

THE CLIMATE MIGRATION CRISIS: SOCIO-ECONOMIC IMPACTS AND INTERNATIONAL POLICY RESPONSIBILITIES IN SOUTHEAST ASIA AND THE PACIFIC ISLANDS

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Abstract

The research investigates the profound impacts of climate change on migration patterns within Southeast Asia and the Pacific Islands, focusing on two critical case studies: Tuvalu and the Mekong Delta in Vietnam. By analysing the governmental responses and adaptation strategies in Tuvalu and the Mekong Delta, the paper highlights the urgent need for integrated policy frameworks that address the multifaceted nature of climate migration and the importance of international cooperation and initiatives to safeguard the rights and livelihoods of climate migrants.

Keywords: climate change climate migration, human displacement, socio-economic impacts, environmental justice, international law, human rights

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Climate migration, a phenomenon propelled by the relentless force of climate change, is reshaping the demographic landscape across the globe. François Gemenne, a leading author of the Intergovernmental Panel on Climate Change (IPCC), starkly warns that no part of the world will be spared from climate migration, global warming will inevitably trigger population movements.¹ This assertion underscores a reality that has been acknowledged for decades. As early as 1998, the IPCC highlighted the potential for climate change to become the most significant driver of human migration, with millions displaced due to shoreline erosion, coastal flooding, and agricultural disruption.² The urgency of this issue is further emphasized by the United Nations High Commissioner for Refugees, which reports an average displacement of 21.8 million people annually since 2008, due to natural disasters.³

The Asia-Pacific region, home to 60% of the global population, faces severe climate change impacts like rising temperatures, altered rainfall, increased monsoon variability, sea-level rise, and more frequent cyclones. High exposure to environmental risks and a dense population could lead to unprecedented

1 Goar, M., (2023), 'François Gemenne, membre du GIEC: "Aucune zone du monde ne sera épargnée par les migrations climatiques"'. Retrieved from: https://www.lemonde.fr/climat/article/2023/11/04/francois-gemenne-membre-du-giec-aucune-zone-du-monde-ne-sera-epargnee-par-les-migrations-climatiques_6198214_1652612.html [accessed 27 March 2024].

2 Lonergan, S. (1998), 'The role of environmental degradation in population displacement', *Environmental Change and Security Project Report*, No. 4, Spring, p. 5.

3 UNHCR (2018), 'Year in review 2017'. Retrieved from: <https://www.unhcr.org/innovation/year-review-2017/> [accessed 27 March 2024].

displacement, with the region contributing over 30% of the global migrant population.⁴ Migration, a key part of human history, involves moving to new locations for settlement, either voluntarily for better opportunities or involuntarily due to conflict or environmental factors.⁵ Motivations are complex, blending economic, social, environmental, and political reasons. Climate change exacerbates food insecurity and economic instability, driving migration by degrading environments and livelihoods.⁶ Climate migration challenges traditional migration definitions, which focus on political and economic factors. The 1951 Refugee Convention defines a refugee as someone fleeing persecution based on race, religion, nationality, social group, or political opinion, excluding those displaced by environmental or climate-related reasons. This gap in international law leaves climate migrants without the protections given to traditional refugees, underscoring the need for international policy reform.⁷ This gap highlights the need for the international community to adapt its responses to the evolving nature of migration, recognizing the significant role climate change plays in displacing populations.

This article examines the significant impacts of climate change on migration patterns in Southeast Asia and the Pacific Islands, focusing on Tuvalu and the Mekong Delta in Vietnam. Tuvalu and the Mekong Delta face severe climate impacts, driving migration despite minimal emissions. Rising sea levels and extreme weather in Tuvalu, and droughts and land degradation in the Mekong Delta, underscore the urgent need for comprehensive policies and international cooperation to protect climate migrants' rights and livelihoods.

1. Tuvalu: A case study of international climate migration in the Pacific Islands

Tuvalu, a Polynesian microstate in the South Pacific Ocean composed of a population of 12,189,⁸ comprises nine atolls characterized by their low-lying nature, with the highest point barely exceeding 3 meters above sea level.⁹ This unique geographical feature places Tuvalu at the forefront of nations vulnerable to the impacts of sea-level rise, a direct consequence of climate change. The

4 Asian Development Bank (2011), 'Climate change and migration in Asia and the Pacific'. Retrieved from: <https://www.adb.org/sites/default/files/publication/29662/addressing-climate-change-migration.pdf> [accessed 27 March 2024].

5 IOM (2019) 'Glossary on migration'. Retrieved from: https://publications.iom.int/system/files/pdf/iml_34_glossary.pdf [accessed 27 March 2024].

6 OECD (2017), 'Human migration, environment and climate change, in Green Transition, Migration'. Retrieved from: <https://oecd-development-matters.org/2017/01/18/human-migration-environment-and-climate-change/> [accessed 27 March 2024].

7 European Parliamentary Research Service (2023), 'The concept of 'climate refugee' Towards a possible definition'. Retrieved from: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698753/EPRS_BRI\(2021\)698753_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698753/EPRS_BRI(2021)698753_EN.pdf) [accessed 27 March 2024].

8 Nito, L. (2023), *Tuvalu Country Presentation* (Power point slides), Department of Marine and Port Services.

9 World Bank (2015), 'Hardship and vulnerability in the Pacific Island countries, Feature story'. Retrieved from: <https://www.worldbank.org/en/news/feature/2014/03/27/hardship-and-vulnerability-in-the-pacific-island-countries> [accessed 27 March 2024].

archipelago's economic structure, heavily reliant on subsistence fishing—which accounts for 42% of its GDP—along with remittances and income from the leasing of its internet domain “.tv”, highlights a significant lack of economic diversification.¹⁰ Such limited economic diversification exacerbates Tuvalu's susceptibility to external economic shocks, notably those associated with climate-induced changes.

Despite contributing negligibly to global greenhouse gas emissions, with current efforts aimed at increasing the share of renewables to 100% by 2025, Tuvalu finds itself disproportionately affected by the global climate crisis.¹¹ This transition towards sustainable energy underscores a commitment to environmental stewardship, despite the nation's minimal impact on global climate change metrics. Internationally recognized as one of the most vulnerable countries to the adverse effects of climate change, Tuvalu is at the epicentre of discussions on international climate migration.¹²

1.1. Climate change impacts on Tuvalu

Tuvalu faces an existential threat from climate change, with rising sea levels already submerging two of its nine coral atolls and projections indicating the entire country could vanish by the century's end due to sea levels rising between 28 cm and 1.01 m by 2100.¹³ The situation in Tuvalu's national capital, Funafuti, is particularly dire. Predictions suggest that the highest tides could inundate 50% of Funafuti's land area by the mid-21st century, escalating to 95% by 2100.¹⁴ Such significant loss of land to the sea not only highlights the immediate risks to Tuvalu's territorial integrity but also underscores the broader implications for the nation's sovereignty and the well-being of its citizens.

In addition to rising sea levels, Tuvalu faces increasing air and sea surface temperatures, along with more frequent and intense extreme rainfall events. By 2030, temperatures are expected to rise by less than 1°C, with a potential increase of over 2.5°C by 2090 under high-emission scenarios.¹⁵ These climatic

10 World Bank Group (2021), 'Climate risk country profile: Tuvalu'. Retrieved from: https://climateknowledgeportal.worldbank.org/sites/default/files/country-profiles/15824-WB_Tuvalu%20Country%20Profile-WEB.pdf [accessed 27 March 2024].

11 Entura (2019), 'Pacific renewable energy investment facility: Tuvalu'. Retrieved from: <https://www.adb.org/sites/default/files/linked-documents/49450-015-sd-04.pdf> [accessed 27 March 2024].

12 SPREP (2023), 'How Tuvalu is dealing with impacts of the climate crisis'. Retrieved from: <https://www.sprep.org/news/how-tuvalu-is-dealing-with-impacts-of-climate-crisis> [accessed 27 March 2024].

13 IPCC (2023), 'Sea level rise and implications for low-lying islands, coasts and communities supplementary material'. Retrieved from: https://www.ipcc.ch/site/assets/uploads/sites/3/2022/03/SROCC_Ch04-SM_FINAL.pdf [accessed 27 March 2024].

14 International Monetary Fund (2023), *IMF Country Report No. 23/267-Tuvalu*. Retrieved from: <https://www.elibrary.imf.org/view/journals/002/2023/267/002.2023.issue-267-en.xml> [accessed 27 March 2024].

15 UNDP (2020), 'Tuvalu coastal adaptation project: Environmental and social impact assessment'. Retrieved from: <https://www.undp.org/pacific/publications/environmental-and-social-impact-assessment-funafuti> [accessed 27 March 2024].

changes exacerbate health risks, particularly for the most vulnerable populations, including the elderly, children, and individuals with disabilities, placing further strain on the country's limited healthcare resources.¹⁶

Tuvalu's marine ecosystem is threatened by rising sea temperatures, coral bleaching, and declining fish stocks. Increasing intense rainfall heightens flooding, saline intrusion, water contamination, and disease risks. Extreme rainfall events may rise from four-to-five per 20 years by 2055 to six-to-seven by 2090 under high-emission scenarios.¹⁷ These conditions also threaten agricultural productivity through soil erosion and the reduction of available fertile land. The cumulative effect of climate-induced changes extends beyond environmental degradation to the destruction of social and economic infrastructure, intensifying migration pressures as communities seek to escape increasingly uninhabitable conditions on their home islands.¹⁸

1.2. Tuvalu's human rights and migration challenges

The adverse effects of climate change in Tuvalu extend beyond environmental degradation, striking at the core of human rights. The Human Rights Measurement Initiative rates the impact of the climate crisis on Tuvalu's human rights conditions as severe, with a score of 5.4 out of 6.¹⁹ This reflects significant challenges in ensuring food, water, and housing security as direct consequences of climate change. The climate crisis in Tuvalu has catalysed both internal and international migrations, reshaping demographic patterns and exacerbating socio-economic inequalities. A notable trend is the migration from the outer islands to the capital, Funafuti, driven by environmental pressures.²⁰

Research highlights a significant emigration, with approximately 15% of Tuvalu's population having left the country between 2005 and 2015.²¹ Despite a strong inclination toward emigration among the populace, financial constraints severely limit the mobility of many. The primary destination for Tuvaluan migrants being New Zealand, which now hosts a Tuvaluan community of approximately 5,000 equivalents to almost half of Tuvalu's total population.²² Projections indicate a stark increase in both internal and

16 Germanwatch (2004), 'Climate change, Challenges tuvalu'. Retrieved from: <https://www.germanwatch.org/sites/default/files/publication/3632.pdf> [accessed 27 March 2024]

17 IFRC (2021), *Emergency plan of action*, Tuvalu Impending Drought.

18 UNEP (2013), 'Small island developing states in numbers'. Retrieved from: <https://www.unep.org/resources/report/small-island-developing-states-numbers> [accessed 27 March 2024].

19 HRMI (2020), 'Tuvalu'. Retrieved from: <https://rightstracker.org/country/TUV?as=hi&tab=report-esr&assessed=some&atRisk=14> [accessed 27 March 2024].

20 World Bank Group (2021), *supra* note 10.

21 United Nations University (2016), 'Climate change and migration in the Pacific'. Retrieved from: https://i.unu.edu/media/ehs.unu.edu/news/11747/RZ_Pacific_EHS_ESCAP_151201.pdf [accessed 27 March 2024].

22 Taafaki, J. (2022), 'The lived experiences of rural Tuvaluans navigating the Aotearo New Zealand Healthcare System'. Retrieved from: <https://ourarchive.otago.ac.nz/bitstream/handle/10523/15152/TaafakiJaneH2023PhD.pdf?sequence=1&isAllowed=y> [accessed 27 March 2024].

international migration due to climate change, with internal migration to Funafuti expected to rise by 70% and international migration to double by 2055.²³ This demographic shift poses significant challenges, including resource overutilization in Funafuti and a potential brain drain from an acute shortage of skilled labour.

Beyond the tangible impacts on resources and the economy, forced migration inflicts deep emotional and cultural wounds. The prospect of leaving ancestral lands is fraught with profound emotional and cultural implications for Tuvaluans. The attachment to land in Tuvaluan culture is not merely physical but encompasses centuries-old traditions, languages, and identities.²⁴ For individuals who decide to leave their homeland, escaping the immediate threats of climate change does not guarantee a more promising future. A study revealed that Tuvaluans in New Zealand face significant challenges stemming from their precarious immigration status.²⁵ Initially arriving with valid visas, many find themselves unable to secure further visas or permanent residency due to minor administrative issues, lack of understanding of the process, or pre-existing medical conditions. This situation leaves them without legal permission to work, ineligible for public support, pushing them into financial vulnerability and often into low-paid jobs. Attempts to navigate the immigration system frequently result in exploitation by unethical lawyers and immigration agents, costing them substantial amounts of money without securing residence. This lack of residency status also severely restricts their ability to rent housing, access education, and obtain necessary healthcare, leading to overcrowded living conditions, inadequate education for their children, and the accumulation of medical debt.

1.3. The Government of Tuvalu's responses to climate change and climate migrations

The Government of Tuvalu's response to climate change is multifaceted, acknowledging the critical importance of effectively managing climate variability, disaster risks, and the need for proactive adaptation. The Tuvalu Climate Change Policy (2012–2021)²⁶ set the country's direction for that period, focusing on vulnerability, disaster preparedness, planning, impact assessment, and migration and relocation needs. Despite ongoing efforts since the 1980s to construct disaster protection infrastructure, these attempts have

23 United Nations University (2017), *supra* note 21.

24 Germanwatch (2004), *supra* note 16.

25 Hoa, N. T. and Kenkel, D. (2022), 'Hidden gems - Lived experiences of Tuvaluan hope seekers and their families in Aotearoa New Zealand'. Retrieved from: <https://www.unitec.ac.nz/sites/default/files/public/documents/Tuvalu%20project%20report%20-FINAL-13.12.2021.pdf> [accessed 27 March 2024].

26 Ministry of Foreign Affairs, Trade, Tourism, Environment and Labour (2011), 'National climate change policy 2012 – 2021'. Retrieved from: https://www.preventionweb.net/files/68527_tuvalunationalclimatepolicy.pdf [accessed 27 March 2024].

failed to provide sustained protection.²⁷

The Tuvalu Coastal Adaptation Project (TCAP)²⁸ is a key initiative, developed in response to the urgent national priority of building coastal resilience. This project aims to provide robust coastal protection infrastructure to high-value vulnerable coastlines, such as Nanumaga. Financed by a Green Climate Fund grant of USD 36 million and co-financed by the Government of Tuvalu with USD 2.9 million, the total cost of the project represents 63.8% of the GDP for 2022. The project is executed in close collaboration with the United Nations Development Programme (UNDP) and the Government of Tuvalu.²⁹

On the international stage, the Government of Tuvalu has taken an initiative-taking stance in advocating for stronger climate action. This was exemplified by the innovative approach of the Minister of Justice, Communication, and Foreign Affairs, Simon Kofe, who, to draw attention to the imminent threat of the archipelago's disappearance, delivered a speech for COP26 standing knee-deep in water, symbolically highlighting the urgency and severity of the situation.³⁰

Considering the escalating pressures from international migration and climate change, Tuvalu faces an existential threat from climate change, risking its territory, cultural identity, and statehood. The Future Now Project aims to preserve Tuvalu's sovereignty through digitizing government services, creating digital archives of cultural practices, and pursuing legal measures to maintain statehood and maritime boundaries if the nation submerges.³¹

2. Vietnam's Mekong Delta: A case study of internal climate migration in Southeast Asia

Vietnam exemplifies dynamic evolution with rapid economic growth and significant poverty reduction, housing an estimated 98.2 million people in 2022, with about one-third residing in Hanoi and Ho Chi Minh City.³² Central

27 Government of Tuvalu (2015), 'Second National Communication of Tuvalu to the United Nations Framework Convention on Climate Change'. Retrieved from: <https://unfccc.int/sites/default/files/resource/Tuvalu%20%20SNC%20Final%20Report.pdf> [accessed 27 March 2024].

28 Government of Tuvalu, UNDP, GCF (2017), 'Tuvalu Coastal Adaptation Project'. Retrieved from: <https://static1.squarespace.com/static/5ad0752c96e76f4ed12e5aff/t/5c84d8bc15fcc08f42b0be6b/1552210143696/doc-tcap-brochure-tuvalu-coastal-adaptation-jan19.pdf> [accessed 27 March 2024].

29 Green Climate Fund (2023), '2022 Annual Performance Report for FP015: Tuvalu Coastal Adaptation Project (TCAP)'. Retrieved from: <https://www.greenclimate.fund/document/2022-annual-performance-report-fp015tuvalu-coastal-adaptation-project-tcap> [accessed 27 March 2024].

30 UNFCCC (2021), 'Tuvalu National Statement for the World Leaders Summit'. Retrieved from: https://unfccc.int/sites/default/files/resource/TUVALU_cop26cmp16cma3_HLS_EN.pdf [accessed 27 March 2024].

31 Government of Tuvalu (2023), 'The First Digital Nation'. Retrieved from: <https://www.tuvalu.tv> [accessed 27 March 2024].

32 World Bank (2023), 'World Population: Vietnam'. Retrieved from: <https://donnees.banquemondiale.org/indicateur/SP.POP.TOTL?locations=VN> [accessed 27 March 2024].

to its economy is rice production, a sector that not only ensures food security and rural employment but also garners significant foreign exchange.³³ Vietnam's geography, with its long coastline, varied topography, and diverse climate, makes it particularly vulnerable to climate change. It ranks among the top five most susceptible countries globally, with projections indicating a potential 3.5% reduction in national income by 2050 due to climate-related adversities.³⁴

The Mekong Delta region, an indispensable part of Vietnam, is home to 20 million people—about one-fifth of the country's population.³⁵ This region is a veritable economic powerhouse, contributing approximately 20% to the national GDP and playing a pivotal role in agricultural production. It accounts for 50% of the nation's rice output, 65% of aquaculture, and 70% of fruit production, underscoring its significance in the national economy.³⁶ Despite its economic vitality, the Mekong Delta faces profound challenges due to climate change, with potential GDP losses estimated at 0.3 percentage points, equating to over USD 1.14 billion. This financial impact is attributed to the detrimental effects of hydropower dams on the Mekong River and the overarching implications of climate change.³⁷

2.1. Climate change impacts on the Mekong Delta

The Mekong Delta's vulnerability to climate change is exacerbated by its exposure to recurrent cyclonic activities and its pivotal role in regional food security.³⁸ This area also faces significant risks from sea-level rise, with projections indicating that 40% of the Delta could be submerged by 2100, affecting 55% of the local population.³⁹

A severe drought in 2016, attributed to El Niño conditions and compounded by upstream hydropower dams restricting the flow of the Mekong River, left 600,000 people without access to freshwater.⁴⁰ This event highlighted

33 The World Bank Group & the Asian Development Bank (2021), 'Climate Risk Country Profile: Vietnam'. Retrieved from: <https://climateknowledgeportal.worldbank.org/sites/default/files/2021-04/15077-Vietnam%20Country%20Profile-WEB.pdf> [accessed 27 March 2024]

34 Arndt, C., Tarp, F., & Thurlow, J. (2015), 'The economic costs of climate change: A multi-sector impact assessment for Vietnam', *Sustainability*, Vol. 7, No. 4, <https://doi.org/10.3390/su7044131>.

35 World Wildlife Fund (2023), 'Production of a documentary on the impacts of sand mining and solutions in the Vietnamese Mekong Delta'. Retrieved from: https://wwfasia.awsassets.panda.org/downloads/term_of_reference_p00000134_documentary.pdf [accessed 27 March 2024].

36 Agence Française de Développement (2022), 'The Mekong Delta emergency'. Retrieved from: <https://www.afd.fr/en/ressources/mekong-delta-emergency-climate-environmental-adaptation-strategies-2050> [accessed 27 March 2024].

37 Yoshida, Y., Lee, H. S., Trung, B. H., Tran, H. D., Lall, M. K., Kakar, K., Xuan, T. D. (2020), *Impacts of mainstream hydropower dams on fisheries and agriculture in lower mekong basin*, Multidisciplinary Digital Publishing Institute.

38 UNDP & FAO (2021), 'Vulnerability and risk assessments of agriculture sectors in Vietnam', *Bangkok*. Retrieved from: <https://www.fao.org/3/cb3776en/cb3776en.pdf> [accessed 27 March 2024].

39 Asian Development Bank (2009), 'Climate Change Impact and Adaptation Study in Mekong Delta – Part A'. Retrieved from: https://www.adb.org/sites/default/files/project-documents/43295-012-tacr-03b_0.pdf [accessed 27 March 2024].

40 EVN (2016), 'Record-breaking El Nino is ending, La Nina on alert'. Retrieved from: <https://evn.com.vn/d6/news/El-Nino-ky-luc-sap-ket-thuc-canh-giac-La-Nina-0-48-17833.aspx> [accessed 27 March 2024].

the complex interplay between climatic phenomena and human interventions in natural river flows. The resulting reduced river flow diminished the Delta's ability to repel seawater intrusion, severely impacting agriculture by allowing saltwater to penetrate far inland.⁴¹ This environmental crisis precipitated a mass migration, with nearly 1.1 million individuals—equivalent to the population of an entire province—leaving the region due to deteriorating conditions including agricultural land degradation, water shortages, landslides, and pollution.⁴²

The increasing frequency of such climate-induced events has propelled a significant migration flow from the Mekong Delta to urban centres like Ho Chi Minh City.⁴³ The 2019 national census revealed that the Mekong Delta's out-migration rate stands at 4.5%, the highest among all Vietnamese regions.⁴⁴ Yet, relocating to mega-cities such as Ho Chi Minh City, which is also vulnerable to climate impacts, particularly flooding, poses its challenges. The city, with a population of 9.5 million and situated near sea level, is expected to face increased flooding intensity, especially when storm surges coincide with high river flows.⁴⁵ The annual impact of flooding in Vietnam is significant, with an estimated 930,000 people affected and an expected annual GDP impact of \$2.6 billion.⁴⁶ This data suggests that migration to areas like Ho Chi Minh City may not offer a sustainable solution to the challenges posed by climate change.

2.2. From delta to city: The struggles of Vietnam's climate migrants

For individuals and families seeking refuge from insecurity and environmental adversities, migration may seem viable but often leads low-skilled migrants into multifaceted urban vulnerabilities. These include harsh employment conditions, economic burdens, and substandard living conditions, compounded by the financial strain of remitting savings to support family members back home.⁴⁷

The migrants' plight is further aggravated by the absence of the social and financial support systems available in their home communities, such as welfare benefits, microloans, livestock assistance, or community-based aid,

41 CGIAR (2016), 'Assessment report: The drought and salinity intrusion in the Mekong River Delta of Vietnam'. Retrieved from: <https://cgspace.cgiar.org/items/ea5cd055-5737-4c95-a8cc-4f16926c4a7f> [accessed 27 March 2024].

42 VCCI (2021), 'Annual economic report: Mekong Delta 2020'. Retrieved from: <https://fspm.fulbright.edu.vn/download/BCKT-Mekong-Delta-Eng-Final.pdf> [accessed 27 March 2024].

43 UNFPA (2015), 'The National Internal Migration Survey'. Retrieved from: https://vietnam.unfpa.org/sites/default/files/pub-pdf/PD_Migration%20Booklet_ENG_printed%20in%202016.pdf [accessed 27 March 2024].

44 General Statistics Office (2020), 'Statistical Yearbook of 2020'. Retrieved from: <https://www.gso.gov.vn/en/data-and-statistics/2021/07/statistical-yearbook-of-2020/> [accessed 27 March 2024].

45 Scheiber, L., et al., (2023), 'Low-regret climate change adaptation in coastal megacities – Evaluating large-scale flood protection and small-scale rainwater detention measures for Ho Chi Minh City, Vietnam', *Natural Hazards and Earth System Sciences*. Retrieved from: <https://nhess.copernicus.org/articles/23/2333/2023/nhess-23-2333-2023-discussion.html> [accessed 27 March 2024].

46 WRI (2018), 'AQUEDUCT Global Flood Analyzer'. Retrieved from: <https://floods.wri.org> [accessed 27 March 2024].

47 Agence Française de Développement (2022), *supra* note 36.

rendering them particularly defenceless in the urban environment. During the 2021 COVID-19 lockdowns, widespread layoffs and employment restrictions led to 1.1 million migrants returning to their hometowns, unemployed and financially depleted, after Ho Chi Minh City's reopening in September 2021.⁴⁸

2.3. Climate adaptation and internal migration management

Vietnam demonstrates its commitment to climate change through policies and initiatives like the 2011 National Climate Change Strategy and the 2012 National Green Growth Strategy. Legislative actions include the 2013 Law on Natural Disaster Prevention and Control and the 2014 Law on Environment. Ratifying the Paris Agreement and updating its NDC in 2020, Vietnam leads Southeast Asia in renewable energy, accounting for 69% of the region's solar and wind power by 2022.⁴⁹

Despite these efforts, the Mekong Delta faces a dire future, with the land both shrinking and sinking at a rate of more than 1 cm per year, outpacing sea level rise by three to eight times. Projections suggest that between 23-90% of the delta could be submerged by 2100, dependent on sediment volume, groundwater availability, and sea level rise.⁵⁰ In response, the Vietnamese government has enacted Decision N.287/QĐ-TTg, launching a master plan for the Mekong Delta from 2021 to 2030, aimed at minimizing the delta's submersion rate.

However, while the master plan seeks to mitigate migration from the Mekong Delta, it falls short of providing adequate support for internal migrants. The absence of policies to ensure safe access to employment, housing, education, healthcare, and social security for rural migrants in Ho Chi Minh City and adjacent industrial provinces remains a significant gap.⁵¹ This oversight highlights the necessity for a comprehensive policy framework that addresses the needs of internal migrants, ensuring their inclusion in Vietnam's adaptation and growth strategies.

2.4. Policy recommendations for Vietnam

Addressing climate-induced migration in the Mekong Delta requires a multifaceted policy approach, drawing on Vietnam's policies and global best practices. Essential strategies include integrated water resource management to protect against sea-level rise and saltwater intrusion. Inspired by the Netherlands' Delta Works, Vietnam could adopt similar large-scale water management initiatives, such as building and upgrading dams, dikes, and irrigation systems.

48 General Statistics Office (2021), 'Report on Impact of COVID-19 Pandemic on Labour and Employment'. Retrieved from: <https://www.gso.gov.vn/en/data-and-statistics/2021/07/report-on-impact-of-covid-19-pandemic-on-labour-and-employment-of-the-second-quarter-of-2021/> [accessed 27 March 2024]

49 EMBER (2023), 'ASEAN's solar and wind growth slowed last year, despite huge potential'. Retrieved from: <https://ember-climate.org/press-releases/aseans-solar-and-wind-growth-slowed-last-year-despite-huge-potential/> [accessed 27 March 2024]

50 Schmitt R. et al. (2022), 'Save the Mekong Delta from drowning', *Science*, Vol. 376.

51 Agence Française de Développement (2022), *supra* note 36.

This approach would help mitigate flooding, manage freshwater resources, and protect agricultural sustainability and livelihoods in the region.⁵²

Urban planning must support climate migrants by ensuring they have access to affordable housing, healthcare, education, and employment opportunities. Brazil's Minha Casa Minha Vida (My House, My Life) program, which provides affordable housing to low-income families, offers a successful example of improving living conditions for migrants.⁵³ Implementing similar policies in Vietnam can enhance support for rural migrants moving to urban areas like Ho Chi Minh City, thereby alleviating the pressures on urban infrastructure and services while promoting social inclusion and economic stability.

Agricultural adaptation programs should focus on introducing practices and technologies that enhance resilience to climate impacts. Implementing salt-tolerant crops, efficient irrigation methods, and sustainable farming practices is imperative. The System of Rice Intensification (SRI), already used in Vietnam, has proven effective in increasing rice yields while reducing water usage.⁵⁴ Such techniques can be tailored to sustain agricultural productivity in the Mekong Delta, helping farmers adapt to changing environmental conditions.

Enhancing data collection and monitoring systems to track climate impacts and migration patterns is critical for evidence-based policymaking. The Climate Risk Index, used globally to assess countries' vulnerability to climate impacts, provides a model for developing comprehensive monitoring systems. Implementing a similar index in Vietnam can help better understand and respond to climate-induced migration, allowing for more targeted and effective interventions.⁵⁵

By adopting these policy recommendations, Vietnam can build a more resilient Mekong Delta, protect its vulnerable populations, and manage the complex dynamics of climate-induced migration. These measures could not only address immediate challenges but also pave the way for sustainable development in the face of ongoing climate change.

3. Concluding reflections: The global responsibility towards climate migration

Despite frequent references to climate migrants as climate refugees by media and advocacy groups, the legal definition of refugees does not encompass

52 Delta Programme Commissioner (2024), 'Room for sea level rise', *Delta Programme*. Retrieved from: <https://english.deltaprogramma.nl/documents/publications/2024/06/13/room-for-sea-level-rise> [accessed 1 July 2024].

53 UN-Habitat (2014), 'Scaling-up Affordable Housing Supply in Brazil'. Retrieved from: <https://unhabitat.org/scaling-up-affordable-housing-supply> [accessed 1 July 2024].

54 FAO (2016), 'System of Rice Intensification in Vietnam: Doing more with less'. Retrieved from: <https://www.fao.org/family-farming/detail/en/c/429763/> [accessed 1 July 2024].

55 Eckstein et al. (2019), 'Who suffers most from extreme weather events? Weather-related loss events in 2017 and 1998 to 2017'. Retrieved from: https://www.germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202019_2.pdf, [accessed 1 July 2024].

those displaced by climate-related stressors, as they do not face persecution based on the criteria outlined in the 1951 Refugee Convention. Recognizing this gap, the UN Human Rights Council in March 2018 highlighted the oversight of climate refugees as the world's forgotten victims, underscoring their ineligibility for legal protections against actions like deportation due to the current refugee definition's limitations.⁵⁶ To address this discrepancy, it is imperative for governments and legal entities to redefine conditions precipitated by climate change as significant human rights threats, acknowledging the severe risks faced by climate refugees. This redefinition would not only align with the immediate dangers faced by those fleeing conflict but also ensure the protection of individuals displaced by climate change, affirming their rights and dignity in the face of an evolving global crisis.

A case in point is the *Teitiota v. New Zealand*, where the UN Human Rights Committee recognized that deporting individuals to countries where climate change poses a life-threatening risk could violate their right to life under the International Covenant on Civil and Political Rights.⁵⁷ This case sets a precedent for expanding the interpretation of international human rights law to include climate-induced displacement.

Countries contributing significantly to greenhouse gas emissions should bear a proportional responsibility for accommodating climate migrants introducing a perspective of global redistributive justice.⁵⁸ The 2023 Australia-Tuvalu Falepili Union treaty exemplifies this principle by creating a special visa arrangement for Tuvaluans, acknowledging Australia's role in climate change. This treaty offers a tangible solution for those affected by rising sea levels, facilitating legal migration for Tuvaluans and ensuring access to essential services in Australia. It sets a precedent for targeted migration policies in response to climate change.

Besides, financial support and technology transfer from developed to more vulnerable nations are pivotal in bolstering their resilience to climate change. This approach, grounded in the principle of common but differentiated responsibilities from international climate agreements,⁵⁹ underscores the moral duty of wealthier countries to aid those less capable of managing climate change repercussions. International agreements like the Kyoto Protocol and the Paris

56 UNCHR (2018), 'Human rights and the environment: resolution'. Retrieved from: <https://digitallibrary.un.org/record/1627326> [accessed 27 March 2024].

57 Human Rights Committee of the United Nations, 'Views adopted by the Committee under Article 5 (4) of the Optional Protocol, concerning communication No.2728/2016'. Retrieved from: <https://www.refworld.org/jurisprudence/caselaw/hrc/2020/en/123128> [accessed 1 July 2024].

58 Ahmed, B. (2018), 'Who takes responsibility for the climate refugees?', *International Journal of Climate Change Strategies and Management*, Vol. 10, No. 1, pp. 5-26, <https://doi.org/10.1108/IJCCSM-10-2016-0149>.

59 United Nations (1992), 'The principle of common but differentiated responsibilities'. Retrieved from: https://legal.un.org/avl/pdf/ls/Hey_outline%20EL.pdf [accessed 27 March 2024].

Agreement have shaped climate policy by supporting vulnerable nations. While compensation for loss and damage is crucial, it should complement, not replace, essential climate adaptation and mitigation strategies. Reducing carbon emissions and transforming global production and consumption patterns remain paramount. ●

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Author Contribution

The author solely contributed to the study conception and design. The author read and approved the final manuscript.

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