

Climate Loss, Damage Fund and Other Major Climate Funds: Analyzing the Global Disparity between Climate Finance and Military Expenditure

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Abstract

Climate change, primarily driven by human activities such as the emission of greenhouse gases (GHG), has led to significant global impacts. These include rising temperatures, sea-level rise, and an increase in extreme weather events such as floods, droughts, and hurricanes. Developing countries, which contribute the least to GHG emissions, bear a disproportionate burden from these effects, enduring far greater casualties and financial strain compared to developed nations. As global temperatures rise, the economic cost of climate change will escalate, with projected losses ranging from \$290 billion to \$580 billion annually by 2030. In response, the United Nations Climate Change Conferences—most notably COP27 and COP28—have facilitated the establishment of the Climate Loss and Damage Fund (CLDF), designed to support vulnerable nations in coping with the severe consequences of climate change. This paper analyzes historical and current climate polluters, their financial commitments to the CLDF and other major climate funds, and contrasts these contributions with their military spending. By scrutinizing the disparity between climate finance and defense budgets, the paper highlights the critical need for innovative financial mechanisms and greater accountability from major climate polluters. Finally, the paper offers recommendations for strengthening the CLDF's governance structures and securing long-term funding to ensure equitable and effective climate action.

Keywords: Climate change; Greenhouse gas emissions; Climate Loss and Damage Fund (CLDF); COP27; Climate finance; Global emissions; Adaptation and mitigation; Developing nations

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صندوق الخسائر والأضرار المناخية وصناديق المناخ الكبرى الأخرى: تحليل التفاوت بين تمويل المناخ والإنفاق العسكري على مستوى العالم

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ملخص

أدى التغير المناخي، الناتج بشكل أساسي عن الأنشطة البشرية مثل انبعاثات الغازات الدفيئة، إلى آثار عالمية كبيرة تشمل ارتفاع درجات الحرارة، وارتفاع منسوب سطح البحر، وزيادة في الظواهر الجوية المتطرفة مثل الفيضانات والجفاف والأعاصير. وتحمل الدول النامية، التي تسهم بنسبة ضئيلة في هذه الانبعاثات، العبء الأكبر من هذه الآثار، حيث تواجه خسائر بشرية ومالية أكبر بكثير مقارنة بالدول المتقدمة. ومع ارتفاع درجات الحرارة العالمية، ستزداد الكلفة الاقتصادية للتغير المناخي، مع توقعات بخسائر تتراوح بين 290 مليار دولار إلى 580 ملياراً سنوياً بحلول عام 2030. استجابةً لذلك، شهدت مؤتمرات الأمم المتحدة بشأن تغير المناخ، وخاصة كوب 27 وكوب 28، إنشاء صندوق الخسائر والأضرار المناخية، الذي يهدف إلى مساعدة الدول الأكثر ضعفاً في مواجهة التأثيرات الكارثية للتغير المناخي. تحلل هذه الورقة الجهات المسببة للتلوث المناخي تاريخياً وحالياً، والتزاماتها المالية تجاه صندوق الخسائر والأضرار المناخية وصناديق المناخ الأخرى الكبرى، وتقارن بين هذه المساهمات وبين إنفاقها العسكري. ومن خلال فحص التفاوت بين تمويل المناخ وميزانيات الدفاع، تسلط الورقة الضوء على الحاجة الملحة لآليات مالية مبتكرة وزيادة المساهمة من الجهات المسببة الرئيسية لانبعاثات الكربون. وفي الختام، تقدم الورقة توصيات لتعزيز هيكل الحوكمة الخاص بالصندوق وتأمين تمويل طويل الأجل لضمان استجابة مناخية عادلة وفعالة.

الكلمات المفتاحية: تغير المناخ، انبعاثات الغازات الدفيئة، صندوق الخسائر والأضرار المناخية، كوب 27، تمويل المناخ، الانبعاثات العالمية، التكيف والتخفيف، الدول النامية

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Introduction

Climate change, often referred to as the long-term alteration of temperature and typical weather patterns in a specific region or globally, is primarily driven by human activities such as the emission of GHG like carbon dioxide (CO₂) and methane, *inter alia*, into the atmosphere.¹ These gases trap heat, leading to a gradual increase in global temperatures, which in turn disrupts weather patterns, accelerates the melting of ice caps and glaciers, raises sea levels, and intensifies extreme weather events such as hurricanes, droughts, and floods.²

Understanding climate change is crucial because it poses significant threats to ecosystems, human health, economies, and global stability.³ The impacts of climate change are far-reaching and affect various aspects of life on earth, including agriculture, water resources, biodiversity, and human settlements.⁴ Addressing climate change requires collective action at local, national, and international levels to reduce greenhouse gas emissions, adapt to its effects, and transition towards a more sustainable and resilient future.

In the ongoing battle against climate change, developing countries find themselves at the forefront, bearing a disproportionate burden of its impacts.⁵ The term ‘*developing countries*’ is commonly used to describe States characterised by lower levels of industrialisation, income *per capita*, and human development indicators when compared with advanced economies, though the category lacks a universally agreed legal definition.⁶ With rising sea levels and an increase in extreme weather events, these nations face significant challenges.⁷ According to the Intergovernmental Panel on Climate Change (IPCC), they endure a staggering fifteen times more casualties from natural disasters compared to their developed counterparts.⁸ The aftermath of such disasters imposes substantial financial strain on these nations, prompting calls for increased support to mitigate climate change impacts.⁹

In response to these challenges, the UN Climate Change Conference 2022 (COP27) in Egypt marked a significant milestone.¹⁰ Participating nations reached an agreement to establish the “Loss and Damage

1 Margaret Rosso Grossman, Climate Change and the Individual, *The American Journal of Comparative Law*, Volume 66, Issue suppl_1, July 2018, Pages 345–378.

2 IPCC, Climate Change 2021: The Physical Science Basis (Cambridge University Press, 2021); D. Puig, E. Calliari, M. F. Hossain and others, *Loss and Damage in the Paris Agreement's Transparency Framework* (University College London, 2019)

3 Margaret Rosso Grossman, Climate Change and the Individual, *The American Journal of Comparative Law*, Volume 66, Issue suppl_1, July 2018, Pages 345–378.

4 Shiv Bolan, Lokesh P. Padhye, Tahereh Jasemizad and others, ‘Impacts of climate change on the fate of contaminants through extreme weather events’ [2024] Volume 909 Science of The Total Environment

5 United Nations Framework Convention on Climate Change (UNFCCC), United Nations Climate Change Report 2022 published 2023.

6 Michael P Todaro and Stephen C Smith, *Economic Development* (12th edn, Pearson 2015).

7 Victoria Masterson, Stephen Hall and Madeleine North, ‘Sea Level Rise: Everything you need to know’ (2024) World Economic Forum < <https://www.weforum.org/agenda/2024/09/rising-sea-levels-global-threat/> > accessed 24.10.2024.

8 UNDP, ‘Loss and Damage Fund for Developing Countries’ (2024) < <https://www.undp.org/belarus/stories/loss-and-damage-fund-developing-countries> > accessed 24.10.2024.

9 Ibid.

10 COP27, ‘Proceedings of the United Nations Climate Change Conference, Egypt’ (2022).

Fund”, aimed at assisting low-income developing countries in coping with the aftermath of climate change-induced natural disasters.¹¹ This initiative, crucial for vulnerable nations, received widespread support.¹² To oversee the implementation of the fund and related climate finance mechanisms, a Transitional Committee comprising representatives from various nations was formed, reflecting a collaborative effort between developed and developing countries.¹³

Fast forward to the UN Climate Change Conference 2023 (COP28) in Dubai, United Arab Emirates, and the focus on climate finance for developing nations remains steadfast.¹⁴ During the inaugural plenary session of the Conference, participants made history by endorsing the creation of a dedicated fund to address and compensate for climate change-related losses and damages.¹⁵ This decision underscores the collective commitment to supporting vulnerable nations in their fight against climate change impacts.¹⁶ Taking a cue from these previous Conferences, the UN Climate Change Conference 2024 (COP 29) held in Baku, centrally focused on the issue of climate finance. The Conference, in alignment with the report of the first global stocktakes of the Paris Agreement,¹⁷ affirmed the need for increased adaptation and mitigation financing as critical enablers for the achievement of the global climate goals, especially for developing countries. Hence, a new finance goal was set to help national governments, especially those of developing countries, protect their economies and societies against climate disasters. Pursuant to the new finance goal, it was agreed that climate financial aid to developing countries be tripled from the previous goal of USD\$100 billion per annum to USD \$300 billion per annum by 2035.¹⁸ It was further agreed that all relevant actors will make efforts to scale up finance to developing countries from both public and private sources up to USD\$1.3 trillion per annum by 2035.¹⁹

Against this background, this paper scrutinizes the major countries that have historically contributed, and those presently contributing to climate pollution, alongside their corresponding contributions to the CLDF and other major climate funds. The CLDF, formally known as the *Fund for Responding to Loss and Damage* (FRLD), is a multilateral climate finance mechanism established under the United Nations Framework Convention on Climate Change (UNFCCC).²⁰ Its purpose is to provide grants or other financial assistance to developing and climate-vulnerable countries to address both *economic and non-economic losses and damages* caused by climate change, especially where mitigation and

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

¹⁴ COP28, ‘Dubai Declaration on Climate Finance for Developing Nations’ (2023).

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ UNFCCC, Technical Dialogue of the First Global Stocktake: Synthesis Report by the Co-Facilitators on the Technical Dialogue, 8 September 2023 <<https://unfccc.int/documents/631600>> accessed 15 December 2024; Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law: Paris Agreement* (Oxford University Press, 2017) 209. .

¹⁸ UNFCCC, The New Collective Quantified Goal on Climate Finance (NCQG), 24 November 2024 <https://unfccc.int/sites/default/files/resource/CMA%2011%28a%29_NCQG.pdf> accessed 15 December 2024.

¹⁹ Ibid.

²⁰ M Pill, ‘Towards a funding mechanism for loss and damage from climate change’ (2022) *Climate Policy*, ANU, Vol 35.

adaptation efforts have failed, are insufficient, or are too late. Such losses include those arising from sudden/extreme events (e.g., hurricanes, floods), as well as slow-onset processes (e.g., sea-level rise, desertification).²¹ The CLDF, recently established, aims to address the urgent need for climate change financing specifically for disproportionately affected nations that lack sufficient resources to manage these impacts, despite the existence of other climate funding sources. The paper meticulously analyses the financial commitments of each major polluter, shedding light on the disparities in funding allocated to address climate change compared to other types of funds, particularly military expenditure. Furthermore, the paper draws insights from these findings to elucidate lessons learned, offering recommendations aimed at fostering greater accountability and proactive measures for climate action. Through this comprehensive examination, the authors endeavour to contribute to the ongoing discourse on equitable resource allocation and sustainable environmental policies.

Methodology

This article employs a doctrinal legal research design, anchored in a close reading of primary instruments and decisions under the UNFCCC regime (including the Kyoto Protocol, the Paris Agreement, and decisions of COP27–COP29), together with relevant soft-law texts and institutional guidance. These sources are interpreted to identify the legal bases, objectives, and operational contours of the CLDF and its relationship to existing climate-finance mechanisms (e.g., the Green Climate Fund and the Adaptation Fund). In addition, the doctrinal analysis is informed by established principles of international law such as the duty to prevent transboundary harm, state responsibility, and the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC).²² The study further draws on concepts of climate justice and obligations of international cooperation under **Articles 55 and 56 of the UN Charter**,²³ thereby situating the CLDF within a broader legal and normative framework.

A comparative assessment is then undertaken to juxtapose historical and contemporary emissions profiles of major polluters with their financial commitments to the CLDF and other funds. Authoritative secondary datasets—such as those produced by the IPCC, the European Commission’s Joint Research Centre, the World Resources Institute, the World Bank, and similar bodies—are used to situate pledges against measures of responsibility and capacity to pay. These empirical comparisons are grounded in normative legal debates around equity, distributive justice, and the *erga omnes* nature of environmental obligations, ensuring that the analysis moves beyond descriptive statistics to engage with the underlying jurisprudential questions. In parallel, an interdisciplinary lens incorporates empirical evidence on global public finance and military expenditure (e.g., SIPRI), enabling a structured comparison between climate-finance allocations and competing fiscal priorities, and assessing whether present contributions are commensurate with projected loss-and-damage needs to 2030 and beyond. The analysis is organised around three evaluative themes: equity and responsibility (operationalising CBDR-RC in contribution patterns), adequacy and sustainability (testing the sufficiency and predictability of funding against

²¹ Ibid.

²² Philippe Sands, *Principles of International Environmental Law* (Cambridge University Press 2018) ch. 8.

²³ Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945) 1 UNTS XVI, arts 55–56.

estimated loss-and-damage ranges), and governance and accountability (scrutinising inclusivity, transparency, and recipient access—particularly for Small Island Developing States (SIDS) and developing countries). This thematic framework is supported by legal-theoretical constructs drawn from international environmental law, human rights law, and global justice scholarship. The study does not undertake original econometric modelling; it relies on triangulation across reputable secondary sources and acknowledges data lags and definitional divergences between pledges, disbursements, and eligible finance. These limitations are mitigated by cross-verification across institutions and by focusing on trends and ratios rather than absolute figures where appropriate.

1. Historic and Current Climate Change Key Polluters

Climate change, a pressing global issue, is primarily driven by anthropogenic activities, with certain entities historically contributing significantly to greenhouse gas emissions. The Industrial Revolution marked a pivotal point in human history, characterized by the widespread use of fossil fuels and the acceleration of industrial activities.²⁴ CO₂ emissions soared during this period, with estimates suggesting an increase from approximately 280 parts per million (ppm) in the pre-industrial era to over 400 ppm in recent years.²⁵ According to the latest data released by the National Oceanic and Atmospheric Administration Global Monitoring Lab in their annual report, the global average atmospheric CO₂ reached 422.03 parts per million in September 2024, marking a significant increase and setting a new record.²⁶ This CO₂ comparison is represented in Figure 1 below, showing the drastic and modern increase since the industrial era to the present. The surge in emissions can be attributed to the proliferation of coal-fired factories and the expansion of transportation networks, particularly in Western Europe and North America.²⁷ For instance, the United Kingdom's coal consumption skyrocketed from around 10 million tonnes in 1800 to 258 million tonnes by 1903, resulting in a substantial contribution to global emissions.²⁸

Throughout the 20th century, developed nations, including the United States, the United Kingdom, and Germany, emerged as major contributors to climate change. Data compiled by the World Resources Institute (WRI) indicate that the United States alone accounted for approximately 25% of cumulative CO₂ emissions between 1751 and 2017.²⁹

24 Chigbo A. Mgbemene, Chidozie Charles Nnaji, Chekwubechukwu Nwozor, 'Industrialization and its Backlash: Focus on Climate Change and its Consequences' (2016) 9(4):301-316 < https://www.researchgate.net/publication/304008995_Industrialization_and_its_Backlash_Focus_on_Climate_Change_and_its_Consequences > accessed 14/05/2024.

25 Rebecca Lindsey, 'Climate Change: Atmospheric Carbon Dioxide' (2024) National Oceanic and Atmospheric Administration < <https://gml.noaa.gov/ccgg/trends/> > accessed 24.10.2024; Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law: Paris Agreement* (Oxford University Press, 2017) 209.

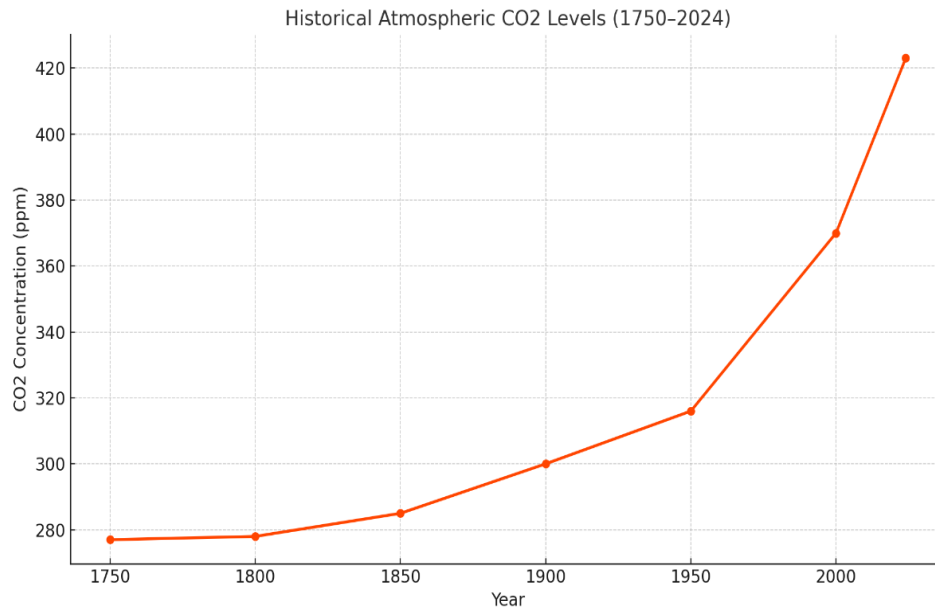
26 Ibid.

27 R.T. Wadanambi, L.S. Wandana, K.K.G.L. Chathumini and others, 'The effects of industrialization on climate change' [2020] Faculty of Technology, University of Sri Jayewardenepura VOL 1, ISSUE 4, 86, 87.

28 Hannah Ritchie, "The death of UK coal in five charts" (2019) OurWorldInData.org < <https://ourworldindata.org/death-uk-coal#article-citation> > accessed 14/05/2024.

29 Bouramdane, Ayat-Allah, 'Lessons Learned from International Climate Negotiations: Mitigation, Climate Finance for Losses and Damages, and Adaptation' (2020) ResearchGate < https://www.researchgate.net/figure/Cumulative-carbon-dioxide-CO2-emissions-from-1751-to-2017-highlighting-the-major_fig2_368602330#:~:text=Context%20in%20source%20publication&text=2%2C%20the%20United%20States%20has,the%20world's%20second%20largest%20contributor.>https://www.climatewatchdata.org/countries/USA?end_year=2020&start_year=1990 > accessed 15/5/2024.

Similarly, Germany's industrial prowess fuelled significant emissions, with the country ranking among the top emitters per capita during the 20th century.³⁰ Moreover, the exponential growth of the automobile industry in developed countries significantly augmented emissions, further exacerbating the climate crisis.³¹ In recent decades, rapid industrialization in emerging economies, notably China, the United States of America, and India, has reshaped the global emissions landscape.³² China, now the world's largest emitter of greenhouse gases, has experienced an unprecedented surge in emissions due to its heavy reliance on coal for electricity generation and industrial production but at the same time provides the largest investments in renewable energy and a fast track to decarbonize its industries.³³



Source: Data compiled by the author from European Commission: CO₂ and GHG Emission Report (2023), NOAA: Climate Change: Atmospheric Carbon Dioxide (2024), and OurWorldInData (2019).

Figure 1: The line graph shows a drastic rise in CO₂ levels in recent years compared to the industrial period

This line graph in Figure 1³⁴ shows the historical rise in atmospheric CO₂, from approximately 280 ppm in the pre-industrial era to a record 422.03 ppm in 2024. The sharp increase underscores the impact of

30 Rie Watanabe and Lutz Mez, 'The Development of Climate Change Policy in Germany' [2004] Vol. 5, No. 1, pp. 109–126.

31 Ian D. Williams and Michael Blyth, 'Autogeddon or autoheaven: Environmental and social effects of the automotive industry from launch to present' [2023] *Science of The Total Environment* Volume 858, Part 3.

32 Le Quéré, C., Jackson, R. B., Jones and others, 'Global Carbon Budget 2018' (2018) *Earth System Science Data*, 10(4), 2141-2194.

33 Ibid.

34 The Co-Author compiled and created this chart using data from these sources: Crippa, M., Guizzardi, D., Pagani and others, *GHG Emissions of All World Countries* (JRC/IEA Report, 2023) European Commission EUR 31658 EN; Rebecca Lindsey, 'Climate Change: Atmospheric Carbon Dioxide' (2024) National Oceanic and Atmospheric Administration <<https://gml.noaa.gov/ccgg/trends/>> accessed 24.10.2024 and Hannah Ritchie, "The death of UK coal in five charts" (2019) OurWorldInData.org <<https://ourworldindata.org/death-uk-coal#article-citation>> accessed 14/05/2024.

industrialization, fossil fuel use, and deforestation on atmospheric CO₂ concentrations over time.

Data from the European Commission JRC Science for Policy 2023 Report reveals that China accounted for approximately 29.2% of global GHG emissions in 2023.³⁵ Similarly, the United States of America accounted for approximately 11.2% of global GHG emissions in 2022, and India accounted for 7.3%.³⁶ Other major greenhouse gas emitters include the European Union, responsible for 6.7% of global emissions, Russia with 4.8%, and Brazil with 2.4%, while the remaining countries collectively accounted for 38.4%, based on 2022 data.³⁷ This information is shown in Figure 2, which shows the correlation between major countries of the world and the global emissions rate. Together, these emerging economies have significantly contributed to the rise in global emissions, underscoring the need for concerted international action.

Percentage of Global Greenhouse Gas Emissions by Major Countries vs. Rest of the World (2022)

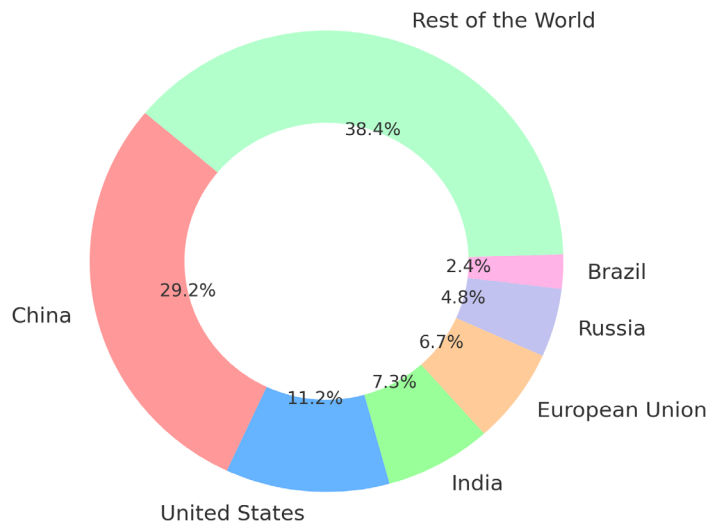


Figure 2: The percentage of global greenhouse gas emissions by the world's major polluters

Source: Crippa, M., Guizzardi, D., Pagani and others, *GHG Emissions of All World Countries (JRC/IEA Report, 2023)* European Commission EUR 31658 EN.³⁸

Deforestation and land-use change also play a pivotal role in climate change, releasing vast amounts of CO₂ into the atmosphere. Data indicate that deforestation rates have accelerated in recent decades, particularly in tropical regions such as the Amazon basin and Southeast Asia.³⁹ For example, Brazil, home to the Amazon rainforest, has witnessed a dramatic increase in deforestation due to agricultural

³⁵ Crippa, M., Guizzardi, D., Pagani and others, *GHG Emissions of All World Countries (JRC/IEA Report, 2023)* European Commission EUR 31658 EN.

³⁶ Ibid [5].

³⁷ Ibid.

³⁸ Ibid.

³⁹ Hannah Ritchie (2021) - "Deforestation and Forest Loss" Published online at OurWorldInData.org. Retrieved from: '<https://ourworldindata.org/deforestation>'

expansion and logging activities, even though it has managed to improve in some sensitive areas like the Amazon region.⁴⁰ Similarly, land-use change associated with urbanization and agricultural expansion has contributed to the loss of carbon sinks, further exacerbating climate change.⁴¹

In response to the growing threat of climate change, international agreements such as the Kyoto Protocol and the Paris Agreement have sought to mitigate greenhouse gas emissions. The Kyoto Protocol, adopted in 1997, established binding emission reduction targets for developed countries, albeit with limited success.⁴² Subsequently, the Paris Agreement, signed in 2015, set more ambitious goals to limit global warming to well below 2°C above pre-industrial levels.⁴³ However, despite these efforts, global emissions continue to rise, underscoring the challenges associated with addressing climate change on a global scale.

2. The Climate Loss and Damage Fund

The establishment of the CLDF marks a pivotal moment in global climate policy, as it directly addresses the long-recognised need to support countries disproportionately affected by the impacts of climate change. It reflects the understanding that adaptation and mitigation measures alone are insufficient to comprehensively respond to the wide range of climate-related losses, particularly in vulnerable nations. This concept gathered significant momentum during successive meetings of the UNFCCC, most notably at COP26 and COP27.⁴⁴

“International attention to the issue of loss and damage⁴⁵ was first galvanised at COP19 in Warsaw, where the Warsaw International Mechanism for Loss and Damage associated with Climate Change

40 David Imolore, ‘The Impact of Deforestation on the Amazon Rainforest: A Comprehensive Look’ (*Fund the Planet*, March 31, 2023) <<https://fundtheplanet.net/amazon-rainforest/the-impact-of-deforestation-on-the-amazon-rainforest-a-comprehensive-look/#:~:text=Deforestation%20in%20the%20Amazon%20is, scale%20agriculture%20and%20urban%20expansion>> accessed 16/5/2024.

41 Ibid.

42 Bodansky D. The Paris Climate Change Agreement: A New Hope? *American Journal of International Law*. [2016] 110(2) 288-319; Meinhard Doelle and Sara Seck, ‘Loss and Damage from Climate Change: From Concept to Remedy?’ (2019) 20 *Climate Policy* 1.

43 United Nations (2015) Paris Agreement https://unfccc.int/sites/default/files/english_paris_agreement.pdf accessed 16/5/2024; Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law: Paris Agreement* (Oxford University Press, 2017) 209.

44 United Nations Climate Change, ‘Five Key Takeaways from COP27’ <<https://unfccc.int/process-and-meetings/conferences/sharm-el-sheikh-climate-change-conference-november-2022/five-key-takeaways-from-cop27>> accessed 17th July 2024; United Nations, ‘COP26: Together for our planet’ <<https://www.un.org/en/climatechange/cop26>> accessed 17/07/2024.

45 As of now, there is no officially accepted definition of loss and damage. Although it is widely acknowledged that the phrase includes climate change consequences that are beyond the scope of adaptation, the distinction between adaptation and loss and damage is still ambiguous. Impacts on loss and damage include losses brought on by both slow-onset phenomena (such as sea level rise, glacier retreat, desertification, and biodiversity loss) and extreme weather events (such as cyclones, floods, and heatwaves). Losses can be non-economic (such as the loss of life, cultural legacy, and territory) or economic (such as the loss of revenue or the damage of infrastructure). See: Melanie Pill and Georgia Hammersley, ‘A Climate Loss and Damage Fund That Works: A New United Nations Climate Instrument to Support the Most Vulnerable Countries Will Make Its Mark If It Follows Six Key Recommendations.’ (*LOWY INSTITUTE*, 2024) <https://www.lowyinstitute.org/publications/climate-loss-damage-fund-works#footnoteref16_pokx6kb> accessed 10 December 2024.

Impacts (WIM) was established in 2013.⁴⁶ The WIM underscored the need for dedicated financial resources to assist countries most severely affected by the adverse impacts of climate change. However, it was not until COP26 in Glasgow that developing nations openly voiced their dissatisfaction with the lack of urgency in creating a separate fund devoted to this purpose, contending that the existing frameworks were inadequate to address the escalating challenges posed by climate-related events.⁴⁷

A breakthrough occurred at COP27, held in Sharm El-Sheikh, where agreement was reached among Parties to establish a fund dedicated exclusively to addressing loss and damage associated with climate change impacts. This development marked a significant milestone in international environmental negotiations.⁴⁸ The decision was subsequently formalised at COP28 in Dubai, resulting in the creation of the CLDF as an official body under the UNFCCC framework. The Fund's primary objective is to provide financial assistance both in the immediate aftermath of extreme weather events—such as hurricanes and floods—and over the longer term in response to slow-onset processes, including sea-level rise and desertification.⁴⁹

COP29 marked a critical moment for the Loss and Damage Fund, established at COP28, yet fell short of meaningful progress. While key documents were signed to enable the fund's distribution starting in 2025 and pledges increased from \$674 million to \$759 million, UN Secretary-General António Guterres emphasized that the initial capitalization was woefully inadequate in addressing the needs of vulnerable nations. The conference revealed deep political divisions surrounding climate finance. Developing countries, represented by the G7 and China, pushed for expanded support mechanisms, including regional offices for the Santiago Network and comprehensive reporting on loss and damage. However, developed countries remained resistant, ultimately blocking most substantive proposals.⁵⁰

46 United Nations Climate Change, 'Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts' < <https://unfccc.int/topics/adaptation-and-resilience/workstreams/loss-and-damage/warsaw-international-mechanism> > accessed 17/07/2024.

47 Erin Louise Roberts and Saleemul Huq, 'Coming full circle: the history of loss and damage under the UNFCCC' (2015) *International Journal of Global Warming*, 8(2), 141-157.

48 United Nations Climate Change, 'COP27 Reaches Breakthrough Agreement on New "Loss and Damage" Fund for Vulnerable Countries' (2022) < <https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries#:~:text=UN%20Climate%20Change%20News%2C%20UN%20Climate%20Change%20Executive%20Secretary.>> accessed 17/07/2024.

49 World Economic Forum, 'COP28 agrees to establish loss and damage fund for vulnerable countries' (*World Economic Forum*, 1 December 2023) < <https://www.weforum.org/agenda/2023/12/cop28-loss-and-damage-fund-climate-change/#:~:text=On%20the%20first%20day%20of%20the%20United%20Nations%20Climate%20Change,the%20effects%20of%20climate%20change.>> accessed 17/07/2024; Eco-Business, 'What next for the new UN climate loss and damage fund?' (*Eco-Business*, 6th December 2023) < <https://www.eco-business.com/news/what-next-for-the-new-un-climate-loss-and-damage-fund/>> accessed 17/07/2024.

50 Daisy Dunne and others, 'COP29: Key Outcomes Agreed at the UN Climate Talks in Baku' (*CarbonBrief*, 2024) <<https://www.carbonbrief.org/cop29-key-outcomes-agreed-at-the-un-climate-talks-in-baku/>> accessed 6 December 2024.

Critical unresolved issues included the fund's financing, the scope of loss and damage reporting, and the creation of a proposed regular "Gap Report" to estimate climate-related damages. Despite initial optimism, negotiations stalled, with talks repeatedly pushed back to the June 2025 climate negotiations under "Rule 16" – highlighting the persistent challenges in establishing a robust international response to climate-induced loss and damage.⁵¹ The conference underscored a stark reality: while symbolic steps were taken, the international community remains far from effectively addressing the financial burdens faced by the most climate-vulnerable nations.

Governance arrangements concerning the CLDF include having representatives selected from both donor and recipient nations serving as board members responsible for decision-making, so that no single group dominates over others when it comes to sharing out resources fairly within CLDF. Currently, the World Bank has been suggested as an interim host institution for the secretariat office, although some critics argue that this might lead to undue influence by richer states housed under such an organization.⁵² The CLDF will be accessible mainly by vulnerable SIDS and other developing countries. These developing countries or SIDS may submit proposals explaining their needs, plus strategies on how they intend to utilize funds granted.⁵³

It is noteworthy that the CLDF is plagued by some obstacles. In particular, securing enough and continuous money remains a priority as the projected cost of loss and damage is estimated to be between \$290bn- \$580bn per year by 2030.⁵⁴ This information is represented by Figure 3 below, which shows the drastic increase in costs as the years increase up to 2030. Other than traditional funds, new financial mechanisms are being brought up, such as carbon pricing and levies on fossil fuel extraction or international shipping and aviation emission taxes.⁵⁵ These steps are crucial in filling the gap between what is promised now and what affected states need financially.

It must be noted that at the time of writing this paper, the focus was placed on developments from COP27 to COP29. Since then, COP 30 was held in 2025, in Brazil, where the CLDF saw a significant increase in pledges totalling around \$12bn and the focus was to move from pledges to actionable support for developing countries.⁵⁶ Further, the "Barbados Implementation Modalities", which seeks

51 David Waskow and others, 'Key Outcomes from COP29: Unpacking the New Global Climate Finance Goal and Beyond' (*World Resources Institute*, 2024) <<https://www.wri.org/insights/cop29-outcomes-next-steps#loss-damage>> accessed 6 December 2024.

52 Will Worley, 'The climate loss and damage fund takes its first steps' *The New Humanitarian* (3rd May 2024) 1.

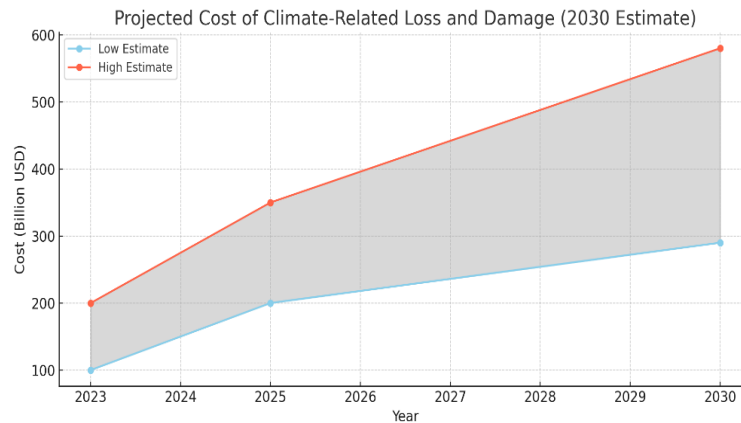
53 Ibid.

54 Eco-Business, 'What next for the new UN climate loss and damage fund?' (*Eco-Business*, 6th December 2023) <<https://www.eco-business.com/news/what-next-for-the-new-un-climate-loss-and-damage-fund/>> accessed 17/07/2024.

55 United Nations Development Program, *A Guide to Carbon Pricing and Fossil Fuel Subsidy Reform: A Summary for Policy Makers* (United Nations, 2021) 9.

56 "CEDARE Team," Analysis of the Key Outcomes of the United Nations Climate Change Conference – COP30" (CEDARE, 2025) <https://2025.cedare.org/analysis-of-the-key-outcomes-of-the-united-nations-climate-change-conference-cop30/?utm_source=chatgpt.com>13/04/2026.

to allow rapid and measured disbursements of funds, was introduced, *inter alia*.⁵⁷ These are significant breakthroughs since the genesis of the CLDF, but even with increased pledges, financial support remains a critical issue to meet projected needs.



Source: Eco-Business, 'What next for the new UN climate loss and damage fund?' (Eco-Business, 6th December 2023) <<https://www.eco-business.com/news/what-next-for-the-new-un-climate-loss-and-damage-fund/>> accessed 17/07/2024.

Figure 3: The projected cost for the climate loss and damage fund

Source: *Eco-Business*, 'What next for the new UN climate loss and damage fund?' (*Eco-Business*, 6th December 2023)⁵⁸

The line chart, in Figure 3 above, with a shaded range, represents the projected annual costs for loss and damage due to climate change. The estimated range for these costs spans from \$290 billion to \$580 billion by 2030, underscoring the need for consistent and substantial funding mechanisms to support vulnerablenationseffectively.⁵⁹

In conclusion, setting up the CLDF is an important move in addressing climate change impacts on developing countries. This shows that the world has realized that it needs separate financial aid for nations recovering from climate-related losses and preparing themselves against future shocks. But whether this project succeeds will largely depend on its consistent funding provision mechanism; fair distribution strategy; adaptability to changes brought about by global warming, among others.⁶⁰

3. The Climate Loss and Damage Fund and Other Climate Funds

The initial contributions towards the establishment of the CLDF reflect a strong international commitment. For example, the United Arab Emirates pledged 100 million dollars, matched by Germany and supplemented by a collective contribution of 245.39 million euros from the European Union,

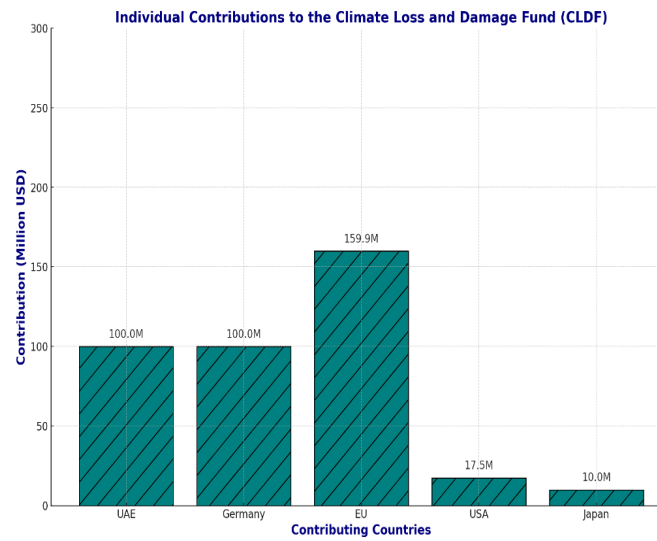
⁵⁷ UNFCCC, Report of the Fund for responding to Loss and Damage and guidance to the Fund for responding to Loss and Damage Version 13/11/2025 19:30.

⁵⁸ Ibid.

⁵⁹ United Nations Development Program, *A Guide to Carbon Pricing and Fossil Fuel Subsidy Reform: A Summary for Policy Makers* (United Nations, 2021) 9.

⁶⁰ Ibid.

while the United States committed 17.5 million dollars and Japan 10 million dollars.⁶¹ These figures, illustrated in Figure 4 below, highlight the comparatively modest contributions of some of the world's largest historical emitters. These contributions are represented in Figure 4 below, which illustrates the comparatively modest financial pledges made by some of the world's largest historical emitters. These figures demonstrate that, although developed countries have shown willingness to support their less privileged counterparts, the scale of their contributions remains considerably below the annual funding requirements identified in global estimates.



Source: World Economic Forum, 'COP28 agrees to establish loss and damage fund for vulnerable countries' (World Economic Forum, 1 December 2023) <<https://www.weforum.org/agenda/2023/12/cop28-loss-and-damage-fund-climate-change/>> accessed 17/07/2024.

Figure 4: The amount of contributions pledged to the climate loss and damage fund as of 2024 by major nations

Source: *World Economic Forum*, 'COP28 agrees to establish loss and damage fund for vulnerable countries' (*World Economic Forum*, 1 December 2023)⁶²

The bar chart in Figure 4 shows the financial commitments made by major contributors to the fund. The United Arab Emirates, Germany, the EU, the United States, and Japan are the primary contributors so far, with Germany and the EU together contributing the largest amount.⁶³ Despite these initial contributions, they still represent only a small fraction of the estimated funds required annually.

On the other hand, the primary goal of funding from other funds is to prevent and lessen the effects of climate change. In certain situations, post-disaster assistance is offered through parametric insurance,

61 World Economic Forum, 'COP28 agrees to establish loss and damage fund for vulnerable countries' (*World Economic Forum*, 1 December 2023) <<https://www.weforum.org/agenda/2023/12/cop28-loss-and-damage-fund-climate-change/#:~:text=On%20the%20first%20day%20of%20the%20United%20Nations%20Climate%20Change,the%20effects%20of%20climate%20change.>> accessed 17/07/2024.

62 Ibid.

63 World Economic Forum, 'COP28 agrees to establish loss and damage fund for vulnerable countries' (*World Economic Forum*, 1 December 2023) <<https://www.weforum.org/agenda/2023/12/cop28-loss-and-damage-fund-climate-change/#:~:text=On%20the%20first%20day%20of%20the%20United%20Nations%20Climate%20Change,the%20effects%20of%20climate%20change.>> accessed 17/07/2024.

which partially covers loss and damage and provides a prompt reimbursement for short-term recovery depending on the event's severity rather than the size of the losses (Figure 5).

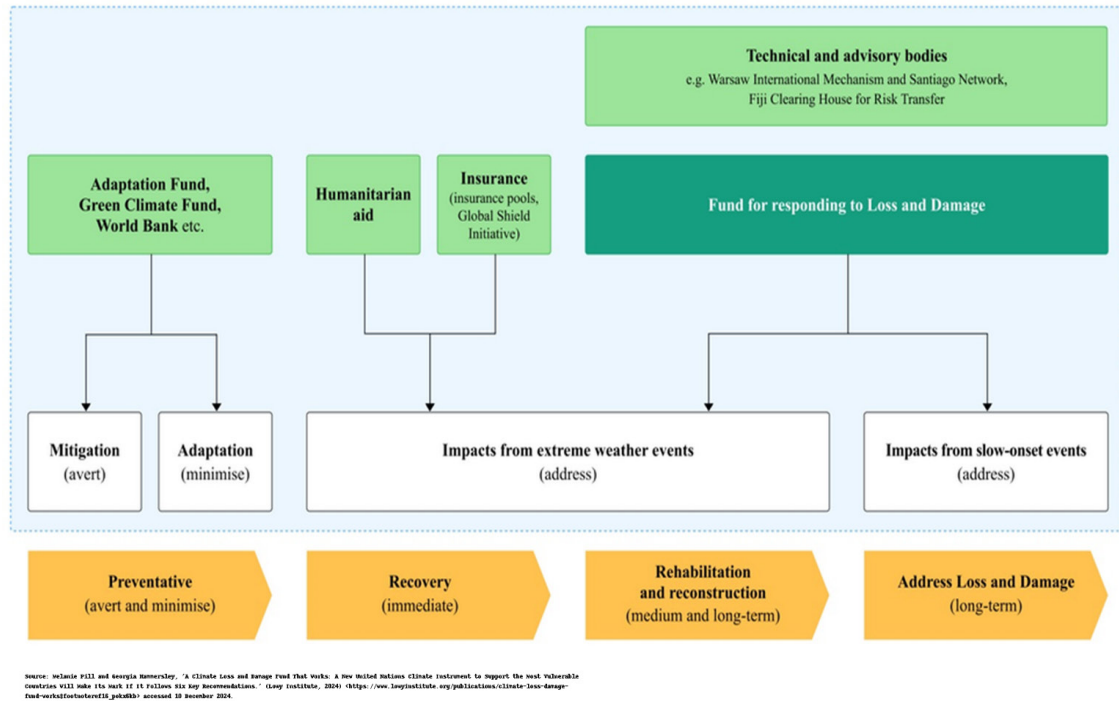


Figure 5: New and Existing Funding Arrangements⁶⁴

Source: Melanie Pill and Georgia Hammersley, 'A Climate Loss and Damage Fund That Works: A New United Nations Climate Instrument to Support the Most Vulnerable Countries Will Make Its Mark If It Follows Six Key Recommendations.' (LOWY INSTITUTE, 2024)⁶⁵

The Green Climate Fund (GCF) and the Adaptation Fund are two other key players within international climate finance mechanisms. The GCF was created under UNFCCC during the Cancun Agreements in 2010, with an aim to help developing countries in their transition towards low-carbon economies and becoming more resilient against climate change impacts, by funding both mitigation and adaptation projects.⁶⁶ GCF has mobilized around \$14.8billion (bn) from different donor countries, including the USA, Japan, UK, Germany, France, among others, to date.⁶⁷ The projects range widely, from renewable energy development to sustainable agriculture, aimed at promoting low-emission development while enhancing adaptation capacities.

⁶⁴ Pill and Hammersley (n 37) 8.

⁶⁵ Ibid.

⁶⁶ Green Climate Fund, 'About the Fund' (*Green Climate Fund*, 2023) <<https://www.greenclimate.fund/about>> accessed 18/07/2024.

⁶⁷ Green Climate Fund, 'A Unique Fund for Humanity's Greatest Challenge' (*Green Climate Fund*, 2024) <<https://www.greenclimate.fund/>> accessed 18/07/2024.

On the other hand, the Adaptation Fund was established under the Kyoto Protocol in 2009.⁶⁸ Its operationalisation seeks to support the implementation of concrete adaptation projects and programmes, primarily in developing countries that are highly vulnerable to the effects of global warming. The bulk share comes from Clean Development Mechanism (CDM) projects revenues plus voluntary contributions of donors' governments. Thus far, about US\$1 bn has been allocated towards various adaptation initiatives like water management systems, agriculture practices, coastal zone management programs, and safeguarding communities living along these zones against rising sea levels and storm surges.⁶⁹

Besides, it is debatable whether humanitarian assistance for Loss and Damage, which the Fund for Responding to Loss and Damage (FRLD) is responsible for, qualifies as an existing funding arrangement for Loss and Damage because it does not fit the criteria of climate finance under the Paris Agreement and the UNFCCC. After many years of fierce negotiations, the FRLD was established in 2022 at COP27 in Sharm El-Sheikh, with a Governing Instrument agreed upon the following year in Dubai (COP28).⁷⁰

The FRLD stands as the sole multilateral fund specifically designed to address non-economic losses caused by climate change. These losses present significant analytical challenges due to their inherent complexity, intangibility, and resistance to straightforward monetary quantification. Potential remediation strategies extend beyond financial compensation, encompassing nuanced approaches such as integrating cultural remembrance into educational curricula, issuing official apologies, providing long-term counselling services, and organizing collective mourning ceremonies. The proposed annual high-level dialogue, convened by the UN Secretary-General, offers a critical platform for developing coordinated funding arrangements and establishing standardized reporting mechanisms, potentially modelled after the OECD Rio Marker system used for climate mitigation and adaptation efforts.⁷¹

Like the Adaptation Fund, the Least Developed Countries Fund (LDCF) was also created in 2001 and has a similarly intuitive name: it provides support for adaptation solely for Least Developed Countries, the 46 poorest countries in the world. It is operated by the Global Environment Facility. As of the end of 2023, it has received \$2.2 billion in cumulative contributions from 28 countries.⁷²

Established in 2001, the Special Climate Change Fund (SCCF) represents a pivotal multilateral financial mechanism designed to address diverse climate change challenges through a strategically

68 Adaptation Fund, 'About the Asdaptation Fund' (*Adaptation Fund*, 2024) <<https://www.adaptation-fund.org/about/>> accessed 18/07/2024.

69 Ibid.

70 Pill and Hammersley (n 40) 8.

71 Ibid.

72 Joe Thwaites, 'Climate Funds Pledge Tracker' (*NRDC*, 2024) <<https://www.nrdc.org/bio/joe-thwaites/cop-28-climate-fund-pledge-tracker>> accessed 7 December 2024.

segmented approach. The fund comprises four distinctive financing windows, each targeting critical dimensions of climate resilience and sustainable development: 1) Adaptation Window: Focused on enhancing climate change adaptation strategies and resilience mechanisms; 2) Technology Transfer Window: Facilitating technological innovations and knowledge transfer to support climate mitigation efforts; 3) Mitigation Sector Window: Targeting comprehensive sectoral interventions across energy, transportation, industrial processes, agriculture, forestry, and waste management systems; 4) Economic Diversification Window: Supporting fossil-fuel-dependent economies in developing alternative economic pathways.⁷³

Operationally managed by the Global Environment Facility (GEF), the SCCF reveals significant structural limitations. Notably, the Technology Transfer (SCCF-3) and Economic Diversification (SCCF-4) windows remain financially dormant, having received no contributions since inception. By the conclusion of 2023, the fund had accumulated cumulative contributions totalling \$433 million, sourced from a consortium of 16 contributing countries. The fund's multifaceted design underscores the complex institutional challenges in addressing climate change through targeted financial interventions, highlighting the intricate negotiations and strategic compromises inherent in international climate finance mechanisms.

Figure 6 below shows the vulnerability between funds. Analysing the trends across the COPs shown in the image, a few key observations can be made:⁷⁴

1. Increasing Pledges from 2021 to 2023: The total pledges have risen steadily from \$769 million in 2021 (COP26) to \$1,018 million in 2023 (COP28). This indicates a growing recognition and commitment from the international community to provide climate finance through these UN funds.

2. Fluctuating Pledges for 2024 (COP29): The total pledges for 2024 (COP29) show a decrease to \$228 million, down from the high of \$1,018 million in 2023. This may suggest potential challenges or uncertainties in sustaining the upward trajectory of climate finance commitments.

3. Shifting Priorities Across Funds: The Adaptation Fund has consistently received the highest pledges, rising from \$356 million in 2021 to \$647 million in 2023. The introduction of the FRLD in 2023 with a \$192 million pledge reflects the growing emphasis on addressing the impacts of climate change. In contrast, the LDCF and SCCF have received relatively lower pledges, indicating potential shifts in funding priorities.

4. Uneven Commitments Across Funds: While the overall trend shows increasing climate finance pledges, the distribution across the different funds is uneven, with some funds (Adaptation Fund, FRLD) receiving significantly higher commitments compared to others (LDCF, SCCF). This may

⁷³ For further information, see: Global Environment Facility, 'Special Climate Change Fund' (GEF, 2024) <<https://www.thegef.org/what-we-do/topics/special-climate-change-fund-sccf>> accessed 11 December 2024.

⁷⁴ Thwaites (n 60).

suggest challenges in aligning funding allocations with the diverse needs and priorities of different countries and regions.

Based on the above, the trend depicts a mixed picture, with an initial upward trajectory in climate finance commitments followed by a potential plateau or decline, as well as uneven distribution of pledges across the various UN climate funds. This fluctuation highlights the fragility of the current system and the need for more sustained and predictable funding to ensure the long-term stability and effectiveness of the UN climate finance architecture. This highlights the complexities and ongoing challenges in mobilizing and sustaining adequate climate finance to address the multifaceted impacts of climate change.

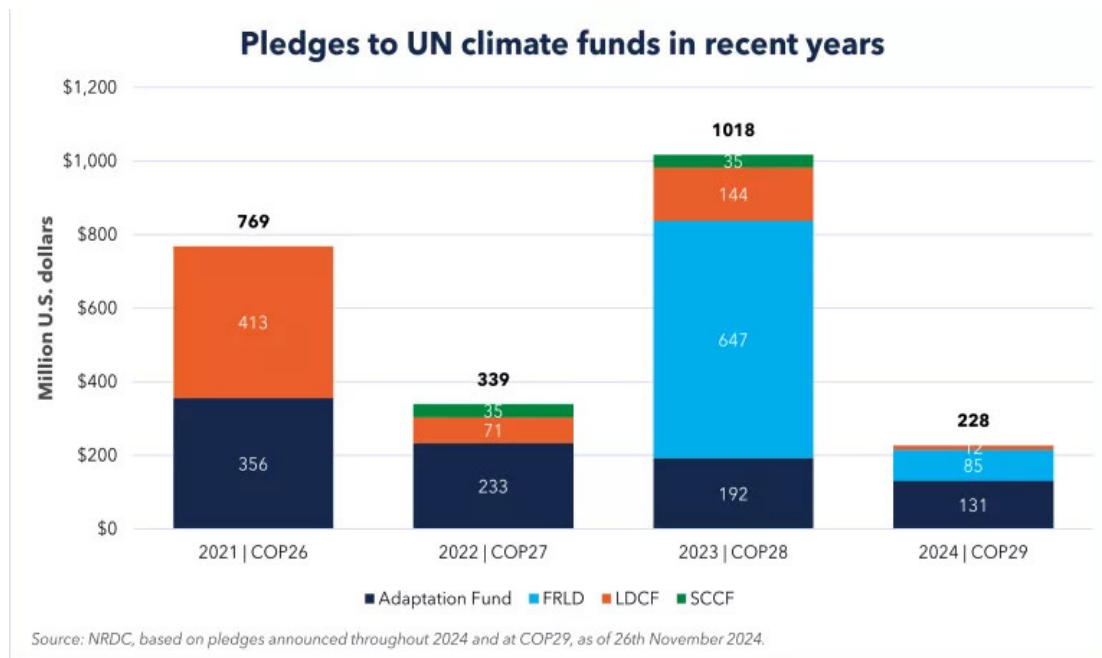


Figure 6: UN Climate Funds in Recent Years⁷⁵

Source: NRDC based on pledges announced throughout 2024 and COP29 as of 26th November, 2024

4. Comparative Analysis with Other Climate Funds and Major Global Military Expenditure

Although these figures represent significant financial commitments towards climate funds, they pale in comparison to global military spending. The estimated amount spent on the world's armies in 2024 was \$2.4tn, and projections suggest this will rise even further in 2025.⁷⁶ In fact, the US alone is expected

⁷⁵ Thwaites (n 60).

⁷⁶ Stockholm International Peace Research Institute (SIPRI), 'Global military spending surges amid war, rising tensions and insecurity' (SIPRI, 2024) < [https://www.sipri.org/media/press-release/2024/global-military-spending-surges-amid-war-rising-tensions-and-insecurity#:~:text=Global%20military%20spending%20surges%20amid%20war%2C%20rising%20tensions%20and%20insecurity,-22%20April%202024&text=\(Stockholm%2C%2022%20April%202024\),on%2Dyear%20increase%20since%202009.>](https://www.sipri.org/media/press-release/2024/global-military-spending-surges-amid-war-rising-tensions-and-insecurity#:~:text=Global%20military%20spending%20surges%20amid%20war%2C%20rising%20tensions%20and%20insecurity,-22%20April%202024&text=(Stockholm%2C%2022%20April%202024),on%2Dyear%20increase%20since%202009.>) accessed 18/07/2024.

to spend around \$883.7bn on its military in 2024, thus reinforcing its position as the highest spender worldwide.⁷⁷ China's defence budget should increase to approximately 233bn dollars,⁷⁸ whereas India plans to allocate about 74.3 bn dollars for their defence forces.⁷⁹ These figures are represented in Figure 5 below, showing the drastic expenditure of these major countries on their military. Moreover, the UK and Germany, together with other NATO countries, still continue splashing out billions each year on new weapon systems while cutting back social services and development aid programmes aimed at the poorest people, both at home and abroad.⁸⁰

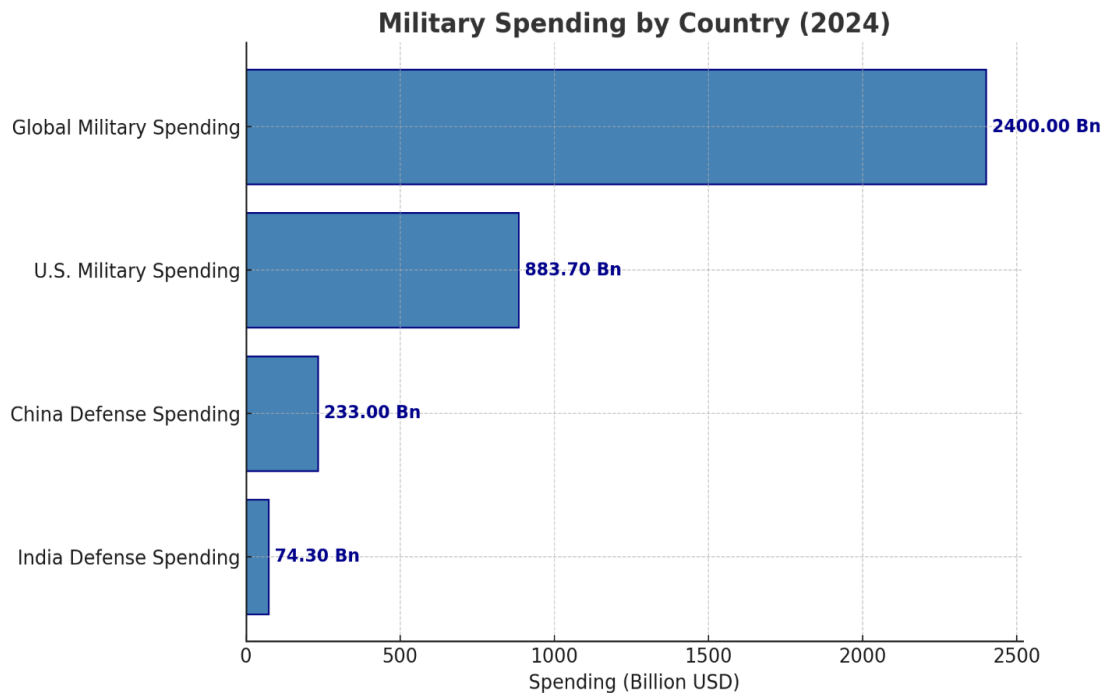


Figure 7: The recent military expenditure for major countries

Sources: USSCAS, 'Summary of the Fiscal Year 2024 National Defence Authorization Act' (2024), Meia Nouwens and Fenella McGerty, 'China's defence budget boost can't mask real pressures' (2024), Gordon Arthur, 'Despite security threats, India's defence budget remains static' (2024) and Fenella McGerty, 'NATO defence spending: a bumper year' (2024)

The horizontal bar chart in Figure 7 above, displays military spending for key countries, with the U.S., and global military spending standing out. Each bar shows the spending in billions of USD,

77 USSCAS, 'Summary of the Fiscal Year 2024 National Defense Authorization Act' (2024) United States Senate Committee on Armed Services.

78 Meia Nouwens and Fenella McGerty, 'China's defence budget boost can't mask real pressures' (2024) < <https://www.iiss.org/online-analysis/military-balance/2024/03/chinas-defence-budget-boost-cant-mask-real-pressures/>> accessed 24.10.2024.

79 Gordon Arthur, 'Despite security threats, India's defense budget remains static' (2024) Defense News < <https://www.defensenews.com/land/2024/08/06/despite-security-threats-indias-defense-budget-remains-static/#:~:text=Beset%20by%20security%20issues%20at,to%20a%20government%20press%20release.>> accessed 24.10.2024.

80 Fenella McGerty, 'NATO defence spending: a bumper year' (2024) Military Balance Blog < <https://www.iiss.org/online-analysis/military-balance/2024/07/nato-defence-spending-a-bumper-year/>> accessed 24.10.2024.

highlighting the significant allocation of resources to defence.

Several countries provide substantial arms aid either directly or through private military contractors. A notable example is Blackwater USA, which rebranded itself as Academi and now called Constellis Holdings and operates globally, despite being headquartered in North Carolina.⁸¹ The U.S. provides Israel with \$3.8 bn annually in military support, as outlined in a 10-year memorandum of understanding signed in 2016.⁸² Egypt receives approximately \$1.3 bn in military aid annually, making it one of the largest recipients of U.S. military assistance.⁸³ Jordan, too, receives significant aid, around 1.45bn per year.⁸⁴ Since the onset of the Ukraine conflict, the U.S. government provided over \$56bn in military assistance, which includes weaponry, training, and other logistical support.⁸⁵ In addition, in 2022, the United Kingdom has pledged £12.8 bn or \$16.61 bn in support to Ukraine in aid. At the end of February 2024, the German Ministry of Defence said that military aid worth €28 bn or \$30.25 bn had either been spent since February 2022 or had been committed to support Ukraine over the next few years.⁸⁶ By the end of 2023, Germany is reported to have provided almost €15 bn in military aid to Ukraine.⁸⁷

This grave disparity between climate fund contributions and military spending reflects a stark difference in global priorities.

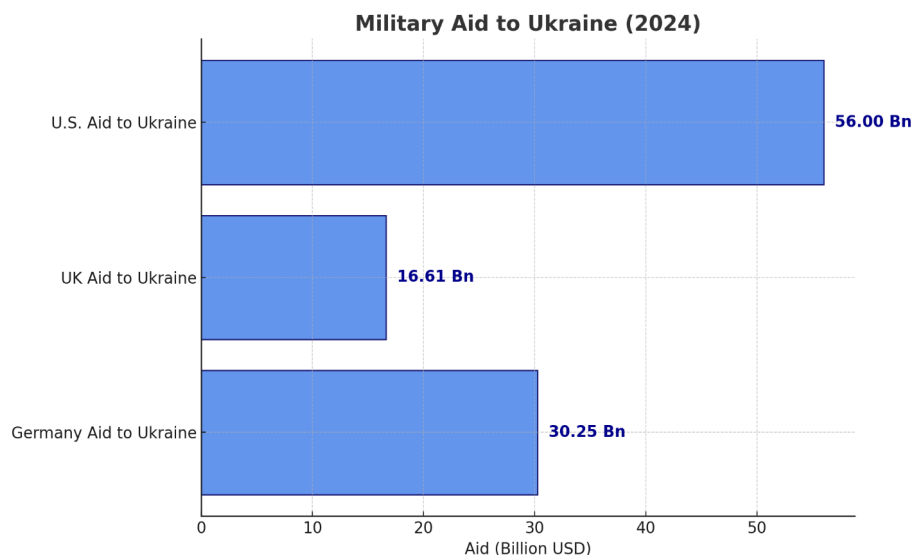


Figure 8: The expenditure on military aid to Ukraine by major World countries and key climate polluters

Sources: Congressional Research Service (CRS), "U.S. Security Assistance to Ukraine, Updated May 22, 2024;

81 P.W Singer, *Corporate Warriors: The Rise of the Privatized Military Industry*. Cornell University Press, 2007; < <https://www.constellis.com/who-we-are/history/>> accessed 24.10.2024.

82 Congressional Research Service (CRS), "U.S. Foreign Aid to Israel," Updated February 18, 2022; Michel Bourban, 'Climate Change, Human Rights and the Problem of Motivation' (2014) 1 *De Ethica: A Journal of Philosophical, Theological and Applied Ethics* 37.

83 Jeremy M. Sharp, "Egypt: Background and U.S. Relations," Congressional Research Service, Updated September 12, 2024.

84 Jeremy M. Sharp, CRS, "Jordan: Background and U.S. Relations," Updated July 1, 2024.

85 Congressional Research Service (CRS), "U.S. Security Assistance to Ukraine, Updated May 22, 2024; Michel Bourban, 'Climate Change, Human Rights and the Problem of Motivation' (2014) 1 *De Ethica: A Journal of Philosophical, Theological and Applied Ethics* 37.

86 Ibid-, 45.

87 Ibid.

Michel Bourban, 'Climate Change, Human Rights and the Problem of Motivation' (2014) 1 *De Ethica: A Journal of Philosophical, Theological and Applied Ethics* 37.

The bar chart in Figure 8, shows U.S. Aid, which is the largest, with a commitment of \$56 billion, followed by Germany at \$30.25 billion, and UK at \$16.61 billion to Ukraine.

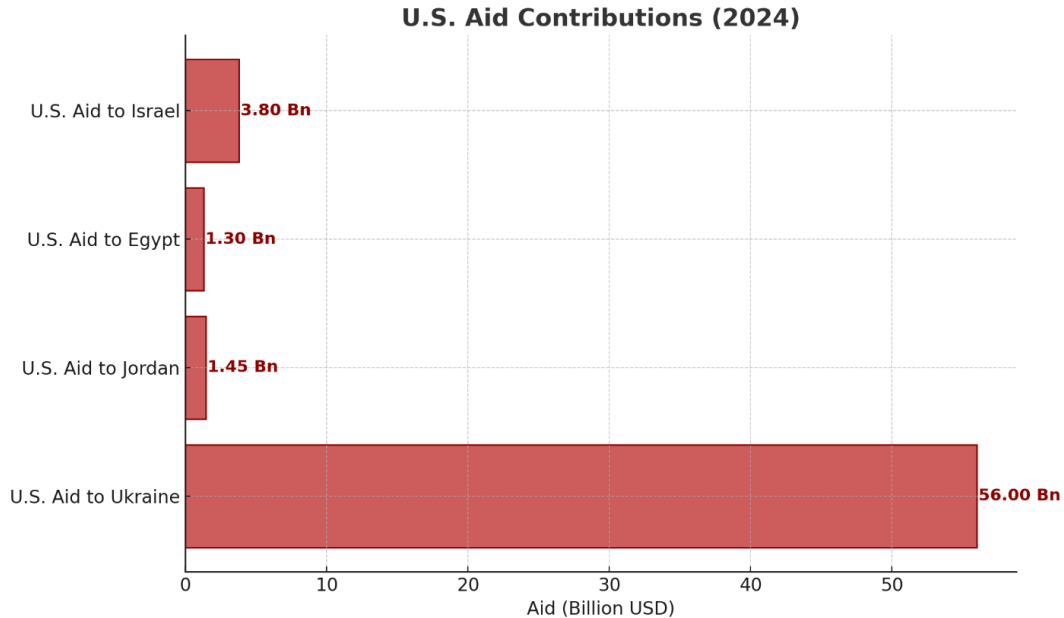


Figure 9: U.S aid contributions to other countries for different projects other than climate change

Sources: *Congressional Research Service (CRS), "U.S. Foreign Aid to Israel," Updated February 18, 2022, Jeremy M. Sharp, "Egypt: Background and U.S. Relations," Congressional Research Service, Updated September 12, 2024, Jeremy M. Sharp, CRS, "Jordan: Background and U.S. Relations," Updated July 1, 2024 and Congressional Research Service (CRS), "U.S. Security Assistance to Ukraine, Updated May 22, 2024*

The chart in Figure 9 above, focuses on U.S. military aid allocations, showing the financial support provided to key allies and conflict regions. Aid to Ukraine is the largest, followed by consistent support to Israel, Egypt, and Jordan.

Estimates suggest that the cost of loss and damage due to climate change could reach anywhere between \$290 bn and \$580 bn annually by 2030.⁸⁸ Addressing this challenge will require innovative financial solutions and unprecedented international cooperation. Some proposals include placing a price on carbon emissions, levies on fossil fuel extractions, and taxes on international shipping and aviation emissions.⁸⁹ This is because the success of the CLDF and other major climate funds will ultimately depend on the ability to secure sustained funding, ensure equitable distribution, and remain

⁸⁸ Dossier, 'Unpacking finance for Loss and Damage' (2024).

⁸⁹ Organization for Economic Co-operation and Development (OECD), 'Joint report explores scope for coordinated approaches on climate action, carbon pricing, and policy spillovers' (2024) < <https://www.oecd.org/en/about/news/press-releases/2024/10/joint-report-explores-scope-for-co-ordinated-approaches-on-climate-action-carbon-pricing-and-policy-spillovers.html>> accessed. 24.10.2024.

adaptable to the increasingly complex impacts of climate change across the globe.

5. Lessons Learned

The global response to climate change reveals profound challenges in the alignment of financial resources with climate action, particularly when comparing funding for climate-related initiatives to military spending. The establishment of the CLDF at COP27 marks an important milestone in addressing the inequitable impacts of climate change on vulnerable nations,⁹⁰ and may also be viewed as part of States' duty to cooperate in solving international problems under **Articles 55 and 56 of the UN Charter**⁹¹ and as an expression of the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC) affirmed in the UNFCCC and the Paris Agreement.⁹²

The establishment of the CLDF at COP27 marks an important milestone in addressing the inequitable impacts of climate change on vulnerable nations.⁹³ However, the stark contrast in resource allocation between military expenditures and climate funding signals the need for urgent and sustained reform in global financial priorities.⁹⁴ The creation of the CLDF acknowledges that adaptation and mitigation measures alone are inadequate for countries disproportionately affected by climate change, particularly where extreme weather events such as hurricanes, floods, and droughts intensify existing socio-economic vulnerabilities.⁹⁵ Accordingly, this article focuses on the CLDF and compares it with other funding commitments by major nations, highlighting how these countries tend to prioritize alternative areas of expenditure over climate finance and support for vulnerable States.

One of the critical lessons learned from the establishment of the CLDF is the necessity of targeted financial mechanisms for addressing specific aspects of climate change, especially those related to loss and damage in developing nations. Before COP26, developing countries consistently raised concerns that existing climate finance structures—such as the GCF and Adaptation Fund—were inadequate to meet the needs arising from increasingly severe and frequent climate disasters.⁹⁶ The CLDF, therefore,

90 United Nations Climate Change, 'Five Key Takeaways from COP27' <<https://unfccc.int/process-and-meetings/conferences/sharm-el-sheikh-climate-change-conference-november-2022/five-key-takeaways-from-cop27>> accessed 24th October 2024; United Nations, 'COP26: Together for our planet' <<https://www.un.org/en/climatechange/cop26>> accessed 24/10/2024.

91 Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945) 1 UNTS XVI, arts 55–56.

92 UN Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107, art 3; Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) TIAS No 16-1104, art 2(2).

93 United Nations Climate Change, 'Five Key Takeaways from COP27' <<https://unfccc.int/process-and-meetings/conferences/sharm-el-sheikh-climate-change-conference-november-2022/five-key-takeaways-from-cop27>> accessed 24th October 2024; United Nations, 'COP26: Together for our planet' <<https://www.un.org/en/climatechange/cop26>> accessed 24/10/2024.

94 UNFCCC, "COP27 Outcomes: Creation of Loss and Damage Fund," Published November 2022.

95 Warsaw International Mechanism for Loss and Damage, "Report of COP19," 2013 <<https://unfccc.int/topics/adaptation-and-resilience/workstreams/loss-and-damage/warsaw-international-mechanism>> accessed 24.10.2024.

96 Green Climate Fund, 'About the Fund' (*Green Climate Fund*, 2023) <<https://www.greenclimate.fund/about>> accessed

fills a crucial gap in climate finance by providing dedicated support to help nations recover from climate-related disasters that existing mechanisms were unable to fully address.⁹⁷ Yet the insufficiency of commitments raises questions of State responsibility under international environmental law, particularly the duty to prevent transboundary harm as recognized by the International Court of Justice.⁹⁸ However, the initial financial commitments to the CLDF remain insufficient to meet the scale of the challenge as represented by Figure 3 above. For example, although Germany, the EU, and the U.S. made significant contributions to the fund, these donations fall short of the annual requirements to adequately address the estimated costs of loss and damage, projected to reach between \$290 bn and \$580 bn per year by 2030, as illustrated by Figure 3.⁹⁹

Moreover, comparing the financial commitments made to the CLDF with military spending by the same countries underscores the significant disparity in global priorities, a disparity that must also be evaluated in light of States' *erga omnes* obligations to protect the environment as a "*common concern of humankind*," duties owed to the international community as a whole. As the International Court of Justice explained in *Barcelona Traction, Light and Power Company, Limited (Belgium v Spain) (Second Phase Judgment) [1970] ICJ Rep 3, 32–33*, *erga omnes* obligations are those which States owe to the international community as a whole, including obligations relating to the protection of the environment. This understanding is reinforced by the preamble to the UN Framework Convention on Climate Change, which affirms that climate change is a common concern of humankind.¹⁰⁰

The United States, for instance, committed only \$17.5 million to the CLDF in contrast to its military budget of approximately \$883.7 bn in 2024.¹⁰¹ This comparison illustrates the significant underfunding of climate initiatives in contrast to the massive financial resources directed toward defence. The need to increase and sustain climate fund contributions is essential if we are to effectively address the growing threats posed by global warming.¹⁰²

24/10/2024; Adaptation Fund, 'About the Adaptation Fund' (*Adaptation Fund*, 2024) < <https://www.adaptation-fund.org/about/> > accessed 24/10/2024.

97 UNFCCC, Report of the Green Climate Fund to the Conference of the Parties (2017) FCCC/CP/2017/5.

98 *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) [1996] ICJ Rep 226, [29]; *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) [2010] ICJ Rep 14, [101]; Philippe Sands, *Principles of International Environmental Law* (Cambridge University Press 2018) ch. 8.

99 Dossier, 'Unpacking finance for Loss and Damage' (2024).

100 *Barcelona Traction, Light and Power Company, Limited (Belgium v Spain)* (Second Phase Judgment) [1970] ICJ Rep 3, 32–33; UN Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107, preamble.

101 USSCAS, 'Summary of the Fiscal Year 2024 National Defense Authorization Act' (2024) United States Senate Committee on Armed Services; United Nations Framework Convention on Climate Change (UNFCCC), 'Pledges to the Fund for responding to Loss and Damage' Updated 26th September 2024 < <https://unfccc.int/process-and-meetings/bodies/funds-and-financial-entities/pledges-to-the-fund-for-responding-to-loss-and-damage> > accessed 24.10.2024.

102 United Nations Framework Convention on Climate Change (UNFCCC), 'Fund for responding to Loss and Damage' (2024) < <https://unfccc.int/loss-and-damage-fund-joint-interim-secretariat#:~:text=In%20this%20context%2C%20>

Similarly, the United Kingdom and Germany made substantial military commitments to aid Ukraine, with the UK pledging £12.8 bn (\$16.61 bn) and Germany providing €15 bn (\$16.4 bn) by the end of 2023, as represented by Figure 8 above.¹⁰³ These figures highlight the profound imbalance in global financial allocations, suggesting that while the political will to support military efforts is robust, the same level of commitment is lacking in addressing the existential threat of climate change.¹⁰⁴ This disparity reflects a global misalignment of priorities, where short-term security concerns overshadow the longer-term but equally critical threats posed by climate change.

Another key lesson is the importance of innovative and diversified financial mechanisms to meet the growing financial demands of climate change. The CLDF's initial funding, while symbolic of global cooperation, demonstrates the need for new sources of revenue beyond traditional government contributions. Mechanisms such as carbon pricing, levies on fossil fuel extractions, and taxes on international shipping and aviation emissions have been proposed to fill the financial gap.¹⁰⁵ Consistent with the polluter pays principle, a well-established norm of international environmental law,¹⁰⁶ mechanisms such as carbon pricing, levies on fossil fuel extractions, and taxes on international shipping and aviation emissions have been proposed to fill the financial gap. These measures, if implemented, could provide sustainable and predictable sources of funding for the CLDF and other climate finance initiatives, ensuring that developing countries can respond to both immediate climate disasters and long-term environmental degradation.¹⁰⁷ However, achieving a broad international consensus on such mechanisms remains a challenge, particularly given the differing economic interests of high-emitting nations and developing countries.

A related issue is the governance structure of the CLDF and other climate finance mechanisms. Ensuring equitable distribution of funds and inclusive decision-making processes is crucial for the success of these mechanisms. The CLDF's governance model, which includes representatives from both donor and recipient countries, is a step in the right direction. However, concerns remain about

the%20COP,economic%20and%20non%2Deconomic%20loss> accessed 24.10.2024.

103

104 Ibid.

105 Organisation for Economic Co-operation and Development (OECD), 'Joint report explores scope for co-ordinated approaches on climate action, carbon pricing, and policy spillovers' (2024) < <https://www.oecd.org/en/about/news/press-releases/2024/10/joint-report-explores-scope-for-co-ordinated-approaches-on-climate-action-carbon-pricing-and-policy-spillovers.html>> accessed. 24.10.2024; Simon Black, Ian W.H. Parry, Sunalika Singh, and Nate Vernon-Lin, 'Destination Net Zero: The Urgent Need for a Global Carbon Tax on Aviation and Shipping' (2024) IMF < <https://www.elibrary.imf.org/view/journals/066/2024/003/article-A001-en.xml>> accessed 24.10.2024.

106 OECD, *Recommendation of the Council on Guiding Principles concerning the International Economic Aspects of Environmental Policies* (26 May 1972) C(72)128; Rio Declaration on Environment and Development (1992) Principle 16.

107 Organization for Economic Co-operation and Development (OECD), 'Joint report explores scope for coordinated approaches on climate action, carbon pricing, and policy spillovers' (2024) < <https://www.oecd.org/en/about/news/press-releases/2024/10/joint-report-explores-scope-for-co-ordinated-approaches-on-climate-action-carbon-pricing-and-policy-spillovers.html>> accessed. 24.10.2024

the influence of wealthier nations and international institutions, such as the World Bank, in the administration of the fund.¹⁰⁸ Developing countries have historically expressed concerns about the undue influence of donor countries in shaping the policies and priorities of international climate funds, which may not always align with the specific needs of vulnerable populations.¹⁰⁹ Ensuring transparency, accountability, and a balance of power within the governance structure will be key to the CLDF's success in delivering effective support.

Furthermore, the lesson that consistent and long-term financial commitments are vital to addressing climate-related loss and damage cannot be overstated. While the establishment of the CLDF is a positive step, its long-term viability hinges on the continued commitment of donor countries to provide adequate and reliable funding. Figures 2, 3, and 4 above illustrate those major countries that contribute significantly to GHG and their low pledges to CLDF. Figure 3 shows how climate financing will grow in the near future and the need for immediate action. As climate change intensifies, the scale of loss and damage will only grow, placing greater pressure on international financial mechanisms to respond. The CLDF's success will depend not only on the initial funding commitments but also on its ability to adapt to evolving climate challenges and secure additional resources over time.¹¹⁰ This will require sustained political will, robust international cooperation, and innovative financial strategies.

Finally, the lessons learned from the establishment of the CLDF extend beyond climate finance and touch upon the broader issue of global priorities. The stark contrast between the relatively small amounts allocated to climate funds and the colossal sums directed toward military expenditures highlights the need for a more holistic approach to global security. Climate change, as evidenced by the increasing frequency and intensity of natural disasters, poses a clear and present danger to global stability. Neglecting to finance climate responses adequately risks undermining States' obligations under international human rights law to safeguard life, health, and development, as well as their UN Charter duties to maintain international peace and security.¹¹¹ Climate change, as evidenced by the increasing frequency and intensity of natural disasters, poses a clear and present danger to global stability. Yet, the financial resources allocated to addressing this threat remain disproportionately low compared to traditional security concerns. The lesson here is that global security must be redefined to include environmental stability, and the allocation of resources must reflect this new understanding of

108 Climate Action Network (CAN), Global Campaign to Demand Climate Justice (DCJ), and Women and Gender Constituency (WGC), 'Proposed Governing Instrument: Loss and Damage Fund' (2023).

109 Chimia AL. Donors' influence on developing countries' procurement systems, rules and markets: a critical analysis. In: Quinot G, Arrowsmith S, eds. *Public Procurement Regulation in Africa*. Cambridge University Press; 2013:219-260.

110 Preety Bhandari, Nate Warszawski, Deirdre Cogan and Rhys Gerholdt, 'What Is 'Loss and Damage' from Climate Change? 8 Key Questions, Answered' (2024) WRI < <https://www.wri.org/insights/loss-damage-climate-change> > accessed 24.10.2024.

111 Human Rights Committee, *General Comment No 36: Article 6 (Right to Life)*, UN Doc CCPR/C/GC/36 (30 October 2018) [62]; UN Charter, art 1(1).

security.¹¹²

In conclusion, the establishment of the CLDF at COP27 represents a significant achievement in the global response to climate change. However, the lessons learned from this process underscore the need for greater financial commitment, innovative funding mechanisms, equitable governance structures, and a realignment of global priorities to ensure that the world is adequately prepared to meet the growing challenges posed by climate change. Addressing these lessons will be critical in the years to come as the international community grapples with the complex and ever-evolving impacts of global warming.

6. Conclusion and Recommendations

The establishment of the CLDF marks a significant milestone in international climate governance, particularly for developing nations that bear the brunt of climate-induced disasters. While the CLDF addresses a critical gap in existing climate finance mechanisms, it also highlights the persistent imbalance between military spending and the funding allocated to climate change mitigation, adaptation, and recovery efforts. The disproportionate allocation of resources reflects a misalignment of global priorities, where immediate security concerns overshadow the longer-term but equally urgent threat of climate change. If left unaddressed, this imbalance will impede the global community's ability to adequately respond to the escalating challenges posed by climate change.

Despite the promising steps taken at COP27, COP28, and even COP30, the current financial commitments to the CLDF remain inadequate in the face of rising costs associated with loss and damage, which are projected to reach between \$290 bn and \$580 bn annually by 2030, as seen in Figure 3 above.¹¹³ This underscores the need for innovative financing mechanisms and more sustained contributions from developed nations. Furthermore, the success of the CLDF will depend not only on financial input but also on its governance structures, which must ensure transparency, equity, and inclusivity in the distribution of funds. Additionally, consistent and long-term political will is crucial for the Fund's survival and effectiveness in the years to come.

To address these challenges, it is recommended that:

112 Stockholm International Peace Research Institute (SIPRI), 'Global military spending surges amid war, rising tensions and insecurity' (SIPRI, 2024) < [https://www.sipri.org/media/press-release/2024/global-military-spending-surges-amid-war-rising-tensions-and-insecurity#:~:text=Global%20military%20spending%20surges%20amid%20war%2C%20rising%20tensions%20and%20insecurity,-22%20April%202024&text=\(Stockholm%2C%2022%20April%202024\),on%2Dyear%20increase%20since%202009.>](https://www.sipri.org/media/press-release/2024/global-military-spending-surges-amid-war-rising-tensions-and-insecurity#:~:text=Global%20military%20spending%20surges%20amid%20war%2C%20rising%20tensions%20and%20insecurity,-22%20April%202024&text=(Stockholm%2C%2022%20April%202024),on%2Dyear%20increase%20since%202009.>) accessed 24/10/2024.

113 Dossier, 'Unpacking finance for Loss and Damage' (2024); UNFCCC, 'COP27 Reaches Breakthrough Agreement on New "Loss and Damage" Fund for Vulnerable Countries' (2022); UNEP, "COP27 Ends with Announcement of Historic Loss and Damage Fund," 2023 < <https://www.unep.org/news-and-stories/story/cop27-ends-announcement-historic-loss-and-damage-fund#:~:text=COP27%20ends%20with%20announcement%20of%20historic%20loss%20and%20damage%20fund,-Photo%3A%20UNFCCC&text=In%20negotiations%20that%20went%20down,vulnerable%20to%20the%20climate%20crisis.>> accessed 24.10.2024.

I. **Increase Financial Commitments to the CLDF:**

Developed countries must significantly enhance their contributions to the CLDF in line with their obligations under the UNFCCC, the **Paris Agreement (art 9)**, and the **principle of common but differentiated responsibilities and respective capabilities (CBDR-RC)**.¹¹⁴ Financing mechanisms such as carbon pricing, fossil fuel levies, and taxes on international shipping and aviation emissions could be implemented through **domestic legislation harmonised with international commitments**, or through a future **protocol or COP decision establishing binding financial pathways**.¹¹⁵

II. **Strengthen Governance Structures:**

The CLDF must adopt governance arrangements consistent with the principles of **equity, transparency, and inclusive participation** recognised in international environmental law.¹¹⁶ A reformed governance framework should guarantee equal representation for donor and recipient States, particularly SIDS and Developing Countries. This could take the form of **a legally binding Governing Instrument under the UNFCCC**, with rules of procedure limiting undue donor influence.¹¹⁷

III. **Enhance International Cooperation on Climate Finance:**

States are under a general obligation of **international cooperation under Articles 55–56 of the UN Charter** and the *erga omnes* character of environmental protection.¹¹⁸ Strengthening cooperation requires legal integration of the CLDF with existing mechanisms such as the Green Climate Fund and the Adaptation Fund, possibly via **an amendment to the Financial Mechanism of the UNFCCC or a COP decision under the Paris Agreement mandating coordination**.¹¹⁹

IV. **Reassess Global Security Priorities:**

Climate change must be recognised in **international peace and security law** as a threat multiplier. The UN Security Council has already debated climate-security risks, and

114 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) TIAS No 16-1104, art 9; UNFCCC (1992) 1771 UNTS 107.

115 Peter Simpa, Nko Solomon, Olubunmi Adeolu Adenekan and Scholar Chinenye Obasi, *Strategic implications of carbon pricing on global environmental sustainability and economic development: A conceptual framework* (2024, International Journal of Advanced Economics) 6 (5):139-172; United Nations Development Program, *A Guide to Carbon Pricing and Fossil Fuel Subsidy Reform: A Summary for Policy Makers* (United Nations, 2021) 9.

116 Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law: Paris Agreement* (Oxford University Press, 2017) 209.

117 UNFCCC, 'Fund for responding to Loss and Damage' 2024 <<https://unfccc.int/loss-and-damage-fund-joint-interim-secretariat>> accessed 24.10.2024.

118 *Barcelona Traction, Light and Power Company, Limited (Belgium v Spain)* (Second Phase Judgment) [1970] ICJ Rep 3, 32–33.

119 Green Climate Fund, 'A Unique Fund for Humanity's Greatest Challenge' (*Green Climate Fund*, 2024) <<https://www.greenclimate.fund/>> accessed 24/10/2024.

General Assembly Resolution 76/300 (2022) recognises the right to a clean, healthy, and sustainable environment.¹²⁰ States should therefore consider **reallocating resources under national budgetary legislation in compliance with international human rights obligations**, particularly the duty to protect life (ICCPR, art 6).¹²¹

V. **Promote Innovative Financial Solutions:**

Innovative strategies such as carbon trading, green bonds, and private sector investment in resilience projects should be embedded within a **legal framework ensuring accountability, transparency, and enforceability**. This could involve **linking such mechanisms to nationally determined contributions (NDCs)** under the Paris Agreement or creating a **new legal instrument on climate-resilient finance**.¹²²

VI. **Ensure Long-Term and Sustainable Funding:**

The longevity of the CLDF requires more than voluntary pledges: it must rest on **binding, predictable financial commitments**. This could be achieved through a **formal replenishment cycle akin to the Green Climate Fund**, codified in a **COP decision or a protocol amendment under the UNFCCC**. Such reforms would align with States' duties under international environmental law to prevent harm and protect vulnerable populations.¹²³

120 UNGA Res 76/300 'The human right to a clean, healthy and sustainable environment' (28 July 2022) UN Doc A/RES/76/300.

121 Stockholm International Peace Research Institute (SIPRI), 'Global military spending surges amid war, rising tensions and insecurity' (SIPRI, 2024) < [https://www.sipri.org/media/press-release/2024/global-military-spending-surges-amid-war-rising-tensions-and-insecurity#:~:text=Global%20military%20spending%20surges%20amid%20war%2C%20rising%20tensions%20and%20insecurity,-22%20April%202024&text=\(Stockholm%2C%2022%20April%202024\),on%2Dyear%20increase%20since%202009.>](https://www.sipri.org/media/press-release/2024/global-military-spending-surges-amid-war-rising-tensions-and-insecurity#:~:text=Global%20military%20spending%20surges%20amid%20war%2C%20rising%20tensions%20and%20insecurity,-22%20April%202024&text=(Stockholm%2C%2022%20April%202024),on%2Dyear%20increase%20since%202009.>) accessed 24/10/2024.

122 Carolina Monsalve, Erwin De Nys and Simon Whitehouse, 'World Bank: Climate Finance Approaches and Actions for Sustainable Landscapes' World Bank Group 2022 <chrome-extension://efaidnbmnribpajpcglefindmkaj/https://www.forestcarbonpartnership.org/sites/fcp/files/2022/May/2022.05.24_wb_climate_approaches.pdf> accessed 24.10.2024; UNEP, 'What is climate finance and why do we need more of it?' (2023) < <https://climatepromise.undp.org/news-and-stories/what-climate-finance-and-why-do-we-need-more-it> > accessed 24.10.2024.

123 Preeti Bhandari, Nate Warszawski and Chikondi Thangata, 'The Current State of Play on Financing Loss and Damage' (2022) World Resource Institute < <https://www.wri.org/technical-perspectives/current-state-play-financing-loss-and-damage> > accessed 24.10.2024.

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UN Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107, preamble.

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