
| RESEARCH ARTICLE

Comparative Analysis of Climate Justice Framework in USA, UK, Japan, China, Germany and France

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| ABSTRACT

Climate injustice is a global problem which persists everywhere, and it does not differentiate. The issue of climate justice has gained significant attention in recent years, as the consequences of climate change disproportionately affect vulnerable populations. Despite numerous steps taken by the Government in different countries, the problem of climate change still persists. Legal Frameworks and other factors are trying to mitigate its impacts and prevent further harm, such as implementing policies to reduce emissions and promote renewable energy over the years; the full gravity of the situation has yet to be fully realized and prepared for. However, all hope is not lost. Many countries have adopted a structured legal framework for climate justice to tackle the threat of climate change and mitigate its effects to a large extent, with some countries aiming for greenhouse-gas neutrality shortly through achievable climate milestones, including the countries of the USA, UK, Japan, China, Germany and France. This article analyses the Climate Justice framework in the USA, UK, Japan, China, Germany and France. The purpose of this article is to provide a comparative study of the legal framework which exists in the USA, UK, Japan, China, Germany and France. It also analyses the best practices and legal challenges with their existing legal framework. The research paper open up with an overview on Climate Justice, Climate Justice legal framework in the USA, UK, Japan, China, Germany and France-basically, the legal and policy framework is mentioned, as Climate Justice initiatives and action taken in the respective country and the legal challenges the respective countries faced and the climate milestone that they have achieved are analysed and are based on:

- Differences in measures adopted by these countries
- The approach chosen to achieve climate milestone
- The best climate justice practise that each system creates.
- The level of impact and legal challenges faced by each system

| KEYWORDS

Climate change, Climate Justice, Legal framework, USA, China, Germany, UK, Japan, France

| ARTICLE INFORMATION

ACCEPTED: 01 September 2023

PUBLISHED: 08 September 2023

DOI: 10.32996/jhsss.2023.5.9.6

1. Introduction

Climate means the long-term weather average observed within a geographic region, and climate change refers to fluctuations in the Earth's climate system as a result of both natural and anthropogenic causes. Currently, the long-term climate change trend is evidenced by rising global temperatures, increasing storm intensity extremes within the hydrologic cycle resulting in more frequent floods and droughts, and rising sea levels.¹

¹ ANTHONY J McMICHAEL ET AL., CLIMATE CHANGE AND HUMAN HEALTH: RISKS AND RESPONSES (2003).

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Climate change has become a significant global challenge that poses a severe threat to the well-being of humanity. Climate related quality necessary for sustaining life is being progressively hampered by the growing needs of the human population. Modern society has realised the importance of protecting and improving the environment for the existence of mankind. National and international governmental organisations have taken an active role in safeguarding the environment. The legal systems and legal principles formulated for this must be continuously revamped and reappraised in order to assess the efficacy of the environmental legal system in addressing the problem of climate change. The legal system will be effective only when it can ensure justice for all and for all.

The United Framework Convention on Climate Change (UNFCCC)², which came into existence in 1994, was a major pioneer in climate change politics internationally, creating legally binding obligations on developed nations to reduce emissions. However, it wasn't complied with and was criticized, getting reduced to a mere guideline document.³ Things took a turn for the better in 1996 when the findings laid down by the Intergovernmental Panel on Climate Change (IPCC)⁴ in its second assessment were accepted at COP 2. The IPCC was a body established in 1988 by WMO and UNEP, whose primary objective was to keep Governments updated on all relevant information regarding climate changes, researched and compiled into assessment reports by selected experts (for a cycle of six to seven years), for reference by policymakers and the general public as well as possible response options. This further paved the way for the adoption of the Kyoto Protocol⁵ in the third conference, which set down clear-cut protocols for mitigating the impacts of climate change and dealt with emission trading, development of clean alternatives, and joint implementation. Despite its ambitious emission goals, it was setback by the actions of the USA, which was the largest producer of greenhouse gases. Furthermore, concessions made to wavering nations during the implementation of the protocol diluted the commitment of prospective parties, defeating the very purpose the Protocol was enacted for.⁶

Despite being in the spotlight for years, the gravity of the climate-change situation remains to be realized and adequately prepared for.

Throughout the research paper, the Author aims to delve into the various intricacies of each climate justice System in the USA, UK, Japan, China, Germany and France, respectively, via data gathered from secondary sources and conduct an in-depth analysis of the systems to ascertain how they hold up in modern times, the impact that each system creates, and how the prevalent bottlenecks prevent the said systems from achieving their full potential - all that while providing recommendations to improve the same.

The scope of this study is to comparatively analyse and assess the existing Climate Justice legal framework present in the USA, UK, Japan, China, Germany and France. The best practices adopted by these States, the legal challenges, the policy framework and the climate milestone that they are achieving through such a system are analysed. US law and policy address climate change and promote climate justice. The Clean Air Act (1970)⁷, Clean Water Act (1972)⁸, National Environmental Policy Act (1969)⁹, & Paris Agreement (2015) are important act.¹⁰ The UK's commitment to climate justice is firmly rooted in its legal and policy framework by the Climate Change Act of 2008, and it is one of the cornerstone legislation present globally. Japan has a robust legal and policy framework to tackle climate change and ensure climate justice through "climate change Adaptation Act (2018)"¹¹ and "climate change Mitigation Act (2019)"¹². In China, there is the 14th Five-Year Plan (2021-2025):¹³ The initiative aims to minimise atmospheric carbon dioxide pollutants by 18 percent per unit of GDP & lower the consumption of energy by 13.5 percent. In Germany, there is a lot of legislation to address climate change issues structuredly-"The Climate Action Plan 2050 (Klimaschutzplan 2050)"¹⁴, "The

² United Nations Framework Convention on Climate Change [UNFCCC], May 9, 1992, 31 ILM 849 (1992).

³ Raneer Khooshie Lai Panjabi, *Can International Law Improve the Climate? An Analysis of the United Nations Framework Convention on Climate Change Signed at the Rio Summit in 1992*, 18 N.C. J. INT'L L & COMM. REG. 491,404 (1993).

⁴ Team, O. (n.d.). *ODS HOME PAGE*. [online] Official Document System (ODS). Available at: <https://documents-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/530/32/IMG/NR053032.pdf?OpenElement> [Accessed 4 Feb. 2023].

⁵ Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, FCCC/CP/1997/L.7/Add. 1, reprinted in 37 ILM 22 (1998).

⁶ Tom Athanasiou & Paul Baer, *Bonn and Genoa: A Tale of Two Cities and Two Movements*, Foreign Pol'y in Focus, Discussion Paper, Aug. 2001, at 3 (Concessions made in negotiations to flesh out Kyoto Protocol could "render the protocol's nominal mandate of a 5.2% overall reduction in rich-world emissions (from their 1990 baseline) into a 0.3% increase"); Miranda A. Schreurs, *Competing Agendas and the Climate Change Negotiations: The United States, the European Union, and Japan*, 31 ENVTL. L. REP. 11218, 11218 (2001).

⁷ Clean Air Act, *Clean Air Act*, UNITED STATES.[GOOGLE SCH. (1970).

⁸ Clean Water Act, *Clean water act*, 47 TEX. TECH LAW REV. 585 (1972).

⁹ Regulatory Flexibility Act, *national environmental policy act*, FLOOD CONTROL ACT (1969).

¹⁰ The Paris Agreement, *supra* note 25.

¹¹ Climate Change Adaptation Act, *Climate Change Adaptation Act, 2018*, (2018).

¹² Government of Japan Ministry of the Environment, *Climate Change Mitigation Act, 2019*, (2019).

¹³ ASIAN DEVELOPMENT BANK, *This policy note outlines recommendations on the 14th Five-Year Plan (2021–2025) for National Economic and Social Development of the People's Republic of China*, (2021).

¹⁴ NATURE CONSERVATION AND NUCLEAR SAFETY FEDERAL MINISTRY FOR THE ENVIRONMENT, *Climate Action Plan 2050*, (2016).

Climate Protection Act (Klimaschutzgesetz)", "The Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG)", "The Coal Phase-out Act (Kohleausstiegsgesetz)" etc. In France, "Plan Climat" (2017) and the Energy Transition for Green Growth Act (ETGGA) are there to combat climate change.

2. Literature Review

Having become a central issue in the global discourse on climate change, Climate justice is gaining traction in a multitude of circles. The literature on climate justice typically explores the interconnected dynamics across climate change, environmental degradation, and social justice and the actions required to ensure that the process of mitigation and adaptation is fair and just.

Throughout the review, we will examine the legal frameworks of climate justice in the UK and Germany and carry out their respective comparative analysis.

The following are some of the specific literature referred to while conducting the research:-

- a. Changing climate risk in the UK: a multi-sectoral analysis using policy-relevant indicators by Arnell, N.W, Kay, A.L., Freeman, A., Rudd, A.C., and Lowe, J.A.:- It gives an insight into the indicators of changes in climate risk spanning across health, transport, energy, agriculture, and water sectors which act as triggers for policy action or proxies for assessing the impact and changes.¹⁵
- b. The impact of climate change on policy-relevant indicators of temperature extremes in the United Kingdom by Arnell, N., and Freeman:- This paper presents an in-depth analysis of the effects of climate change in connection to policy-relevant indicators of temperature extremes across the UK with the help of UKCP indicators that represent triggers for policy intervention and planning.¹⁶
- c. Achievements and needs for the climate change scenario framework by Brian C. O'Neil and others:- It cobbles together insights from community discussions, scenario-based literature, and experiences in assessments and how the CCS framework as a whole has facilitated research and assessment consistently toward policy creation and modulation.¹⁷
- d. Analysis of climate related legislation and challenges faced by the government in the USA by Kellie E. Billings and others- It focuses on vulnerable community needs and effectively addresses climate justice.
- e. Climate policy outcome in Japan: Energy system scenarios were analysed to achieve an 80% reduction in carbon dioxide emissions by 2050. Six integrated assessment model to reveal decarbonization challenges in the system was used by Hiroto Shirawaki and others.¹⁸
- f. Climate Policy Outcomes in Germany: Environmental Performance and Environmental Damage in Eleven Policy Areas by Roger Karapin: This paper throws light on the dreadful climatic conditions that have been prevalent since the 2000s in Germany, emission levels, and the methods adopted to tackle them initially.¹⁹
- g. Germany's Federal Climate Change Act by Christian Flachsland and Sebastian Levi:- It gives a quick peek into how Varieties of Climate Governance (VOCG) affect the institutional mechanisms in place by way of which States orchestrate climate change politics as a whole.²⁰
- h. Cautious scrutiny: The Federal Climate Change Act case in the German Constitutional Court by Stefan Theil:- This paper delves into the unanimous decision of 24th March 2021, where certain provisions of the Federal Climate Change Act were held unconstitutional and analyses its various aspects.²¹

¹⁵ Arnell, N. W., Kay, A. L., Freeman, A., Rudd, A. C., & Lowe, J. A. (2021). Changing climate risk in the UK: A multi-sectoral analysis using policy-relevant indicators. *Climate Risk Management*, 31, 100265. <https://doi.org/10.1016/j.crm.2020.100265>

¹⁶ Arnell, N.W. and Freeman, A. (2021). *The impact of climate change on policy-relevant indicators of temperature extremes in the United Kingdom*. *Climate Resilience and Sustainability*, [online] 1(2).

¹⁷ O'Neill, B.C., Carter, T.R., Ebi, K., Harrison, P.A., Kemp-Benedict, E., Kok, K., Kriegler, E., Preston, B.L., Riahi, K., Sillmann, J., van Ruijven, B.J., van Vuuren, D., Carlisle, D., Conde, C., Fuglestvedt, J., Green, C., Hasegawa, T., Leininger, J., Monteith, S. and Pichs-Madruga, R. (2020). *Achievements and needs for the climate change scenario framework*. *Nature Climate Change*, [online] 10(12), pp.1074–1084.

¹⁸ Masahiro Sugiyama, S Fujimori, K Wada, S Endo, Y and others (2019). Japan's long-term climate mitigation policy: Multi-model assessment and sectoral challenges, *Energy*, available at- <https://doi.org/10.1016/j.energy.2018.10.091>.

¹⁹ Karapin, R. (2012). *Climate Policy Outcomes in Germany: Environmental Climate Policy Outcomes in Germany: Environmental Performance and Environmental Damage in Eleven Policy Areas Performance and Environmental Damage in Eleven Policy Areas*. [online] NEW YORK: CITY UNIVERSITY OF NEW YORK (CUNY). Available at: https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1702&context=hc_pubs [Accessed 31 Jan. 2023].

²⁰ Flachsland, C. and Levi, S. (2021). *Germany's Federal Climate Change Act*. *Environmental Politics*, [online] 30(sup1), pp.118–140.

²¹ Theil, S. (2022). Cautious scrutiny: *The Federal Climate Change Act case in the German Constitutional Court*. *The Modern Law Review*, [online] 86(1).

2.1 Research Question

Before we delve further into the intricacies and details of the Comparative analysis, the question that lies before us is

- i. How do the legal framework of climate justice in the USA, UK, Japan, China, Germany and France differ from each other in terms of policy and initiatives, the approach taken, and the outcomes achieved?
- ii. What are the implications for ensuring fairness and justice throughout the process of mitigation and adapting to climate change?

2.2 Research Objective

To answer the laid out research questions, we need to fulfil the following milestones throughout the research paper:-

- i. To compare and contrast the legal framework of climate justice in the USA, UK, Japan, China, Germany and France in terms of measures taken, the approach for the said measures, and the outcomes achieved through the same.
- ii. To analyse in depth and to bring into the spotlight the weaknesses of each country's legal frameworks, all the while identifying areas that can be improved upon.
- iii. To assess the impact the said frameworks create in response to the mitigation and adaptation to climate change.
- iv. To provide recommendations for improving the legal frameworks for all countries for maximising their potential and effectiveness.

3. Research Methodology

The employed methodology for the research into the intricacies of the respective climate justice frameworks shall involve the following steps:

1. Literature Review: Review the various materials on the legal framework of climate justice in the USA, UK, Japan, China, Germany and France, which, in turn, will provide an overview of the topic at hand and serve as a foundation for subsequent analysis.
2. Collection of Data: Adequate collection of relevant secondary data on the measures implemented, the approach taken, and outcomes achieved by the USA, UK, Japan, China, Germany and France in their legal frameworks of climate justice through various secondary sources, including government reports, academic articles, policy documents, official websites, etc.
3. Comparative analysis of Legal Frameworks: Carry out a comparative analysis of the legal framework of climate justice in the USA, UK, Japan, China, Germany and France using the data collected in the previous, which shall involve the identification of similarities and differences in the measures implemented, approaches taken, and the respective outcomes achieved by these countries through their Legal Frameworks.
4. Evaluation of the impacts: Evaluating the effectiveness of legal frameworks of Climate-Justice in the USA, UK, Japan, China, Germany and France regarding ensuring fairness and justice during the process of mitigation and adapting to climate change. This will involve assessing the strengths and weaknesses of each country's framework and identifying areas for improvement.
5. Best Practice: Best practices adopted by the USA, UK, Japan, China, Germany and France in fighting climate justice and how they contribute to a global effort to address the severe effects of climate change

The employed methodology will include a combination of qualitative and quantitative data collection methods from various sources of information, depending upon the availability of data and documents, while attempting to maintain a high amount of accuracy in the said figures.

However, it should be noted that the research paper, despite the detailed methodology and its high accuracy of data and figures, will not be able to display all the relevant figures and data due to limited access to the said relevant information.

3.1 Significance of the Study

By conducting research into the legal frameworks of climate justice in both countries and making a comparative analysis of the two, the study shall: -

1. Provide an insight into the legal frameworks in the two countries and their impact on ensuring fairness and justice during the process of mitigation and adapting to climate change, which can be used to inform climate policy and improve the legal framework of climate justice in the USA, UK, Japan, China, Germany and France.
2. Understanding the role of the legal framework in ensuring fairness and justice in the process of mitigating and adapting to climate change can be used to promote the principles of climate justice and ensure that the impact of climate change is shared equitably and that the most vulnerable communities are protected.
3. Provide a forum for international cooperation in addressing the effects of climate change. By comparing the legal framework of climate justice in the USA, UK, Japan, China, Germany and France, the study can identify the best practices and areas for improvement and contribute to the development of a global framework for climate justice.
4. Contribute to the existing body of knowledge on the legal framework of climate justice and to ongoing efforts to understand the relationship between the legal framework and climate change mitigation and adaptation.

4. Result and Discussion

With every passing day and no end to the encroaching impact of climate change, a need arises for a rigid framework of measures and procedures to tackle the problem at hand. That is where a "climate justice system" comes into play. It is a system that ensures just and fair equitable distribution of burdens in different strata of society that arise as a result of the impact of climate system changes. Many countries have put in place structured legal frameworks to ensure climate justice in order to deal with the severe consequences of climate change.

In this paper, we will be focusing solely on the climate justice systems in the USA, UK, Japan, China, Germany and France, which include respectively the legal measures and policies put in place by these countries to mitigate the effects of climate change and ensure that the process of mitigation and adaptation is fair and applies equally to all. From the research conducted on the various intricacies and the data collected from various sources, the respective legal frameworks of the two countries have been discussed below in detail as follows:-

4.1 Climate Justice Framework in Selected Countries

4.1.1 United States

4.1.1.1 Legal and Policy Framework

US law and policy address climate change and promote climate justice. The Clean Air Act (1970)²², Clean Water Act (1972)²³, National Environmental Policy Act (1969)²⁴, & Paris Agreement (2015) are important act.²⁵ The "Clean Air Act (CAA)" sets national air quality regulations for stationary and mobile sources to protect public health and welfare. The CAA has reduced air pollution, especially GHG and criterion pollutant emissions (EPA, 2021). The "Clean Water Act (CWA)" protects the nation's waters from contamination and makes them suitable for "swimming, fishing, & drinking" (EPA, 2021). The CWA protects habitats and controls water pollution. Federal agencies must examine the environmental implications of their proposed actions and seek alternatives under NEPA. NEPA has influenced federal environmental policy. The "Paris Agreement" intends to keep global temperature rise below 2°C and ideally below 1.5°C. President Joe Biden re-joined the "Paris Agreement" in 2021, committing to decrease GHG emissions by 50-52% by 2030.²⁶

4.1.1.2 Climate Justice Initiatives and Actions

The Biden Administration has prioritised climate justice, focusing on alleviating the disproportionate effects of climate change on vulnerable populations. To ensure that low-income neighbourhoods receive a fair share of the benefits from federal investments in climate and clean energy, the White House issued Executive Order 14008 in January 2021.²⁷ In order to better understand and address environmental justice issues, the Environmental Protection Agency (EPA) developed a new tool called EJSCREEN. To make fair policy decisions and distribute resources, this data is used.

4.1.1.3 Challenges and Progress

Despite these efforts, the United States faces significant challenges in achieving climate justice, including the ongoing reliance on fossil fuels, historical legacies of environmental racism, and the need for a just transition for workers in carbon-intensive industries. Nevertheless, improvement observed in recent years. The Biden Administration's American Jobs Plan has allocated \$2 trillion for

²² Clean Air Act, Clean Air Act, UNITED STATES.[GOOGLE SCH. (1970).

²³ Clean Water Act, Clean water act, 47 TEX. TECH LAW REV. 585 (1972).

²⁴ Regulatory Flexibility Act, national environmental policy act, FLOOD CONTROL ACT (1969).

²⁵ The Paris Agreement, supra note 25.

²⁶ THE WHITE HOUSE, Take Climate Action in Your Community, (2021).

²⁷ THE WHITE HOUSE, Justice40, (2021).

clean energy infrastructure, creating millions of jobs and promoting environmental justice.²⁸ Additionally, the Clean Energy and Sustainability Accelerator aims to mobilize private investment in low-income and disadvantaged communities, facilitating their transition to a clean energy economy.²⁹

Finally, the United States has a stable constitutional & legislative base to combat the effects of climate change and establish the cause of climate justice. There still exist numerous challenges to be conquered, but recent attempts indicate progress & a commitment to making the shift to a sustainable future that's equitable and fair for everyone.

4.1.2 United Kingdom

4.1.2.1 Legal and Policy Framework

The UK's commitment to climate justice is firmly rooted in its legal and policy framework. Climate Change Act of 2008 is the cornerstone legislation, which sets legally binding targets for reducing greenhouse gas emissions. The Act mandates an 80% reduction in emissions by 2050 relative to 1990 levels (1).³⁰

In 2019, the UK government further strengthened its commitment by setting a target of net-zero emissions by 2050.³¹ The UK also adheres to international climate agreements such as the Paris Agreement, which aims to limit global temperature rise to well below 2°C and strives for 1.5°C above pre-industrial levels.³² and is a signatory to international climate agreements such as "Paris Agreement". In order to help countries that are developing in their quest to respond to and alleviate the consequences of worldwide warming, the United Kingdom has pledged £11.6 billion from 2021-2025 as part of international climate finance.³³

4.1.2.2 Climate Justice Initiatives and Actions

The United Kingdom (UK) has launched a number of environmental justice initiatives with the twin objectives of eliminating environmental-related disparities while accelerating the move to an economy with low carbon emissions. Important steps include:

- a. The Green New Deal: A set of policy proposals aiming to address both climate change and economic inequality through massive investment in renewable energy and green infrastructure, creating millions of well-paid jobs in the process.³⁴
- b. Just Transition: A sustainable and balanced shift to an environmentally friendly economy, particularly among those who engage with sectors with high carbon emissions along with those who are marginalised, necessitates a system of regulations that can ensure this.³⁵
- c. Climate Assembly UK: In order to handle climate change in a more transparent and all-encompassing way, a citizens' convention was laid out in 2020.³⁶

4.1.2.1 Challenges and Progress

Despite significant progress, the UK still faces several challenges in achieving climate justice:

- a. Slow progress in reducing emissions: Recent assessments imply the UK isn't certainly towards meeting its 4th & 5th carbon spending plans, which span 2023-2027 to 2028-2032, correspondingly (9). This is despite the fact that the UK has cut its carbon footprint by 43.8% between the years 1990 and 2020.³⁷
- b. Inequalities in climate impacts: Climate change disproportionately affects low-income communities and marginalized groups, and the UK needs to address these inequalities by investing in adaptation and resilience measures.
- c. Financing the transition: The United Kingdom must keep mobilising resources for climate action in order to fund the shift to an economy with low carbon footprints.³⁸

²⁸ THE WHITE HOUSE, Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies, (2021).

²⁹ THE WHITE HOUSE, Fact Sheet: Biden Administration Advances Equity and Opportunity for Disadvantaged Communities Through the Clean Energy and Sustainability Accelerator, (2021).

³⁰ UK Government, *Climate Change Act 2008*.

³¹ UK Government, *UK becomes first major economy to pass net zero emissions law*, (2019).

³² The Paris Agreement, *supra* note 25.

³³ UK Government, *UK International Climate Finance*, (2020).

³⁴ Green New Deal Group, *A Green New Deal*, (2008).

³⁵ Energy & Industrial Strategy Department for Business, *Final UK greenhouse gas emissions national statistics: 1990-2019*, (2021).

³⁶ COMMITTEE ON CLIMATE CHANGE, *Progress in reducing emissions: 2021 Report to Parliament*, (2021).

³⁷ UK EXPORT FINANCE, *Climate Change Strategy 2021- 2024*, (2021).

³⁸ Robert Watson, *Financing the Transition to a Low Carbon Economy*, WORLD BANK, WASHINGT. DC (2007).

The UK has made substantial progress in addressing climate change and promoting climate justice through its legal and policy framework and various initiatives. However, it still faces several challenges in achieving its climate goals and ensuring a just and equitable transition to a low-carbon economy.

4.1.3 Japan

4.1.3.1 Legal and Policy Framework

Japan has a robust legal and policy framework in place to tackle climate change and ensure climate justice. The primary legal framework is governed by "climate change Adaptation Act (2018)"³⁹ and "climate change Mitigation Act (2019)"⁴⁰. These laws provide the foundation for Japan's national strategy to combat climate change and ensure a just transition to a low-carbon society. Under these laws, Japan has established ambitious targets, such as achieving carbon neutrality by 2050, as announced in "2050 Carbon Neutral Policy Outline" (2020)⁴¹. According to its "Nationally Determined Contributions (NDCs)" under the "Paris Agreement" (2015), the country is committed to reducing the emission of greenhouse gases by 46% from what they were in 2013 by 2030.

4.1.3.2 Climate Justice Initiatives and Actions

Japan has taken several regional, local, and worldwide steps towards establishing climate justice. For instance, the following:

- a. Green Finance: Japan has embraced green finance, promoting investment in sustainable projects and technologies. The Green Growth Strategy (2020) aims to stimulate private investment in green businesses and create opportunities for employment in clean industries.⁴²
- b. Decentralized Renewable Energy: Japan's Feed-in Tariff (FIT) scheme (2012) has incentivized the deployment of decentralized energy systems that are renewable, contributing to the reduction of power usage and promoting a just energy transition.⁴³
- c. Climate Resilient Infrastructure: To safeguard the most endangered inhabitants from the effects of climate change, Japan has built environmentally friendly structures, including the Tokyo Metropolitan Area Outer Underground Discharge Channel.
- d. International Cooperation: Japan has actively participated in international climate negotiations, providing financial and technical support to developing countries through the Green Climate Fund (GCF)⁴⁴ and the Japan International Cooperation Agency (JICA)⁴⁵.

4.1.3.3 Challenges and Progress

Despite these initiatives, Japan still faces significant challenges in achieving climate justice:

- a. Coal Dependency: Japan continues to rely on coal for approximately 30% of its electricity generation (IEA, 2021). The country needs to phase out coal and accelerate the transition to renewable energy sources.⁴⁶
- b. Social Inclusion: Ensuring social inclusion in climate policies is crucial to achieving climate justice. Vulnerable communities, such as the elderly and the poor, must be given priority in adaptation and mitigation efforts.
- c. International Climate Leadership: Japan, being the world's third-biggest economy, has to assume a more active role in pursuing sustainable development on an international basis.

Even so, Japan has made major strides forward in the cause of climate justice. Carbon neutrality by 2050 and a 46 percent decrease in GHG emissions by 2030 demonstrate the country is concerned about combating the effects of climate change. Other nations can learn from the United States' focus on green financing, decentralised energy production from renewable sources, and climate-resilient infrastructure as they work to achieve climate justice.

³⁹ Climate Change Adaptation Act, *Climate Change Adaptation Act, 2018*, (2018).

⁴⁰ Government of Japan Ministry of the Environment, *Climate Change Mitigation Act, 2019*, (2019).

⁴¹ Trade and Industry Ministry of Economy, *2050 Carbon Neutral Policy Outline, 2020*, (2020).

⁴² Government of Japan Ministry of Economy, Trade and Industry, *Green Growth Strategy, 2020* (2020).

⁴³ Government of Japan Ministry of Economy, Trade and Industry, *Feed-in Tariff (FIT) scheme*, (2020).

⁴⁴ Green Climate Fund (GCF).

⁴⁵ Japan International Cooperation Agency (JICA).

⁴⁶ INTERNATIONAL ENERGY AGENCY, *Japan - Countries & Regions*, (2021).

4.1.4 China

4.1.4.1 Legal and Policy Framework

- a. "13th Five-Year Plan (2016-2020)": According to this plan, China is expected to reach its carbon dioxide emitting maximum around 2030, and as of 2020, the amount of its main energy use that comes from sources other than fossil fuels would have expanded to about 20%.⁴⁷
- b. "Paris Agreement": Following its adoption of the "Paris Agreement" in 2016, China vowed to reduce its carbon footprint (CO2 pollutants per unit of GDP) by 60 to 65 percent from that of 2005 by 2030, along with to grow its timber inventory by 4.5 billion cubic metres.⁴⁸
- c. The 14th Five-Year Plan (2021-2025):⁴⁹ The initiative aims to minimise atmospheric carbon dioxide pollutants by 18 percent per unit of GDP & lower the consumption of energy by 13.5 percent. Additionally, it underlines the relevance of advancing low-carbon technologies along with energy from sustainable sources.

4.1.4.2 Climate Justice Initiatives and Actions

- a. South-South Cooperation on Climate Change: Since 2015, China has committed \$3 billion to the "South-South Climate Cooperation Fund" to benefit emerging nations, mitigate and adapt to varying climatic settings all around.⁵⁰
- b. "Belt & Road Initiative (BRI)": Despite concerns raised about the environment, China is actively promoting ecological growth through initiatives like the "Green Silk Road Initiative", which encourages the incorporation of aesthetically environmentally friendly techniques in BRI construction.⁵¹

4.1.4.3 Challenges and Progress

- a. Coal Dependency: According to the National Bureau of Statistics (2020), 56.8 percent of China's major consumption of energy was derived from coal. Both solar and wind power capacities have reached 281 GW and 253 GW, respectively, by the end of 2020 (China Energy Portal, 2021), illustrating China's progress in pursuing its clean energy potential.⁵²
- b. Industrial Overcapacity: China's heavy industries, such as steel and cement, contribute significantly to its greenhouse gas emissions. The government has implemented policies to reduce overcapacity and promote energy efficiency, with a target to cut crude steel production capacity by 100-150 million tons between 2016 and 2020.⁵³
- c. Public Awareness and Participation: Raising public awareness and promoting citizen participation in climate action is crucial for China's climate justice efforts. The country has been increasingly involving non-state actors in its climate policies, and environmental NGOs have played an important role in raising public awareness of climate issues.⁵⁴

China's legal & regulatory environment worldwide attempts, including domestic initiatives, have collectively attained substantial progress towards mitigating the effects of climate change and furthering the cause of environmental justice. Nevertheless, there are still major problems that the country must deal with, such as its reliance on coal and its industrial overcapacity. More work has to be done to find substances to all of these problems, along with providing an equitable move to a carbon-free future.

4.1.5 Germany

4.1.5.1 Legal and Policy Framework

To address the effects of climate change and establish sustainable development, the German federal govt has enacted a number of laws & initiatives. Major pieces of laws and regulations are as follows:

- a. "The Climate Action Plan 2050 (Klimaschutzplan 2050)": Germany's long-term aim to reduce the release of greenhouse gases by 80-95% by 2050 compared with the year 1990 was first implemented in 2016.⁵⁵

⁴⁷ COMMUNIST PARTY OF CHINA & CENTRAL COMPILATION BUREAU, THE 13TH FIVE-YEAR PLAN FOR ECONOMIC AND SOCIAL DEVELOPMENT OF THE PEOPLE'S REPUBLIC OF CHINA (2016-2020) (2016).

⁴⁸ The Paris Agreement, *supra* note 25.

⁴⁹ ASIAN DEVELOPMENT BANK, *This policy note outlines recommendations on the 14th Five-Year Plan (2021-2025) for National Economic and Social Development of the People's Republic of China*, (2021).

⁵⁰ MINISTRY OF ECOLOGY AND ENVIRONMENT, *China's Policies and Actions for Addressing Climate Change*, (2018).

⁵¹ Boqiang Lin & François Bega, China's Belt & Road Initiative coal power cooperation: Transitioning toward low-carbon development, 156 ENERGY POLICY 112438 (2021).

⁵² China Energy Portal, (2021).

⁵³ COMMUNIST PARTY OF CHINA AND CENTRAL COMPILATION BUREAU, *supra* note 82.

⁵⁴ Fei Teng & Pu Wang, The evolution of climate governance in China: drivers, features, and effectiveness, 30 ENV. POLIT. 141 (2021).

⁵⁵ NATURE CONSERVATION AND NUCLEAR SAFETY FEDERAL MINISTRY FOR THE ENVIRONMENT, Climate Action Plan 2050, (2016).

- b. "The Climate Protection Act (Klimaschutzgesetz)": Germany's emissions of greenhouse gases have been obligated to be reduced by 55 percent by 2030, compared to the year 1990, owing to a recent law that took effect in 2019.⁵⁶
- c. "The Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG)": Since its initial implementation in 2000, the EEG has undergone multiple rounds of changes, with the most recent being in 2021. Its goal is to have 65% of Germany's electrical power come from sources that are sustainable by the year 2030.⁵⁷
- d. "The Coal Phase-out Act (Kohleausstiegsgesetz)": In 2020, lawmakers passed a bill that would ultimately scale out coal-fired energy plants by 2038, including an assessment of the proposed timeline set for 2032.⁵⁸

4.1.5.2 Climate Justice Initiatives and Actions

To combat the impact of climate change and establish the cause of climate justice, the German federal gov't introduced a number of laws & initiatives. The following are examples of significant laws & guidelines:

- a. "The Climate Action Plan 2050 (Klimaschutzplan 2050)": Germany's long-term aim to reduce greenhouse gas emissions by 80-95% by 2050 relative to 1990 levels was launched in 2016.
- b. "The Climate Protection Act (Klimaschutzgesetz)": Germany's emissions of greenhouse gases are legally required to be reduced by 55 percent by 2030, compared to 1990 levels, thanks to a new law that will take effect in 2019.
- c. "The Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG)": Since its initial implementation in 2000, the EEG has been through a series of modifications, with the majority of the recent being in 2021. The intention is to have 65% of Germany's power come from sources that are sustainable by the year 2030.
- d. "The Coal Phase-out Act (Kohleausstiegsgesetz)": The act, which took effect in 2020, defines the gradual elimination of coal-fired energy sources by 2038 at its earliest, with an assessment of the timeline anticipated for 2032.
- e. Microclimate adaptation actions: Germany has a comprehensive resilience initiative in effect, with a particular focus on domains like infrastructure, water conservation, food production, as well as healthcare. Populations, environmental systems, and businesses are more resistant to the consequences of climate change if that strategy is put into operation.
- f. Green inducement correspondences: Germany introduced its ecological stimulation strategy in 2020 in response to the monetary impact of Covid-19. The plan's components included expenditures in energy from renewable sources, mass transit, plus charging stations for electric cars facilities. The primary objectives of the aforementioned plan were to foster more job opportunities, raise economic growth, & develop an economic recovery that is sustainable.
- g. Carbon pricing: To encourage both companies and customers together to take steps to cut back on the way they contribute to the climate crisis, Germany has set up integrated national carbon trading tactics for the automotive & building sectors.
- h. Universal environment international relations: Germany is a proactive player in global climate discussions where it advocates strong efforts to combat climate change & reinforces the Paris Agreement's fulfilment. They have also been influential in efforts by the EU designed to reduce carbon emissions & enhance ecological practises.

4.1.5.3 Challenges and Progress

Despite Germany's ambitious goals and actions, it faces several challenges, including:

- a. Reliance on Coal: Phasing out coal remains a significant challenge, as it still accounted for approximately 24% of the entire electricity production in 2020 for the nation.⁵⁹
- b. Emission Reduction Targets: As of 2020, Germany had reduced its greenhouse gas emissions by 40.8% compared to 1990 levels, falling short of its 2020 target of 40%.⁶⁰

However, Germany has made significant progress in its climate justice initiatives, with some notable achievements, such as:

- a. Renewable Energy: It was the first ever instance when such renewable energy resources, reported for 46% of energy production in Germany, surpassed fossil fuels in the year 2020.⁶¹

⁵⁶ Gesetz zur Einführung eines Bundes-Klimaschutzgesetzes und zur Änderung weiterer Vorschriften, Bundesgesetzblatt Jahrgang 2019 Teil I Nr. 48.

⁵⁷ FEDERAL MINISTRY FOR ECONOMIC AFFAIRS AND ENERGY (BMWi), The Renewable Energy Sources Act (EEG), (2021).

⁵⁸ BUNDESGESETZBLATT, Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung und zur Änderung weiterer Gesetze (Kohleausstiegsgesetz), (2020).

⁵⁹ FEDERAL MINISTRY FOR ECONOMIC AFFAIRS AND ENERGY (BMWi), *Energy data*, (2021).

⁶⁰ NATURE CONSERVATION FEDERAL MINISTER FOR THE ENVIRONMENT & BUILDING AND NUCLEAR SAFETY, *The German Government's Climate Action Programme 2020*, (2014).

⁶¹ Fraunhofer ISE, *Electricity production in Germany*, (2021).

- b. Emissions Trading System (ETS): Being a European Union member, Germany takes part in ETS, which has helped reduce secretions in power & manufacturing areas.⁶²

Germany has established a robust legal and policy framework for climate justice and has made substantial progress in its initiatives. However, it is still fronting challenges in meeting emission reduction targets and transitioning away from fossil fuels.

4.1.6 France

4.1.6.1 Legal and Policy Framework

France has enacted several regulations & guidelines to combat environmental settings appraised due to changing climatic conditions, together with promoting climate justice practices. The country's efforts are guided by "Plan Climat" (2017), which outlines its commitment to carbon neutrality by 2050.⁶³ In 2015, France introduced the Energy Transition for Green Growth Act (ETGGA), which seeks to reduce greenhouse gas (GHG) emissions, increase renewable energy production, and improve energy efficiency.⁶⁴ Furthermore, France has implemented the National Low-Carbon Strategy (SNBC) to reduce emissions of greenhouse gases by more than 75% by the year 2050, in contrast to what it was in year 1990.⁶⁵

4.1.6.2 Climate Justice Initiatives and Actions

France has taken several measures to address climate justice, particularly in vulnerable communities. The government has allocated €20 billion for energy-efficient building renovations in social housing, schools, and hospitals under its €100 billion stimulus plan.⁶⁶ This investment aims to reduce energy poverty and improve living conditions for low-income households. In addition, France's Climate Solidarity Pact (2018) seeks to safeguard that changeover to a fair & inclusive economy with the emission of low carbon where special attention is given to rural and economically disadvantaged areas.⁶⁷ France is also active internationally, as demonstrated by its leadership during the 2015 Paris Agreement negotiations. The French government has committed to providing €5 billion annually in climate finance by 2020 to support developing countries in their mitigation and adaptation efforts.

4.1.6.3 Challenges and Progress

Despite its ambitious goals and actions, France faces several challenges in its pursuit of climate justice. The country is struggling to meet its own GHG reduction targets, with emissions only decreasing by 1% in 2019 instead of a targeted 3%.⁶⁸ Additionally, public resistance to some environmental policies, such as "Yellow Vest" protests against fuel tax increases, underscores the difficulty of balancing social equity with environmental goals.⁶⁹ Nevertheless, France has made significant progress in its energy transition. In 2020, renewable energy accounted for 33.6% of electricity production, up from 19.5% in 2010.⁷⁰ Furthermore, coal's part in France's entire energy drip down from 4% in 2010 to 1.4% in 2020, while the share of natural gas fell from 40.6% to 35.2%.⁷¹ France's legal and policy framework has provided a strong foundation for addressing climate justice, and the country has made progress in promoting equitable and inclusive initiatives. However, challenges remain, and France must continue to work toward balancing environmental goals with social equity.

4.2 Cross-Country Comparison and Best Practices

4.2.1 Comparative Analysis of Climate Justice Frameworks

Country	Climate Justice Framework	Key Policies and Measures
US	The US Administration has prioritized climate justice, integrating equity into climate policy.	- Executive Order on Tackling the Climate Crisis at Home and Abroad (2021)
		- Justice40 Initiative, targeting 40% of climate investment benefits to disadvantaged communities
UK	The UK government has focused on green economy by ensuring fair process.	- Climate Change Act (2008), establishing legally binding emissions targets
		- Just Transition Commission (2020) to advise on a fair transition to a low-carbon economy

⁶² European Commission, *System, EU Emissions Trading*.

⁶³ MINISTRY OF ECOLOGICAL AND SOLIDARITY TRANSITION, *Plan Climat*, (2017).

⁶⁴ Legifrance, LOI n° 2015-992 of August 17, 2015 relating to the energy transition for green growth, (2015).

⁶⁵ MINISTRY OF ECOLOGICAL AND SOLIDARITY TRANSITION, *No Title*, (2018).

⁶⁶ French Government, *France Recovery: Economic recovery plan*, (2020).

⁶⁷ Ministry of Ecological and Inclusive Transition, *Pact for an Inclusive Transition*, (2018).

⁶⁸ HAUT CONSEIL POUR LE CLIMAT, *RAPPORT ANNUEL 2020 – REDRESSER LE CAP, RELANCER LA TRANSITION*, (2021).

⁶⁹ Emiliano Grossman, *France's Yellow vests--symptom of a chronic disease*, 10 POLIT. INSIGHT 30 (2019).

⁷⁰ ELECTRICITY TRANSMISSION NETWORK, *ELECTRICITY REPORT 2020*, (2021).

⁷¹ *Id.*

China	China's climate justice approach primarily targets reducing emissions while maintaining economic growth.	- 14th Five-Year Plan (2021-2025), emphasizing low-carbon development
		- Carbon neutrality target by 2060
Germany	Germany's approach to climate justice focuses on social equity, environmental protection, and sustainable growth.	- Climate Action Plan 2050, setting sector-specific emissions reduction targets
		- Coal phase-out by 2038
France	France's climate justice policies prioritize a just transition and environmental protection.	- Climate and Resilience Law (2021), with provisions on energy, transport, and housing
		- High Council for Climate, an independent body advising the government on climate policy

4.2.2 Identifying Best Practices and Lessons Learned

Best practices in climate justice, drawing from the experiences of the United States, United Kingdom, China, Germany, France, Israel, Russia, Canada, Brazil, and South Africa:

- i. Ambitious emission reduction targets: Setting legally binding and ambitious targets for greenhouse gas emission reductions is crucial for driving climate action. For example, the UK has an aim of net zero carbon emission by the year 2050 as per its millennium goal.
- ii. Carbon pricing and taxation: Implementing carbon pricing mechanisms or taxes can incentivize businesses and individuals to reduce their carbon footprints. Both France and Canada have introduced carbon taxes.
- iii. Renewable energy development: Investing & encouraging acceptance of sources based on renewable energy is a key component of climate justice. Germany's Energiewende policy exemplifies this approach.
- iv. Energy efficiency measures: Promoting energy efficiency in buildings, transportation, and industry can significantly reduce emissions. France's Law on Energy Transition for Green Growth focuses on energy efficiency.
- v. Electric vehicle adoption: Encouraging the use of electric vehicles (EVs) and supporting charging infrastructure can help reduce transportation-related emissions. China has taken steps to promote EV adoption.
- vi. Green finance strategies: Supporting sustainable investments & supporting environment friendly ventures & infrastructure, as realized in the green finance approach that can arouse with the changeover to an economy with low emersion of carbon.
- vii. Forest conservation and reforestation: Protecting forests and promoting reforestation can help sequester carbon dioxide and preserve biodiversity. Russia and Brazil have implemented forest conservation measures.
- viii. Environmental justice initiatives: Addressing inequalities and promoting environmental justice is critical for a fair climate transition. The US's Justice40 Initiative exemplifies this approach.
- ix. Adaptation and resilience planning: Developing comprehensive plans for climate adaptation and resilience can help countries and communities prepare for and respond to the impacts of variations in climatic conditions. Building resilience is key for the framework of the Canadian Govt for sustainable environmental growth so as to cope with conditions that emerged due to changes in climatic settings.
- x. Methane emission reduction: Targeting methane emissions, a potent greenhouse gas, can help curb global warming. Russia has implemented policies to reduce methane emissions.
- xi. Green technology innovation: Supporting the growth & deployment of hygienic machineries can drive the changeover to the economy with reduced emersion of carbon. Israel's Green Growth Fund invests in clean technology startups.
- xii. Managing waste & reprocessing: Improving the system to manage waste & promoting recycling can reduce emissions and resource consumption. Russia's National Project for the Environment addresses waste management.
- xiii. Public transportation and urban planning: Promoting sustainable urban planning and public transportation can help reduce emissions and improve quality of life. France's climate plan includes low-carbon transportation initiatives.
- xiv. Collaboration with indigenous communities: Engaging and supporting indigenous communities in climate action can foster greater inclusivity and resilience. Canada's climate framework includes support for indigenous communities.
- xv. International cooperation and commitment: Participating in international treaties & collaboration, like the Paris Agreement, is essential for a coordinated global response to climate change. The US's recent re-joining of the Paris Agreement demonstrates its renewed commitment to involve actively in climate related concerns.

5. Conclusion and Policy Recommendation

On a concluding note, it can be said that the legal frameworks of climate justice in the USA, UK, Japan, China, Germany and France, despite their ambitious goals, remain plagued by shortcomings in their implemented policies and programs, pulling them back

from attaining their full potential. Furthermore, differences remain in the specific measures implemented by each country and the way they approach climate justice, leading to different levels of impact on the overall problem. Nonetheless, the overall goal of all selected countries, to ensure that their citizens are shielded from the severe impact of climate instability and their subsequent efforts to address the issue, remains the same and is guided by principles of fairness and justice despite their differences.

The author believes that the climate justice systems in all selected countries could be improved by the following steps:

1. Increasing support for vulnerable communities by providing financial and technical assistance to those communities that are disproportionately affected by the effects of climate change.
2. Greater investment in renewable energy sources, particularly in regions where communities are more likely to be negatively impacted by a transition to an economy of low-carbon nature.
3. Improved energy-efficient measures such as requiring all new buildings to meet high energy-saving standards and providing incentives for retrofitting existing buildings.
4. While phasing out coal and other non-renewable sources of energy, the UK and Germany must ensure that the workers in various industries have access to training and job opportunities in the new low-carbon economy to make the transition seamless and without many hiccups.
5. Ensuring that the costs are distributed equitably among the different strata of society, with support and intervention for those who are not equipped sufficiently to bear them.

The above list of suggestions is not an exhaustive one but might prove to be a prominent catalyst in the process of attaining milestones set to be achieved through the Legal Frameworks of the USA, UK, Japan, China, Germany and France.

6. Study Limitations and Future Directions

This is doctrinal research; case studies can be added from other South Asian States. The scope of the study is limited as it is a doctrinal study. Best practices can be inculcated in other developing States like India so that a proper legal framework can be designed to address climate change. Further research can be done with other States, and the pros and cons of the legal framework existing in the USA, UK, Japan, China, Germany and France can be beneficially utilised at a global level.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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