking-on-the-climate-challenge-across-the-board>.

growing role of non-state actors, has generated over 10,000 proposals for climate change mitigation and adaptation efforts.¹⁷⁷

Statistics on admission

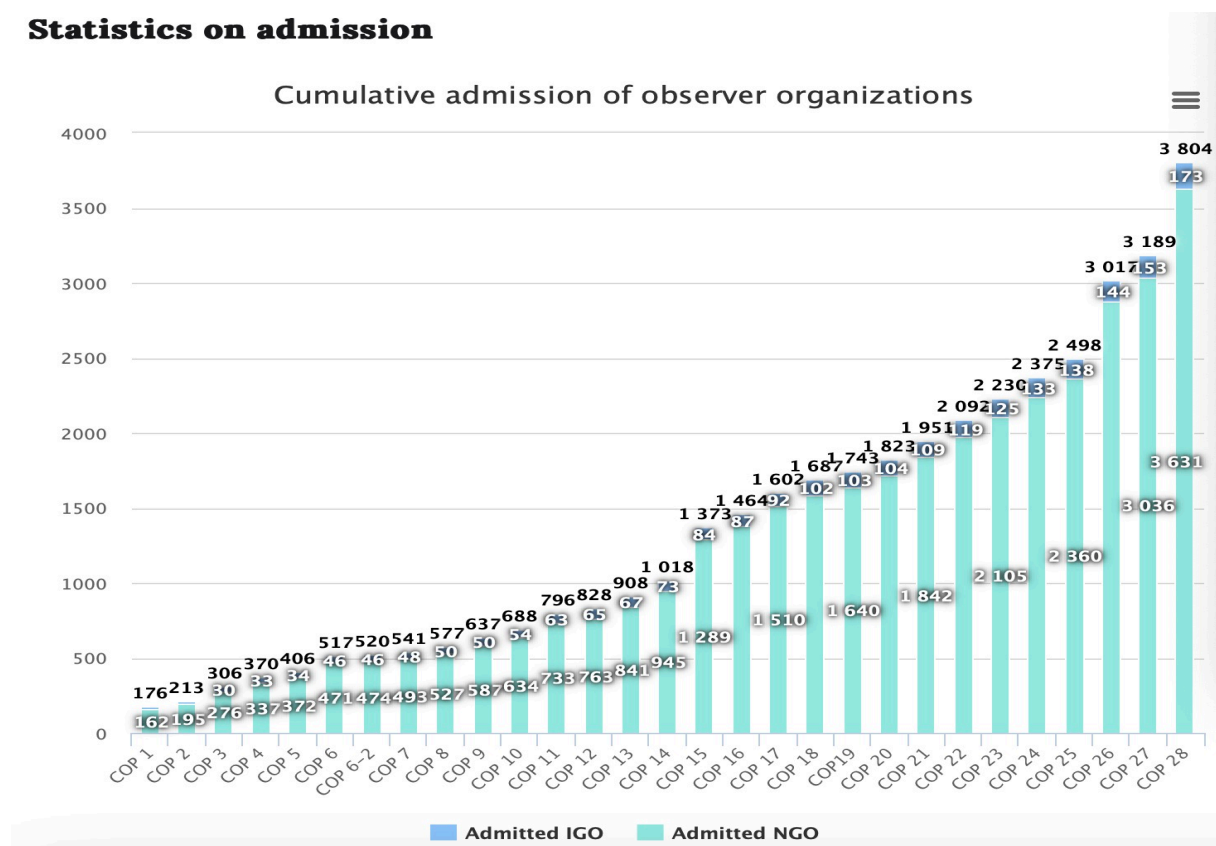


Figure 6: Cumulative admission of observer organizations¹⁷⁸

The expanding role of NGOs is seen in the increasing number. Since COP20, the number of participating non-governmental organizations (NGOs) has markedly increased, with a growing proportion affiliated with the United Nations Framework Convention on Climate Change (UNFCCC), as indicated by the rising presence of Admitted Intergovernmental Organizations (IGOs) and Admitted NGOs within the UNFCCC framework.¹⁷⁹ The term “admitted NGOs” refers to those NGOs that have been officially recognized and granted observer status by the UNFCCC, allowing them to participate in climate negotiations and contribute to the development of climate policies and actions.

¹⁷⁷ UNITED NATIONS. CLIMATE CHANGE. *NAZCA Now Featuring Over 10,000 Commitments*. [online]. 27 November 2015. [Accessed 5 March 2023]. Available at: <https://unfccc.int/news/nazca-now-featuring-over-10000-commitments>.

¹⁷⁸ UNITED NATIONS. CLIMATE CHANGE. *Statistics on Admission*. [online]. [Accessed 6 March 2023]. Available at: <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/statistics-on-non-party-stakeholders/statistics-on-admission>.

¹⁷⁹ Ibid.

However, despite these efforts, significant challenges remain. Political constraints, limited resources, and the need for greater coordination often hamper the effectiveness of these organisations. Moreover, while their work has raised awareness and shaped discussions, translating these into concrete, enforceable actions remain daunting. A more integrated approach that enhances collaboration across these bodies and strengthens their influence in policy-making processes is imperative for future endeavours. This could pave the way for recognising the rights of vulnerable populations affected by climate change and ensuring these rights are actively protected.

3.4. Integrating Human Rights Considerations into Climate Change Policy Frameworks

Section 3.4 explores incorporating human rights considerations into climate change policy frameworks, emphasizing the reciprocal benefits of linking rights-based principles with mitigation and adaptation strategies. In addressing mitigation, the analysis highlights how integrating human rights enhances policy equity, reinforces sustainability, and fosters broader international cooperation—all vital for effective greenhouse gas reduction initiatives. Similarly, in the context of adaptation, human rights serve as critical safeguards to protect vulnerable populations, promote fair and inclusive decision-making, and support sustainable development pathways. By situating these policy imperatives within existing legal and governance structures, Section 3.4 underscores the transformative potential of a human rights-based approach: It may not only strengthen the legitimacy and longevity of climate measures but also galvanizes global solidarity and shared responsibility in combating one of the most pressing threats facing humanity.

3.4.1. The Importance of Integrating Human Rights into Climate Change Mitigation

The urgent global challenge of the 21st century tends to be climate change, which has far-reaching environmental impacts and affects the fundamental rights of human society. It is crucial to incorporate human rights principles into strategies for addressing climate change to ensure fair policies, effectiveness, and societal support. This section explores the need to integrate human rights into climate change mitigation strategies, highlighting their specific contributions to promoting fair policies, encouraging sustainable development, and fostering international cooperation. The essential role of the human rights framework in developing and

implementing climate change mitigation policies is emphasized through an analysis that covers the protection of disadvantaged communities, fairness and effectiveness considerations, requirements for sustainable development, and the need for international collaboration.

A. Augmenting policy equity and effectiveness

a. Safeguarding vulnerable groups

Vulnerable groups, including impoverished communities, ethnic minorities, women, and children, face more significant challenges due to the impacts of climate change. These groups often experience limited access to resources and struggle to cope with the economic and social difficulties caused by climate change. Introducing human rights principles into policies addressing climate change can provide essential protection and support to help safeguard these vulnerable populations from the dangers of climate change. For example, the United Nations Development Programme (UNDP) emphasizes the need for tailored protective measures to support the most vulnerable groups in achieving fair and inclusive sustainable development.¹⁸⁰ The case of *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland*, which will be discussed in Chapter 4, tends to be a significant recent case concerning the protection of vulnerable groups.

b. Ensuring comprehensive stakeholder participation

The human rights paradigm accentuates imperatives of transparency, information disclosure, and participatory governance, all of which underpin the development and implementation of efficacious climate change mitigation policies—lapses in public engagement and informational opacity risk engendering policies bereft of social legitimacy and efficacy. Ensuring public rights to information and participation via legislative and policy frameworks, instituting transparent information dissemination mechanisms and public consultation avenues, and facilitating stakeholder inclusivity encompassing community entities, non-governmental organizations, and ordinary citizens enhance the legitimacy and effectiveness of policy frameworks.¹⁸¹ A strong example of a country that effectively ensures the public’s right to access information and participate in environmental decision-making through legislative and policy frameworks is Sweden. Sweden could has long been recognized

¹⁸⁰ ANDRADE CORREA, Fabiano de. *Environmental Justice. Securing our right to a clean, healthy and sustainable environment*. Technical Paper. United Nations Development Programme, 2022, p.28.

¹⁸¹ HUMAN RIGHTS WATCH. *World Report 2018*. 2018, p.73-74.

as a global leader in transparency, environmental governance, and participatory rights,¹⁸² mainly due to its robust Freedom of the Press Act (Tryckfrihetsförordningen, 1949) and the Environmental Code (Miljöbalken, 1998),¹⁸³ which enshrine fundamental principles of open government and environmental democracy.

Under the Swedish Environmental Code, public authorities must provide timely and comprehensive access to environmental information, ensuring that individuals can understand the potential environmental impact of governmental and industrial activities. This aligns with Sweden's obligations under the Aarhus Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters (1998), which mandates that states uphold three core rights: (1) the right to access environmental information, (2) the right to participate in decision-making, and (3) the right to access legal remedies in environmental matters.

A particularly illustrative case demonstrating Sweden's commitment to participatory environmental governance is the Supreme Administrative Court's ruling in NJA 2004 p. 662. The court upheld that public authorities must provide full environmental impact data to the public before making decisions on industrial projects with potential ecological consequences. This decision reinforced the Polluter Pays Principle (PPP) and the Precautionary Principle, ensuring that environmental decision-making remains transparent and accountable.¹⁸⁴

Moreover, Sweden's Environmental Impact Assessment (EIA) framework mandates that developers of large-scale projects engage with affected communities and stakeholders during early planning stages.¹⁸⁵ This participatory mechanism has influenced broader European Union directives, particularly Directive 2011/92/EU on Environmental Impact Assessment, strengthening procedural safeguards for public involvement.

Sweden's model demonstrates that a human rights-based approach to environmental governance—characterized by transparency, free access to environmental data, and structured public participation—is vital for protecting vulnerable communities from environmental harm. This case supports the argument that effective legislative and policy frameworks can

¹⁸² GOVERNMENT OFFICE OF SWEDEN – [MINISTRY OF FINANCE/MINISTRY FOR FOREIGN AFFAIRS](#). *Sweden and the 2030 Agenda — Report to the UN High Level Political Forum 2017 on Sustainable Development*. 2017, p.8.

¹⁸³ EUROPEAN UNION. EXTERNAL ACTION. *The Swedish Press Act: 250 years of freedom of the press*. [online]. 1 June 2016. [Accessed 5 March 2023]. Available at: https://www.eeas.europa.eu/node/4049_en#:~:text=The%20Swedish%20constitution%20is%20governed,parties%20and%20practice%20their%20religion.

¹⁸⁴ NJA 2004 p. 662. <https://lagen.nu/dom/nja/2004s662>.

¹⁸⁵ ANTONSON, Hans. The treatment of landscape in a Swedish EIA process. *Environmental Impact Assessment Review*, Vol. 31, Issue. 3, 2011, p.200.

operationalize the principles of participatory democracy and access to justice, ensuring that environmental rights are safeguarded in practice rather than merely in theory.

B. Fostering the sustainability of climate change mitigation endeavours

a. Advancing sustainable development

Climate change mitigation endeavours steeped in human rights considerations compel policymakers to adopt long-term outlooks and champion sustainable development imperatives. Beyond short-term emissions curtailment goals, climate change policies must ensconce measures safeguarding the interests of future generations while harmonizing environmental, economic, and societal imperatives.¹⁸⁶ For instance, advocating for the proliferation of clean energy and green technologies abates carbon emissions, catalyses job creation, and propels sustainable economic growth trajectories. A compelling example of fostering sustainability in climate change mitigation is the rapid expansion of China's electric vehicle (EV) industry. As one of the global leaders in EV production and adoption, China has significantly contributed to reducing carbon emissions by promoting the widespread use of clean energy vehicles. Studies indicate that, compared to traditional internal combustion engine vehicles, EVs in China generate lower lifecycle carbon emissions,¹⁸⁷ particularly when powered by an increasingly decarbonized electricity grid. Furthermore, the EV sector has created substantial employment opportunities, not only within China but also internationally. Companies such as BYD have expanded their operations beyond domestic markets, investing in production facilities and supply chains in multiple countries, thereby fostering global green industrial transformation. This growth trajectory underscores the role of green technology in driving sustainable economic development, as it aligns with China's broader national strategy of achieving carbon neutrality by 2060 while maintaining economic competitiveness.¹⁸⁸ The Chinese EV industry's expansion exemplifies how clean energy innovations can simultaneously address environmental concerns, enhance economic resilience, and create global market opportunities.

¹⁸⁶ IPCC. *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2022, p.96.

¹⁸⁷ HU, Dingding, ZHOU, Kaile, HU, Rong, YANG, Jingna, Provincial inequalities in life cycle carbon dioxide emissions and air pollutants from electric vehicles in China. *Communications Earth & Environment*, 5, Article number: 726, 2024, p.1-2.

¹⁸⁸ LI, Mulin, HOU, Yufei, JIA, Zhiya, LI, Jingang. Role of green technological innovation in the green economic growth in China's natural resource markets. *Resources Policy*, Vol. 86, 2023, p.5.

b. Holistic integration of Socio-economic dimensions

Mitigating climate change involves reshaping economic and industrial systems, which could lead to job losses and social disruptions affecting societal well-being. By integrating human rights into mitigation strategies, policymakers could address these socio-economic challenges by providing training, creating job opportunities, and offering social welfare support. This promotes social stability and maintains economic progress. This engenders social stability and sustains economic development trajectories.

C. Amplifying International cooperation and global governance

a. Propagating international climate justice

Substantial disparities persist between developed and developing nations concerning climate change responsibilities and capacities. Embedding human rights principles within climate change mitigation strategies constitutes a conduit to propel international climate justice imperatives. Emphasizing entitlements to development and egalitarianism incentivizes developed nations to assume greater onuses in technology transfers, financial assistance, and capacity-building endeavours, facilitating green transitions in developing nations.¹⁸⁹ For instance, the Paris Agreement encourages developed nations to furnish financial aid for developing nations' climate change mitigation efforts and extend technical and capacity-building support. A concrete example of international cooperation under the Paris Agreement is developed countries' financial and technical assistance to support developing nations in climate mitigation and adaptation efforts. The Green Climate Fund (GCF), established as a key mechanism of the agreement, has mobilized substantial financial resources to facilitate climate resilience projects in developing countries. For instance, Germany and Norway have contributed significant funding to renewable energy initiatives in African nations, such as the "Scaling Solar" program in Zambia,¹⁹⁰ which aims to expand solar energy capacity and reduce reliance on fossil fuels. Similarly, Japan has supported capacity-building initiatives through the Japan International Cooperation Agency (JICA), which provides technological expertise and training in climate-resilient infrastructure in Southeast Asia.¹⁹¹ The International Climate Finance (ICF) initiative, led by the United Kingdom, has also allocated resources to

¹⁸⁹ Ibid.

¹⁹⁰ NEFCO. *Tenth portfolio company in Zambia scaling up access to energy through mini-grids*. [online].18 December 2023. [Accessed 5 March 2024]. Available at: <https://www.nefco.int/news/tenth-portfolio-company-in-zambia-scaling-up-access-to-energy/>.

¹⁹¹ JAPAN INTERNATIONAL COOPERATION AGENCY. *Building Disaster and Climate Resilient Cities in ASEAN. Final Report*. 2018, p.1-2.

projects that enhance sustainable agriculture and water management in vulnerable regions, such as Bangladesh and Kenya.¹⁹² These initiatives demonstrate how financial aid and technical cooperation are crucial in bridging the climate action gap between developed and developing nations. This ensures that all countries, regardless of economic capacity, can actively participate in global climate governance and the transition toward a low-carbon future.

b. Strengthening international legal regimes and multilateral mechanisms

The fusion of human rights precepts with environmental preservation imperatives serves to fortify the implementation of international legal frameworks and foster inter-country collaboration within multilateral frameworks. The amalgamation of human rights treaties with international environmental accords engenders heightened legal bindingness, galvanizing nations to honour emission reduction commitments and fortifying the global apparatus for addressing climate change. International agreements such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement augment the legal obligations and compliance imperatives upon nations to realize global climate change mitigation objectives.¹⁹³ These international legal instruments establish binding commitments, requiring states to implement national policies aligned with global climate objectives. The Czech Republic is an illustrative case of how such legal frameworks shape national climate policies. As an EU member state, the Czech Republic is legally bound by the EU Climate Law, translating the Paris Agreement's targets into enforceable regional commitments, such as achieving climate neutrality by 2050.¹⁹⁴ Furthermore, under the Enhanced Transparency Framework (ETF) of the Paris Agreement, the Czech Republic must submit biennial progress reports detailing its greenhouse gas emissions, mitigation actions, and adaptation strategies.¹⁹⁵ The country has also incorporated these obligations into domestic law through the National Energy and Climate Plan (NECP), which outlines strategies to reduce emissions by at least 55% by 2030 compared to 1990. Additionally, participation in the EU Emissions Trading System (EU ETS) ensures that the Czech Republic adheres to legally binding carbon reduction mechanisms. These measures illustrate how multilateral legal regimes enhance

¹⁹² UK GOVERNMENT. *Value of ecosystem services generated or protected as a result of International Climate Finance*. ICF KPI 10 Methodology Note, February 2023, p.16.

¹⁹³ Ibid.

¹⁹⁴ *Update of the Czech National Plan of the Republics in the field of energy and climate* (automatic machine translation). [online]. October 2023, p. 26. [Accessed 12 December 2024]. Available at: https://commission.europa.eu/system/files/2023-10/Czech%20Draft%20Updated%20NECP%202021%202030_en.pdf.

¹⁹⁵ Ibid., p.359.

national compliance with climate commitments and facilitate harmonized global action by holding countries accountable under a unified legal structure.

Incorporating human rights principles into strategies to address climate change ensures fair and effective policies, promotes sustainable development, and fosters international cooperation. Integrating human rights considerations into climate change mitigation policies tends to address environmental challenges while balancing social, economic, and ecological needs.¹⁹⁶ Future research and policy efforts should continue to prioritize the inclusion of human rights principles in climate change mitigation frameworks to address better the complex challenges posed by global climate change.

3.4.2. The Importance of Integrating Human Rights into Climate Change Adaptation

Climate change adaptation refers to adjusting to actual or expected climate and its effects to mitigate harm or exploit beneficial opportunities.¹⁹⁷ Incorporating human rights considerations into climate change adaptation strategies is paramount to ensure that these measures are equitable, effective, and sustainable. The following discussion elucidates the importance of embedding human rights within climate adaptation frameworks by focusing on protecting vulnerable populations, enhancing policy equity and effectiveness, and fostering sustainable development.

A. Protecting vulnerable populations

Vulnerable populations such as impoverished communities, indigenous peoples, women, and children are often the most affected by climate change impacts. These groups usually have limited resources and abilities to adapt to changing climatic conditions. By integrating human rights into climate adaptation strategies, we can ensure that these populations receive the necessary protections and support. This can be accomplished through targeted policies that offer disaster relief, economic subsidies, healthcare, education, and housing security.¹⁹⁸ For

¹⁹⁶ KNOX, John H. Human Rights Principles and Climate Change. *Oxford Handbook of International Climate Change Law* (Cinnamon Carlarne, Kevin R. Gray, and Richard Tarasofsky eds., 2015), Wake Forest Univ. Legal Studies Paper No. 2523599, 2014, p. 12.

¹⁹⁷ EUROPEAN ENVIRONMENT AGENCY. *What is the difference between adaptation and mitigation?* [online]. 2024. [Accessed 20 August 2024]. Available at: <https://www.eea.europa.eu/en/about/contact-us/faqs/what-is-the-difference-between-adaptation-and-mitigation#:~:text=In%20essence%2C%20adaptation%20can%20be,of%20climate%20change%20less%20severe.>

¹⁹⁸ NGCAMU, Bethuel Sibongiseni, Climate change effects on vulnerable populations in the Global South: a systematic review. *Nature Hazards*, Vol. 118, 2023, p.977.

instance, the Intergovernmental Panel on Climate Change (IPCC) emphasizes that adaptation efforts should prioritize the needs of the most vulnerable in order to achieve fair and inclusive climate resilience.

B. Enhancing policy equity and effectiveness

a. Ensuring participatory decision-making

A human rights-based approach emphasizes the importance of participatory decision-making processes. Ensuring that all stakeholders, including marginalized communities, have a voice in formulating and implementing adaptation policies enhances their legitimacy and effectiveness.¹⁹⁹ This can be facilitated through mechanisms for transparent information dissemination, public consultations, and community engagement. Effective public participation empowers communities and leads to more contextually relevant and socially accepted adaptation strategies.

b. Addressing disparities in adaptive capacity

The more adaptive capacity of different regions and communities tends to be often needed. Human rights considerations can guide allocating resources and support to those least equipped to adapt, thereby addressing inequalities. This ensures a more equitable distribution of the benefits and burdens associated with climate change adaptation. Policies prioritising the allocation of adaptation funds to the most vulnerable regions can significantly reduce the risks and enhance resilience at the grassroots level.²⁰⁰

C. Promoting sustainable development

a. Long-term and inclusive development

Adaptation strategies that incorporate human rights principles encourage a long-term and inclusive approach to development. These strategies ensure that the measures taken today maintain the ability of future generations to meet their needs. Human rights-based adaptation policies can foster sustainable development by promoting resilience in critical agriculture, water resources, and infrastructure sectors. For example, investing in climate-resilient

¹⁹⁹HÜGEL, Stephan, DAVIES, Anna R. *Public participation, engagement, and climate change adaptation: A review of the research literature. WIREs Climate Change*, Vol. 11, Issue 4, 2020, p.10.

²⁰⁰ MALIK, Ishfaq Hussain, FORD James D. *Addressing the Climate Change Adaptation Gap: Key Themes and Future Directions. MDPI AG*, 2024. p.4.

agricultural practices can improve food security and livelihoods while safeguarding environmental sustainability. A good example of such an initiative is the Niger Climate-Smart Agriculture Support Project, funded by the World Bank. Launched in 2016, this project aims to improve the productivity and resilience of smallholder farmers in Niger, a country highly vulnerable to climate change due to its arid conditions and increasing desertification. Through investments in drought-resistant crops, agroforestry, water-efficient irrigation techniques, and sustainable land management practices, the project has helped over 500,000 farmers adapt to changing climatic conditions while simultaneously restoring degraded ecosystems.²⁰¹ By integrating climate adaptation with rural development, the initiative has boosted agricultural yields, reduced soil erosion, and enhanced food security for vulnerable communities. Moreover, by incorporating local knowledge and inclusive governance structures, the project upholds fundamental human rights principles, ensuring that marginalized groups, including women and indigenous farmers, have equitable access to climate-resilient resources and technologies. This case exemplifies how strategic investments in climate-adaptive agriculture can serve as a sustainable and inclusive development model, reinforcing the interdependence between human rights, climate resilience, and long-term food security.

b. Integrating socio-economic factors

Adaptation measures must consider the socio-economic dimensions of climate impacts. A human rights approach ensures that adaptation policies do not exacerbate existing social and economic disparities.²⁰² It emphasizes the need for social protection measures, such as social safety nets, vocational training, and employment support, to help affected communities adapt to new climatic realities. These strategies contribute to social stability and economic continuity by addressing the socio-economic impacts of climate change.

²⁰¹ BORROWING AGENCY. *Niger - Climate Smart Agriculture Support Project : Environmental Assessment (Vol. 11 of 12) : Environmental and Social Management Plan for Construction Works of a Water Retention Basin in Takoro, in the Rural Commune of Malbaza (French)*. Washington, D.C. : World Bank Group, 2021. p,7-8.

²⁰² MONGELLI, Francesco Paolo, CEGLAR, Andrej, SCHEID, Benedikt Alois. *Why do we need to strengthen climate adaptations? Scenarios and financial lines of defense*. Working Paper Series No 3005. European Central Bank, 2024, p.4-5.

D. Fostering international cooperation and governance

a. Advancing climate justice

Integrating human rights into climate adaptation frameworks can advance the cause of international climate justice. This approach recognizes countries' differentiated responsibilities and capabilities in addressing climate change and promotes equitable support for adaptation efforts. Developed countries, with more excellent resources and historical contributions to climate change, are responsible for assisting developing nations in building adaptive capacities.²⁰³ This can include financial assistance, technology transfer, and capacity-building initiatives, as outlined in the Paris Agreement.

b. Strengthening legal and institutional frameworks

Incorporating human rights into climate adaptation enhances the robustness of legal and institutional frameworks. When aligned with climate adaptation policies, international human rights treaties can provide a more substantial legal basis for ensuring that states meet their adaptation commitments. This alignment can promote accountability and compliance, thereby strengthening global governance mechanisms. Enhanced legal frameworks support effective and equitable adaptation strategies, ensuring that global efforts are coherent and mutually reinforcing.

Integrating human rights into climate change adaptation strategies is crucial for developing equitable, effective, and sustainable policies. Human rights considerations ensure that adaptation measures are comprehensive and just by focusing on protecting vulnerable populations, enhancing policy equity and effectiveness, and promoting sustainable development. Additionally, fostering international cooperation and strengthening legal frameworks further support the implementation of robust adaptation strategies. Future research and policy efforts should continue to prioritize integrating human rights into climate change adaptation to address the multifaceted challenges posed by global climate change effectively.

²⁰³ WIJAYA, A S. Climate Change, Global Warming and Global Inequity in Developed and Developing Countries (Analytical Perspective, Issue, Problem and Solution). *IOP Conference Series: Earth and Environmental Science*, 2014,p.4

4. Climate Litigation and Human Rights

Climate litigation has emerged as a vital tool for addressing the accountability gap in global climate governance, compelling governments and corporate entities to confront the human rights implications of their environmental actions. Initially focused on statutory compliance and regulatory enforcement, climate-related lawsuits have increasingly invoked human rights arguments, signalling a paradigm shift in domestic and international legal forums. This convergence recognizes that climate change disrupts ecosystems and jeopardizes core human rights, including the rights to life, health, and a safe environment. As this chapter demonstrates, courts now grapple with complex questions of causation, the appropriate defendants, extraterritorial obligations, and the inherent tensions that arise when balancing environmental imperatives with competing societal values. By examining the rise and global context of climate litigation, followed by the challenges of a human rights-based approach, Chapter 4 highlights the transformative potential and the inherent limitations of judicial interventions in bridging critical gaps between environmental governance and the protection of fundamental rights.

4.1. Development of Climate Litigation and Global Content

This section provides an overview of the evolution of climate litigation and its growing significance in the global legal landscape. Section 4.1.1 defines the concept of climate litigation, highlighting its pivotal role in addressing the urgent challenges posed by climate change and ensuring governmental and corporate accountability. Building on this foundation, Section 4.1.2 focuses on the predominance of national-level climate cases, examining how human rights arguments are increasingly invoked to bolster climate-related claims. This subsection delves further into the burgeoning potential for international human rights litigation, illuminating how legal theories and remedies are applied to address transboundary environmental harms. By contextualizing both domestic and international dimensions of climate litigation, this chapter offers insight into the legal frameworks, strategies, and implications that shape ongoing and future climate disputes, ultimately informing broader conversations on environmental responsibility and justice. Such an analysis underscores the transformative potential of litigation in driving meaningful climate action across jurisdictions.

4.1.1. Defining Climate Litigation and its Relevance

Climate litigation refers to using judicial or quasi-judicial mechanisms, including domestic courts and international tribunals, to address issues related to climate change. These cases often involve claims that governments or private actors have failed to mitigate greenhouse gas emissions adequately, adapt to climate impacts, or comply with existing environmental or human rights obligations.²⁰⁴ Climate litigation has gained traction as an essential strategy for holding governments and corporations accountable, especially when legislative or executive efforts prove insufficient to combat or prepare for climate change. In the context of international human rights law, climate litigation offers a vital avenue for communities, civil society organizations, and affected individuals to seek remedies, push for policy reforms, and create legal precedents that frame climate issues as matters of fundamental rights.

Relevance to a rights-based approach to climate change is apparent when considering how climate impacts—such as severe weather events, droughts, floods, and rising sea levels—endanger various human rights, including the rights to life, health, housing, and culture. Litigation can thus be instrumental in clarifying the scope of states' human rights obligations in the face of the climate crisis. It can serve to enforce or expand upon the principles identified in international instruments (for example the Universal Declaration of Human Rights and various UN human rights treaties) and national constitutions or environmental legislation.

The origins of climate change litigation in the United States can be traced back to *the City of Los Angeles v. National Highway Transportation Safety Administration* case. This case from 1986 involved a challenge against the National Highway Transportation Safety Administration (NHTSA) for its failure to prepare an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), specifically about its decision not to consider the adverse climate impacts of lowering motor vehicle fuel economy standards. Although the courts did not uphold the claims, this case served as a prototype for subsequent climate litigation in the United States.²⁰⁵ Subsequent cases have sought to either promote or prevent federal and state regulation of greenhouse gases, often by invoking environmental statutes that mandate the consideration of climate change in the review of power plant projects and by framing climate change as a public nuisance.

²⁰⁴ ACTION4JUSTICE. *Climate Litigation Basics*. [online]. [Accessed 15 July 2024]. Available at: https://action4justice.org/legal_areas/climate-change/climate-litigation-basics/#:~:text=Climate%20litigation%20means%20legal%20action,to%20prevent%20dangerous%20climate%20change.

²⁰⁵ *City of Los Angeles v National Highway Traffic Safety Administration*, 912 F 3d 478 (DC Cir, 1990).

Outside the United States, Australia has also seen several climate-related lawsuits. One of the earliest and most notable cases was the Redbank Power Company case from 1994, where Greenpeace Australia challenged the development consent for the Redbank Power Station in New South Wales. The challenge was based on the argument that the station's greenhouse gas emissions would contribute to climate change and thus adversely impact humanity. However, the court held that decisions regarding the development of the power plant were within the purview of governmental decision-making rather than judicial intervention.²⁰⁶ Like the United States, Australia's industrial structure has prompted litigation to address the regulatory gaps in domestic legislation concerning climate change.

Globally, climate litigation has primarily focused on regulating administrative actions,²⁰⁷ manifesting in several key areas:

i. The assessment of whether administrative standards align with international commitments on emissions control targets. For example, in *Massachusetts v. EPA*, the U.S. Supreme Court determined in 2007 that the Environmental Protection Agency (EPA) possesses the authority to set standards for limiting greenhouse gas emissions from new motor vehicles under the Clean Air Act.²⁰⁸ This litigation catalysed a series of EPA rulemakings, including the endangerment finding regarding the public health and welfare impacts of greenhouse gas emissions, the development of emission standards for light- and heavy-duty vehicles, and the regulation of emissions from stationary sources such as power plants.²⁰⁹

ii. The requirement for project assessments of impacts of greenhouse gas (GHG) emissions. The U.S. Council on Environmental Quality (CEQ) has issued guidance on conducting GHG emissions and climate change impact assessments as part of environmental reviews under NEPA. In subsequent litigation over Environmental Impact Assessments (EIA), courts have ruled that the government must include climate change considerations during the EIA stage.²¹⁰

²⁰⁶ *Greenpeace Australia v Redbank Power Company* (1994) 86 LGERA 143 in Tim Bonyhady, "The New Australian Climate Law" in Tim Bonyhady and Peter Christoff (eds), *Climate Law in Australia* (Sydney: Federation Press, 2007), p. 11.

²⁰⁷ PRESTON, Brian J. The influence of climate change litigation on governments and the private sector. *Australia's New Climate Laws*, Vol. 2, Issue. 4, 2023, p.1-2.

²⁰⁸ *Massachusetts et al. v Environmental Protection Agency*, 127 S. Ct. 1438. 2007.

²⁰⁹ PAYNE Jr., Perry W., ROSENBAUM, Sarah. *Massachusetts et al. v environmental protection agency: implications for public health policy and practice. Public Health Rep.* 2007 Nov-Dec;122(6), p.819.

²¹⁰ NEPA.GOV. NATIONAL ENVIRONMENTAL POLICY ACT. *Guidance on Consideration of Greenhouse Gases*. [online]. 2023. [Accessed 19 April 2024]. Available at: https://ceq.doe.gov/guidance/ceq_guidance_nepa-ghg.html.

iii. Judicial review of the legality of administrative actions. A prominent example is the *Urgenda Foundation v. State of the Netherlands* case, where the Dutch court ruled in 2015 that the government had failed to respond adequately to climate change. The court ordered the Dutch government to reduce carbon emissions to at least 25 per cent below 1990 levels by the end of 2020.²¹¹

In recent years, courts have increasingly upheld climate litigation cases, underscoring the critical role of the rule of law in addressing climate change. Access to justice enables individuals and communities to utilize environmental law as a protective mechanism, defend their human rights, and promote the accountability of public institutions.

Over the past two decades, climate-related lawsuits have increased significantly worldwide. According to data from the Grantham Research Institute at the London School of Economics, climate litigation cases have steadily risen, especially since the mid-2010s.²¹² According to the Global Climate Litigation Report: 2023 Status Overview, climate litigation cases have surged from 884 in 2017 to 2,180 in 2022. Notably, approximately 17 per cent of these cases originate from developing countries.²¹³ This growing trend reflects a widespread response to the climate crisis, with an increasing number of individuals turning to the judiciary for recourse. In many jurisdictions, vulnerable parts of the population like children and youth, women's groups, local communities, and indigenous peoples have played a prominent role in initiating climate litigation and advocating for governance reforms related to climate change.

²¹¹ *Urgenda Foundation v. State of the Netherlands*. Judgement of 24 June 2015. The Hague District Court, paras. 4.85, 4.86, 5.1.

²¹² SETZER, Joana, HIGHAM, Catherine. *Global trends in climate change litigation: 2024 snapshot*. [online]. Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science, 27 June 2024. [Accessed 15 July 2024]. Available at:

<https://www.lse.ac.uk/granthaminstitute/publication/global-trends-in-climate-change-litigation-2024-snapshot/>.

²¹³ UNITED NATIONS. UN ENVIRONMENT PROGRAMME. *Global Climate Litigation Report: 2023 Status Review*, 2023, p.12-13.

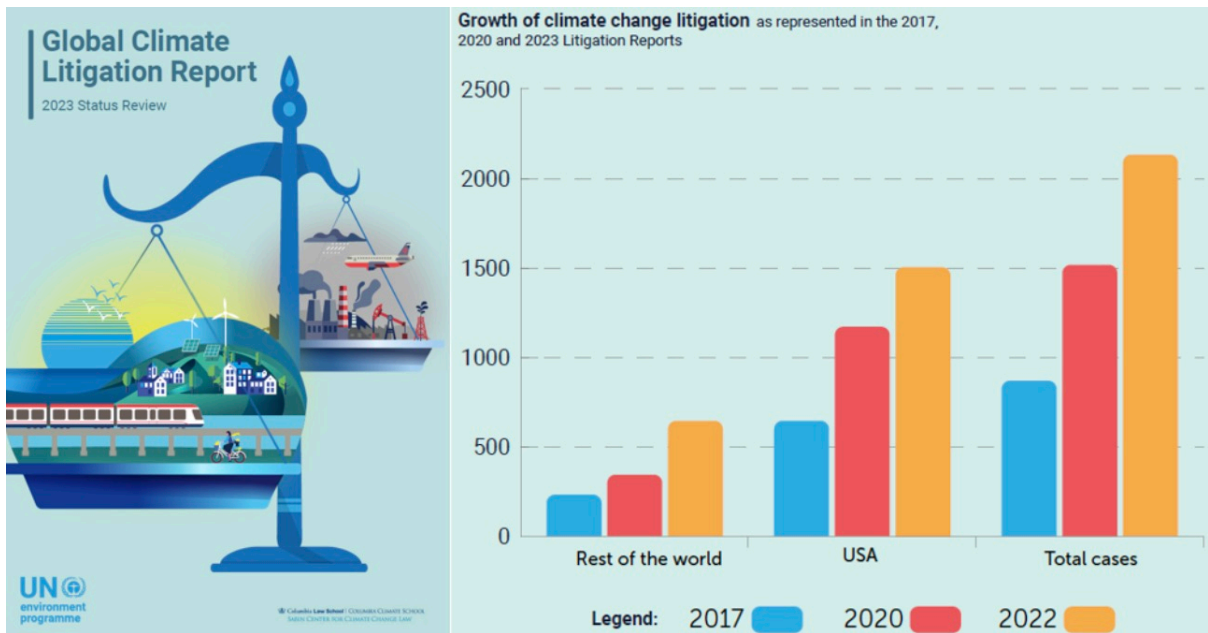


Figure 7: Growth of Climate Change Litigation²¹⁴

The rise of climate litigation can be traced back to seminal cases such as *Massachusetts v. Environmental Protection Agency (EPA)* (2007).²¹⁵ When substantive climate legislation faced significant obstacles and governments were wavering on climate regulation, civil society in many countries began to turn to litigation to influence the regulatory behaviour of governments and significant carbon-emitting corporations. These lawsuits often sought to compel legislatures to enact stricter emissions laws or to require executive agencies or other authorized bodies to take action to limit greenhouse gas emissions. Additionally, plaintiffs have demanded that governments investigate the harms caused by climate change, such as species endangerment, and disclose information about these harms. The *Massachusetts v. EPA* case marked a turning point by holding the U.S. Environmental Protection Agency accountable for addressing climate change and successfully challenging regulatory statutes and regimes.²¹⁶ During this phase of climate litigation, courts began to pay increased attention to the adequacy of governmental regulatory frameworks.

However, in the earliest wave of climate litigation, many plaintiffs sought to influence regulatory action or force legislative change when direct climate legislation was stalled and government policies remained in flux. An illustration comes from a case before the South Dakota Public Utilities Commission (PUC), where a non-governmental organization (NGO)

²¹⁴ Ibid.

²¹⁵ Ibid.

²¹⁶ Ibid.

challenged the issuing of a new coal-fired power plant permit. Despite recognizing the scientific consensus on global warming and the harmful effects of CO₂ emissions, the court declared, "*While global warming and CO₂ emissions are considered harmful by the scientific community, ... The Legislature and Congress must balance the competing interests of economic development and protecting our environment. Based on all the evidence and our limited scope of review, the PUC's decision was not clearly erroneous.*"²¹⁷ This outcome highlights how, at the time, courts often accorded considerable deference to governmental regulatory frameworks, viewing climate policy decisions as primarily the responsibility of the legislative and executive branches.

During this initial phase, lawsuits against government entities produced varied results. Some actions demanded stricter emissions rules or the disclosure of information on climate-related harms, while others urged governmental bodies to investigate threats to species survival linked to climate change. Meanwhile, legal actions seeking compensatory relief from major corporate polluters largely failed, reflecting the challenges of proving liability and damages within the then-evolving field of climate change litigation. These cases underscore the strategic efforts of NGOs and other advocates to catalyse climate action through the judiciary, especially in periods marked by legislative inaction or regulatory uncertainty. However, as demonstrated by decisions like the PUC case, courts were initially reluctant to supplant the policymaking roles of elected bodies, revealing the complex interplay between climate science, legal recourse, and institutional deference.

Among the most notable corporate climate litigation cases during this period was *Native Village of Kivalina v. ExxonMobil Corp.* (2012). In this case, the plaintiffs, residents of a village located on a narrow six-mile-long barrier reef, sought to hold 24 greenhouse gas emitters financially responsible for the costs associated with relocating the village due to climate-induced erosion of sea ice. The estimated relocation costs ranged from \$95 million to \$400 million USD. However, the court dismissed the lawsuit, reasoning that the plaintiffs failed to establish causation, as they could not prove that the defendants had directly caused the harm they suffered.²¹⁸ Furthermore, the court held that the issue of climate change was inherently political and, therefore, not justiciable.

²¹⁷ IN RE: OTTER TAIL POWER COMPANY on Behalf of BIG STONE II co-Owners for an Energy Conversion Facility Permit for the Construction of the Big Stone II Project. Supreme Court of South Dakota, docket No. 24485, 16 January 2008, para. 35.

²¹⁸ *Native Village of Kivalina v. ExxonMobil Corp.*, 663 F.3d 1020 (9th Cir. 2009). United States Court of Appeals for the Ninth Circuit. Decided 21 September 2009.

In other landmark cases from this period, such as *American Electric Power Co. v. Connecticut* (2011), plaintiffs faced significant challenges, often losing on grounds including lack of standing, failure to establish causation, and the court's determination that the matters at hand fell outside its jurisdiction.²¹⁹ These rulings underscored the plaintiffs' difficulties in holding corporations and governments accountable for climate change impacts through litigation, particularly in proving the direct link between emissions and specific harms and navigating the political and jurisdictional complexities inherent in climate-related cases.

Climate litigation gained significant traction beginning in 2013, focusing on holding governments and businesses accountable for their roles in contributing to climate change. This was due to several converging factors. First, prominent strategic lawsuits, such as the Urgenda case in the Netherlands that year, underscored the potential for court rulings to pressure governments into more ambitious climate policies. At the same time, heightened public concern and scientific consensus on climate change sharpened the focus on legal remedies. Growing familiarity with environmental statutes—alongside novel legal arguments linking emissions to human rights obligations—further emboldened litigants. Consequently, 2013 became a pivotal point when climate-related lawsuits became more frequent and sophisticated, reflecting an evolving global momentum toward using judicial avenues to drive meaningful climate action where legislative and executive measures proved insufficient. Litigation during this period sought to impose liability on these critical actors, compelling them to take responsibility for their contributions to environmental degradation.

In the post-Paris Agreement era, the landscape of climate governance has expanded, with many actors engaging in this critical issue. The number of global climate lawsuits has doubled since 2015, a surge driven mainly by the active involvement of non-governmental organizations (NGOs). These NGOs have played a pivotal role in promoting strategic climate litigation, which now aims to secure remedies for individual rights violations and influence the broader shaping of society, economy, policy, and law. Increasingly, such litigation addresses climate commitments at the national level, seeking to enforce or challenge governmental pledges under international agreements.²²⁰

²¹⁹ *American Electric Power Co. v. Connecticut*, 564 U.S. 410 (2011). Supreme Court of the U.S. Decided 20 June 2011.

²²⁰ SETZER, Joana. *Why are climate action cases rising?*. [online]. The London School of Economics and Political Science, 19 March 2024. [Accessed 30 April 2024]. Available at: <https://www.lse.ac.uk/research/research-for-the-world/sustainability/climate-legislation-and-litigation>.

This upward trend is often attributed to factors such as:

- **Growing Public Awareness:** A greater understanding of climate change science has led communities to seek judicial redress when government policies or corporate practices are perceived as contributing to climate harm.²²¹
- **Evolving Legal Frameworks:** Domestic and international laws have progressively integrated climate objectives, exemplified by the adoption of the Paris Agreement (2015) and ongoing regulatory reforms at the national level.²²²
- **Strategic Litigation:** Environmental advocacy groups and other stakeholders increasingly use litigation as a strategic tool to force governmental and corporate transparency, accountability, and accelerated climate action.²²³

In summary, strategic climate litigation is becoming more comprehensive in its objectives and more multifaceted in its approaches. It continues to innovate in legal theories and claims, expanding its reach and impact within the broader context of global climate governance. This trend reflects a shift towards more macro-level claims, as litigants seek to drive systemic change across multiple sectors and influence the development of climate-related laws and policies. These developments have prompted jurists and academics to pay closer attention to the legal arguments deployed in climate litigation. In many instances, plaintiffs rely on constitutional environmental rights or refer to the public trust doctrine, a principle positing that specific natural resources are held in trust by the state for public use and must be protected for current and future generations. In jurisdictions with robust human rights protections, litigants frequently invoke international or national human rights norms to argue that a government's failure to limit emissions or protect ecosystems constitutes a breach of its legal obligations.

4.1.2. Predominantly National-level Cases

While climate litigation has garnered international attention, most cases have been heard in national courts.²²⁴ One fundamental reason is the admissibility requirement for many international tribunals and human rights bodies, which generally demand the exhaustion of

²²¹ Ibid.

²²² ANDERSON, Kara. *Why climate lawsuits are on the rise*. [online]. Leaf by Greenly, 4 December 2024. [Accessed 7 December 2024]. Available at: <https://greenly.earth/en-gb/blog/ecology-news/why-climate-lawsuits-are-on-the-rise>.

²²³ Ibid.

²²⁴ SETZER, Joana, HIGHAM, Catherine. *Global trends in climate change litigation: 2023 snapshot*. Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science, 2023, p. 14.

domestic remedies before a claim can proceed internationally. For instance, under the Optional Protocol to the International Covenant on Civil and Political Rights (ICCPR), individuals must first attempt to obtain relief in their national legal systems unless no effective remedy is available.²²⁵ Similar admissibility clauses exist under regional human rights systems, such as the European Court of Human Rights and the Inter-American Commission on Human Rights.

As a result, litigants frequently turn to domestic courts as the initial forums for pursuing climate-related claims. Examples include the groundbreaking *Urgenda Foundation v. State of the Netherlands* case, in which the Dutch Supreme Court upheld the government's duty to reduce emissions under national and European human rights standards.²²⁶ Another widely cited case is *Juliana v. United States*, where youths argued that the federal government's actions and inactions contributed to climate change, violating their constitutional rights.²²⁷ Although the procedural hurdles in these cases can be substantial, they highlight how domestic-level litigation may set the stage for or obviate the need for international legal proceedings.

A. *The growing role of human rights in climate-related lawsuits*

The Sixth Assessment Report by the United Nations Intergovernmental Panel on Climate Change (IPCC) issued between 2021 and 2023 underscores an urgent message to humanity, highlighting the immediate crisis posed by climate change. The report warns that if global temperatures are not limited to a 1.5°C increase over the next two decades, climate catastrophes will pose substantial and irreversible risks to global ecosystems and human societies. Despite the substantial scientific evidence of the imminent threat climate change poses, and despite attempts by economists to employ the discount rate to reframe the costs and benefits of climate action, there remains a significant challenge in effectively addressing this threat. This phenomenon is encapsulated in what is known as the "Giddens Paradox" of climate governance: the discrepancy between the overwhelming evidence of climate change and the insufficient response to it.²²⁸

International political cooperation on climate governance has experienced some fluctuations and setbacks. The delayed impact of climate change compared to other immediate

²²⁵ Optional Protocol to the International Covenant on Civil and Political Rights 1995, article 5.

²²⁶ CLIMATE CHANGE LITIGATION DATABASES. *Urgenda Foundation v. State of the Netherlands*. [online]. 2015. [Accessed 15 April 2024]. Available at: <https://climatecasechart.com/non-us-case/urgenda-foundation-v-kingdom-of-the-netherlands/>.

²²⁷ *Juliana v. United States (Filing date: 2015)*. [online]. Climate Change Litigation Database. Sabin Center for Climate Change Law, 2025. [Accessed 15 April 2024]. Available at: <https://climatecasechart.com/case/juliana-v-united-states/>.

²²⁸ ISENHOUR, Cindy. On the Politics of Climate Knowledge: Sir Giddens, Sweden and the Paradox of Climate (In)Justice. *The International Journal of Justice and Sustainability*, Vol.18, Issue. 2, 2012, p.9.

global risks has led to climate action being perceived as a form of gesture politics—ambitious in rhetoric but lacking substantive content. For example, while recognised as a fragile victory, the COP26 conference in Glasgow in 2021 did not significantly advance the goals of the Paris Agreement.²²⁹

In contrast to the often-symbolic nature of international climate negotiations, climate change litigation has emerged as a significant and influential force in global climate governance. The systemic risks associated with climate change have elevated it to the most pressing human rights issue, with the IPCC describing the threat to human rights as severe, pervasive, and irreversible.²³⁰ Consequently, a growing climate litigation trend incorporates human rights arguments, shifting from attribution of responsibility to the state and policy advocacy and enforcement to challenging governmental climate targets and significant carbon emitters.

Following the Paris Agreement, nations have codified their climate commitments into law, with carbon neutrality and climate neutrality becoming prominent in national legislation. This legal development has also influenced the evolution of human rights arguments in climate litigation. Integrating human rights considerations into climate lawsuits continues to evolve, probably provide a robust counter to climate action's ineffectual gesture politics and strengthen the role of legal mechanisms in addressing the climate crisis.²³¹

While climate litigation is rapidly expanding worldwide, it is not uncommon for plaintiffs to face setbacks, with the majority of cases resulting in unfavourable outcomes for those challenging governmental or corporate actions. Human rights-based climate litigation has gained prominence as a legal strategy to counter these challenges. This approach seeks to create a pathway for positive responses to climate change by framing the issue within the context of fundamental human rights.

B. Potential for international human rights litigation

Despite the dominance of national level lawsuits, there is a growing interest in testing the boundaries of international human rights law through climate litigation. Bodies such as the UN Human Rights Committee, the Committee on the Rights of the Child, and regional human rights tribunals have begun to receive climate-related communications and petitions. A salient

²²⁹ BENNETT, Vamora. “*A fragile win*”: *looking back at COP26*. [online]. 2021. [Accessed 30 April 2024]. Available at: <https://www.ebrd.com/news/2021/a-fragile-win-looking-back-at-cop26.html>.

²³⁰ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE. *Climate Change 2014. Impacts, Adaptation, and Vulnerability Summary for Policymakers*, 2014, p.14.

²³¹ GURUPARAN, Kumaravadivel, MOYNIHAN, Harriet. *Climate change and human rights-based strategic litigation*, Briefing Paper, Chatham House, 2021, p.14.

illustration of children’s invocation of international human rights mechanisms in climate change is the 2019 petition brought by a group of minors, including Greta Thunberg, against Argentina, Brazil, France, Germany, and Turkey before the Committee on the Rights of the Child. In this communication (filed under the Optional Protocol to the Convention on the Rights of the Child on a communications procedure), the petitioners argued that these States’ alleged failure to take adequate measures to combat climate change violated various provisions of the Convention on the Rights of the Child. However, in its decision adopted on 8 October 2021, the Committee declared the case inadmissible on the basis that the petitioners had not exhausted all available domestic remedies.²³² This holding underscores the Committee’s insistence on the principle of exhaustion of domestic remedies, reflecting a broader norm in international human rights adjudication that parties must seek relief at the national level before seeking recourse to an international treaty body.²³³ Although jurisdictional issues remain a significant obstacle, such cases offer new avenues for clarifying state responsibilities under international instruments.

Moreover, the Inter-American Court of Human Rights has indicated in advisory opinions (for instance, Advisory Opinion OC-23/17 on the environment and human rights) that a severe environmental degradation could violate the American Convention on Human Rights. Thus, over time, international and regional human rights bodies may play a pivotal role in shaping the jurisprudence of climate-related claims, particularly once domestic avenues have been exhausted. One such example is the *Klimaseniorinen* case before the European Court of Human Rights, which the next part will discuss in more detail below.

C. Legal theories and remedies

Climate litigation cases often involve diverse legal theories. Beyond the human rights approach, litigants may advance tort-based claims, alleging that corporate defendants caused harm through negligent or intentional emissions of greenhouse gases. They may also invoke administrative law, challenging government approvals of fossil fuel projects because such approvals are irrational or contrary to statutory mandates requiring environmental impact

²³² See Committee on the Rights of the Child, Views: Communication No. 104/2019, U.N. Doc. CRC/C/88/D/104/2019 (2021).

²³³ UNICEF. *16 children, including Greta Thunberg, file landmark complaint to the United Nations Committee on the Rights of the Child* Child petitioners protest lack of government action on climate crisis. [online]. 23 September 2019. [Accessed 15 April 2024]. Available at: <https://www.unicef.org/lac/en/press-releases/16-children-including-greta-thunberg-file-landmark-complaint>.

assessments.²³⁴ Such as *Neubauer et al v. Germany* and *Friends of the Irish Environment v. Ireland*, illustrating how climate litigation can encompass various legal frameworks from constitutional violations to specific environmental and administrative laws. Some plaintiffs frame their arguments around consumer protection laws, claiming misleading corporate communications about climate-related risks.

In terms of remedies, successful climate litigation can lead to various outcomes. Courts may order governments to adopt more stringent emission reduction targets, impose temporary injunctions halting specific projects, or require corporations to provide more transparent disclosures about climate risks.²³⁵ Declaratory judgments that clarify the law can have a substantial deterrent or precedent-setting effect, even if not accompanied by large monetary penalties. This evolving body of case law signals to policymakers and corporate actors that inaction or insufficient action on climate change may entail legal consequences.

4.2. Basis and Elements of Liability for Climate Change Torts

This part examines the basis and elements of liability in climate change torts, focusing on key legal principles and emerging jurisprudence. Section 4.2.1 explores the foundational legal grounds for climate-related liability, including theories of responsibility. Section 4.2.2 analyses the duty of care for carbon emitters, assessing their obligations and the legality of emissions. Section 4.2.3 categorizes the damage resulting from climate change, highlighting its impact on property, health, and fundamental rights. This analysis provides insight into how tort law is evolving to address climate-related harms and corporate accountability.

4.2.1. Basis of Liability for Climate Change Torts

The primary basis for climate change tort liability tends to be that tort law tends to be a unique mechanism for achieving distributive and corrective justice. This system is designed to address individual justice and promote the greater good by remedying harms and deterring wrongful acts.²³⁶ This approach effectively addresses the central issue of climate justice: who should bear the costs of climate change. Without remedies, those suffering disproportionately from climate change will be unfairly burdened, akin to those whose property could be

²³⁴ SAVARESI, Annalisa. Human Rights and Climate Change. *International Environmental Law-Making and Diplomacy*, Vol. 11, No. 1, 2018, p.12.

²³⁵ DERNBECH, John D., PARENTEAU, Patrick A. Judicial Remedies for Climate Disruption. *Environmental Law Reporter*, Vol. 53, No. 10547, 2023, p.1-2.

²³⁶ SAAD, Aisha I. Attribution for Climate Torts. *Boston College Law Review*, Vol. 64, Issue. 4 2023, p.929.

expropriated without compensation, effectively sacrificing more than their fair share for economic development.

Thus, the theory of climate justice also encompasses intergenerational justice to protect the survival interests of future generations.²³⁷ This suggests that establishing liability for climate change torts requires a legitimacy basis beyond mere attribution, as highlighted by identifying perpetrators in climate change torts.

A unique social fact of climate change infringement is that everyone is a carbon emitter, making everyone both a victim and a perpetrator, resembling a Hobbesian jungle of competing interests. However, litigation practice upholds the principles of tort law justice by adequately identifying the perpetrators of climate change infringement.

Firstly, carbon emission enterprises are considered perpetrators. On one hand, carbon-emitting companies, particularly industry giants, are in a prime position to influence climate change by reducing emissions or adopting new technologies. By assuming liability for climate change torts, they can internalize the damage from their emissions and pass on the costs to specific users through higher product prices. On the other hand, users who opt for carbon-emitting products benefit from their use, justifying the sharing of increased costs with them rather than society as a whole.²³⁸ Although carbon emissions do not constitute environmental pollution in the traditional sense, the considerations of liability are similar to those for pollution, such as the principles of polluter pays, beneficiary pays are less likely to be defendants in litigation and thus may not be incentivized to reduce emissions, but this does not negate their role as aggressors.²³⁹

Secondly, consumers are not typically seen as perpetrators. Their carbon emissions are often tied to survival or maintaining a decent standard of living, making them unlikely to make a material contribution to climate change. Furthermore, consumers are often limited to fossil fuels and products dependent on them, with no viable alternatives.²⁴⁰ They use products as intended, and shifting the costs of climate change to consumers does not fulfil the goal of tort law to reduce accident costs, as consumers need to develop new technologies for substantial emission reductions.

²³⁷ BONYTHON, Wendy. Tort Law and Climate Change. *University of Queensland Law Journal*, Vol. 40, No. 3, 2021, p.452.

²³⁸ SAAD, Aisha. Attribution for Climate Torts. *Boston College Law Review*, Vol : 64, Issue : 4, 2023,p.888.

²³⁹ GAILHOFER, Peter, KREBS, David, PROELSS, Alexander, SCHMALENBACH, Kirsten, VERHEYEN, Roda, *Corporate Liability for Transboundary Environmental Harm*. Springer Nature, 2022, p.209.

²⁴⁰ *Ibid.*, p.364.

Climate change damage tends to be cumulative, slow to manifest, and traceable to emissions from centuries ago. Some scholars argue that holding modern entities responsible for past emissions amounts to permanent liability, conflicting with the principles of the rule of law and implying liability even when adverse effects of carbon emissions are unknown. In climate change litigation, defendants are usually enterprises with different lifecycles than natural persons. Some scholars are of the view that holding them accountable for long-term emissions conflicts with the statute of limitations.²⁴¹ An ideal solution would be to exclude emissions that occurred before climate change became a global concern from the calculation.

4.2.2. Duty of Care for Carbon Emitters

Tort liability must be based on unreasonable social behaviour, with the core principle being the unreasonable infringement of others' rights and interests. Establishing liability for climate change torts requires proving a breach of the duty of care by carbon emitters, regardless of whether the basis of liability is fault-based or strict. This issue could be examined at two levels:

A. Carbon emitters' duty of care about climate change

The duty of care in tort liability jurisdictions requires that duty holders respect and avoid infringing upon the lawful civil rights and interests of others. This duty is owed by every civil subject to all others and is performed to prevent reasonably foreseeable damage. When the impacts of climate change become a scientific consensus, carbon emitters have a duty of care not to alter the climate through their emissions.²⁴² The essence of the duty of care is a civil subject's responsibility to protect society from abstract dangers rather than protecting specific individuals.

The “neighbour rule” in tort law restricts this duty to those close in time and space directly affected by the aggressor's conduct. In *Palsgraf v. Long Island Railroad Company* (1928), Justice Cardozo held that tortious behaviour must have a specific, identifiable victim. At the same time, some scholars argued that the duty of care is abstract and applies to the community. In climate change cases, the link between the defendant's conduct and the plaintiff's damage may be too remote. However, the scientific consensus is that climate impacts are global,

²⁴¹ EVANS, Simon. *Analysis: Which countries are historically responsible for climate change?*. [online]. 2021. [Accessed 2 May 2024]. Available at: <https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change/>.

²⁴² MAYER, Benoit. The Duty of Care of Fossil-Fuel Producers for Climate Change Mitigation. *Cambridge University Press*, Vol.11, No.2, 2022, p.412.

suggesting that everyone in human society tends to be a neighbour in an environmental sense.²⁴³ Thus, the liability for climate change does not require tracking specific foreseeability pathways, and perpetrators cannot argue that the victim was outside their scope of foreseeability.

B. Are carbon emissions legal?

Under a general standard of breach of duty of care, once climate change is a scientific consensus, carbon emitters who continue emitting are in breach of their duty of care and commit a tort. However, carbon emissions' specificity complicates this conclusion. First, some level of carbon emissions is necessary for human survival, and everyone emits carbon daily. Second, many carbon emissions by enterprises are essential for societal survival and development, such as energy production, which is legally mandated. Tort law's freedom of action includes behaviour unrelated to the public good, and actions that promote the public good should enjoy more freedom rather than face restrictions.²⁴⁴ Even if carbon emitters have a duty of care regarding climate change, proving a breach requires examining illegality.

There could be two standards for determining illegality in tort law: behavioural illegality and consequential illegality. The mainstream view considers the importance of legal interests and means of publicity. For absolute rights infringements, the infringement determines illegality; for other legal interests, it depends on whether the act is unlawful. Carbon emissions are standard, so labelling them as inherently illegal is hard.

Specific regulations such as carbon emission quotas may apply, but many jurisdictions do not currently make carbon emissions illegal. For-profit corporations' social responsibility can be used to determine illegality. For instance, *the Friends of the Earth v. Royal Dutch Shell* judgment recognized international soft law on corporate social responsibility as legally binding. Shell's statements on emission reduction demonstrate this obligation. The severity of climate change consequences means that corporate social responsibility includes emission reduction, which constitutes legal liability.²⁴⁵

4.2.3. Types of Damage from Climate Change

The damages resulting from climate change, driven by global warming and extreme weather, can be categorized as follows:

²⁴³ NELSON, William E. *Palsgraf v. Long Island R.R.: Its Historical Context*. *Touro Law Review*, Vol.34, No.1, 2018, p.283.

²⁴⁴ KYSAR, Douglas A. *The Duty of Climate Care*. *DePaul Law Review*. p.511-512.

²⁴⁵ *Ibid*.

A. Property rights and interests

This represents the primary type of damage caused by climate change. Examples include property damage, such as flooded homes due to melting snow and ice or rising sea levels. This category also encompasses purely economic losses,²⁴⁶ such as the impact on local fishermen from listing the California delta smelt under the federal Endangered Species Act due to rising ocean temperatures, which constitutes an economic loss for the community dependent on this fishery.

B. Health rights and interests

Health rights can be affected by rising temperatures or extreme weather events. For instance, The European Union could experience over 100,000 additional annual heat fatalities by the end of the century under a high-warming scenario,²⁴⁷ illustrating the severe impact of extreme weather on personal health and well-being.

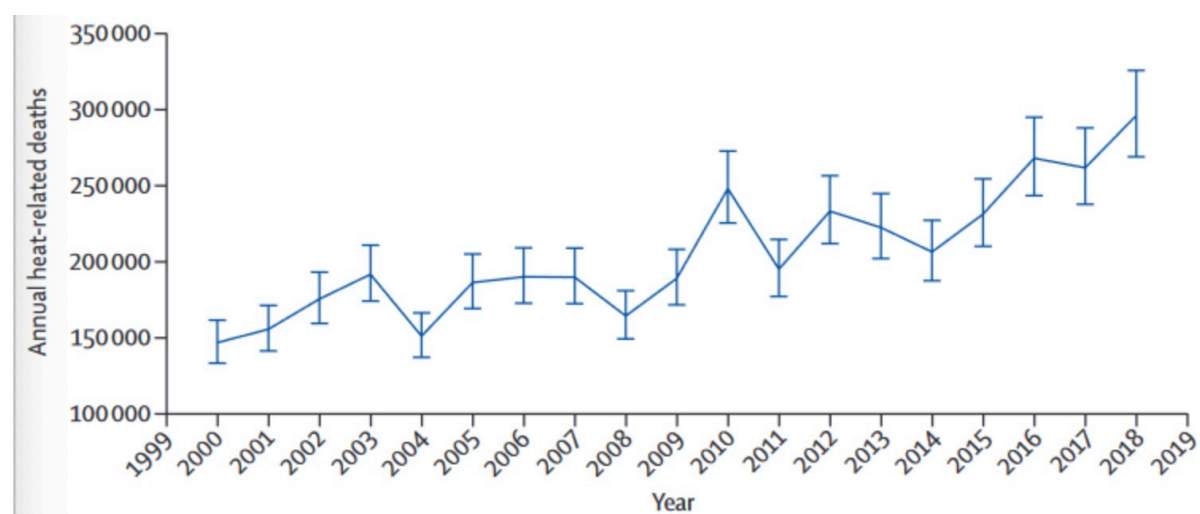


Figure 8: Global heat-related mortality for populations older than 65 years²⁴⁸

C. Other Fundamental rights

²⁴⁶ CARLIN, David, ARSHAD Maheen, BAKER, Katy. *Climate Risks in the Real Estate Sector*. Sectoral Risk Briefings: Insights for Financial Institutions. UN Environment Programme, 2023, p.7.

²⁴⁷ EUROPEAN CLIMATE AND OBSERVATOR. *Climate Adapt*. [online]. 2021. [Accessed 3 May 2024]. Available at: <https://climate-adapt.eea.europa.eu/en/observatory/evidence/health-effects/heat-and-health#:~:text=The%20European%20Union%20could%20experience,under%20a%20high%20warming%20scenario>.

²⁴⁸ Ibid.

Climate change litigation frequently involves claims based on other fundamental rights, where states or major carbon emitters are sued for failing to reduce emissions. These rights vary and include environmental rights and climate stabilization rights (refers to that everyone has the right to a stable climate²⁴⁹). Traditional legal perspectives on fundamental rights in tort liability are divided. Nishikawa treats these rights as extensions of general civil rights, such as personality rights,²⁵⁰ while Vilchez recognizes an independent right to a healthy environment.²⁵¹ The latter approach suggests that the environment should not be seen as subordinate to any civil subject and thus does not support the first idea. Furthermore, climate change affects current and future generations who are entitled to the same fundamental rights. The case of *Friends of the Earth et al. v. Royal Dutch Shell* emphasized the rights of future generations, indicating that climate change victims include not only present-day individuals but also those yet to come.²⁵²

Current mainstream jurisprudence does not typically recognize the environment or ecology as legal subjects. The primary concern in climate change cases is often a utilitarian perspective on its adverse effects on human beings, maintaining an anthropocentric view that values only human interests rather than the environment itself. The deep ecological movement argues for the intrinsic value of nature, as demonstrated by the Colombian Constitutional Court's ruling that nature should be recognized as a legal subject. Some scholars advocate for recognizing nature as a legal subject on behalf of which humans can exercise rights.²⁵³ However, such a fundamental shift in legal subjectivity faces significant challenges in empirical law.

4.3. Significance for International Human Rights and Climate Governance

Climate litigation underscores the idea that legal mechanisms—far from being ancillary—can be engines of accountability and innovation.²⁵⁴ By bringing climate change into courtrooms,

²⁴⁹ UNITED STATES ENVIRONMENTAL PROTECTION AGENCY. *EnviroAtlas Benefit Category: Climate Stabilization*. [online]. 7 November 2024. [Accessed 27 November 2024]. Available at: <https://www.epa.gov/enviroatlas/enviroatlas-benefit-category-climate-stabilization>

²⁵⁰ NISHIKAWA, Yumeno Grace. Japanese Climate Litigation and the Development of Personal Rights. *Chinese Journal of Environmental Law*, Vol.7, 2023, p.220.

²⁵¹ VILCHEZ, Pau de, SAVARESI, Annalisa. The Right to a Healthy Environment and Climate Litigation: A Game Changer?, *Yearbook of International Environmental Law*, 2021, Vol.32, Issue.1, p.6.

²⁵² Ibid.

²⁵³ CHAVES, Ivan V, AMPARO RODRIGUEZ, Gloria, CUMBE-FIGUEROA, Alexandra, MORA-GARZON, Sandra-Estefania. Recognizing the Rights of Nature in Colombia: The Atrato River case. *Revista Juridicas*, Vol.17, No.1, 2019, p.38.

²⁵⁴ SVILECIC, Oli. The use of climate litigation as a corporate accountability tool. *Wageningen University & Research (WUR)*, 2020, p.13.

plaintiffs and advocacy groups highlight the tangible harms endured by communities and the urgency of rethinking current socio-economic models. When these lawsuits invoke international human rights treaties, they reinforce that states must take proactive measures to prevent foreseeable harm to fundamental rights. Such litigation also complements multilateral climate negotiations by exerting bottom-up pressure on governments to keep pace with scientific realities and moral imperatives.

Furthermore, climate litigation contributes to the development of transnational legal norms.²⁵⁵ Successful arguments in one jurisdiction can inspire similar cases elsewhere, and the global proliferation of climate suits fosters cross-pollination of legal strategies. In time, this can solidify a global consensus that climate inaction may contravene basic tenets of human rights law, potentially spurring more robust international cooperation and compliance measures.

In conclusion, climate litigation tends to be a dynamic and increasingly prominent pathway for addressing the intersection of international human rights law and the climate crisis. While for now predominantly pursued at the national level due to admissibility requirements, such litigation continues to shape legal standards and policy responses, gradually paving the way for enhanced accountability under domestic and international regimes. As the climate emergency becomes more acute, one can expect litigation strategies to evolve further, potentially driving more substantial recognition of the human rights obligations implicated by climate change.

4.4. Case Study: *Verein Klima Seniorinnen Schweiz and Others v. Switzerland*, a Fundamental Decision by the European Court of Human Rights

This piece of writing presents a case study of *Verein Klima Seniorinnen Schweiz and Others v. Switzerland*, a landmark European Court of Human Rights (ECtHR) decision. Section 4.4.1 outlines the facts of the case, detailing the claims brought by the applicants. Section 4.4.2 analyses the Court's judgment, highlighting its key legal findings. Section 4.4.3 examines the broader significance of the decision, emphasizing its status as the first climate case before the Grand Chamber, its potential to clarify causation and state responsibility, and its implications for vulnerable groups and states' positive obligations under human rights law. Before delving into the specific legal implications of *Verein Klima Seniorinnen Schweiz and Others v. Switzerland*, it is crucial to clarify why this case has

²⁵⁵ PAIEMENT, Phillip. Urgent agenda: how climate litigation builds transnational narratives. *Transnational Legal Theory*, Vol.11, No.1-2, 2020, p.130.

been selected as a centrepiece for analysis. Not only does it mark the first climate-related dispute heard by the Grand Chamber of the European Court of Human Rights (ECtHR), but on 9 April 2024, the ECtHR issued what many regard as a landmark ruling: for the first time, the Court explicitly recognized that government inaction on climate change could amount to a potential violation of human rights. This unprecedented step carries profound significance for future climate litigation within Council of Europe Member States and globally.

4.4.1. Facts of the Case

Verein KlimaSeniorinnen Schweiz and Others v. Switzerland originated from a complaint filed in 2016 by a Swiss-based association, Verein KlimaSeniorinnen Schweiz (also referred to as the Swiss Senior Women for Climate Protection), along with several individual members. The organization represents a demographic group—older women—who argue that they face disproportionate risks from climate change, particularly in light of the intensifying heat waves that have become more frequent in Europe in recent decades. According to the applicants, older women are especially vulnerable to extreme heat, which can exacerbate pre-existing health conditions, increase mortality rates, and undermine their overall well-being.²⁵⁶

In their domestic litigation, the applicants contended that the Swiss government's climate policy and associated legal framework were insufficient to comply with Switzerland's obligations under both domestic law and international treaties. Despite having specific federal and cantonal measures to reduce greenhouse gas (GHG) emissions, the applicants argued that these efforts fell short of what was necessary to mitigate climate change and protect vulnerable populations meaningfully. They specifically emphasized that the official targets, as set out in Swiss legislation and administrative strategies, did not align with the reductions required by the 2015 Paris Agreement, nor did they adequately address the imminent health risks faced by senior women.²⁵⁷

Upon exhausting domestic remedies, including proceedings before the Swiss Federal Supreme Court, the applicants sought recourse at the ECtHR. They argued that Switzerland's insufficient climate action infringed upon several rights guaranteed by the European Convention on Human Rights (ECHR), notably Article 2 (right to life) and Article 8 (right to respect for private and family life). Some academic commentators have also pointed out that the applicants effectively raised issues that may touch upon Article 14 (prohibition of

²⁵⁶ *Verein KlimaSeniorinnen Schweiz and Others v Switzerland*. Judgement of 9. 4. 2024, ECtHR (App No. 53600/20).

²⁵⁷ *Ibid.*

discrimination) insofar as older women might be disproportionately affected by climate-related harms.²⁵⁸ Although the Swiss Federal Supreme Court did acknowledge the seriousness of climate change, it ultimately concluded that the applicants lacked the required direct, personal harm to establish standing for a detailed judicial review of the national climate policies. Consequently, the case was advanced to the ECtHR to secure broader judicial recognition of states' obligations in the face of climate change.

Since the submission to the ECtHR, numerous non-governmental organizations and legal scholars have intervened or provided amicus curiae briefs, underscoring the broad international significance of the case. These briefs typically argue that the effects of climate change can and should be interpreted within the purview of existing human rights treaties, particularly given the direct and indirect ramifications of global warming on life, health, housing, and private life. The breadth and depth of these interventions highlight the case's pioneering role in clarifying the extent to which state parties to the ECHR must implement robust climate policies to protect fundamental rights.

4.4.2. Judgment of the Court

On 9 April 2024, the European Court of Human Rights (“the Court”) issued its landmark judgment in *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland*, marking the first time it addressed a claim specifically centred on the adverse impacts of climate change under the European Convention on Human Rights (“ECHR”). The applicants were the Verein KlimaSeniorinnen Schweiz (Climate Senior Women Association) and four individual members, who asserted that Switzerland had failed to take sufficient measures to reduce greenhouse gas emissions and protect their health and well-being. In examining the applicants' standing under Article 34 of the ECHR, the Court distinguished between the Association and the four individual members. While it deemed the Association a proper applicant because it represented individuals arguably at specific risk from climate change, the Court held that the four members lacked the requisite “victim status” since their claims did not establish sufficiently direct or imminent personal harm to meet the strict standing criteria.²⁵⁹ Turning to the merits, the Court focused on the alleged violation of Article 8, which safeguards the right to respect for private

²⁵⁸ LIBRARY OF CONGRESS. *Switzerland: European Court of Human Rights Finds Switzerland Failed to Implement Regulations to Combat Climate Change*. [online][Accessed 3 May 2024]. Available at: <https://www.loc.gov/item/global-legal-monitor/2024-05-14/switzerland-european-court-of-human-rights-finds-switzerland-failed-to-implement-regulations-to-combat-climate-change/>.

²⁵⁹ *Verein KlimaSeniorinnen Schweiz and Others v Switzerland*. Judgement of 9. 4. 2024, ECtHR (App No. 53600/20), para. 458 et seq.

and family life, including its environmental dimension.²⁶⁰ The judgment drew on well-established case law recognizing that serious environmental harm may infringe Article 8 if it significantly impairs individuals' health or quality of life. In this context, the Court elaborated on states' positive obligations to adopt and effectively implement legislative and administrative frameworks to address climate risks. Emphasizing the need for a balance between state discretion, known as the "margin of appreciation," and the practical reality of mounting evidence on the severity of climate change, the Court noted that while states are free to choose among various policy options,²⁶¹ they must act diligently and proportionately in fulfilling their obligations under the Convention. It highlighted seven core principles that guide the assessment of compliance, notably the requirement for states to enact concrete laws and policies aimed at emissions reduction, to set quantifiable or otherwise transparent targets (such as carbon budgets), to track and update these commitments based on the best available scientific evidence,²⁶² to provide timely information enabling the public to understand and mitigate the risks and to ensure meaningful opportunities for affected individuals or groups to participate in decision-making processes. Against this backdrop, the Court scrutinized Switzerland's existing legal and regulatory measures, concluding that the authorities had not established an adequate or comprehensive framework to limit greenhouse gas emissions.²⁶³ In particular, Switzerland had neither quantified its carbon budget nor achieved the emissions reductions it had set for itself, indicating a lack of consistent and timely action. According to the Court, these failings revealed that Switzerland had not exercised its margin of appreciation responsibly, as it had not adopted or enforced legislation capable of mitigating the clear and foreseeable risks posed by climate change. Consequently, the Court found a breach of Article 8, holding that Switzerland's shortcomings jeopardized the right to respect for private and family life of those facing heightened threats from rising temperatures and related environmental hazards.²⁶⁴ The Court then addressed the alleged violation of Article 6(1) concerning the right to a fair hearing arising from the Association's contention that Swiss authorities and domestic courts had summarily dismissed its claims without thoroughly examining the merits.²⁶⁵ In this regard, the Court determined that the dismissal effectively deprived the Association of access to a judicial process capable of assessing the substance of its climate-related grievance. By neglecting to

²⁶⁰ Ibid. (paras 544–6).

²⁶¹ Ibid. (paras 573–4).

²⁶² Ibid. (paras 569–72).

²⁶³ Ibid. (paras 87 and 559).

²⁶⁴ Ibid. (para. 519).

²⁶⁵ Ibid. (para. 616).

engage meaningfully with the Association’s evidence and arguments, the Swiss courts had, in the Court’s view, curtailed the procedural safeguards guaranteed under Article 6(1). As a remedy, the Court awarded the Association 80,000 euros in respect of costs and expenses,²⁶⁶ declining to make a separate award for pecuniary or non-pecuniary damages while underscoring the significance of Switzerland’s obligation to align domestic climate measures with its stated commitments and with the scientific consensus on how best to mitigate global warming. Although the Court refrained from prescribing the exact policy instruments Switzerland must adopt, it sent a clear signal that states’ inaction, or insufficient action, in the face of mounting evidence about climate change may amount to a Convention violation. This judgment thus represents a watershed moment in European human rights jurisprudence, illuminating how environmental degradation and climate risks can fit within the protective scope of Article 8 and reinforcing that procedural fairness, as guaranteed by Article 6(1), must extend to claims alleging that a state’s failure to address climate change endangers individuals’ health and well-being.

4.4.3. Importance of the Case

A. First climate case before the grand chamber

Verein KlimaSeniorinnen Schweiz and Others v. Switzerland is historically significant as the inaugural climate change case brought before the ECtHR’s Grand Chamber.²⁶⁷ While the Court has previously addressed environmental issues in the context of human rights (e.g., under Articles 2 and 8 of the European Convention on Human Rights), the direct allegation that a State’s inadequate mitigation policies violate individuals’ rights due to foreseeable climate harms represents a jurisprudential milestone by accepting the referral to the Grand Chamber, the ECtHR signalled its willingness to grapple with the complexities of climate science, the multifaceted nature of State obligations, and the tension between economic or policy choices on one hand and human rights protection on the other.

This procedural posture alone elevates the case’s importance, as Grand Chamber judgments carry broader precedential weight than Chamber rulings. The Court’s readiness to examine whether Switzerland’s climate policies adequately safeguard the rights of older citizens under Articles 2 (right to life) and 8 (right to respect for private and family life)

²⁶⁶ Ibid. (para. 650).

²⁶⁷ EUROPEAN NETWORK OF NATIONAL HUMAN RIGHTS INSTITUTIONS. *The Grand Chamber of the European Court of Human Rights issues groundbreaking judgment on climate change and human rights*. [online]. 2019. [Accessed 5 January 2025]. Available at: <https://ennhri.org/news-and-blog/the-grand-chamber-of-the-european-court-of-human-rights-issues-groundbreaking-judgment-on-climate-change-and-human-rights/>.

underscores the expanding intersection of human rights law and environmental protection. Because a Grand Chamber judgment definitively clarifies the interpretation of the Convention, it may prompt States to reevaluate their national climate strategies and legislative frameworks to avert future human rights litigation.

B. Clarification of causation and responsibility

One of the most challenging aspects of climate litigation is demonstrating a causal link between government inaction (or insufficient action) and specific harm claimants suffer. Plaintiffs often face hurdles in proving that their health or well-being is directly endangered by a particular policy gap, especially when greenhouse gas emissions are diffuse, global in scope, and unfold over lengthy time horizons. In *Verein KlimaSeniorinnen Schweiz*, the applicants—elderly Swiss women—argued that they are especially susceptible to extreme heat events exacerbated by global warming and that Switzerland’s insufficient climate measures place them at heightened risk.

The Grand Chamber’s 2024 ruling addressed this causal conundrum by articulating a framework for evaluating whether States have discharged their duty to protect individuals from foreseeable and serious environmental threats.²⁶⁸ Crucially, the Court emphasized that while scientific certainty is rarely absolute, the weight of credible climate data can be sufficient to prove a “real and immediate risk” under certain conditions. This nuanced approach to causation helps refine the legal standards for establishing State responsibility in environmental cases, confirming that governments cannot insulate themselves from liability merely because multiple actors contribute to climate change on a planetary scale. The ruling thus serves as guidance for national courts confronting similar evidentiary questions about attribution and risk in climate litigation.

C. Implications for vulnerable groups and positive obligations

The named plaintiffs in *Verein KlimaSeniorinnen Schweiz* are elderly individuals who claim that they bear disproportionate burdens from rising temperatures, more intense heat waves, and related health complications. This case highlights how climate change frequently

²⁶⁸ HÖSLI, Andreas, REHMANM, Meret. *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland: The European Court of Human Rights ‘Answer to Climate Change*. *Climate Law*, Vol.14,2024, p.9.

strikes vulnerable populations—whether defined by age, health status, socioeconomic factors, or geography—hardest, thereby raising human rights concerns under Articles 2 and 8.²⁶⁹

The Court’s decision underscores the States’ positive obligations to safeguard human life and dignity against environmental hazards. In examining whether Switzerland met its Convention obligations, the Grand Chamber clarified that vulnerability can heighten a State’s duty to enact effective policies. This perspective echoes the ECtHR’s broader jurisprudence on positive obligations, which requires not only the avoidance of direct harm by the State but also proactive measures to prevent or mitigate foreseeable risks posed by third parties or systemic conditions (in this case, excessive greenhouse gas emissions). Consequently, the judgment offers a potentially powerful legal basis for other vulnerable groups—children, indigenous peoples, or communities living in climate-sensitive areas—to seek redress when government inaction exacerbates their heightened susceptibility to climate-related harm.

D. Influence on Transnational Climate Litigation

As a Grand Chamber pronouncement, this decision carries considerable persuasive authority beyond the Council of Europe. Litigants worldwide increasingly reference ECtHR case law to bolster arguments about States’ human rights obligations in environmental contexts. By explicitly recognizing that inadequate climate action may infringe upon Convention rights, *Verein KlimaSeniorinnen Schweiz* becomes a pivotal reference point for transnational litigation strategies.

Other courts, such as the Inter-American Court of Human Rights or domestic tribunals in Africa, Asia, and the Americas, may consider the ECtHR’s reasoning when confronted with similar claims. Additionally, the case could influence international treaty bodies evaluating complaints brought under UN instruments like the International Covenant on Civil and Political Rights (ICCPR) or the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW).²⁷⁰ Over time, cross-pollinating human rights jurisprudence may help harmonize global standards on State responsibility for mitigating climate risks, thereby shaping a more coherent framework for transnational climate adjudication.

²⁶⁹ PATHAK, Puneet. Human Rights Approach to Environmental Protection. *OIDA International Journal of Sustainable Development*, Vol.07, No.02, 2014, p.22-23.

²⁷⁰ DEBEVOISE & PLIMPTON. *Climate Change Litigation: The European Court of Human Rights Finds Violation of Convention Rights*. [online]. 24 April 2024. [Accessed 5 January 2025]. Available at: <https://www.debevoise.com/-/media/files/insights/publications/2024/04/climate-change-litigation.pdf?rev=5c5756f0b7684b9484b45fb43d704d85&hash=9238E9EC936C418B65A04DBE753637A8>.

E. *Strengthening the Normative Link between Human Rights and the Environment*

Although the European Convention on Human Rights does not explicitly mention environmental rights, the ECtHR has long interpreted specific Convention provisions as encompassing ecological harms. This interpretive stance is grounded in the premise that severe environmental degradation may impair fundamental rights to life, health, and private life.²⁷¹ *Verein KlimaSeniorinnen Schweiz* advances this jurisprudential evolution by squarely linking climate inaction to potential human rights violations.

By doing so, the Grand Chamber consolidates and expands upon prior environmental case law, reinforcing that environmental protection is integral to realizing human rights. Courts and scholars often refer to this process as the “greening” of human rights law—an ongoing trend that acknowledges how ecological and climate-related threats directly influence individual rights. Thus, *The KlimaSeniorinnen* judgment is a critical illustration of how human rights bodies can adapt legal doctrines to address 21st-century global challenges, blurring the traditional boundaries between environmental law and international human rights law.

F. *Future Pathways for Strategic Litigation*

The outcome of *Verein KlimaSeniorinnen Schweiz* foreshadows a future in which human rights arguments become central to strategic climate litigation. Litigants can be expected to draw on the ECtHR’s willingness to scrutinize State climate policies for compliance with core Convention guarantees.²⁷² By articulating thresholds for scientific evidence, clarifying the scope of positive obligations, and emphasizing the heightened risks vulnerable communities face, the Court has effectively charted a roadmap for future cases.

Moreover, the judgment could embolden NGOs and activists to pursue more ambitious legal claims, pressing governments to explain their emission-reduction targets and demonstrate that those targets effectively avert foreseeable harm to human life and dignity. Cases might also expand to incorporate broader ecosystem considerations, arguing that preserving biodiversity and healthy environments tends to be essential to safeguarding human rights. Still, the *KlimaSeniorinnen* ruling also highlights potential challenges: States retain a margin of

²⁷¹ RAOUL WALLENBERG INSTITUTE. *The Right to Life, Environmental Degradation, and Human Mobility*. [online] 18 April 2024 [Accessed 5 January 2025]. Available at: <https://rwi.lu.se/blog/the-right-to-life-environmental-degradation-and-human-mobility/>.

²⁷² REICH, Johannes. *KlimaSeniorinnen and the Choice Between Imperfect Options*. In *Verfassungsblog on matters constitutional*. [online] 18 April 2024 [Accessed 5 January 2025]. Available at: <https://verfassungsblog.de/klimaseniorinnen-and-the-choice-between-imperfect-options/>.

appreciation in balancing competing interests, and courts may remain reluctant to impose detailed prescriptive duties that, in their view, belong to the legislature or executive.

In conclusion, *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland* is pivotal for several reasons. It inaugurates the Grand Chamber's direct engagement with climate issues, clarifies causal and responsibility thresholds, underscores the relevance of positive obligations to protect vulnerable groups, and sets a powerful precedent that may shape the trajectory of transnational climate litigation. By more firmly linking climate inaction with possible human rights breaches, the ECtHR has demonstrated that international human rights law can serve as a key lever to demand—and potentially enforce—more robust climate policies. As governments, industries, and civil society weigh the implications of this decision, it is poised to influence debates on legislative reform, spur novel legal strategies, and reinforce the normative convergence of environmental and human rights protections on a global scale.

4.5. Challenges of Human Rights-Based Climate Change Litigation

Theoretically, international human rights law presents several advantages over international environmental law in addressing climate change:

1. International human rights law boasts a broad base of signatories, with most countries having ratified various human rights conventions.²⁷³ Many obligations under these conventions have attained the status of customary international law.
2. These conventions grant individuals the right to bring claims against States. Their provision allows individuals to seek redress in international courts by demonstrating that a state's failure to regulate greenhouse gas emissions effectively has violated their human rights.²⁷⁴
3. There is a potential to expand the interpretation of human rights protections to encompass a range of climate change-induced harms.

Nevertheless, human rights-based climate change litigation also faces significant challenges:

²⁷³ MAYER, Benoit. Climate Change Mitigation as an Obligation under Human Rights Treaties?. *Cambridge University Press*, Vol.115, No.3 2021, p.410.

²⁷⁴ KNOX, John. *Climate Change and Human Rights: Three Benefits of a Human Rights Perspective on Climate Change*. [online]. Global Policy, 15 November 2015 [Accessed 5 January 2025]. Available at: <https://www.globalpolicyjournal.com/blog/15/11/2015/climate-change-and-human-rights-three-benefits-human-rights-perspective-climate-chan>.

4.5.1. Choice of Defendants

The global nature of greenhouse gas emissions implies that nearly everyone contributes to climate change, albeit in varying degrees. Plaintiffs in climate litigation often target affluent corporations or countries to enhance the viability of their claims. However, international treaties typically impose obligations on states rather than corporations or individuals, meaning human rights treaties do not directly bind non-state actors.²⁷⁵ Consequently, plaintiffs cannot sue companies or individuals directly under these treaties. When states are chosen as defendants, they often benefit from sovereign immunity, which can preclude legal action in domestic courts.

This presents a dilemma in human rights-based climate litigation: human rights conventions primarily regulate state behaviour, yet states are frequently shielded from litigation in domestic courts. These conventions require States to regulate the actions of various subjects within their jurisdiction, but non-state actors are bound by these conventions only insofar as the state regulates them. Future legal frameworks will need to clarify how states should regulate non-state actors in the context of climate change to better address these challenges.

4.5.2. Causation and Apportionment of Responsibility

In human rights-based climate litigation, plaintiffs must demonstrate that their harm is attributable to global warming. This requires proving two levels of causation: first, that human rights were harmed due to environmental damage, and second, that there is a direct causal link between the defendant's actions and the harm suffered by the plaintiff.

Environmental damage often manifests over extended periods, complicating the determination of specific causes. Even if a plaintiff can establish that environmental harm has affected their human rights, proving that the defendant's actions were the primary cause of this damage is challenging.²⁷⁶ Environmental harm is typically the result of multiple contributing factors, making it difficult to isolate the impact of any defendant's actions. The risk of losing a human rights-based climate change lawsuit increases if the causal link cannot be established.

Moreover, determining and apportioning liability becomes complex when multiple parties contribute to environmental damage. Challenges could include:

(1) the impracticality of identifying all greenhouse gas emitters globally, including individuals, corporations, and governments;

²⁷⁵AMOAKUH, Konadu. Climate Change Litigation and Rights-Based Strategies: Why International Human Rights Approaches to Climate Change Are Not Easily Transplanted to the American Legal System, 41 *Stan. Envtl. L. J.*, 2022, p.202-203.

²⁷⁶ *Ibid.*

(2) the difficulty in scientifically assessing responsibility and accurately apportioning liability, which can lead to inequitable outcomes.

Some emitters may face undue penalties for damage they did not significantly contribute to, while others might be insufficiently held accountable for their substantial contributions to environmental harm. Such disparities undermine the principles of fairness and justice in climate change litigation.

4.5.3. Difficulties regarding Extraterritorial Obligations of States in Human Rights Litigation

The International Covenant on Civil and Political Rights (ICCPR), adopted by the United Nations and rooted in the Universal Declaration of Human Rights, outlines obligations for States under Article 2(1), which mandates that

"Each State Party to the present Covenant undertakes to respect and to ensure to all individuals within its territory and subject to its jurisdiction the rights recognized in the present Covenant, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status."

In the context of climate change, applying this Covenant involves extraterritorial considerations due to the transboundary nature of greenhouse gases, which can affect human rights beyond national borders.²⁷⁷

Greenhouse gases emitted within a State's territory can have global repercussions, impacting human rights worldwide. This raises the issue of whether States should be responsible for protecting the human rights of individuals in other countries affected by their emissions. Such an obligation could impose an excessive burden on the State where emissions originate, as international human rights law does not currently accommodate such extraterritorial obligations. Without provisions addressing this disproportionate burden, human rights law struggles to apply extraterritorially, leading to insufficient environmental protection and inadequate legal remedies for victims.

Additionally, the global nature of climate change means that substantial progress cannot be achieved by a single country reducing its emissions alone. Effective climate governance requires global cooperation, making unilateral or isolated efforts insufficient to address the problem comprehensively.

²⁷⁷ WORLD METEOROLOGICAL ORGANIZATION. *Greenhouse gases*. [online] 2015 [Accessed 5 January 2025]. Available at: <https://wmo.int/topics/greenhouse-gases>.

Scientific evidence indicates that global warming presents a significant threat to human survival. However, the measures taken by states to address climate change can also infringe upon human rights. Efforts to control greenhouse gas emissions, such as reducing deforestation or enforcing stricter emission regulations, can negatively impact livelihoods, especially those reliant on affected industries.

For example, policies to reduce deforestation may harm those dependent on logging for their income. Similarly, stringent emission regulations might lead to industry relocation, impacting local economies and job security. Furthermore, funds diverted to emission control technologies might affect other critical areas of development. Therefore, states must balance climate action with respect for human rights, ensuring that their measures do not inadvertently cause new human rights violations or exacerbate existing inequalities.

The impacts of global warming disproportionately affect vulnerable populations, particularly in low-lying islands and impoverished coastal regions where rising sea levels cause flooding and property damage.²⁷⁸ Other affected groups include farmers experiencing changes in crop viability, individuals exposed to emerging diseases, and communities reliant on glacial water sources.

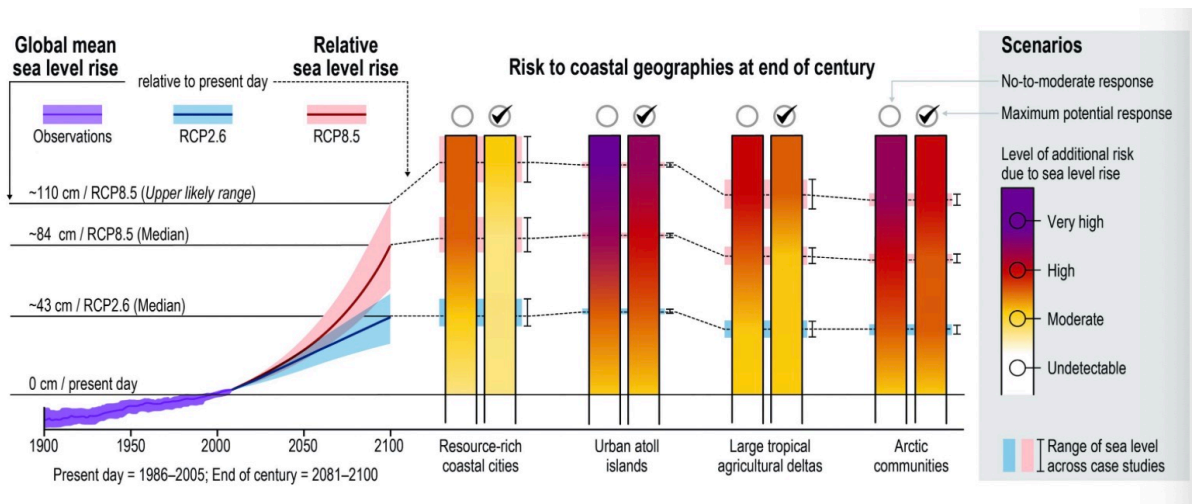


Figure 9: Risk to Coastal Geographies at End of Century²⁷⁹

Current climate change litigation predominantly represents the poorest victims from developing countries, while wealthier victims are less likely to pursue legal action until they

²⁷⁸ IPCC. *Sea Level Rise Impacts and Implications for Responses*. [online]. 2019 [Accessed 5 January 2025]. Available at: <https://www.ipcc.ch/srocc/chapter/chapter-4-sea-level-rise-and-implications-for-low-lying-islands-coasts-and-communities/#:~:text=Rising%20mean%20and%20increasingly%20extreme,loss%20and%20change%20of%20coastal.>

²⁷⁹ Ibid.

face significant losses. This disparity can result in middle-class or affluent plaintiffs receiving higher damages due to the more excellent value of their assets, potentially diverting resources away from poorer victims.

As corporations implement measures to combat climate change, the benefits are often delayed and may not address the immediate needs of today's impoverished populations. These measures may lead to increased product costs, disproportionately affecting low-income individuals and worsening their economic situation.

Ultimately, while climate litigation aims to address these injustices, it is crucial to ensure that such legal actions do not inadvertently shift the burden of climate change disproportionately onto the most vulnerable populations. The challenge lies in crafting equitable solutions that balance immediate human rights protections with long-term climate justice.

5. Critical Comparison of the Impact of Paris Agreement on Chinese and German Domestic Laws

Chapter 5 critically compares how the Paris Agreement has shaped domestic climate laws in China and Germany, revealing distinct divergences in legal frameworks, policy objectives, and economic considerations. While China increasingly views environmental protection as a key component of its broader development strategy, Germany perceives the Paris Agreement as a critical catalyst for ambitious greenhouse gas reduction targets and comprehensive legal reforms. By examining differing perspectives on the unity and validity of the Paris Agreement, this chapter illuminates the interplay between international commitments and national sovereignty. It also highlights the evolution of China’s domestic climate policy—exemplified by the Air Pollution Prevention Law—and discusses how human rights concerns and public participation are implemented. Turning to Germany, the analysis explores the Agreement’s profound impact on legislative processes and the heightened role of judicial scrutiny in shaping environmental governance. By juxtaposing these two nations, Chapter 5 seeks to uncover why their legal responses to the Paris Agreement diverge significantly despite sharing global climate objectives, ultimately offering insights into the broader challenges of integrating international environmental obligations within diverse domestic contexts.

5.1. Different Views on the Unity and Validity of the Paris Agreement

On 12th December, the year 2015, at COP 21, parties to the United Nations Framework Convention on Climate Change (UNFCCC) arrived at a phenomenal agreement on ways of combating the menacing climate change.²⁸⁰ The agreement, which is commonly referred to as the Paris Agreement (hereinafter referred to as PA), seeks to help in accelerating and intensifying the actions as well as investments which are required for the attainment of a sustainable low carbon future.²⁸¹ Today, the PA boasts of up to 195 Parties, all of which are required to submit updated national action plans, commonly termed as Nationally Determined Contributions (NDCs) through which the parties are able to communicate the actions they are intending to take towards the reduction of their GHG emissions so as to be able to meet the overall targets of the PA.

²⁸⁰ UNITED NATIONS. CLIMATE CHANGE. ‘COP21/CMP11’. [online]. [Accessed 27 May 2022]. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/key-aspects-of-the-paris-agreement>.

²⁸¹ UNITED NATIONS. *The PA*. [online]. [Accessed 26 May 2022]. Available at: <https://www.un.org/en/climatechange/paris-agreement>.

Despite the existence of the PA, it is observable that the extent to which different countries have been able to translate the Agreement into domestic laws differs. At the same time, the differences in the levels of GHGs emissions by different countries have brought about non-uniformity in the implementation of the PA besides bringing about scepticism by some governments and other actors. Although China has long been recognized as the world's largest greenhouse gas (GHG) emitter due partly to its considerable population and rapid industrialization, it remains a focal point of international scrutiny under the Paris Agreement. In 2014, China accounted for approximately 27% of global CO₂ emissions from fossil fuels and industries; the sheer scale of its emissions and population means that the challenges and strategies for implementing the Paris Agreement differ significantly from those of smaller or less industrialized countries. Critics, including some governments and climate sceptics, have questioned whether China's approach—and the particular flexibility it requires—undermines the uniformity and effectiveness of the Agreement. This scepticism underscores the broader tension in global climate governance: States with varying emission levels and domestic contexts will inevitably implement the Paris Agreement differently, leading some observers to doubt whether it can be enforced consistently.²⁸² Despite China's remarkable economic growth and modernization, it remains classified as a developing country when examined through the lens of industrial structure. Although China has formed the rudiments of a modernized industrial framework, its tertiary sector still lags considerably behind fully industrialized nations. For instance, China's service industry accounts for approximately 54.6%²⁸³ of its GDP, whereas the United States and Germany exhibit much higher tertiary-sector proportions of around 79.09%²⁸⁴ and 75.3%,²⁸⁵ respectively in 2023. In contrast, countries like the United States and Spain have already entered a post-industrial stage characterized by service-dominated economies. China, however, continues to advance through its industrialization process, indicating that it tends to be not yet on par with the development levels of these

²⁸² VIOLA, Eduardo. *The Limits of PA and the Need of Global Coalition for Deep Decarbonization*. [online]. May 2015 [Accessed 28 May 2022]. Available at:

https://www.researchgate.net/publication/305179911_The_Limits_of_Paris_Agreement_and_the_Need_of_Global_Coalition_for_Deep_Decarbonization.

²⁸³ NATIONAL BUREAU OF STATISTICS OF CHINA. *Bulletin by the National Bureau of Statistics of China on the Revision of Annual GDP Data for 2023*. [online]. 18 December 2024. [Accessed 28 January 2025].

Available at: https://www.stats.gov.cn/english/PressRelease/202412/t20241231_1958128.html.

²⁸⁴ STATISTA. *Distribution of the workforce across economic sectors in the United States from 2013 to 2023*. [online]. 31 January 2025. [Accessed 1 February 2025]. Available at:

<https://www.statista.com/statistics/270072/distribution-of-the-workforce-across-economic-sectors-in-the-united-states/>.

²⁸⁵ STATISTA. *Share of economic sectors in aggregate employment in Germany from 1950 to 2023*. [online]. 13 January 2025. [Accessed 1 February 2025]. Available at:

<https://www.statista.com/statistics/1248331/economic-sectors-share-aggregate-employment-germany/>.

economies. Consequently, when considering the implementation of the Paris Agreement, China's status as a developing country warrants a degree of flexibility in fulfilling international obligations, aligning with the principle of common but differentiated responsibilities in global climate governance.²⁸⁶

The effectiveness of the PA in meeting its goals has also been questioned by a number of scholars and activists, who, among other concerns, state that the PA could be vague on the overall ambition and that it falls short of specifying a date for the peaking of emissions.²⁸⁷ At the same time, the Agreement specifies that the reductions should lead towards neutrality in GHG emissions in the “second half of the century”, which is considered vague wording on the basis that there is a lot of latitude for weakening the agreement during its implementation at the national level, more so those that are climate sceptical. The weaknesses of the PA were evident on 24th March 2021 when the First Senate of the German Constitutional Court (*Bundesverfassungsgericht*) made a ruling in regard to the country's Federal Climate Change Act of 2019. The ruling upheld the view by the plaintiffs that the Act violated the fundamental rights of future generations in the sense that it did not provide substantial details or a long-term roadmap for the reduction of GHG emissions after 2030.²⁸⁸ The ruling above therefore highlights the challenges that Parties are experiencing as far as translating the PA into domestic climate policies is concerned. Against this background, the chapter provides a comparison of the impact of the PA in German and Chinese domestic laws. Precisely, the chapter provides a critical analysis of how the two countries have transposed the PA into their domestic legal systems. In Germany, special attention will be paid to the environmental law litigation, Order of the First Senate of 24 March 2021 - 1 BvR 2656/18 -, paras. 1-270.²⁸⁹

5.2. The Impact of the Paris Agreement on Chinese Domestic Law

In addition, the PA has brought a number of changes to the approaches by the two countries as far as domestic climate change policies are concerned. In China, for instance, the country started making changes even before the 2015 PA. For instance, following the non-binding Copenhagen Accord agreed to at COP15 in 2009, China submitted its voluntary action targets

²⁸⁶ UNFCCC. *The Explainer: The Paris Agreement*. [online]. 26 February 2021. [Accessed 1 February 2025]. Available at: <https://unfccc.int/news/the-explainer-the-paris-agreement>.

²⁸⁷ Ibid.

²⁸⁸ SCHMIDL, Anna-Christina. *No more procrastination on climate change, says German Constitutional Court in landmark decision*. [online]. Universal Rights Group Geneva, 26 May 2021 [Accessed 28 May 2022]. Available at: <https://www.universal-rights.org/blog/no-more-procrastination-on-climate-change-says-german-constitutional-court-in-landmark-decision/>.

²⁸⁹ Ibid.

to the United Nations (UN) in January 2010. One of the goals included in the document was the country's plan to achieve a drop in CO₂-GDP intensity by 40-45% from 2005 compared to 2020.²⁹⁰ Overall, China has been able to promote three major initiatives. These are: energy conservation and expanding the use of energy not generated from fossil fuels; stable energy supply and; developing low-carbon industries.²⁹¹ It has been argued that the implementation of these initiatives have received considerable support from the Xi Jinping's administration since the year 2013 which is evidenced by the switch to the so-called New Normal²⁹² strategy which lays emphasis on the economic growth quality and efficiency, promotion of an energy revolution and strengthening of international cooperation.

In addition to, it could be that the PA has influenced China domestic law especially as far as international cooperation is concerned. This is evidenced for example by the statement by Zhang Gaoli, was Vice Premier of China, who, after attending the PA signing ceremony on April 22, 2016, stated that China would complete domestic procedures aimed at approving the agreement. At the same time, the Chinese domestic law has also incorporated provision of assistance to developing nations.²⁹³ ²⁹⁴For instance, to developing nations and the country showed willingness to create the Fund for South-South Cooperation on Climate Change with the aim of helping developing nations especially from Africa and small island countries.²⁹⁵ The country also offered financial support aimed at funding 100 climate change mitigation and adaptation projects as well as 10 model projects on low-carbon society development besides offering relevant trainings to individuals mainly from developing nations.²⁹⁶

More specifically, observers and scholars have pointed out that the PA has impacted the domestic law in China to the extent that it has made the environment to be viewed as a resource

²⁹⁰ GAO, Yun. China's response to climate change issues after Paris Climate Change Conference', *Advances in Climate Change Research*. *Advances in Climate Change Research*, Vol.7, Issue.4, 2016, p.4.

²⁹¹ *Ibid.*

²⁹² The Central Economic Work Conference held in December 2024 styled the "new normal" as follows:

- (1) Transition from high-speed to medium-to-high-speed growth.
- (2) Transition from an extensive growth model focused on the economic growth rate to an intensive growth model emphasizing high-quality, efficient growth.
- (3) Transition from an economic structure prioritizing expanding supply capacity to one focused on appropriate supply capacity.
- (4) Transition from traditional economic development promotion capacity to a new type of economic development promotion capacity.

²⁹³ HILTON, Isabel, KERR, Oliver. The PA: China's 'New Normal' role in international climate negotiations' *Climate Policy*. Taylor & Francis Journals, vol. 17(1), 2017 , p.48.

²⁹⁴ Administrative measures for foreign aid. 2021.

²⁹⁵ HILTON, Isabel, KERR, Oliver. The PA: China's 'New Normal' role in international climate negotiations' *Climate Policy*. Taylor & Francis Journals, vol. 17(1), 2017 , p.48.

²⁹⁶ *Ibid.*

that should be protected.²⁹⁷ This is different from the approach taken by the previous regimes, such as Mao Zedong era, whereby the environment was not considered as an aspect in need of protection but simply as a resource that should be subjected to exploitation for politico-economic motives. The approach taken by previous regimes in China regarding domestic environmental policy paved way for extensive degradation of the environment including frequent flooding, soil erosion and shortage of arable land and soil. This implies that domestic law largely viewed the economic development to be superior to environmental protection.²⁹⁸ However, beginning the late 1990s, the central government of China started to seriously consider environmental issues and resultantly sought to find ways of balancing the need for rapid economic growth with the importance of environmental protection.

5.2.1. China's Domestic Climate Policy has been Strengthened - Taking the Air Pollution Prevention Law as an Example

This section explores the strengthening of China's domestic climate policy, focusing on the Air Pollution Prevention Law as an illustrative example. Section 5.3.1 provides an overview of this legislation's legal and policy background, outlining its significance in China's environmental governance. Section 5.3.2 examines how the Paris Agreement (PA) has been incorporated into Chinese domestic law, assessing its transformation mechanisms. Section 5.3.3 analyses the extent of the PA's influence on Chinese legal frameworks, questioning whether it serves as a mere reference or a catalyst for broader legal and policy reforms. Section 5.3.4 engages in the ongoing debate regarding China's status as a developing or developed country, a classification with legal and policy implications under the PA. Finally, Section 5.3.5 discusses China's Nationally Determined Contribution (NDC) and its commitments under the global climate regime, highlighting China's role in international climate governance.

5.2.2. Background of the Air Pollution Prevention Law

In addition to its influence on international relations, the PA has had an observable impact on the Chinese domestic law as well. A case in point is the revised Air Pollution Prevention

²⁹⁷ Ibid.

²⁹⁸ EDMONDS, Richard Louis. The environment in the People's Republic of China 50 years on' *The China Quarterly*. Cambridge University Press, No.159, 1999, p. 640.

Law.²⁹⁹ This law, among other goals, seeks to reduce coal-related activities, an indication that the country's climate change policy is driven, besides other motivators, driven not only by the country's urgent need to tackle conventional air pollutants—such as sulphur dioxide (SO₂), nitrogen oxides (NO_x), and particulate matter (PM)—that stem from fossil fuel combustion but also by growing concerns over greenhouse gas (GHG) emissions contributing to climate change. While both air pollution and climate change can share the exact root cause (burning fossil fuels), it tends to be crucial to that CO₂ is not classified as a traditional air pollutant, even though its reduction often aligns with efforts to improve air quality that are closely linked to burning fossil fuels. Observers have held the view that the need for China to take legal steps towards improving air quality by limiting coal-related activities has not only been informed by the need to meet the PA targets but also the need to ensure social stability. This is because, left unchecked, air quality problem is likely to worsen especially in cities in China to an extent that will not support human life in the near future. It tends to be against this background that the National People's Congress of China passed the revised Air Pollution Prevention Law, commonly termed as the New Air Law, which, among others, serves to prioritise air quality management.³⁰⁰ This law stipulates that Chinese cities must regularly issue and submit plans aimed at ensuring that the cities are on track to meet the national air quality targets.³⁰¹ The New Air Law has been credited as the first law in China mentioning the control of GHG emissions as well as addressing sources from agricultural machinery, marine vessels, vehicles and coal industry, and also from the food and construction industries.³⁰² At the same time, the New Air Law has also been credited with being characterised by strengthening of the enforcement systems as well as enhanced levels of democratisation.

5.2.3. The Example of the Paris Agreement Being Transformed into Chinese Domestic Law

The need for strengthening of the law enforcement, especially those related to air pollution, is informed by the fact that, despite the approved strategies by the government of China towards improving air quality in the country, the country's excessive dependence on coal for its energy

²⁹⁹ LI, Anthony Ho-fai. Hopes of limiting global warming? China and the PA on climate change' China perspectives. *Environmental Science, Political Science*, No.1, 2016, p.49.

³⁰⁰ZHAO, Lijian, XIE, Tonny, TANG, Jenny. . *How China's new air law aims to curb pollution*. [online]. Dialogue Earth, 30 December 2015 [Accessed 28 May 2022]. Available at: [https://chinadialogue.net/en/pollution/8512-how-china-s-new-air-law-aims-to-curb-pollution/#:~:text=China's%20new%20Air%20Pollution%20Prevention,air%20quality%20in%2015%](https://chinadialogue.net/en/pollution/8512-how-china-s-new-air-law-aims-to-curb-pollution/#:~:text=China's%20new%20Air%20Pollution%20Prevention,air%20quality%20in%2015%20).

³⁰¹ Ibid.

³⁰² Ibid.

needs remains a major dilemma. Studies have indicated that, in recent years, close to 60% of the consumption of coal in China was associated with the generation of energy, a trend that has in turn worsened the country's carbon emissions.³⁰³ This is because the process of burning coal to generate energy releases both airborne pollutants including Particulate Matter 2.5 (PM2.5) which have negative impact on the health of the Chinese people and CO₂, that exacerbates the global warming menace.³⁰⁴ For example, during the Paris Climate Summit in 2015, Beijing among other parts in northern China was worst affected by smog characterised by concentration of PM2.5 at levels that are above the limits set by the WHO. This in turn resulted in public discontent in regards to worsening air pollution, an aspect that was enabled partly by the existence of social media, thereby making it possible for the attention of the state to be captured. The air pollution problem in China thus became one of the focal issues for the air pollution problem in China to be incorporated as one of the focal issues of discussion at the summit.³⁰⁵ Therefore, the revised Air Pollution Prevention Law is an example of the efforts that China is making towards transposing the PA into domestic law in the country. More importantly, unlike previous laws related to the environment, the revised Air Pollution Prevention Law tends to be characterised not only by accountability of local governments but also by increased participation by the public and principles and priorities aiming at supervising the government's control of air pollution and improving air quality and participating in the government's formulation of laws and regulations to protect air quality. These are aspects that were lacking in most of the environmental laws that the country had put in place under previous governments and prior to the signing of the PA. As far as the accountability is concerned, unlike previous laws, the New Air Pollution Prevention Law makes local governments responsible for making comprehensive plans to achieve high air quality objectives and their effective execution.³⁰⁶ At the same time, the law makes it imperative that cities failing to meet the set air quality standards. Additionally, the Law stipulates that cities failing to meet the prescribed air quality standards must both submit and publicly disclose detailed, explicit plans outlining how they will achieve those standards. Also, besides recognising public participation as an integral part of

³⁰³ LIU, Zhu. *China's Carbon Emissions Report 2015*. Energy Technology Innovation Policy. Harvard Kennedy School Belfer Center for Science and International Affairs. May 2015 [online]. [Accessed 27 May 2022]. Available at: <https://scholar.harvard.edu/files/zhu/files/carbon-emissions-report-2015-final.pdf>.

³⁰⁴ Ibid.

³⁰⁵ Ibid.

³⁰⁶ ZHAO, Lijian, XIE, Tonny, TANG, Jenny. *How China's new air law aims to curb pollution*. [online]. Dialogue Earth, 30 December 2015 [Accessed 28 May 2022]. Available at: <https://dialogue.earth/en/pollution/8512-how-china-s-new-air-law-aims-to-curb-pollution/>.

environmental protection, the New Air Pollution Prevention Law became one of the laws in China which mentioned control of GHG emissions as a principle and priority.³⁰⁷

Therefore, it can be argued from the above that the PA has had observable impacts on the Chinese domestic law. Firstly, it may be that PA has undoubtedly contributed to China's perception of environmental protection as an important part of its economic development to view environmental protection as being important even in the face of pursuance of rapid economic growth. Secondly, the PA led to strengthening of the domestic climate policies in China, evidenced by the increased recognition of the role of public participation, accountability of local governments as well as well as the fact that control of GHG emissions is mentioned both as a principle and also as a priority. See table 1 below for a summary of the targets within China's energy revolution targets.³⁰⁸ Table 2 also indicates some of the major energy policies and strategies by the country which are aimed at attaining the climate targets.

Targets within China's energy revolution targets.

	Target	2020	2030
Carbon emission	Carbon emission per unit of GDP (compared with 2015)	-18%	
	CO ₂ emission Carbon emission per unit of GDP (compared with 2005)		Peak or earlier -60% to-65%
Non-fossil	Non-fossil fuel in the energy mix	15%	20%
	Natural gas in the energy the mix		15%
	Non-fossil power generation account for total power generation		50%
	New energy demand met by clean energy		Should mostly be done
Energy efficiency	Energy consumption per unit of GDP (compared with 2015)	-15%	
	Primary energy consumption (unit: billion tonne tce)	5%	6%
Energy self-sufficiency	Energy self-sufficiency rate	above 80%	
Energy governance	By 2050, China shall become an "important participant" of international energy governance		
Vision towards 2050	By 2050, primary energy consumption should be stable, with more than half coming from non-fossil energy.		

Table 1: Targets within China's energy revolution targets.³⁰⁹

³⁰⁷ Ibid.

³⁰⁸ In 2016, the Chinese government proposed China energy revolution, it means a shift to growing emphasis on cleaner energy sources and a move away from fossil fuels for the nation.

³⁰⁹ CHEN, ChengC.et al. Comparing the energy transitions in Germany and China: Synergies and recommendations. *Energy Reports*, Vol. 5, November 2019, p.1249.

Overview of major energy policies and strategies in China.

Year	Document title	Key context
2014	Energy Development Strategy Action Plan (2014–2020)	Reduce China's high energy consumption per unit GDP ratio through a set of measures and mandatory targets,
2014	National Action Plan on Climate Change (2014–2020)	Set energy related targets, responding to the global climate change
2016	13th Five-Year Energy Development Plan (2016–2020)	Set the first mandatory coal cap, and show the commitment of government to cut coal's share in the country's energy mix, indicating a right track towards its energy transition.
2016	13th Renewable Energy Development Plan (2016–2020)	Provide specific goals and measures, with a particular focus on renewables for 2016–2020
2016	Energy Supply and Consumption Revolution	Specify the long-term energy target towards 2030, and even longer, to 2050.

Table 2: Overview of Major Energy Policies and Strategies in China.³¹⁰

5.2.4. The Paris Agreement and Chinese Law: Limited Influence or a Catalyst for Change?

However, the achievements notwithstanding, critiques point out that the PA has had a relatively little impact in influencing China positively towards making genuine changes in its domestic laws that would make possible the achievement of the approved targets . This view tends to be echoed by Anthony who explains that the ambition shown by the country's leadership in green development tends to be evident, but the road is replete with challenges.³¹¹ Specifically, the scholar puts forward that one of the major questions that remains unanswered is the extent to which the country's top leadership is willing to spearhead the transition towards low-carbon economy as well as how capable they are in addressing the challenges that are bound to be faced in the process. Further, Anthony explains that while China has several environmental and comprehensive laws which are well-intentioned, policy implementation and enforcement remain to be one of the major challenges in this regard.³¹² Further, it is crucial to question how the central-level officials will be able to take care of the interests of the local governments without initiating reforms in state-owned enterprises (SOEs) especially those that operate in sectors which are considered to be high emitters of GHGs.³¹³

³¹⁰ Ibid.

³¹¹ LI, Anthony Ho-fai. Hopes of limiting global warming? China and the PA on climate change' China perspectives. *Environmental Science, Political Science*, No.1, 2016, p. 51-52.

³¹² Ibid.

³¹³ BEYER, Stefanie. Environmental Law and Policy in the People's Republic of China. *Chinese Journal of International Law*, Vol.5, Issue 1, 2006, p.5.

5.2.5 The Debate on whether China is a Developing Country or a Developed Country

In contrast, defenders of China’s position underscore that the Paris Agreement explicitly recognizes the principle of common but differentiated responsibilities.³¹⁴ Indeed, Article 4(1) provides that while all Parties seek to reach global peaking of greenhouse gas emissions “as soon as possible,” developing country Parties “will take longer” to do so. Moreover, Article 4(4) states that “developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets,” whereas “developing country Parties should continue enhancing their mitigation efforts and are encouraged to move over time towards economy-wide emission reduction or limitation targets in light of different national circumstances.” These provisions reflect an understanding that states at different stages of economic development cannot be expected to proceed at the same pace or level of stringency.

Notwithstanding this textual recognition, debates persist regarding China’s classification as a developing country.³¹⁵ In March 2023, for instance, the U.S. House of Representatives unanimously passed the “*People’s Republic of China Is Not a Developing Country Act*,”³¹⁶ whose sponsor argued that China’s status as the second-largest global economy, comprising 18.6% of worldwide GDP, should place it within the developed-country category—akin to the United States or major European economies.³¹⁷ Subsequently, on 8 June, the U.S. Senate Foreign Relations Committee also approved the bill, now renamed “*the Ending China’s Developing Nation Status Act*.” It calls on the State Department to “take actions to stop China from being classified as a developing nation by international organizations”.³¹⁸ The debate may sound academic, but it has real-world implications. The benefits of the developing country label include preferential tariff treatment in developed countries, making their exports more competitive in international markets. China also uses its developing-country status to justify subsidies to industries such as fisheries and science and technology, even though many of these industries are effectively state-owned and have global reach. Even China’s contribution to world economic growth averaged 38.6 per cent from 2013 to 2021, higher than the combined

³¹⁴ UNFCCC. *The Explainer: The Paris Agreement*. [online]. 26 February 2021. [Accessed 1 February 2025]. Available at: <https://unfccc.int/news/the-explainer-the-paris-agreement>.

³¹⁵ KANWIT, Graham. *Is China Still a Developing Country?*. [online]. China News, 28 August 2023. [Accessed 28 May 2024]. Available at: <https://www.voanews.com/a/is-china-still-a-developing-country/7244652.html>.

³¹⁶ H.R.1107 - PRC Is Not a Developing Country Act.2023.

³¹⁷ YOUNG KIM CALIFORNIA’S 40TH DISTRICT. *Rep. Young Kim: We cannot let the PRC continue exploiting countries in need*. [online]. 27 May 2023. [Accessed 28 May 2024]. Available at: <https://youngkim.house.gov/2023/03/27/rep-young-kim-we-cannot-let-prc-continue-exploiting-countries-need/>.

³¹⁸ Ending China’s Developing Nation Status Act. 2023.

contribution of the Group of Seven countries. However, according to the World Bank, China's gross national income per capita remains relatively low, ranking 64th worldwide in 2023 (Germany is 17th)³¹⁹; its 2023 GDP per capita of USD 12,614 is still roughly one-fifth that of developed economies (Germany is USD 54,343).³²⁰ Its Human Development Index ranking (79th globally and 7th globally for Germany)³²¹ is closer to that of many developing countries than advanced industrialized states. As a result, most international treaties and institutions—including the World Trade Organization (WTO), the United Nations Framework Convention on Climate Change (UNFCCC), and the Montreal Protocol—continue to categorize China as a developing country. Germany, by contrast, is unequivocally recognized as a developed country and aligns with the broader consensus among European Union Member States on stricter near-term emission reduction targets and robust domestic implementation measures.

Exploring whether China qualifies as a “developing country” under the Paris Agreement bears significant implications for the Agreement's continued evolution and its practical enforcement, especially regarding the differentiated obligations set forth therein. Numerous economies that boast relatively high per capita income and elevated Human Development Index (HDI) rankings—for example Brunei, Hong Kong SAR (China), Kuwait, Macau SAR (China), Qatar, Taiwan (China), Singapore, and the United Arab Emirates—remain classified as developing countries. As a result, the Paris Agreement imposes distinct requirements on these jurisdictions, shaping how the Agreement is transposed into domestic legal frameworks. Consequently, each country and region follow a unique path in implementing climate change legislation to safeguard human rights, leading to variations in legal approaches, substantive provisions, and enforcement mechanisms.

5.2.6. China's Nationally Determined Contribution

A. Submission and key commitments

China submitted its updated NDC to the UNFCCC on 28 October 2021, reaffirming its determination to peak CO₂ emissions before 2030 and to achieve carbon neutrality before 2060. The NDC also includes the following quantified objectives:

³¹⁹ WORLD BANK GROUP. *GNI per capita, Atlas method (current US\$)*. [online]. [Accessed 28 May 2024]. Available at: <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD>.

³²⁰ Ibid.

³²¹ WORLD POPULATION REVIEW. *Human Development Index (HDI) by Country 2024*. [online]. [Accessed 28 May 2024]. Available at: <https://worldpopulationreview.com/country-rankings/hdi-by-country>.

Carbon Intensity Reduction: Lower CO₂ emissions per unit of GDP by over 65% relative to 2005 levels by 2030.³²²

Non-Fossil Fuel Share: Increase the share of non-fossil fuels in primary energy consumption to around 25% by 2030.³²³

Forest Stock: Expand the forest stock volume by 6 billion cubic meters compared to 2005 by 2030.³²⁴

Renewable Energy Capacity: Raise the total installed capacity of wind and solar power to over 1.2 billion kW by 2030.³²⁵

B. Legal and policy context

Although this NDC sets forth targets aligned with the principle of common but differentiated responsibilities under the Paris Agreement, China's domestic implementation strategies remain diverse, given its status as a developing country with a large population and significant coal dependency. Policies such as the overarching "ecological civilization" framework and the evolving environmental law regime (including amendments to the Environmental Protection Law and sector-specific regulations) serve as the legal underpinnings of these commitments. However, many observers note that the current domestic legal obligations do not yet fully incorporate the more stringent aspects of the NDC, reflecting the need to balance economic growth, energy security, and emission reduction targets.

The failures of the PA in having substantial influence on China's domestic laws and consequently on meeting the PA targets was evident, for instance, in the days leading up to COP26 in 2021, China submitted two important climate-related documents to the United Nations: its updated Nationally Determined Contribution (NDC)—sometimes called the 2030 climate commitment—and a new Long-Term Strategy (LTS).³²⁶ The updated NDC reaffirmed China's intention to peak its carbon emissions before 2030 and achieve carbon neutrality by 2060. It also set targets such as increasing the share of non-fossil fuels in primary energy consumption to around 25% by 2030 and lowering carbon intensity by over 65% relative to 2005 levels. The LTS further elaborated on the pathways to achieve these objectives,

³²² CHINESE GOVERNMENT. *China's Achievements, New Goals and New Measures for Nationally Determined Contributions*, 2021, p.2.

³²³ Ibid.

³²⁴ Ibid.

³²⁵ Ibid.

³²⁶ CARBON BRIEF. *Q&A: What does China's new PA Pledge Mean for Climate Change?*. [online]. [Accessed 28 May 2022]. Available at: <https://www.carbonbrief.org/qa-what-does-chinas-new-paris-agreement-pledge-mean-for-climate-change/>.

emphasizing the role of energy transition, technological innovation, and green finance in fulfilling long-term emission reduction goals.

Despite these commitments, many observers point out that the updated NDC and LTS did not substantially tighten China's near-term emission trajectories. For instance, although the documents significantly emphasize transitioning away from coal, concrete timelines and interim measures remain vague, allowing for continued reliance on coal-fired power in the short to medium term. Moreover, the lack of detailed domestic enforcement mechanisms or binding legal stipulations within Chinese law suggests that these documents—while symbolically aligning with the Paris Agreement—may not transform domestic policy as significantly or rapidly as some had hoped. As a result, there was a general disappointment in the wider global community more so from climate change activists who were of the view that the updated pledge and a new long-term climate strategy did not raise the country's climate ambition. The criticism of China's renewed.³²⁷

These relatively modest short-term targets and the incremental nature of China's climate strategies can partly be explained by its status as a developing country with a massive population and an economy that heavily depends on coal and other fossil fuels. China's policymakers must balance ambitious decarbonization efforts with concerns about energy security, economic growth, and social stability—priorities that may slow down the pace at which the Paris Agreement's goals are fully integrated into domestic legislation. Consequently, while the 2021 submissions to the UN represent progress in articulating long-term objectives, they do not necessarily amount to immediate and stringent domestic legal reforms, underscoring the ongoing challenges in translating international commitments into substantive internal legal change. Critiques argue that the pledge fell short of being specific on the eagerly awaited peaking date or information how long the emissions in the country would plateau before starting to drop.³²⁸

The critics of the two documents, LTS and the updated pledge, is therefore reflective of the overall criticisms of the PA which is largely considered to have high likelihood of failing to meet its targets. For instance, as already explained above, the PA is viewed to be vague on the overall ambition and to fall short of specifying a date for the peaking of emissions.³²⁹ Simultaneously, the Agreement sets out a collective objective of achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases—often

³²⁷ Ibid.

³²⁸ Ibid.

³²⁹ Ibid.

referred to as ‘carbon neutrality’—in the ‘second half of the century.’ Although this provision signals a clear long-term aspiration, it does not prescribe a specific target year or uniform pathway for all Parties. Consequently, while not necessarily vague in its purpose, it allows for considerable national discretion in formulating timelines, technological approaches, and policy frameworks. Some critics may note that this flexibility may result in uneven ambition levels and potentially slow global progress, especially if Parties with limited political will or differing economic priorities postpone more rigorous commitments and implementation. However, it could be worth emphasizing that once ratified, the Agreement itself cannot be easily ‘weakened’ through domestic processes; rather, the open-ended timeframe in the text primarily reflects the inherent challenge of reconciling diverse national capacities and development realities within a single international treaty.

The example of China corroborates these assertions. This is because, while China also seems to be making steps towards achieving carbon neutrality, the country is not clear on the peak dates. An illustration It shows that different countries that are parties to the PA have different interests that may be in conflict with the objectives of the agreement. . This therefore makes it difficult for the countries to be committed to the proper transposition of the PA into the domestic laws. Even where transposition occurs, implementation and enforcement still remain a major concern. For example, the discussions above indicate that China is one of the major emitters of GHGs not only because the country depends on coal for energy generation but also that most of the organisations/companies operating in high GHG emitting sectors are state-owned. This therefore means that taking drastic actions towards reducing GHG emissions through the legal system would not only impact negatively on the country’s social stability but also on its economic power but also economic power, which are considerably important in the current world order. While there is less scepticism regarding the science around global warming and climate change, observers point out that there have been more disagreements about how to set priorities. These disagreements are further evident in the extent to which individual governments are willing to transpose the PA into domestic laws. Similarly, while China rolled out a number of initiatives aimed at curbing rise in emissions, it tends to be clear that the country has, in recent years, opposed suggestions to commit to legally-binding overall limit on emissions, a case in point being the pledge by the country in 2009 to achieve a reduction of its emissions per unit of GDP to 40-45% by the year 2020, compared to the levels recorded in 2005.

5.2.7. Challenges in Establishing Specific National Climate Legislation in China

As mentioned before, although the Paris Agreement has not dramatically reshaped current Chinese domestic legislation, there is a discernible trend toward more comprehensive environmental and climate regulations. Recent scholarship points to China's efforts to integrate environmental protection and human rights within its evolving legal framework, illustrating how the country has increasingly placed climate policy within broader concerns of sustainable development and ecological civilization.³³⁰

Such as, the nexus between climate action and human rights in China has increasingly focused on public participation as a procedural safeguard.³³¹ Although the Chinese Constitution does not explicitly grant an individual right to a healthy environment,³³² various statutory provisions in the environmental domain now incorporate participatory mechanisms that align with broader human rights principles. For instance, the Environmental Protection Law and the Environmental Impact Assessment (EIA) Law provide limited but growing avenues for the public to engage in decision-making processes, lodge environmental complaints, and access certain types of information.³³³ Through public hearings, online disclosure of EIAs, and public consultation periods in major infrastructure or industrial projects, citizens, NGOs, and other stakeholders can voice concerns. While still evolving, these procedural rights help ensure greater transparency and accountability in policymaking, reflecting the principle of public participation promoted in international environmental law.

In practice, the scope and effectiveness of this participation can vary significantly across regions due to differences in local governance structures, financial resources, and legal awareness. Nonetheless, the underlying rationale—that individuals and communities have a legitimate interest in decisions affecting the environment and, by extension, their livelihoods and health—echoes key human rights norms. As China positions itself as a proactive actor under the Paris Agreement, debates continue over how best to strengthen these participatory rights, enhance judicial remedies, and ensure broader consistency with international human

³³⁰ MA, Junjie. Mission Possible: China's Climate Change Policy after the Paris Agreement. *L'Europe en formation*, 2016/2, No 380, p.67.

³³¹ GE, Junjie, BI, Jun, WANG, Shi. Public participation in China's environmental protection. *Institute of Development Economies*, 2022, p.5.

³³² ZHAO, Zijun. *State Policy or Individual Right: The Recent Development of Environmental Protection in China*. [online]. Oxford Human Rights Hub, 21 August 2018 [Accessed 28 May 2024]. Available at: <https://ohrh.law.ox.ac.uk/state-policy-or-individual-right-the-recent-development-of-environmental-protection-in-china/>.

³³³ ZHU, Xiao, WU, Kaijie. Public Participation in China's Environmental Lawmaking: In Pursuit of Better Environmental Democracy. *Journal of Environmental Law*, Vol.29, Issue.3, 2017 p,2.

rights obligations.³³⁴ Although the immediate legal impact of the Agreement on China's environmental laws remains relatively modest, the expanding emphasis on transparency and inclusivity in climate governance may, over time, deepen the protection of procedural human rights in environmental matters.

The trajectory suggests that, even if the Paris Agreement's immediate legal impact within China tends to be not as pronounced as in some developed-country jurisdictions, the Agreement nonetheless influences China's longer-term legislative agenda. The gradual enhancement of the environmental law regime in China—mainly through ambitious national plans, incremental legal reforms, and judicial interpretations—may, over time, narrow the implementation gap and further align China's domestic obligations with its international climate commitments.

5.2.8. Climate Action and Human Rights in a Developing China: the Role of Public Participation

More importantly, the limited impact that the PA has had on the domestic law in China could be also evidenced by the fact that, unlike Germany among many other countries which have specific national laws on climate change, China has not been able to do the same.³³⁵ Instead, the country had implanted the emissions reduction targets in its Five-Year Plans with the official implementation of the relevant legislations remaining a long drawn-out process.³³⁶ Efforts to draft climate legislation had in fact already been underway before the Paris Agreement was adopted., in 2009, the National People's Congress (NPC) proposed a comprehensive climate legislation. The China Social Science Academy drafted the proposed legislation on Climate Change in 2012 presenting it for discussion.³³⁷ Later, in 2014, the first draft of climate change law was completed. However, the process hit a legislative stalemate since then.

In China, the absence of specific national law on climate change can be explained by several reasons. First, the complex nature of the concept of climate change has resulted in political battles regarding whether climate change is a product of human activities. In this regard, while there is a clear scientific consensus, the political class remains divided on the

³³⁴ LI, Xiaoren, PATTERBERG, Philipp, WIDERBERG, Oscar. China's climate governance from 2009 to 2019: motivations, instruments, actors, and geopolitics. *Climate Policy*, Vol.24, Issue.3, 2024. p.379.

³³⁵ ZHANG, Jianwei, JIANG, Xiaoyi, PAN, Xiaobin. Regional legislation to address climate change in China: necessity and feasibility. *International Journal of Climate Change Strategies and Management*, Vol.11, No.4, 2019, p.536.

³³⁶ Ibid.

³³⁷ Ibid.

manner in which climate change mitigation and adaptation should be carried out. As a result, a number of Chinese officials lack the requisite confidence and motivation to push for legislation on climate change.³³⁸ Apart from the lack of consensus on whether humans are the causes of climate change, it tends to be also that the country still lacks cutting-edge clean technologies. As already explained above, the reduction of carbon emissions may, to some extent, impact negatively on the country's economic development.³³⁹ Therefore, it has been established that climate change legislation which is considered to be ambitious besides covering many economic sectors are more likely to be faced with longer drafting and approval processes and it is more likely that such legislation will face opposition.

Second, different regions in China are characterised by varying levels of GHG emissions among other key differences which make it difficult for policy makers to come up with a comprehensive law that is tailored to the demands of every region. For instance, the northern side of China, including Beijing, has long been associated with higher levels of GHG emissions as compared to the other regions. At the same time, reports indicate that the southern parts of China experienced extreme heat wave in 2014 and that this was the severest heat wave recorded in the region since 1951, given it not only lasted longer but also covered large areas besides being associated with both great extremity and strength.³⁴⁰ This therefore implies that coming up with a comprehensive law that seeks to cut carbon emissions in all the regions in the same way is likely to face resistance especially from the Chinese officials from regions which produce the lowest GHG emissions. At the same time, Chinese officials from regions whose economic development tends to be largely dependent on GHG emissions will also resist comprehensive laws given these laws are more likely to limit the economic growth and development in those regions.

Third, the absence of a specific national law on climate change in China is also attributable to the fact that there exist many governmental departments in the country which are assigned different functions in as far as climate change is concerned.³⁴¹ The role that each level of government plays as well as the roles that each department is playing in climate change

³³⁸ BUCKLEY, Chris. *China's Role in Climate Change, and Possibly in Fighting It*. [online]. [Accessed 27 May 2022]. Available at: <https://www.nytimes.com/2017/06/02/world/asia/chinas-role-in-climate-change-and-possibly-in-fighting-it.html/>.

³³⁹ Ibid.

³⁴⁰ KING, David, GURTNER Yetta, FIRDAUS, Agung, HARWOOD, Sharon, COTTRELL, Alison. Land use planning for disaster risk reduction and climate change adaptation: Operationalizing policy and legislation at local levels. *International Journal of Disaster Resilience in the Built Environment*, Vol.7, No.2, 2016, p.158.

³⁴¹ ZHANG, Jianwei, JIANG, Xiaoyi, PAN, Xiaobin. Regional legislation to address climate change in China: necessity and feasibility. *International Journal of Climate Change Strategies and Management*, Vol.11, No.4, 2019, p.541.

mitigation and adaptation remains a sensitive issue and as such, cannot be addressed by one comprehensive law on climate change.³⁴² This is because coming up with such a law requires extensive coordination and lobbying besides taking relatively longer time and resources. This therefore implies that reflecting the interests of all the levels of government and all departments in one piece of legislation is a major concern.³⁴³

Finally, the absence of a comprehensive and specific national law on climate change in China is also because international climate law and individual countries' approaches constantly evolve. From China's perspective, it is unclear whether adopting a comprehensive and stringent climate law in a situation where many other countries do not have such a law would not harm its economic development and competitiveness.

5.3. The Impact of the Paris Agreement on German Domestic Law

This part examines the impact of the Paris Agreement (PA) on German domestic laws, analysing its influence through key legal frameworks. Section 5.6.1 explores the *Grundgesetz für die Bundesrepublik Deutschland* (Basic Law for the Federal Republic of Germany) and its role in shaping climate policy obligations. Section 5.6.2 assesses the *Bundes-Klimaschutzgesetz* (Federal Climate Protection Act) and its alignment with PA commitments. Finally, Section 5.6.3 evaluates Germany's Nationally Determined Contribution (NDC) within the broader EU submission, focusing on Germany's specific domestic targets. This analysis provides insight into integrating international climate obligations into national legislation.

5.3.1. Analyse from the *Grundgesetz für die Bundesrepublik Deutschland* Perspective

Compared to China, the impact of the Paris Agreement on German domestic law has been more pronounced. This tends to be because, compared to China where climate policies and laws are overridden by national interests including maintenance of economic development and social stability, in Germany, climate actions are entrenched in the country's constitution and are understood as necessary by most people and political representatives. Under Article 20a of *Grundgesetz für die Bundesrepublik Deutschland* (the Basic Law for the Federal Republic of

³⁴² HARRIS, Paul G, CHOW, Alice S.Y., KARLSSON, Rasmus. China and climate justice: Moving beyond statism. *International Environmental Agreements: Politics Law and Economics*, Vol.13, 2103, p.291.

³⁴³ ZHANG, Jianwei, JIANG, Xiaoyi, PAN, Xiaobin. Regional legislation to address climate change in China: necessity and feasibility. *International Journal of Climate Change Strategies and Management*, Vol.11, No.4, 2019, p.541.

Germany), the state is obliged to protect the natural foundations of life and animals, “*mindful also of its responsibility towards future generations.*”³⁴⁴ Although the text of Article 20a does not explicitly mention climate neutrality, the Federal Constitutional Court, in its Order of the First Senate of 24 March 2021 (1 BvR 2656/18 et al.), interpreted this provision as requiring the legislature to adopt measures aimed at avoiding disproportionate burdens on future generations. In the Court’s view, a failure to adequately curb greenhouse gas emissions today would shift an excessive mitigation load onto younger and future populations, thereby infringing the intergenerational justice component enshrined in Article 20a. Consequently, the Court concluded that the Basic Law implies an obligation to move toward climate neutrality. It is crucial to note, however, that the Basic Law itself does not contain any direct reference to “climate neutrality”; instead, this principle emerges from the Court’s interpretation that the constitutional mandate to protect life’s natural foundations necessarily entails a robust commitment to preventing dangerous climate change. This obligation does however not completely supersede all other interests. In instances where there is conflict, the law stipulates that there is a need to balance these against other constitutional interests as well as principles.³⁴⁵ More importantly, the Article outlines that in the process of balancing the conflicts against other constitutional interests, the state of Germany is obligated to take climate action and that this is accorded more weight especially with the increasing relevance and concerns around this topic.³⁴⁶ Further, the Basic Law stipulates that, in the event of scientific uncertainty in regards to the causal relationships of environmental relevance, a special duty of care imposed upon the legislator by Art. 20a of the Basic Law entails an obligation to take care of reliable indications of likely irreversible outcomes.³⁴⁷

5.3.2. Analyse from the *Bundes-Klimaschutzgesetz* Perspective

In Germany, the planning and execution of climate change actions is guided closely by the Federal Climate Action Act (*Bundes-Klimaschutzgesetz*) adopted on 12 December 2019 and there were several more amendments on 31 August 2021.³⁴⁸ As explained by Schmidl, the amendment helped in codifying the goal for the country to become climate neutral by 2045 as

³⁴⁴ Grundgesetz für die Bundesrepublik Deutschland (Basic Law for the Federal Republic of Germany) 1949. Article.20a.

³⁴⁵ MILLER, Russell A. Germany's Basic Law and the use of Force. *Indiana Journal of Global Legal Studies*, Vol.17, Issue.2, 2010, p.197.

³⁴⁶ BVERFG, *Order of the First Senate of 24 March 2021 - 1 BvR 2656/18 -*.

³⁴⁷ *Ibid.*

³⁴⁸ Federal Climate Action Act (*Bundes-Klimaschutzgesetz – KSG*) 2021.

an obligation that is legally binding.³⁴⁹ The amendment further indicates that, after the year 2050, the goal will be to realise negative emissions.³⁵⁰ Specifically, compared to the 1990 levels, the amended Federal Climate Action Act stipulates that Germany is to achieve emission reduction target of 65% and 88% by 2030 and 2040 respectively.³⁵¹ In the event that an international or European Union (EU) climate goals require the country to adopt more stringent climate goals, the German government is authorised to makes amends to the intermediary reduction targets.³⁵² It means that, unlike in China, emission reduction targets can only be tightened rather than being lowered. This is because, apart from the international law, the European Climate Law also serves to codify the key goal of climate neutrality by 2050 and as such, requires the member states, including Germany, to take necessary measures towards the achievement of the goal.³⁵³ In this regard, it is important to point out that there are European countries which have adopted more ambitious climate neutrality goals compared to others, with the German 2045 climate neutrality goal being considered as one of the most ambitious climate actions in the EU. The data indicated in tables 3 and 4 below provide evidence of the country's targets, policies and strategies for the coming years.

	Target	2016	2020	2030	2040	2050
GHG emission	(compared with 1990)	-27.3%	-40%	-55%	-70%	-80% ~ -95%
Renewable energies	Share of gross electricity consumption	31.6%	35%	50%	65%	80%
	Share of gross final energy consumption	14.8%	18%	30%	45%	60%
Energy efficiency	Primary energy consumption (compared with 2008)	-6.5%	-20%			-50%
	Gross electricity consumption (compared with 2008)	-3.6%	-10%			-25%
	Primary energy consumption in buildings (compared with 2008)	-18.3%				-80%
	Heat consumption in buildings (compared with 2008)	-6.3%	-20%			
	Final energy consumption in the transport sector (compared with 2008)	4.2%	-10%			-40%
Nuclear phase-out	Gradual shut down nuclear power plants by 2022					
Electric vehicles	One million electric vehicles on the road by 2022					

Table 3: Key German Energy Transition Targets.³⁵⁴

³⁴⁹ Ibid.

³⁵⁰ KSG § 3, para. 2.

³⁵¹ LIBRARY OF CONGRESS. *Germany: Amendment of Climate Change Act Codifies Climate Neutrality Goal by 2045*. [online]. [Accessed 28 May 2022]. Available at: <https://www.loc.gov/item/global-legal-monitor/2021-09-28/germany-amendment-of-climate-change-act-codifies-climate-neutrality-goal-by-2045/#:~:text=On%20August%2031%2C%202021%2C%20an,is%20to%20achieve%20negative%20emissions>.

³⁵² Ibid.

³⁵³ European Climate Law (2021), art. 1.

³⁵⁴ CHEN, Cheng et al. Comparing the energy transitions in Germany and China: Synergies and recommendations. *Energy Reports*, Vol. 5, November 2019, p.1249.

Overview of major energy policies and strategies in Germany.

Publication year	Document title	Key context
2000	Renewable energy act (EEG)	EEG implements a fixed feed-in tariff for renewables, paid for through a surcharge on consumption, creating a reliable market to support higher investment and participation in renewable energy generation. The EEG also prioritizes renewable energy, ensuring access to the grid.
2010	Energy concept	The Energy Concept establishes specific milestones for the integration of renewable energies and climate change mitigation strategies by 2020 and 2050. Targets and methodologies for measuring and assessing energy efficiency are introduced.
2011	Phase-out nuclear power	In response to renewed public opposition following the Fukushima disaster in Japan, the government recommits to closing all German nuclear power plants by 2022.
2014	EEG 2.0	EEG 2.0 reduces fixed tariffs, creating auctions for most solar producers, recalculating the surcharge to assist large industry, and forcing self-suppliers to pay a surcharge.
2016	EEG 3.0	EEG 3.0 suggest that market auctions could soon replace fixed feed-in tariffs for nearly all renewables installations, a 'deployment corridor' would help ensure new capacity growth is compatible with grid expansion, and further liberalization of the auction's markets, including opening up to international producers, might be tested.

Table 4: Overview of major energy policies and strategies in Germany.³⁵⁵

Therefore, from the arguments above and the data indicated in both tables, it tends to be clear that the impact of the PA on the domestic law in Germany tends to be more evident than in China. This could be confirmed by the fact that Germany, unlike China which still grapples with overdependence on coal as a source of energy, has been able to reduce its dependence on fossil fuels, an aspect shown by the increased production and use of renewable energy as indicated in figure 10 below.

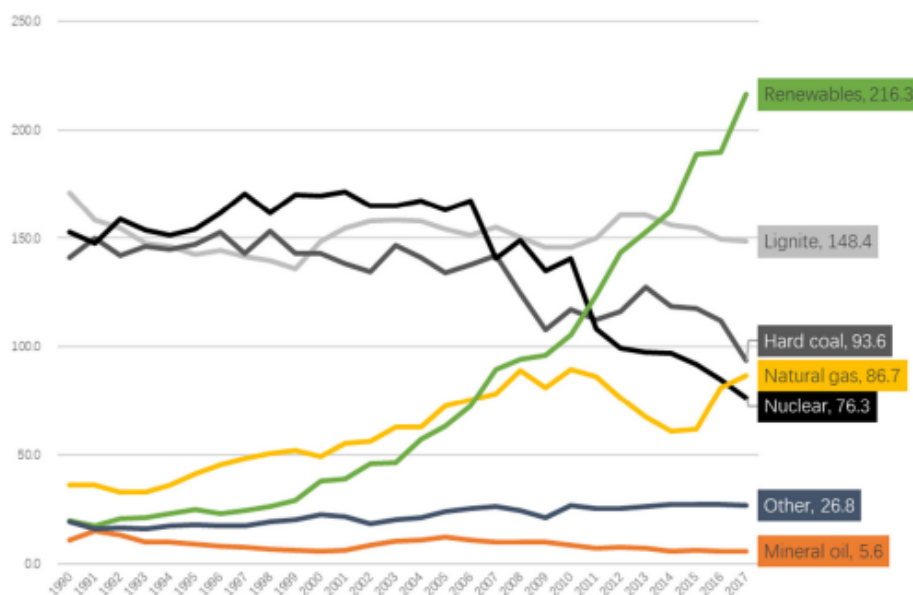


Figure 10: Gross Electricity Production in Germany by Sources, between 1997 and 2017.³⁵⁶

³⁵⁵ Ibid.

³⁵⁶ Ibid.

5.3.3. Analyse from the Germany's Nationally Determined Contribution Perspective

A. EU-Wide submission and Germany's role

Germany is a Party to the Paris Agreement as an EU Member State; therefore, its formal NDC is incorporated into the joint submission of the European Union. The most recent update to the EU-wide NDC commits to a net domestic reduction of at least 55% in greenhouse gas emissions by 2030 compared to 1990. This updated NDC was communicated to the UNFCCC in December 2020 and confirmed thereafter. As a constituent of the European Union, Germany is legally bound to contribute to the collective EU target, with intra-EU burden-sharing reflected in various implementing regulations and directives.

B. Germany's domestic targets

Germany has adopted more ambitious climate objectives domestically, codified in the Federal Climate Change Act (Bundes-Klimaschutzgesetz). Following amendments in 2021, Germany aims to:

Reduce its GHG emissions by 65% by 2030 relative to 1990 levels (exceeding the older 55% target).³⁵⁷

Achieve near-complete decarbonization by 2045, thus pursuing climate neutrality five years ahead of the EU-wide goal of 2050.³⁵⁸

These statutory requirements impose annual emission budgets for different sectors (energy, industry, buildings, transport, agriculture, and waste), backed by oversight mechanisms and possible adjustment measures if reduction pathways fall short. Therefore, Germany's domestic legal framework is more stringent than the collective EU NDC indicates, reflecting the country's policy leadership within the Union on climate action.

As part of its Nationally Determined Contribution (NDC) under the Paris Agreement, Germany's climate commitments intersect powerfully with human rights principles, particularly the fundamental rights of future generations. Article 20a of the Basic Law (Grundgesetz) obliges the state to protect the natural foundations of life, mindful of its

³⁵⁷ EU Submission on information to be provided by Parties in accordance with Article 9, paragraph 5, of the Paris Agreement. Submission by Germany and the European Commission on behalf of the European Union and its Member States. Berlin, 20 November 2020, p.90.

³⁵⁸ Ibid.

responsibility toward future generations.³⁵⁹ In its landmark decision of 24 March 2021 (1 BvR 2656/18 et al.), the Federal Constitutional Court interpreted this provision to require the legislature to adopt robust measures to mitigate climate change so as not to unduly burden younger and future populations with disproportionate emission reduction obligations later. By tying intergenerational equity to constitutional rights, the Court effectively underscored that insufficient climate action today can infringe on tomorrow's citizens' freedoms.

This perspective on the fundamental rights of future generations places Germany's climate policy within a broader human rights framework. It imposes constitutional constraints on legislative and executive action, ensuring that any climate strategy—including those aligned with the Paris Agreement—must account for long-term sustainability and fairness. Hence, Germany's domestic climate legislation, such as the Federal Climate Change Act, is increasingly shaped by the imperative to balance present-day economic and social interests with the rights of future generations. This jurisprudential development highlights Germany's unique legal approach: in tandem with fulfilling international commitments under Article 4 of the Paris Agreement, domestic authorities are constitutionally bound to uphold a standard of climate protection that safeguards intertemporal human rights.

5.4. The Paris Agreement's Influence: Why It Impacts German Law More Than Chinese Law

The superior performance by Germany over China can be attributed to a number of reasons. One of the key reasons is that the different levels of governance including the German Federal government, the regional governance (EU) and the international governance (UN) serve to enhance the accountability aspect which tends to be key as far as transposing the PA to domestic laws is concerned. For example, the discussions above point out that the EU laws on climate change override those by the Federal government's and as such, seek to impose even stricter requirements on the actors to meet set targets.

In addition, compare to China, the legal system in Germany tends to be well developed without being characterized by a large number of actors with different interests that can influence the achievement of climate goals. This was evident for instance on March 24 2021 when the First Senate of the German Constitutional Court (*Bundesverfassungsgericht*) upheld the view by young climate activists that Federal Climate Action Act 2019 violates the

³⁵⁹ *Grundgesetz für die Bundesrepublik Deutschland* (Basic Law for the Federal Republic of Germany) 1949. Article 20a.

fundamental rights of future generations. In the ruling that was given on April 29, 2021, the German Federal Constitutional Court provided instruction to German legislator to carry out revision of the Federal Climate Action Act (FCAA) before the year 2023.³⁶⁰ The Court found that the FCAA as currently constituted, is partially unconstitutional to the extent that it does not specify GHG emission reduction targets beyond the year 2030.³⁶¹ This way, the ruling identified that the Act falls short of sufficiently providing long-term directions on the reductions of GHG emissions by the year 2050. While the FCAA helps Germany in meeting the national and international climate targets as prescribed in the PA, the complainants argued that the Act is not sufficient for reducing GHG emissions as soon as possible. They alleged that the failure by the Act to prescribe ways of curbing GHG emissions as soon as possible amounts to violation of the constitutional duty to protect the fundamental rights against the risks of climate change.³⁶² The court upheld the argument that failure by the Act to provide for emissions reduction as soon as possible violates the rights of people, more so the young generations and the future generations who are more likely to inherit a world with irreversible climate conditions including global warming. Some of the sectors which are likely to be affected by the ruling include construction, manufacturing, energy, agriculture and waste management.

Therefore, comparable to China, it could be seen that the German legal system, through the ruling, is setting a precedent for intergenerational climate justice and is with the global trend of the courts mandating legislators to intensify efforts and measures in fighting climate change in the foreseeable and long-term future. In Germany, the amendment of the Federal Climate Action Act 2019 which took effect on August 31, 2021, could therefore be said to be a step in the right direction towards stepping up measures related to climate neutrality.³⁶³

While China and Germany implement the Paris Agreement's objectives, their approaches to integrating human rights concerns in climate governance diverge. In China, public participation mechanisms in environmental decision-making represent a gateway for enhancing procedural rights, although substantive protections remain a work in progress. In Germany, intergenerational equity is enshrined in constitutional jurisprudence, compelling the

³⁶⁰ TREISMAN, Rachel. *German Court Orders Revisions To Climate Law, Citing 'Major Burdens' On Youth*. [online]. National Public Radio, 29 April 2021 [Accessed 2 June 2022]. Available at: <https://www.npr.org/2021/04/29/992073429/german-court-orders-revisions-to-climate-law-citing-major-burdens-on-youth>.

³⁶¹ Ibid.

³⁶² Ibid.

³⁶³ Ibid.

state to adopt forward-looking climate measures that protect the fundamental rights of both present and future citizens. These two perspectives illuminate the broader global trend of recognizing climate protection as a policy goal and a legal and human rights imperative. By linking climate action with human rights, states reinforce their obligations under the Paris Agreement with principles that resonate deeply in domestic legal orders and the evolving corpus of international law.

This chapter establishes that both China and Germany have made remarkable progress as far as transposing the PA into domestic law is concerned. It has been shown that the PA has had observable impact on the domestic climate policies and laws in both countries. In China for instance, unlike previous years, the signing of the PA saw enhancement of efforts towards strengthening the domestic laws in environmental protection part and their enforcement. More importantly, the chapter outlines that the PA, coupled with the observable exacerbation of the effects of burning fossil fuels has made the country embrace public participation, accountability of local governments as well as mentioning the GHG emissions control both as a priority and a principle. However, it is outlined that transposing of PA into the domestic law in China still faces a number of challenges, key among which include ambivalent support provided by the central government. Given the country's reliance on fossil fuels, drastic measures aimed at curbing emissions are likely to impact negatively on the country's social and economic power. As such, unlike in Germany, the conflict of interests limits the effectiveness of the domestic laws. In contrast, in Germany, climate action is entrenched deeply in the country's constitution which has incorporated the interests of future generations as one of the main constitutional interests that must be considered by the state. In addition, unlike China, actions and efforts on climate change are guided not only by national laws but also by EU laws which are even stricter thereby contributing positively to accountability of the German government in the field of climate action. It could be summarized that the PA has had more pronounced impact on the domestic laws in Germany than in China at the moment.

Conclusion

This dissertation has sought to unravel the multifaceted interplay between climate change and human rights, ultimately illustrating that these two realms are inextricably linked. It tends to be clear from the preceding chapters that addressing climate change as an environmental issue neglects the profound ways a changing climate undermines fundamental human rights. By reviewing legal instruments, examining state practices, and analysing international jurisprudence, this study has demonstrated that climate change urgently demands a more integrated response that places human rights at the core of climate governance.

Chapter 1 presented a conceptual framework situating climate change as a threat to ecological stability and the foundations of human civilisation. In the *Climate Change, a Problem for the Environment* segment, the dissertation outlined how rising sea levels, exacerbated weather events and biodiversity loss negatively affect ecosystems. This environmental crisis forms the backdrop for subsequent sections acknowledging the broader repercussions for societies and cultures. Next, the discussion *Climate Change, a Problem for Human Civilization* underscored how climate-induced disruptions translate into social, economic, and cultural detriments. The chapter highlighted that the changing climate has wide-reaching societal consequences, from diminishing agricultural productivity to the forced displacement of communities. Crucially, it established a preliminary link between these impacts and the erosion of rights, a theme further developed in subsequent chapters.

Building on that foundation, Chapter 2 delved into the normative dimensions of human rights. Basics of Human Rights demonstrated how the international human rights framework historically arose to protect inherent human dignity in diverse contexts yet was not originally designed to address environmental threats. Moving into Human Rights and the Environment, the discussion centred on how courts and treaty bodies have progressively recognised environmental degradation as a significant factor limiting the enjoyment of rights—especially the rights to life, health, and property. Finally, by introducing the Human Rights Framework and environment to examine global, regional, and national sources—including the Universal Declaration of Human Rights, the Aarhus Convention, the European Convention on Human Rights, and domestic laws in the Philippines, China, and the Americas—we gain insight into the interconnectedness of environmental preservation and fundamental human rights. By bridging human and environmental rights, legal frameworks can better address vulnerabilities heightened by climate change, safeguarding present and future generations. Ultimately, recognising environmental rights as integral to the human rights continuum is crucial for

effective climate responses and ensures environmental protection remains central to global legal discourse.

In Chapter 3, the focus shifted to *The Relationship Between Human Rights Protection and Climate Change*. This chapter underscores that while international climate law has historically overlooked explicit human rights considerations, recent developments indicate a growing convergence between these two frameworks. The evolving intersection of human rights protections with climate action underscores the importance of integrating fundamental rights into governance. At the same time, international human rights law has begun to grapple with the profound implications of climate change, recognizing the urgent need to safeguard vulnerable populations. Key institutions, including the UN Human Rights Council and the Office of the High Commissioner for Human Rights, have played a pivotal role in highlighting the human rights dimensions of climate change, supported by non-state actors committed to expanding the normative scope of environmental governance. Through this combined effort, a foundation is emerging for a cohesive, rights-based approach that addresses climate change's causes and consequences. This chapter thus highlights the critical role that human rights principles can—and should—play in guiding and strengthening international climate action, underscoring the necessity of robust legal frameworks to ensure accountability in the face of evolving environmental threats.

Chapter 4 evaluated *Climate Litigation and Human Rights*. This chapter underscores the evolving landscape of climate litigation and its increasingly prominent intersection with human rights. Once viewed primarily through national regulatory lenses, climate-related lawsuits have come to incorporate sophisticated legal theories and remedies grounded in fundamental rights protections. Through this progression, litigants have sought damages or injunctions and broad transformative outcomes that may shape future climate governance, compelling governments and corporations alike to reevaluate and strengthen their environmental commitments. Nevertheless, these actions face significant hurdles, including complex causation issues, the apportionment of responsibility across multiple actors, and the extraterritorial scope of state obligations. Moreover, the normative conflicts inherent in balancing individual rights against collective economic and societal interests can present a formidable dilemma. Nevertheless, as demonstrated by high-profile cases such as *Verein Klima Seniorinnen Schweiz and Others v. Switzerland*, such challenges also spur innovative arguments that may redefine human rights enforcement principles in a rapidly changing global climate. By highlighting both the promise and the obstacles of human rights-based litigation, the chapter reveals a potent avenue for legal advocacy to safeguard both present and future generations.

Chapter 5 concentrated on the *Critical Comparison of the Impact of the Paris Agreement on Chinese and German Domestic Laws*. It commenced with *Different Views on the Unity and Validity of the Paris Agreement*, revealing how states hold diverse legal perspectives regarding the binding nature of their commitments. In examining China’s stance, the section on *China Sees Environmental Protection as an Important Component of Economic Development and China’s Domestic Climate Policy Has Been Strengthened—Taking the Air Pollution Prevention Law as an Example* provided a nuanced picture of China’s evolving climate regime. Although China has historically prioritised economic growth, recent legislative reforms and a growing emphasis on public participation show a shift toward integrating human rights considerations into environmental policies. Nevertheless, *The Paris Agreement and Chinese Law: Limited Influence or a Catalyst for Change?* underscored that institutional, economic, and developmental factors still constrain the full incorporation of human rights perspectives in China’s climate agenda. Conversely, analysing *The Impact of the Paris Agreement on German Domestic Law and Why It Impacts German Law More Than Chinese Law* highlighted Germany’s more explicit legal mechanisms—such as the Federal Climate Change Act—that place climate action within a broader human rights and constitutional framework. By contrasting these two major emitters, the chapter illuminated how domestic legal structures influence whether and how human rights arguments resonate in climate policymaking.

Drawing these threads together, the core conclusion to be drawn from the evidence presented is that climate change and human rights are tightly interconnected and cannot be meaningfully disentangled. Even though explicit human rights provisions in climate treaties remain limited—and references to climate change in human rights law have not yet reached a comprehensive level—there is significant momentum toward a more integrated approach. The Paris Agreement (2015), in particular, marks a noteworthy milestone, as it explicitly references the importance of respecting human rights in all climate actions.³⁶⁴ This recognition paves the way for a future legal landscape where states must undertake climate mitigation and adaptation while upholding their human rights obligations and strengthening environmental and human rights protections.

However, current geopolitical developments complicate this trajectory. In January 2025, President Donald Trump signed an executive order announcing that the United States would withdraw again from the Paris Agreement, with the withdrawal slated to take effect in January

³⁶⁴ UNITED NATIONS. Paris Agreement, 2015, Preamble.

2026.³⁶⁵ He made this decisions regardless of the fact that the World Meteorological Organization (WMO) recently reported that the last decade was the hottest on record and that 2024 was the hottest year recorded so far.³⁶⁶Clare Nullis, a WMO spokesperson, emphasised that every incremental temperature increase has a significant implications for economies and livelihoods.³⁶⁷Given that the United States faces—and contributes to—some of the highest economic losses from climate and weather-related disasters, its departure from the Paris Agreement threatens to erode the international community’s collaborative efforts. The Trump Administration justified this move by arguing that the Agreement disproportionately hampers U.S. economic interests, particularly in industries such as coal and steel, and diverts financial resources to the Green Climate Fund.³⁶⁸ However, from a human rights and global governance perspective, such unilateral action undercuts coordinated climate action vital for safeguarding lives, health, and property worldwide.

The question arises whether other key players, notably China, might follow suit. So far, China has demonstrated a willingness to remain committed to the Paris Agreement. The latest data show a considerable expansion of China’s renewable energy and electric vehicle industries, indicating that the Agreement has already stimulated significant shifts in the Chinese economy.³⁶⁹ For instance, China dominates global rankings for solar photovoltaics, electric vehicles, and battery manufacturing capacity—developments suggest a pivot toward a more sustainable growth model. According to official statistics, China’s carbon dioxide emission intensity fell by more than 51% in 2022 compared to 2005.³⁷⁰ Although concerns remain regarding gaps in comprehensive climate legislation, these achievements imply that China’s continued participation in the Paris Framework could reinforce global progress. Indeed, if China were to mirror the United States and abandon the Agreement altogether, the

³⁶⁵ UNITED NATIONS. *UN regrets US exit from global cooperation on health, climate change agreement*. [online]. 21 January 2025. [Accessed 22 January 2025]. Available at: <https://news.un.org/en/story/2025/01/1159211>.

³⁶⁶ ABNETT, Kate, WITHERS, Alison. *2024 was the hottest year on record, scientists say*. [online]. Reuters, 21 January 2025. [Accessed 22 January 2025]. Available at: [https://www.reuters.com/business/environment/2024-was-first-year-above-15c-global-warming-scientists-say-2025-01-10/#:~:text=BRUSSELS%2C%20Jan%2010%20\(Reuters\),agreement%2C%20scientists%20said%20on%20Friday](https://www.reuters.com/business/environment/2024-was-first-year-above-15c-global-warming-scientists-say-2025-01-10/#:~:text=BRUSSELS%2C%20Jan%2010%20(Reuters),agreement%2C%20scientists%20said%20on%20Friday).

³⁶⁷ UNITED NATIONS. *UN regrets US exit from global cooperation on health, climate change agreement*. [online]. 21 January 2025. [Accessed 22 January 2025]. Available at: <https://news.un.org/en/story/2025/01/1159211>.

³⁶⁸ TRUMPWHITEHOUSE. *Statement by President Trump on the Paris Climate Accord*. [online]. 1 June 2017. [Accessed 22 January 2025]. Available at: <https://trumpwhitehouse.archives.gov/briefings-statements/statement-president-trump-paris-climate-accord/>.

³⁶⁹ NATIONAL BUREAU OF STATISTICS OF CHINA. *Statistical Communiqué of the People’s Republic of China on the 2022 National Economic and Social Development*, 2023, p.15–20.

³⁷⁰ LIU, Hongqiao, EVANS, Simon, ZHANG, Zizhu, SONG, Wanyuan, YOU, Xiaoying. *The Carbon Brief Profile: China*. Carbon Brief. [online]. 30 November 2023. [Accessed 22 January 2025]. Available at: <https://interactive.carbonbrief.org/the-carbon-brief-profile-china/index.html>.

environmental and human rights repercussions could be devastating, given China's status as the world's largest greenhouse gas emitter. The collective achievements attained thus far—by states, regions, and private actors—would risk being undermined, jeopardising the international community's capacity to avert the most severe climate scenarios.

In sum, this dissertation has shown that climate change's human rights dimension is not a theoretical or peripheral concern but rather a central component of global governance. Each chapter underscored various facets of this reality: from the conceptualisation of climate change as an existential problem for humanity to the evolution of human rights frameworks that increasingly recognise environmental well-being as integral to human dignity, and finally to the comparative legal analysis of how major emitters implement—or fail to implement—the Paris Agreement in domestic law. Although the Agreement remains a critical cornerstone for linking human rights and climate change on the world stage, its effectiveness hinges upon consistent engagement by major powers. The United States' renewed withdrawal accentuates the fragility of international treaties in the face of shifting political winds, just as China's dynamic approach illustrates the importance of bolstering climate objectives through domestic legislation and economic innovation.

The interplay between human rights and climate change will inevitably deepen. The intensification of extreme weather events and the acceleration of global warming—reaching approximately 1.55 °C above preindustrial levels—amplify demands for robust legal responses that protect ecological systems and the people whose lives depend on them. Historically oriented toward protecting individuals from state abuses, human rights law tends to be evolving to address contemporary threats posed by climate change. Likewise, climate law is increasingly enriched by human rights considerations, ensuring that transition policies do not abandon marginalised groups or compromise essential freedoms. Together, these developments promise a more equitable and sustainable future in which environmental integrity and human rights are elevated as mutually reinforcing priorities.

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Lidskoprávní dimenze změny klimatu:

Abstrakt a klíčová slova

Tato práce zkoumá rozmanité způsoby, jimiž se změna klimatu prolíná s lidskými právy, a zdůrazňuje potřebu přístupu ke globální péči o životní prostředí založené na právech. V první kapitole práce vytváří základ pro další úvahy tím, že představuje změnu klimatu jako environmentální a společenský problém. Věnuje se fyzikálním základům změny klimatu a jejím nepříznivým dopadům na přírodní systémy a biologickou rozmanitost a ukazuje, jak změna klimatu ohrožuje ekologickou stabilitu i blahobyt lidí. Druhá kapitola se zabývá teoretickými základy lidských práv, objasňuje jejich historický vývoj a představuje nejvýznamnější mezinárodní i vnitrostátní prameny. Ukazuje, jak se lidskoprávní normy, ačkoli původně nebyly určeny k řešení environmentálních krizí, stávají stále relevantnějšími pro vyjádření a ochranu základních zájmů jednotlivce tváří v tvář škodám souvisejícím s klimatem.

Na základě tohoto rámce se třetí kapitola zaměřuje na vztah mezi ochranou lidských práv a změnou klimatu. Zabývá se tím, do jaké míry klíčové mezinárodní smlouvy z oblasti ochrany klimatu, jako jsou UNFCCC, Kjótský protokol a Pařížská dohoda, berou v úvahu lidská práva, a jak naopak lidskoprávní nástroje berou v úvahu změnu klimatu. Zdůrazňuje rostoucí úsilí OSN a nestátních subjektů o začlenění úvah o lidských právech do politiky v oblasti klimatu. Čtvrtá kapitola se věnuje klimatické litigaci, zkoumá vzestup klimatických soudních sporů a mapuje, jak žalobci po celém světě využívají soudní mechanismy k tomu, aby přiměli vlády i korporace k přijetí opatření na mitigaci změny klimatu a přizpůsobení se jí. Analyzuje složité právní otázky příčinné souvislosti, extrateritoriálních závazků a protichůdných hodnot, které charakterizují střet základních práv s ekonomickými nebo politickými zájmy. A konečně pátá kapitola kriticky srovnává, jak Pařížská dohoda ovlivnila domácí klimatickou legislativu v Číně a Německu, a ukazuje, proč se dopad dohody na německé právo podstatně liší od jejího vlivu na čínskou politiku. Na základě srovnání těchto dvou právních systémů práce učiní obecnější závěry týkající se integrace mezinárodních klimatických závazků do různých vnitrostátních rámců a zdůrazňuje ústřední význam lidských práv pro dosažení spravedlivé a účinné ochrany klimatu.

Klíčová slova: změna klimatu, lidská práva, klimatická litigace

The Human Rights Dimension of Climate Change:

Abstract and key words

This thesis investigates how climate change intersects with human rights, underscoring the need for a rights-based approach to global environmental stewardship. The first chapter establishes the groundwork by framing climate change as both an environmental and societal challenge, examining its physical underpinnings, its detrimental effects on natural systems and biodiversity, and the ensuing threats to ecological stability and human well-being. The second chapter delves into the theoretical foundations of human rights, tracing their historical development and introducing the most significant international and domestic sources. It demonstrates how human rights norms—though not originally designed to address environmental crises—are becoming increasingly pivotal in articulating and protecting fundamental individual interests in the face of climate-related harms.

Building upon this conceptual framework, the third chapter analyzes the relationship between human rights protection and climate change. It explores the extent to which pivotal international climate treaties, such as the UNFCCC, the Kyoto Protocol, and the Paris Agreement, incorporate human rights considerations and, conversely, how human rights instruments address climate change issues. This discussion highlights the growing efforts of both the United Nations and non-state actors to integrate human rights into climate policy. The fourth chapter examines the rise of climate litigation, mapping how claimants worldwide employ judicial mechanisms to compel governments and corporations to adopt mitigation and adaptation measures. It addresses complex legal questions of causality, extraterritorial obligations, and conflicting values inherent in disputes where fundamental rights collide with economic or political interests. Finally, the fifth chapter critically compares how the Paris Agreement has influenced domestic climate legislation in China and Germany, illustrating why the Agreement's impact on German law diverges considerably from its influence on Chinese policymaking. Drawing on these two legal frameworks, the thesis offers broader conclusions regarding integrating international climate commitments into diverse national contexts. It emphasizes the central role of human rights in ensuring equitable and effective climate protection.

Key words: Climate Change, Human Rights, Climate litigation