



**10 YEARS OF THE
PENINSULA PRINCIPLES**

SOLVING CLIMATE DISPLACEMENT THROUGH PROACTIVE LAND POLICY

July 2023



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All images by Kadir van Lohuizen/NOOR.

THE HUMAN FACE OF CLIMATE DISPLACEMENT IN BANGLADESH

Location: Bangladesh



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Executive Summary

Climate change is affecting our planet in countless ways. One way that has yet to receive the attention it deserves is the fact that the portion of Earth's land mass which is comfortably habitable by humans is shrinking and will continue to do so in the coming decades, as climate change worsens. This will lead to irreversible geographical changes so dramatic that the world maps we are familiar with today will need to be altered to reflect these changes due to rising sea levels and polar ice melt. As a result, humans will be forced into smaller and smaller enclaves of habitability, regardless of boundaries, affiliations or ethnicity. Mass climate displacement is already a feature of the world today, and in line with these changes will inevitably grow quickly in the near future. Those affected will require one thing above all others; land. However, it is abundantly clear that states and the international community more broadly, have thus far failed to adequately recognise the central importance of land, as well as housing, land and property rights, in finding solutions to climate displacement.

This report asks a simple question: Why are we not preparing for climate displacement with land solutions right now?

To cite just one example, extremely cautious modelling by the World Bank predicts that without immediate reductions in emissions, 216 million people are likely to be displaced by climate change by 2050.¹ And yet, unless forced by circumstance to do so, most governments have effectively ignored these issues. There is not a single United Nations financial, organisational or treaty mechanism which is focused solely on the land that will be required to resettle and rehouse the hundreds of millions who will face displacement in coming decades.

Despite the UN's lack of concerted attention to this issue, this report suggests that land and HLP rights are at the core of resolving displacement issues. The report asserts that the land required to protect the rights and standard of living of displaced populations already exists, and that it is simply a matter of planning and ensuring access to that land that can form the basis for effective policy designed to promote the rights of climate displaced persons everywhere. Even at the most extreme end of climate displacement estimates in the range of one billion or more people, a land area the size of Austria is all that would be required to provide land solutions to the displaced.

Governments hold the keys to solving climate displacement, and a small number of those whose populations are already experiencing climate displacement have begun planned relocations and land set-aside programs. The most positive of these efforts should be supported, learned from and scaled to other areas where appropriate.

¹ Clement, Viviane, Kanta Kumari Rigaud, Alex de Sherbinin, Bryan Jones, Susana Adamo, Jacob Schewe, Nian Sadiq, and Elham Shabahat, *Groundswell: Acting On Internal Climate Migration Part II*, World Bank, 2021, 1.

This report outlines a range of options that governments and UN agencies could support to mitigate the human rights impacts of climate displacement. It argues that the international community has failed to protect the housing, land and property rights of refugees and IDPs displaced by conflict, and these failures cannot be repeated in the case of climate displacement. This is not only a matter of ethical or humanitarian considerations, but also of economics and national, regional and international security.

This report was prepared by HLP rights expert Shaun Butta, with inputs from Viraaj Akuthota, Ryan Butta, Kirsten Young and myself. This study forms a part of our year-long series of events commemorating the tenth anniversary of the Peninsula Principles on Climate Displacement Within States, a text that remains as valid today as when it was approved in 2013. We urge governments everywhere to begin today to enact proactive land policies designed to prevent, reduce and resolve the climate displacement that will surely affect every country on Earth if it has not done so already.

A handwritten signature in blue ink, appearing to read 'Scott Leckie'.

Scott Leckie, Director

1 July 2023

I. Climate Displacement Has Already Begun and We Are Not Prepared

1. The world's population is heading for a climate displacement crisis that will likely dwarf the numbers of people today classified as refugees or internally displaced persons. Current action on climate change will not be sufficient to reverse the cumulative effect of increasing temperatures, extreme weather events, sea-level rise and other climate related events, which are now an indisputable fact of life on a warming planet. The inevitability of future global warming makes it a certainty that displacement is set to continue and worsen.² The Global South will bear the brunt of these impacts, but nowhere will be immune. The developed world which bears a disproportionately large responsibility for creating the problem will not only find itself becoming a destination for climate-displaced persons (CDPs), but as a group these states will also generate CDPs in increasingly large numbers.³ Consequently, the developed world will no longer be able to ignore or complain about conflict displacement associated with developing nations in the world's conflict zones, as countries like the USA, Australia and the Netherlands begin to generate large numbers of CDPs. This should serve as an early warning sign that a global approach will be needed to deal with large-scale displacements and that the housing, land and property (HLP) rights of these populations should be at the forefront of efforts to deal with climate displacement in a rights-consistent manner.
2. Unless new planning approaches are adopted by governments immediately, near future climate-induced displacements are likely to be so large that CDPs could destabilise economies, housing markets and resource allocation in addition to undermining international security. As an example of economic impacts, the United Nations Food and Agriculture Organisation (FAO) estimates that there are 608 million family farms around the world, occupying between 70 and 80 percent of the world's farmland and producing around 80 percent of the world's food in value terms. If millions of these people are forced into displacement, the world's food supply chain will be dangerously disrupted.⁴

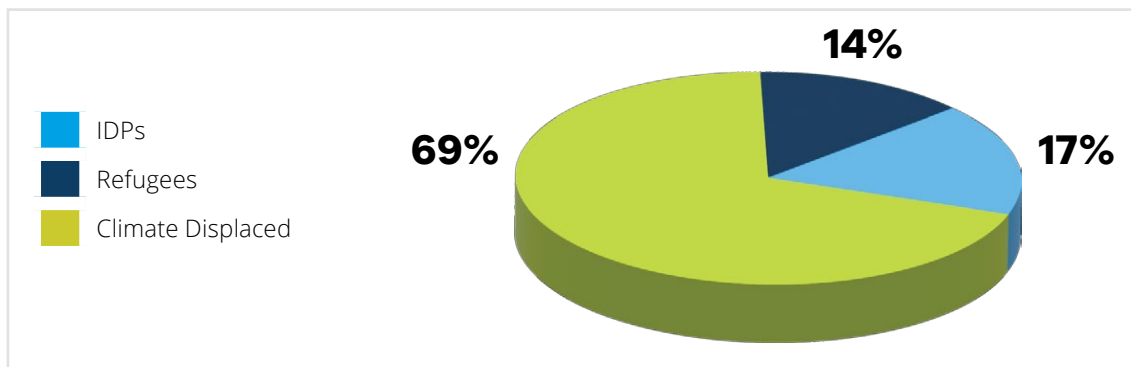
2 The Intergovernmental Panel on Climate Change, *Synthesis Report of The IPCC Sixth Assessment Report (AR6) Summary for Policymakers*, 2023, 5; Transnational Institute, *The Global Climate Wall: How the world's wealthiest nations prioritise borders over climate action*, October, 2021, 1.

3 The latest Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change, Ian Fry, entitled, *Providing legal options to protect the human rights of persons displaced across international borders due to climate change*, uses the term "persons displaced across international borders due to climate change", however for this report we use the term "climate displaced persons." While aligning closely with the term used by the Special Rapporteur, it is more inclusive and can refer to those displaced both across borders, and internally within countries. (A/HRC/53/34, 18 April 2023).

4 FAO, *Small family farmers produce a third of the world's food*, 23 April 2021, <https://www.fao.org/news/story/en/item/1395127/icode/>.

3. Furthermore, a series of pre-existing international human rights will be compromised by these processes, including the right to adequate housing, protection from eviction, the right freedom of movement, including the ability to choose one's residence, the right and restitution and compensation rights.

**1. Displaced Populations: Refugees/IDPs in 2023 v potential CDPs in 2050
(World Bank Estimates)**



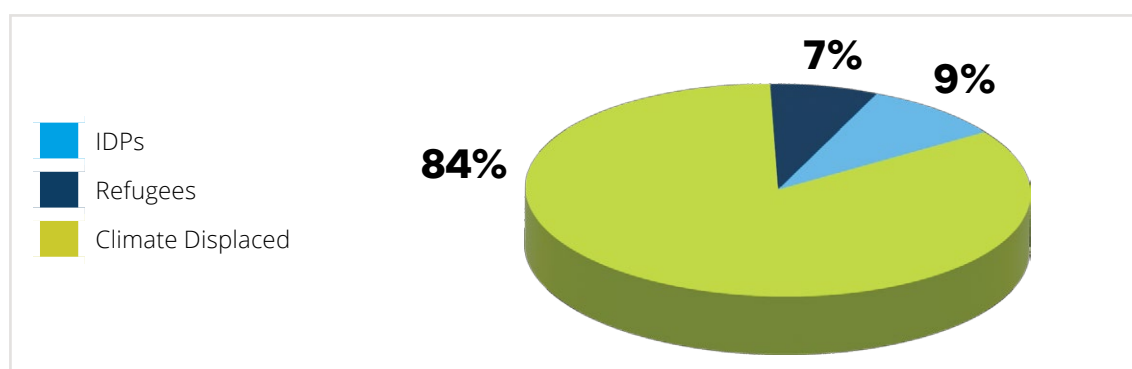
4. The impacts on the human rights of those populations already displaced by conflict and increasingly, natural disasters, provide a dire warning of what is to come in the not-too-distant future. Protracted displacement in camps, overcrowding in urban slums and tight restrictions on movement are today the hallmarks of what could be described as a failing protection system for refugees and IDPs. Current official estimates point to roughly 110 million having been displaced.⁵ The international system and individual host-country governments are already unable to deal with the housing, land and property needs of these populations in a manner consistent with human rights obligations. Once the number of displaced persons is doubled (under conservative estimates⁶) by climate-induced push factors (extreme weather events, sea-level rises, droughts etc), the entire system of asylum and protection of internally displaced populations will be overwhelmed, with dire consequences for those displaced, unless strategies are developed now to mitigate the human rights impacts of these movements.

⁵ UNHCR, Global Trends Report 2022, June 2023, <https://www.unhcr.org/global-trends-report-2022>.

⁶ World Bank, *Groundswell: Acting On Internal Climate Migration Part II*, 2021, 6.

5. Chart 1 shows the number of the world's displaced populations currently, using UNHCR estimates of combined refugee/IDP numbers in 2023,⁷ contrasted with World Bank estimates of 216 million persons who will likely be displaced by 2050.

2. Displaced Populations: Refugees/IDPs in 2023 v potential CDPs in 2050
(World Bank estimates plus extra regions and cross border displacements)



6. However, the Bank clarifies that this is likely to be a conservative estimate, given that this number only considers internal displacement and does not include displacement across borders, nor does it account for displacement originating in Europe, North America, the Middle East or Small Island Developing States.⁸ Given that there are few signs of genuine emissions reductions currently, it is also worth considering the difference in displacement in worst case scenarios which take into account the regions mentioned above and the possibility of cross-border displacements.⁹ As an example, Chart 2 considers the scenario if 500 million persons were to be displaced by 2050, in comparison with today's displaced numbers presented in Chart 1.
7. Even more dramatically, according to IPCC estimates up to one third of the earth's population - 3.3–3.6 billion people - live in contexts that are highly vulnerable to climate change.¹⁰ If even half of those affected populations are forced by circumstances beyond their control to move residence under this scenario, close to two billion people will require new places to live. Populations at risk could be forced to move out of necessity, or they may actively choose to move if they have access to the resources, as a mitigation strategy.

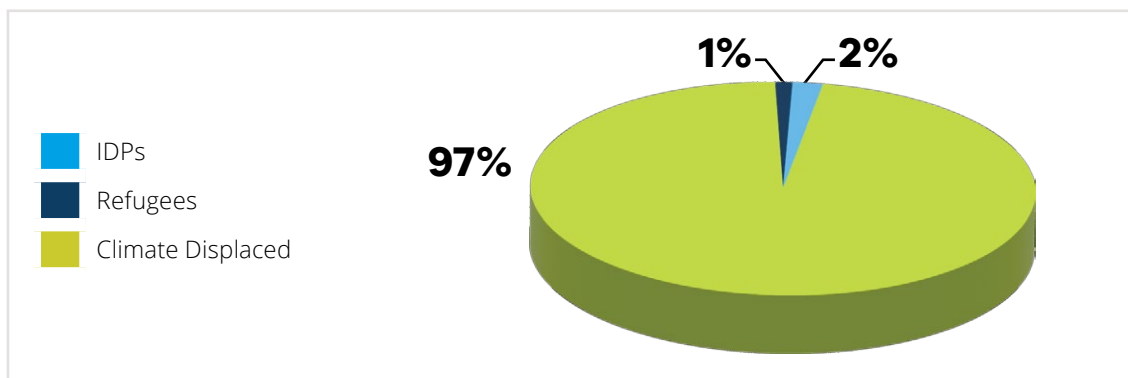
⁷ Supra, Note 5: UNHCR, Figures at a glance, 2022, <https://www.unhcr.org/us/about-unhcr/who-we-are/figures-glance>.

⁸ Supra, Note 6: World Bank, *Groundswell: Acting On Internal Climate Migration Part II*, 2021, 6.

⁹ A 2022 report indicated that current commitments on emissions would lead to an increase of 10.6% by 2023, UNFCCC, *Climate Plans Remain Insufficient: More Ambitious Action Needed Now*, 26 October 2022, <https://unfccc.int/news/climate-plans-remain-insufficient-more-ambitious-action-needed-now>.

¹⁰ Supra: Note 2, 5.

3. Displaced Populations: Refugees/IDPs in 2023 v potential CDPs in 2050 (every person at risk of displacement)



8. A worst-case scenario is presented in Chart 3, which displays the comparison between today's displaced populations and a possible future of 3 billion people forced to move by climate change events.
9. The IPCC points out that regions and people with considerable development constraints have high vulnerability to climatic hazards, noting that "increasing weather and climate extreme events have exposed millions of people to acute food insecurity and reduced water security, with the largest adverse impacts observed in many locations and/or communities in Africa, Asia, Central and South America, LDCs, Small Islands and the Arctic, and globally for Indigenous Peoples, small-scale food producers and low-income households. Between 2010 and 2020, human mortality from floods, droughts and storms was 15 times higher in highly vulnerable regions, compared to regions with very low vulnerability."¹¹ Consequently, populations in these regions are more likely to be forced to move, rather than making an active choice, meaning that those movements are more likely to be unplanned, less organised and into areas which are not prepared for large scale movements.

Climate Displacement Creates Growing Pressure on Housing, Land and Property Resources

10. The refugee and IDP movements of today are a useful indicator of what lies in store, once climate displacement increases in size and frequency. The movements of these groups create enormous pressure on HLP resources in both rural and urban areas. Traditional approaches to the HLP needs of these populations have been woefully inadequate,

¹¹ The Intergovernmental Panel on Climate Change, Synthesis Report of The IPCC Sixth Assessment Report (AR6) Summary for Policymakers, 2023, 5.

often resulting in the violation of international obligations to respect, protect and fulfil HLP rights. Camp settings, frequently seen in rural areas close to international borders, often become the permanent residences of refugees who languish, sometimes for generations, without access to adequate housing, restitution rights or the prospects of HLP ownership or documentation.¹² In the meantime, refugees in some areas are left with no choice but to rely on resources of the land surrounding camps, depleting local resources and creating a negative association in the minds of the host community. In urban areas, refugees and IDPs often remain in the grey market of informal housing, fall victim to unscrupulous landlords and create pressure on rental markets leading to social cohesion issues with local populations.¹³

11. While many of today's refugee and IDP crises remain intractable, worryingly the numbers of refugees and IDPs pale in comparison to what is about to happen in coming decades when much larger-scale climate displacements occur. Already, three times as many people are now displaced annually because of extreme weather events and the effects of climate change than those displaced due to armed conflict and violence.¹⁴ It logically follows that the current frameworks for dealing with conflict displacement, which are incapable of providing adequate protection or HLP rights for those already displaced, will clearly be inadequate to provide the human rights protections necessary on the scale which climate displaced populations will require.
12. It could also be argued that the frameworks for addressing conflict-induced displacement are not the correct frameworks for the problem, meaning that no amount of expansion or adaptation of those frameworks would be capable of mitigating the problem, given the differential nature of climate displacement from that of conflict. Thus far, however, the international community has shown no ability to coalesce around a clearly needed climate-displaced persons convention, despite warnings such as that of the Special Rapporteur on the promotion and protection of human rights in the context of climate change, that "There is no legal definition for these so-called climate change refugees, and they are not defined as refugees under the UN Refugee Convention. As a result, these people may fall through the cracks when it comes to protection."¹⁵

12 There are very few contexts in which refugees have been granted full ownership rights in countries of asylum, presumably because asylum is viewed by the international community as being temporary in nature and because the UN has since the 90's, prioritised returns as the favoured durable solution for ending displacement.

13 See for example the case of Syrian refugees in Turkey, Regional Refugee and Resilience Plan In Response to the Syria Crisis, *Social Cohesion An overview of host community-refugee dynamics in the 3RP context*, June 2022, 6.

14 <https://www.internal-displacement.org/global-report/grid2022/>.

15 UN OHCHR, "Intolerable tide" of people displaced by climate change: UN expert, 23 June 2022, <https://www.ohchr.org/en/press-releases/2022/06/intolerable-tide-people-displaced-climate-change-un-expert>.



Image: Bangladesh.

In the Short Term, Most Climate Displacement Will Result in IDPs, Not Refugees

13. Among UN agencies and international NGOs, refugees receive most of the attention and resources, even though IDPs already vastly outnumber refugees across the world. For instance in 2021, out of the roughly 100 million people displaced at that time, refugees accounted for 42 million and IDPs for 58 million.¹⁶ Climate induced displacement however, will lead to more IDPs in the short term and require a renewed focus on the issues of internal displacement in areas where most of the world's displacement occurs.
14. Current modelling already provides glimpses of what can be expected in large coastal metropolises. For example, a McKinsey Report which looked at Ho Chi Minh City, where 40-45% of the city's land mass is only one metre above sea-level, shows the estimated impacts on real estate and infrastructure of 1% probability flooding scenarios now, in 2050 and in 2100. Their analysis is summarised in the table below.

Event Timeline	Estimated Damage
Today	23 percent of the city could flood, a range of existing assets would be taken offline; infrastructure damage may total \$200 million to \$300 million. Knock-on effects would be significant, potentially totalling a further \$100 million to \$400 million. Real estate damage may total \$1.5 billion.
2050	A flood with the same probability in 30 years' time would likely do three times the physical damage and deliver 20 times the knock-on effects, 36 percent of the city becomes flooded. Many of the 200 new infrastructure assets are planned to be built in flooded areas. As a result, the damage bill would grow, totalling \$500 million to \$1 billion. Increased economic reliance on assets would amplify knock-on effects, leading to an estimated \$1.5 billion to \$8.5 billion in losses. An additional \$8.5 billion in real estate damages could occur.
2100	A 180 centimetres sea-level rise scenario: A one percent probability flood in this scenario may bring three times the extent of flood area. About 66 percent of the city would be underwater. Damage is critical and widespread, totalling an estimated \$3.8 billion to \$7.3 billion. Much of the city's functionality may be shut down, with knock-on effects costing \$6.4 billion to \$45.1 billion. Real estate damage could total \$18 billion. ¹⁷

¹⁶ UNHCR, <https://www.unhcr.org/us/about-unhcr/who-we-are/figures-glance>.

¹⁷ McKinsey Global Institute, Can coastal cities turn the tide on rising flood risk? 20 April 2020, <https://www.mckinsey.com/capabilities/sustainability/our-insights/can-coastal-cities-turn-the-tide-on-rising-flood-risk>.

15. In scenarios such as these, which are likely to affect many of the world's largest coastal megacities, some of which are listed in the table below, the resulting displacement will range from tens of thousands, up to potentially millions, of displaced persons over time. Such movements may be temporary or permanent, depending on the resulting damage to housing stock and the viability of human habitability in areas of origin. In these scenarios, humanitarian responses may be unable to cater for the land and housing requirements of those populations which will be displaced to other areas of the city, including urban slums, peri-urban and rural areas.

Top Ten Cities at Risk Due to Rising Sea Levels by 2050¹⁸

Rank	Country	Urban Agglomeration	Exposed Population Current	Exposed Population Future
1	India	Kolkata	1,929,000	14,014,000
2	India	Mumbai	2,787,000	11,418,000
3	Bangladesh	Dhaka	844,000	11,135,000
4	China	Guangzhou	2,718,000	10,333,000
5	Vietnam	Ho Chi Minh City	1,931,000	9,216,000
6	China	Shanghai	2,353,000	5,451,000
7	Thailand	Bangkok	907,000	5,138,000
8	Myanmar	Rangoon	510,000	4,965,000
9	Usa	Miami	2,003,000	4,795,000
10	Vietnam	Hai Phòng	794,000	4,711,000

16. The locations where displaced populations will seek refuge will often depend on their access to resources. However, from the governmental perspective, each individual and family displaced by slow onset or sudden climate events has HLP rights which must be fulfilled, even in displacement. Therefore, planning ahead for the land needs of these populations is likely to be an easier task than adaptation in the face of sudden crisis. Flooding events, such as those described above for example, are likely to generate large amounts of displaced persons rapidly, depending on the severity of weather events, meaning that large amounts of land will be required for both temporary and permanent settlements to house climate displaced persons in future.

18 R.J. Nicholls, S. Hanson, et al, Environment Working Papers No. 1 Ranking Port Cities With High Exposure And Vulnerability To Climate Extremes Exposure Estimates, OECD Environmental Working Papers, 2007.

17. Early action is key, as the World Bank points out:

“The call for solutions on internal climate migration cannot be subscribed to the very communities who would have to move in response to the increasing intensity and frequency of climate change impacts. Early and far-sighted global, regional, and national action is imperative to address the urgent challenges at the nexus of climate, migration, and development and foster momentum toward inclusive, sustainable, and resilient economic transitions for all.”¹⁹

Neither Governments Nor the UN Spend Nearly Enough on Addressing Climate Displacement

18. The international community through the UN and its agencies has been surprisingly slow to recognise the need for research to understand further the interconnectivity of climate displacement. The siloing of funding and the mandates of particular agencies, means that research and action on the issues of climate displacement and its intersection with conflict has only begun in earnest in the relatively recent past. Within UNHCR, there are only a few people with dedicated roles focused on climate, and even fewer with roles focused on HLP considerations. This is despite the fact that climate change as a driver of displacement has been obvious for some time. In addition, there have been calls for UNHCR to focus on HLP rights specifically since the early 2000s, and yet there are less than 10 permanent roles within the entire organisation of 19,000 staff dedicated solely to climate displacement issues.²⁰
19. There are a range of international frameworks and policy approaches which address the issue of climate mobility including:

¹⁹ Supra: Note 1, 35.

²⁰ UNHCR, *Environment, Disasters and Climate Change*, <https://www.unhcr.org/us/what-we-do/how-we-work/environment-disasters-and-climate-change#:~:text=Our%20climate%20action%20is%20focused,international%20discussions%20on%20their%20rights>.

United Nations Framework Convention on Climate Change – Cancun Adaptation Framework	The framework formally incorporates mobility in the context of climate change in the 2010 Cancun Adaptation Framework, calling on countries for “measures to enhance understanding, coordination and cooperation with regard to climate induced displacement, migration, and planned relocation,” while “taking into account their common but differentiated responsibilities” (UNFCCC 2010, 4).
Sendai Framework for Disaster Risk Reduction	Focused on disaster displacement, the Sendai Framework outlines “targets and priorities for action to prevent and reduce disaster risks, including through governance, investment in disaster reduction for resilience, and disaster preparedness, recovery, rehabilitation, and reconstruction” (United Nations 2015). The Sendai Framework articulates the need to include migrants in disaster risk reduction and management in three places (see Guadagno 2016 for in-depth analysis): Paragraph 7: governments should engage with relevant stakeholders, including [...] migrants [...] in the design and implementation of policies, plans and standards. Paragraph 27(h): empower local authorities, as appropriate, through regulatory and financial means to work and coordinate with [...] migrants in disaster risk management at local level. Paragraph 36(a)(vi): Migrants contribute to the resilience of communities and societies and their knowledge, skills and capacities can be useful in the design and implementation of disaster risk reduction.
Paris Agreement	The Preamble of the Paris Agreement states that the “Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on [...] migrants” (UNFCCC 2015)
UNFCCC Task Force on Displacement	The Warsaw International Mechanism for Loss and Damage focuses on preparing for and addressing loss and damage from both sudden- and slow-onset climate change impacts, including effects on mobility. The UNFCCC Task Force on Displacement, established under the Warsaw Mechanism, is specifically mandated to address climate-related displacement through supporting “efforts, including finance, technology and capacity building of parties and other actors, including with and for communities and local actors, to avert, minimise and address displacement related to the adverse impacts of climate change, at all levels, including community, national, regional and international levels” (see Task Force report: UNFCCC 2018b).

UNFCCC 24th Conference of Parties Decision	The COP24 Decision, informed by a report from the UNFCCC Task Force on Displacement, invites UNFCCC parties “[to] facilitate orderly, safe, regular and responsible migration and mobility [. . .] in the context of climate change, by considering the needs of migrants and displaced persons, communities of origin, transit and destination, and by enhancing opportunities for regular migration pathways, including through labor mobility” (UNFCCC 2018a, 44).
Global Compact for Safe, Orderly, and Regular Migration	Recognizes the need to strengthen joint analysis and sharing of information to better map, understand, predict, and address migration movements, such as those that may result from sudden-onset and slow-onset natural disasters and the adverse effects of climate change, as well as develop adaptation and resilience strategies, taking into account the potential implications on migration.
Global Compact on Refugees	Provides specific commitments to address the drivers of environmental mobility and develop policies aimed at ensuring greater protection for those affected by these movements. ²¹
Global Forum on Migration and Development	A State-led, informal and non-binding process, which aims to shape the global debate on migration and development.
2030 Agenda for Sustainable Development	The Sustainable Development Goals recognize the urgency of climate change; Goal 13 is to take urgent action to combat climate change and its impact.
Guidance for Protecting People from Disasters and Environmental Change through Planned Relocation	Provides overarching principles for States and other actors to plan and implement planned relocations to protect people from disasters and environmental change.

20. With the exception of the Peninsula Principles on Climate Displacement Within States, the absence of specific HLP prioritisation in the current frameworks, or indeed a stand-alone framework directly addressing the issue of land availability and HLP rights in connection with climate mobility is alarming. There are eleven international frameworks and agreements on migration and climate, but other than the Peninsula Principles none adequately address the centrality of land as a foundational component to resolving climate displacement.
21. Governments and the UN can and must do more, to harness international consensus on the issue of HLP rights and land, as well as provide the research and technical capacity, specifically on land issues connected to climate change which many of the world’s least developed nations may lack. There are myriad lessons to be learned in relation to HLP rights in displacement, which will be more relevant than ever to the countries most affected by climate change which could be parlayed into greater support and technical advice in future.

²¹ Supra: Note 1, 7.

Loss and Damage

22. The Warsaw International Mechanism for Loss and Damage was established at the COP19 UN climate conference in 2013 with the purpose of addressing the impacts of loss and damage in developing countries. Subsequent COP meetings further refined the role of the mechanism but there are still important elements to be decided and ratified. However, an important component of the Warsaw Mechanism is the loss and damage fund. It is envisioned that this fund will assist developing countries in dealing with the irreversible losses and persistent impacts of climate change that cannot be addressed through adaptation measures alone.
23. The fund, once established and fully funded, could be used for financing climate displacement mitigation activities in developing economies. These activities could include:
 - (i) Resettlement and relocation support - Monies could be used for land purchases, constructing new infrastructure and housing and providing essential services such as sewage systems and garbage collection in the relocation areas.
 - (ii) Capacity building initiatives and support - The loss and damage fund could provide financial assistance for training programs, entrepreneurial initiatives, and the development of sustainable economic activities in the relocation areas to allow relocated communities begin to build economic self-sufficiency in their new community.
 - (iii) Infrastructure and services upgrades - The loss and damage fund could contribute to the upgrade of essential infrastructure, such as roads, water supply, healthcare facilities, schools, and public spaces. The provision of essential services, such as access to clean water, sanitation, healthcare, and education, could also be financed from the fund.
 - (iv) Benchmarking and knowledge sharing - The loss and damage fund could pre-emptively fund research projects to examine successful relocation projects, identify at risk communities and evaluate possible solutions and identify best practices for supporting displaced communities. The fund can also finance activities i.e. conferences, forums, research that promote knowledge exchange and collaboration among affected countries, organisations, communities and experts to share best practice, lessons learned and innovative approaches.

Who is setting aside land already?

24. Some countries are already leading the way by seeking land solutions for climate displaced persons and communities. It is now time for others to follow their lead. The majority of these vanguard nations are those witnessing rising sea levels and extreme weather events which are already having a massive impact on coastal communities. These countries have implemented at least piecemeal and partial land set aside programs and planned relocations to move communities in a safe, regulated and human-rights centred way.

Fiji

25. Fiji has spent several years designing planned relocation policies to deal with the regular severe weather events which threaten the 300 islands making up the nation.²² Fiji's relocation planning revolves around the concept of "managed retreat", which involves the gradual relocation of communities from vulnerable coastal areas to safer inland locations. The government has recognised the need to move people away from areas at high risk of flooding and erosion to ensure their safety and protect their livelihoods.
26. Fiji has implemented various programs and initiatives, including the Climate Relocation and Displaced Peoples Trust Fund.²³ The fund provides financial resources to support the relocation efforts and assist communities in adapting to new environments. It aims to ensure that the affected populations have access to basic services, infrastructure, and livelihood opportunities in their new locations. Additionally, Fiji has established partnerships with the United Nations Development Programme (UNDP) and the Green Climate Fund (GCF), to access funding and technical expertise for relocation planning and implementation. These partnerships have enabled Fiji to develop comprehensive relocation strategies and incorporate climate resilience measures into their policies. The proactive response from Fiji has garnered support from Pacific neighbours, with New Zealand contributing \$150m in assistance for climate programs and \$2m specifically for relocations.²⁴

22 Kate Lyons, *The Guardian*, 'How to move a country: Fiji's radical plan to escape rising sea levels', 8 Nov 2022, <https://www.theguardian.com/environment/2022/nov/08/how-to-move-a-country-fiji-radical-plan-escape-rising-seas-climate-crisis>.

23 United Nations, *World's First-Ever Relocation Trust Fund For People Displaced By Climate Change Launched By Fijian Prime Minister*, 25 September 2019, <https://www.un.int/fiji/news/world%E2%80%99s-first-%E2%80%93-ever-relocation-trust-fund-people-displaced-climate-change-launched-fijian-prime>.

24 Laurie Goering, *Reuters*, New Zealand makes first donation to Fiji climate relocation fund, 27 February 2020, <https://www.reuters.com/article/us-climate-change-fiji-newzealand-trfn/new-zealand-makes-first-donation-to-fiji-climate-relocation-fund-idUSKCN20L04K>.

27. Fiji's relocation planning follows best practice by emphasising community engagement and participation through consultative decision-making processes, ensuring that the voices of those forced to move are heard and that their concerns are addressed – issues which have plagued other relocations. A participatory approach helps build trust and enables the government to develop tailored solutions that meet the specific needs of each community.

Kiribati

28. In 2014, the government of Kiribati took action to establish a *de facto* Climate Land Bank by purchasing a large tract of land in neighbouring Fiji. The thinking behind the purchase of the 20km² land plot was that it had the theoretical potential, if needed, to relocate a considerable portion of Kiribati's population subject to the approval to relocate by the government of Fiji.²⁵ However, in 2021, following a change in government, Kiribati announced plans to turn the site into a working farm to supply the island nation with produce.²⁶

Panama – Guna Yala

29. The indigenous Guna people of Panama, who live on an archipelago located off the northeastern coast of Panama, have attempted to address the challenges posed by rising sea levels and preserve their way of life by moving their entire community to the mainland of Panama. This relocation effort began a decade ago, but this year around 300 families from the island of Gardi Sugdub are expected to move to the mainland.²⁷ The community has identified 17 hectares of suitable mainland areas within their ancestral territory to relocate communities, close to a school and health care centre being built by the government.²⁸ The Guna leaders and community members collaborated with government agencies, NGOs, and international organisations to identify viable sites that could accommodate the relocation. The relocation plan aims to ensure the preservation of Guna culture, traditions, and self-governance systems. Additionally, efforts were made to maintain traditional sustainable practices, including fishing and agriculture. The Guna Yala relocation plans have highlighted the community's resilience in the face of environmental challenges and their commitment to preserving their heritage. It serves as an example of indigenous communities taking proactive measures to adapt to the impacts of climate change while safeguarding their cultural identity and way of life.

25 Lawrence Caramel, *The Guardian*, Besieged by the rising tides of climate change, Kiribati buys land in Fiji, 1 July 2014, <https://www.theguardian.com/environment/2014/jul/01/kiribati-climate-change-fiji-vanua-levu>.

26 Christopher Pala, *The Guardian*, Kiribati and China to develop former climate-refuge land in Fiji, 24 February 2021, <https://www.theguardian.com/world/2021/feb/24/kiribati-and-china-to-develop-former-climate-refuge-land-in-fiji>.

27 Melba Newsome, *ScienceNews*, How an Indigenous community in Panama is escaping rising seas; 7 April 2023, The Indigenous Guna people of Gardi Sugdub have plans to move to Panama's mainland this year, <https://www.sciencenews.org/article/indigenous-guna-panama-escape-rising-seas>.

28 Id.



Image: Bangladesh climate refugees.

Bangladesh

30. In their 2020 National Strategy on the Management of Disaster and Climate Induced Internal Displacement (NSMDCIID), the government of Bangladesh drew heavily on the approach taken in the Peninsula Principles. Among many other efforts, Bangladesh has begun preparing for displacement with projects funded in part by the Asian Development Bank²⁹ in Mongla, which hopes to become a hub for climate migrants by expanding job training, public services and income generation projects.³⁰ The model being adopted in Mongla is set to be replicated in multiple coastal towns in the hope of being able to resettle around 10 million climate migrants in the next decade, as a means of avoiding the creation of slums in larger cities.³¹

Vanuatu

31. The Vanuatu 2018 National Policy on Climate Change and Disaster-Induced Displacement is a common framework to assist all people affected by displacement and sets out strategic priority areas for interventions aimed at addressing displacement and facilitating the successful return of IDPs, their local integration, or their planned relocation.³²

United States

Louisiana – Isle De Jean Charles

32. While planned relocations have considerable benefits, few relocations are without issues. The state of Louisiana was granted federal funding of close to USD\$50m to relocate indigenous tribes living on a strip of land that has been sinking due to the interference with the Mississippi River and the impacts of oil industry canalizations.³³

29 Global Centre on Adaptation, GCA and Asian Development Bank to Scale Up Nature-Based Solutions for Climate Change Adaptation in Bangladesh, 30 November 2022, https://gca.org/news/gca-and-adb-to-scale-up-nbs-for-climate-adaptation-in-bangladesh/?_gl=1*1chouhb*_ga*MjAwNzA0NTA3NS4xNjgyMTIyMjU2*_up*MQ.

30 Patrick Verkooijen, Ban Ki-moon, *Context*, Bangladesh is a global pioneer in preparing for climate migrants, 13 February 2023, <https://www.context.news/climate-risks/opinion/bangladesh-is-a-global-pioneer-in-preparing-for-climate-migrants>.

31 Julhus Alam, *The Diplomat*, For Climate Migrants, Bangladesh Offers Promising Alternatives, 30 March 2022, <https://thediplomat.com/2022/03/for-climate-migrants-bangladesh-offers-promising-alternatives/>. The efforts in Bangladesh align with the National Strategy on the Management of Disaster and Climate-Induced Internal Displacement (2015), which seeks to prevent and respond to displacement and support the achievement of durable solutions through housing assistance, livelihood opportunities, and improved community infrastructure.²⁰⁶ It emphasises the importance of addressing the impact of displacement and relocation on host communities, providing them with social security assistance, and engaging them in local integration interventions.

32 Government of Vanuatu. 2018. National Policy on Climate-change and Disaster-induced Displacement. Port Vila.

33 Adam Crepelle, 'The United States First Climate Relocation: Recognition, Relocation, And Indigenous Rights At The Isle De Jean Charles', *Belmont Law Review*, 2018, Vol 6:1:1, 5, 6, 7.

Climate change events like sea-level rise and cyclones have exacerbated these factors, which have increased land loss for these communities.³⁴ The relocation grant eventually led to communal tensions between the inhabitants of the area, undermining social cohesion and the success of the project. A lack of coordination between federal authorities granting the money, an NGO facilitating the process and local communities, led to the inclusion of one tribe as beneficiaries, at the expense of another related tribe. Eventually work began in 2020 to develop homes in a relocated area of about 515 acres of land, however, questions still remained unanswered about important elements of the project, notably the taxation and insurance implications for the new homeowners.³⁵ The exclusion of one tribe in the relocation process left its leadership disillusioned and they now say that they were not properly consulted throughout the program.

Alaska

33. The Quinault Indian Nation, located on the Olympic Peninsula in Washington, the Newtok Village, located on the Ninglick River in Alaska, and the Native Village of Napakiak, located on Alaska's Kuskokwim River villages in Alaska each received USD 25\$m in federal funding in late 2022 to relocate their homes.³⁶ Each of the villages will completely relocate to escape the thawing of permafrost which is threatening to undermine the structural integrity of homes, roads, pipelines and traditional hunting and trapping territories.³⁷ Some of the concerns highlighted by the communities preparing for relocation are the disconnection from traditional livelihood opportunities which will be caused by the separation from traditional homes located near rivers, which have formed the basis of hunting and fishing activities over generations. However, the existential threat posed by the climatic changes have forced the communities to face the fact that they will have to adapt culturally to the relocation. As Guy Capoeman, president of The Quinault Indian Nation, describes it "We've lived off the land and resources for thousands and thousands of years. We can see the changes. These tides that are coming in are not normal....to take ourselves away from that is not traditional, but we have to save ourselves. We realise that it's the key to our very own survival at this point."³⁸

34 Id.

35 Olga Loginova and Zak Cassel, 'Leaving the island: The messy, contentious reality of climate relocation', *The Center for Public Integrity*, 17 August 2022, <https://publicintegrity.org/environment/harms-way/leaving-isle-de-jean-charles-climate-relocation/>.

36 Jaclyn Diaz, NPR, 3 tribes dealing with the toll of climate change get \$75 million to relocate, 1 December 2022, <https://www.npr.org/2022/12/01/1139949450/tribes-climate-change-relocation-department-of-interior>.

37 Hilary Beaumont, *Al Jazeera*, Alaska Native community relocates as climate crisis ravages homes, 15 Dec 2022, <https://www.aljazeera.com/news/2022/12/15/alaska-native-community-relocates-as-climate-crisis-ravages-homes>.

38 Supra, Note 36.

34. The Hoa Binh Relocation Project, which began in 2010, was designed to relocate 1,200 households from two remote communes in the northwest region identified as facing high risks of landslides, as well as flooding and storm damage. The project relocated 300 households into newly built relocation sites and facilitated the permanent relocation of a further 900 households into existing residential areas.³⁹ The outcomes of the project have been largely positive in terms of disaster risk reduction, however there have been questions raised about communal participation in the process, as well as access to livelihoods.⁴⁰ In addition, the fact that the project ran from 2009-2020 and the considerable costs involved, show that planned relocations may not be feasible in all contexts.⁴¹

II. Solving the Climate Displacement Crisis Now

35. Policies designed to solve climate displacement can be broken down into the physical resources required (the necessary land and houses) and the legal elements required to protect the HLP rights of the displaced (a combination of the rights of the displaced and the responsibilities of the governments onto whose territory CDPs are forced by circumstance). Despite the challenges, the tools for solving the climate displacement and land equation preemptively, in a rights-compatible manner, are already available. Three things will be required: (1) Finding the land required ahead of time; (2) Housing the displaced populations; and (3) Guaranteeing tenure security in displacement.

39 IOM, *Planned Relocation In The Context Of Environmental Change In Hoa Binh Province, Northern Viet Nam An Analysis Of Household Decision-Making And Relocation Outcomes*, 2017, 1.

40 Id, 1.

41 Id, 17. In early 2015, the Government Decision No. 84/QDTTg extended the project implementation period to 2020 and finalised the project scope to relocate 300 households into newly established collective relocation sites, and 900 households into existing residential areas. The new decision also increased the budget significantly from almost VND 900 billion (USD 39.6 million) to more than VND 4,053 billion (USD 178.4 million) (Government of Viet Nam, 2015). Under the relocation plan, each relocated household is eligible to receive: VND 15 million (USD 660) for households relocated in 2010, or VND 23 million (USD 1,010) for households relocated in 2014, for relocation expenses and house construction, 300–500 square metres residential land, 5,000 square metres of agricultural land. Depending on the timing of relocation or the destination, households may also be eligible for additional support including: VND 3 million (USD 130) for a water storage tank, VND 900,000 (USD 40) for a septic toilet, support to purchase livestock, food support for low-income households, training and agricultural extension. Relocated households were allowed to continue using their existing agricultural land in their commune of origin.

The Land Resources Are Already Available

36. Despite the enormity of the problem, the land required to sustain the entire world's displaced populations, as well as those who will be displaced in the future, is (obviously) already available, regardless of the calculation used to predict just how much land will be required. The missing component is political will and an approach reflecting the urgency to pre-emptively enact policy and planning for land solutions right now. The cost of action now will, in the end, prove to be far cheaper than the long run costs in material and lives resulting from failure to act today.
37. The estimated numbers of displaced populations vary widely, as they depend to a large degree on the actions that governments will take to mitigate climate change impacts now and in coming decades. If countries such as the Maldives continue urging citizens to relocate to safer islands with higher ground, or Indonesia successfully implements its plan to relocate the capital Jakarta to a new city, for example, the estimates of displaced populations could change significantly.⁴² Similarly, if emissions reductions, land rehabilitation and sustainable agriculture improve in efficiency then, once again, the numbers of displaced are likely to be reduced.
38. The World Bank's first *Groundswell* report projected that, by 2050, climate change could lead 143 million people in three regions of the world (South Asia, Latin America and Sub-Saharan Africa) to migrate within their own countries. The 2022 *Groundswell* report builds on those findings, modelling three additional regions, namely East Asia and the Pacific, North Africa, and Eastern Europe and Central Asia—to provide a global estimate of up to 216 million climate migrants by 2050 across all six regions. The report notes that numbers could change dramatically if countries start now to reduce emissions, close development gaps, restore vital ecosystems, and help people adapt, noting that internal climate migration could be reduced by up to 80 percent—to 44 million people by 2050.⁴³ As mentioned earlier however, other estimates of those at risk of climate events range up to one third of the world's population, meaning that three billion people could be at risk of some level of displacement. The difference in the costs of land and housing required between 44 million and three billion displaced is enormous and requires a range of projections.
39. Regardless of what governments might be able to achieve in mitigation and adaptation measures, contingency planning on land availability and housing must consider worst case scenarios of population movements, given that the governments of the world's largest economies have been lethargic in their responses to climate change to date.

42 Tristan Mcconnell, *National Geographic*, The Maldives is being swallowed by the sea. Can it adapt?, 20 January 2022, <https://www.nationalgeographic.com/environment/article/the-maldives-is-being-swallowed-by-the-sea-can-it-adapt>; Al Jazeera, Why Indonesia is abandoning its capital city to save it, 9 November 2022, <https://www.aljazeera.com/news/2022/11/9/hldwhyindonesia-is-abandoning-its-capital-jakarta-to-save-ithld>.

43 Supra: Note 1, 27.

How Much Land Is Required to Rehouse Displaced People?

40. The question thus arises: How much land would be required by displaced populations on a global scale, using the various estimates, once displacement begins on a large scale? This question was first posed by Displacement Solutions in 2013 using conservative estimates of the number of people to be displaced and the amount of land that each household would require, finding that the land required would represent less than half of one percent of the world's land surface.⁴⁴ Using a generous high-end estimate this would require land resources roughly the size of Uganda, and using the lower end of the estimate scale, this would be the size of Costa Rica or the Australian state of Tasmania. Earth's total land mass is roughly 149m km², which is equivalent to 36.8 billion acres or nearly 15 billion hectares of land. Based on mid-level estimates of projected climate displacement of 250 million persons, assuming an average household size of five persons and an average land requirement of one acre per household (understanding fully that some households will need more (rural dwellers) and others less (urban and peri-urban dwellers), some 50 million acres of land would be a reasonable estimate of the physical amount of land that would be required to provide various land-based solutions to the world's climate displaced population.
41. Alternatively, using a ratio of four households per acre instead of one, the 50 million acres required declines to 12.5 million acres. Taking the high estimate of one acre per household reveals that the equivalent of 1/736th of the landmass of planet Earth, a mere 0.14% of our planet's surface, (roughly the same size as Uganda) would facilitate rights-based solutions to climate displacement. If we use our second scenario (one-quarter of an acre per household) we come to the equivalent of 1/2944th of the Earth's land surface.
42. These types of calculations highlight the fact that the issue of land in relation to climate displacement is **not a question of quantity**, but of the law and policy which would facilitate access to that land to uphold the HLP rights of displaced populations.
43. Other calculations are also possible. Not all people who are displaced by climate change require a large amount of land. Many people who will be displaced by climate change are already located in coastal megacities, in these cases the amount of land required will be a fraction of the estimates outlined above. For example, if 10 households were placed on an acre, leaving no room for agriculture, then the land required for 250 million would be reduced greatly, to a mere 5 million acres or 20,000 square kilometres; an area roughly the equivalent to the size of Slovenia, only 1/1736th of the world's land.⁴⁵

44 Scott Leckie (ed), *Land Solutions for Climate Displacement*, Routledge, 2014. See also: Displacement Solutions, *Finding Land Solutions for Climate Displacement: A Challenge Like Few Others*, 2013.

45 Titlmax, *The 100 Smallest Countries in the World*, <https://www.titlmax.com/discovery-center/lifestyle/the-100-smallest-countries-in-the-world/>.

44. A worst-case scenario in the future would be that climate displaced persons end up in displaced persons camps across the world, as governments fail to cope with adequate strategies for climate displacement ahead of time.
45. According to UNHCR's refugee camp site planning minimum standards, displaced persons camps must be designed to provide 45 sqm per person. This equates to 30 sqm for shelter, infrastructure, roads and markets with a remaining 15 sqm per person allocated for household gardens to assist with self-reliance. Taking the estimate of 250 million displaced across the globe, if these populations were to be resettled into settlements using the criteria UNHCR uses in developing displacement camps, the amount of land required would only amount to 11,250,000,000 sqm. This is roughly the equivalent to 2.8 million acres of land. At the level of these estimates, it would be possible to fit every displaced person into an area the size of the Gambia or Qatar.
46. More than doubling the World Bank's conservative estimate of 216 million to the round figure of 500 million displaced persons, the world would need to provide 10 million acres of land, the equivalent of roughly 40,000 square kilometres, an area the size of Switzerland.⁴⁶ Under the current emissions policies being pursued, the world is heading for around a 2.7 degree Celsius increase by the end of the century. A recent report estimates that this would drive as many as one billion people, or approximately 200 million families, into displacement as they seek more habitable temperatures. In this worst-case scenario, the land requirements for such huge displacements at 10 households per acre would rise to 20 million acres, or 80,000 square kilometres, an area equivalent to the size of Austria (only 1/1840th of the earth's surface).⁴⁷
47. If the IPCC's outside estimate of 3 billion people at risk of displacement by 2050 were to occur, then in this worst case scenario, 60 million acres, or 240,000 square kilometres of land would be required, amounting to 1/620th of the Earth's surface, an area equivalent to the size of the United Kingdom.⁴⁸

46 NationMaster, Geography > Land area > Sq. km: Countries Compared, <https://www.nationmaster.com/country-info/stats/Geography/Land-area/Sq.-km>.

47 Lenton, T.M., Xu, C., Abrams, J.F. et al. 'Quantifying the human cost of global warming'. *Nature Sustainability*, 22 May 2023, <https://doi.org/10.1038/s41893-023-01132-6>.

48 NationMaster, Geography > Land area > Sq. km: Countries Compared, <https://www.nationmaster.com/country-info/stats/Geography/Land-area/Sq.-km>.



Space Required					
Numbers of Displaced		Acres (@50 persons/10 households per acre)	Square Kilometres	Equivalent Land Mass	Proportion of the Earth's Surface
	250m	5 million	20,000	Slovenia	1/7450th
	500m	10 million	40,000	Switzerland	1/3725th
	1 billion	20 million	80,000	Austria	1/1862th
	3 billion	60 million	240,000	United Kingdom	1/620th

Would all the land set aside for displaced populations need to be arable?

48. There is no prerequisite that land set aside in land banks or allocated in peri-urban areas of large cities needs to necessarily be arable and suitable to agriculture. Much will depend on the needs of displaced populations. As the earlier arguments suggest,

⁴⁹ <https://www.freeworldmaps.net/europe/austria/location.html>.

many future displacements will be generated by the world's coastal cities such as Bangkok, Alexandria or Shanghai. It will not be necessary to provide these populations with arable land, as they are already coming from urban contexts and will have no agricultural background.

49. Large numbers of CDPs from rural areas⁵⁰ which will be affected by droughts and bushfires, however, and may well need some form of self-sustaining livelihood opportunities to ease the burden on national governments, which will already be stretched to logistical and financial capacity in the provision of land and shelter for CDPs. Rural communities forcibly relocated through internal conflicts in Myanmar, Afghanistan, Syria, Yemen, Ukraine and elsewhere often rely heavily on subsistence agricultural activities to sustain their families.
50. In some contexts like Myanmar, where Displacement Solutions has conducted research previously, land bank options have been explored in the central dry zone, where much arable land is available, along with significant acreages of wasteland/degraded lands. The rehabilitation of degraded land is an option which could be explored to provide both land and livelihood opportunities for relocated populations in an attempt to both increase the sustainable use of land but also to provide an opportunity for self-reliance among IDPs. This is an approach which although often referred to in literature on IDPs, has never been achieved at scale. In north-western Tanzania, Burundian refugees which arrived destitute in the 1970s provide an example of the potential for self-reliance of displaced populations, when they are given the tools to provide for themselves. These populations leveraged their agricultural skills to successfully grow tobacco. Their success at cropping created self-reliance and a lucrative source of tax revenue for the Tanzanian government.⁵¹ There is no doubt that Syrian Kurdish farmers in Kurdistan Iraq, or Shan IDPs in Kayah State Myanmar, or indeed NSW wheat farmers could not do likewise, if provided arable land to work with in their future displacement from bushfire and drought.
51. Displacement Solutions research on the Irrawaddy Delta and the potential for land banks in the interior of Myanmar brought to light some serious issues with pre-emptive relocation of populations with particular skill sets. In that research, residents of the delta were reliant on fishing for livelihoods. In interviews they pointed out relocating to the central dry zone, would likely be difficult both in access to services (schools, hospitals etc), but also in terms of self-reliance, as they have no other vocational skills

50 As many as 2 billion people around the world depend on subsistence agriculture, Lenton, T.M., Xu, C., Abrams, J.F. et al. 'Quantifying the human cost of global warming'. *Nature Sustainability*, 22 May 2023, <https://doi.org/10.1038/s41893-023-01132-6>; World Bank, *A Year in the Lives of Smallholder Farmers*, 25 February 2016, <https://www.worldbank.org/en/news/feature/2016/02/25/a-year-in-the-lives-of-smallholder-farming-families>.

51 UNHCR, Tanzania grants citizenship to 162,000 Burundian refugees in historic decision, 17 October 2014, <https://www.unhcr.org/news/stories/tanzania-grants-citizenship-162000-burundian-refugees-historic-decision>.

SEA LEVEL RISE IN PANAMA

Location: Guna Yala, Panama



beyond fishing, which their populations have practised for generations.⁵² Governments will need to prepare for these types of eventualities in future by planning for access to economic opportunities in displacement locations.

Physical Resources – Housing is expensive, but inaction is more expensive

52. Of course, finding sufficient land is only part of the equation when providing for the world's CDPs. The HLP rights of these populations, particularly the right to adequate housing for vulnerable sections of the population, need to be protected through law and policy.
53. While the likely numbers of future CDPs are daunting, some simple calculations illustrate that, in fact, the problem of providing housing for displaced populations could be solved with adequate planning and a reasonable budget. For example, the efforts in Panama to rehouse the Guna Yala relocated communities gives an indication of the cost of housing, where the structures are relatively simple. The cost for the 300 complete houses, which are being paid for by the Panamanian government, is roughly USD \$10m, and the Inter-American Development Bank has invested \$800,000 in technical assistance. The new homes will have cement floors, bamboo walls, zinc roofs, running water and full electrification. The cost of these homes is around USD\$3,333 each. If the median numbers of those estimated to be displaced in the coming decades is used, for example around 250 million persons, and assuming that there could be roughly 5 persons per family, meaning that 50 million houses were required, then at the price of the Guna Yala rehousing, the amount of funding to rehouse everyone displaced would be roughly \$166 billion dollars; roughly the equivalent to the GDP of Qatar or Algeria.⁵³ Put another way, the combined GDP of the ten richest countries in the world is 56.3 trillion dollars,⁵⁴ meaning that this group alone could finance the housing of the world's displaced populations many times over, today. With global annual GDP now measuring over 85 trillion dollars annually, again it is not the absence of money but the will to make it happen.
54. The question of housing presents a difficult theoretical issue because not everyone displaced will require the construction of a new house. Many are likely to be displaced into peri-urban areas and slums across the Global South in particular. In these cases, it will be paramount for governments to be prepared for mass influxes into urban areas which have traditionally been on the periphery both in terms of physical infrastructure

52 Displacement Solutions and EcoDev, *The Urgent Need to Prepare for Climate Displacement in Myanmar: Establishing a Myanmar National Climate Land Bank*, May 2018 (www.displacementsolutions.org).

53 Worldometer, GDP by Country, <https://www.worldometers.info/gdp/gdp-by-country/>.

54 World Population Review, GDP Ranked by Country 2023, <https://worldpopulationreview.com/countries/by-gdp>.

but also in terms of the legality of informal settlements. Many slums provide no security of tenure, meaning that inhabitants lack access to the legal protections which guard them against evictions and abusive landlords. In preparation for mass movements into slums and the growth of new slums, governments must prepare to improve security of tenure in slums through improvements in fit for purpose land administration systems, using systems like those developed by UN-Habitat for areas where informal tenure is the norm.⁵⁵

55. Many CDPs will need houses constructed on land set aside specifically for the purpose. However, the USD \$3,333 which is sufficient to build a house in Panama as highlighted above, and which may cost the equivalent in Bangladesh, for example, will not be sufficient in middle/upper income countries where construction of single houses could run up to the hundreds of thousands of dollars. There are myriad factors which also make it difficult to accurately predict how much funding would need to be set aside for the purpose of housing displaced communities, including: the location (urban/rural), type of materials, complexity of design, size, quality of materials, inspection costs and taxes etc. In addition, to the actual construction, further infrastructure will be required, like sewage, electricity, roads etc, all of which adds to the costs significantly. Clearly, many countries will need financial assistance from the international community, as well as alternative mitigation strategies.

Vulnerable Populations in Displacement

56. Women, the elderly and other vulnerable groups are always disproportionately affected by displacement, resulting in violations of their HLP rights, as a part of the general reduction in the protection environment in camps, slums and other typical displacement locations. Guaranteeing equity and inclusion when planning land solutions for climate displaced populations will be essential. Adaptation plans must consider a range of marginalised and vulnerable populations, incorporating gender considerations, disability rights, indigenous rights, and protection needs as factors contributing to different populations' mobility, independence, access to basic needs and ability to adapt to climate displacement.⁵⁶ As the OHCHR notes, "persons with disabilities are often among those most adversely affected in a crisis and are among those least able to access emergency support. They are also often less mobile and more dependent on assistance devices or other individuals, leaving them at risk of exclusion or abandonment before or during migration."⁵⁷

55 UN Habitat, *Fit-For-Purpose Land Administration: Guiding Principles for Country Implementation*, <https://unhabitat.org/fit-for-purpose-land-administration-guiding-principles-for-country-implementation>.

56 Mayors Migration Council, *US Local Governments Call for Equitable and Inclusive Action on Climate Migration*, <https://www.mayorsmigrationcouncil.org/biden-climate-eo>.

57 UN Human Rights Office of the High Commissioner, *The impact of climate change on the rights of persons with disabilities*, <https://www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/PersonsWithDisabilities.aspx>.

57. As the sections above point out, various countries have made promising starts on climate mitigation strategies, however, much more needs to be done in a concerted manner at the national and international level, to prepare for and adequately fund strategies which will be able to protect the HLP rights of massive numbers of CDPs.

III. Recommendations for Action - Policy

1: Apply the Peninsula Principles on Climate Displacement Within States to Protect Housing, Land and Property Rights of Climate Displaced Persons

58. In 2013, a group of human rights and displacement experts assembled by Displacement Solutions created the Peninsula Principles on Climate Displacement Within States, a comprehensive, rights-based framework for governments wishing to mitigate the impacts of climate displacement. The Principles propose concrete actions for governments to follow which strengthen the protection environment for CDPs through a range of measures, many of which are now reflected in the Special Rapporteur for the promotion and protection of human rights in the context of climate change's latest report on providing legal options to protect the human rights of persons displaced across international borders due to climate change.⁵⁸
59. The Peninsula Principles are more relevant now than ever before, as they address the fundamental aspects of dealing with climate displacement in terms of land rights by outlining how governments can set aside land, compensate displaced populations, develop institutional frameworks to facilitate protection and ensure tenure security in displacement. Where returns to places of origin are feasible, the Principles also outline a pathway for returns where possible.
60. International norms on housing, land and property rights are well established and apply equally to pre/displaced/returnee communities worldwide. Despite the existence of these legal frameworks and principles, governments and the international community often fall short of protecting the HLP rights of those in displacement. These failures cannot be repeated with CDPs, or the impacts on social cohesion, economies and security will be devastating.

⁵⁸ Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change, Ian Fry, Providing legal options to protect the human rights of persons displaced across international borders due to climate change, Human Rights Council Fifty-third session 19 June–14 July 2023 Agenda item 3 Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development, (A/HRC/53/34, 18 April 2023).

61. Displaced populations are frequently denied access to HLP resources, face forced evictions, and experience discriminatory practices that hinder their ability to rebuild their lives. Governments frequently prioritise other concerns, such as security or development, over the rights of displaced individuals. Weak governance structures, lack of recognition for customary land management systems, corruption, and inadequate land administrative systems further contribute to the violation of HLP rights.
62. Additionally, the international community frequently fails to protect HLP rights during displacement crises, through insufficient funding, coordination gaps, and a lack of political will, which often hinder the provision of adequate assistance and support for affected communities. Humanitarian responses tend to focus on immediate needs like food, water, and healthcare, neglecting issues which are seen as “developmental” in nature, such as the need to secure HLP rights for sustainable recovery and social cohesion.
63. Failing to protect HLP rights in CDP situations will have worse consequences than the failures that are obvious in the international responses to refugee/IDP displacements, simply because of the scale. CDPs will face continued insecurity, poverty, and marginalisation, impeding their ability to rebuild their lives and contribute to local economies. Without secure HLP rights, returnees may encounter difficulties reintegrating into their communities, exacerbating social tensions and hindering post-conflict reconciliation. Economic development will be hampered, as property disputes and insecure land tenure discourage investment and prevent infrastructure development. Moreover, the lack of protection for HLP rights could contribute to increased levels of violence, social unrest, and displacement cycles, perpetuating conflicts and threatening regional security.

IV. Recommendations for Action - Immigration/Migration

2: Implement New Climate Immigration Policies

64. Although most climate displacement today will occur within the borders of existing nation states, as climate change worsens cross-border displacement as a proportion of all climate displacement will grow. Some countries have well-located, serviced and accessible land to resettle internal CDPs. But many countries across the developing

world, however, will simply not have enough land to resettle/rehouse CDPs in sufficient numbers. Countries such as Mali will experience the impact of rising temperatures across its entire landmass, meaning there will be little respite from climate change effects there.⁵⁹ The amount of people predicted to be displaced in places like Bangladesh, where climate displacement has already begun, are large enough that CDP relocation sites may not be sufficient to accommodate everyone. For populations who originate in rural areas and depend on agriculture to sustain their livelihoods, there will not always be a solution to their displacement which is compatible with offering both shelter and livelihood opportunities. Bangladesh is already an extremely densely populated country. Alternative solutions are likely necessary in this case.

65. A reframing of immigration and migration will be required if these mechanisms are to play a constructive role in contributing CDP solutions. In terms of refugee law and policy, since the 1990s, the international community has refocused efforts from resettlement toward returns to countries of origin in the refugee space, meaning that only around 2% of refugees around the world are beneficiaries of resettlement organised by UNHCR.⁶⁰ Despite the lack of progress towards a convention on the protection and status of CDPs, it could be argued that this leaves room for bilateral or regional arrangements on definitions of CDPs. There are two possible options in relation to CDP resettlement schemes. One would be regional schemes, where CDPs wish to relocate across borders, but within smaller geographical regions, meaning smaller, bilateral or larger arrangements such as Thailand-Cambodia-Vietnam, or Spain-Portugal-France, or perhaps Turkmenistan-Uzbekistan-Afghanistan. These types of small-scale resettlement schemes would benefit from CDPs being at least culturally familiar with the receiving countries and in some cases would speak the same language, leading to greater prospects for cultural integration. In general terms, immigration policies in all countries should be specifically expanded to include new categories of immigrants experiencing climate displacement.

3: Introduce Carbon Credit Trading Schemes for Climate Displaced Persons Resettlement Spots

66. The leverage presented by government inaction on climate promises could be exploited by a scheme under which future CDP resettlement spots could be traded for carbon credits as means of incentivising countries with huge areas of vacant land to allocate some of that land, as well as nationality, to future CDPs. Countries such as Australia,

59 Nature Sustainability, Fig. 5: Country-level exposure to unprecedented heat (MAT $\geq 29^\circ\text{C}$) at 2.7°C and 1.5°C global warming in a world of 9.5 billion people (around 2070 under SSP2), 22 May 2023, <https://www.nature.com/articles/s41893-023-01132-6/figures/5>.

60 Benedicta Solf and Katherine Rehberg, Migration Policy Institute (MPI), *The Resettlement Gap: A Record Number of Global Refugees, but Few Are Resettled*, <https://reliefweb.int/report/world/resettlement-gap-record-number-global-refugees-few-are-resettled>.

USA, Canada, Spain, France have never provided the amount of refugee resettlement spots per capita that they could easily afford historically. Efforts could be made to persuade these countries which have the space, economic resources and the historical legacy of being some of the worst polluters worldwide,⁶¹ that they could earn carbon credits if they consider setting aside land and resettlement spots for future CDPs.

67. Countries in which coal, one of the dirtiest of fossil fuels, is relied upon heavily, such as China, Australia and the USA, could earn carbon credits if they offer resettlement spots and their obligations would continue until such a time as carbon capture operations reach the 99% capability that has been claimed by the coal industry. Recent statistics from Australia for example, indicate that carbon capture, utilisation and storage (CCUS) projects, which have formed the basis for government approvals for huge fossil fuel extraction projects, are only operating at 30% of what was promised at the commencement of these projects.⁶² Worldwide, the figures are alarming, with the International Energy Agency claiming that 35 commercial CCUS facilities were in operation globally, with a total annual capture capacity of almost 45 million tonnes of CO₂. That is a fraction of the roughly 40 billion tonnes of CO₂ emitted annually.⁶³

4: Fast-Track Nationality/Permanent Residency Programs for Resettled CDPs

68. Governments with existing resettlement programs could consider the possibility of fast-tracking nationality recognition for CDPs recognised within bilateral or other agreements, which would be easier to negotiate than UN level conventions on CDPs, which have thus far foundered on political concerns within the international community. As an interim measure, given the political sensitivity of conferring nationality, at a minimum, CDPs could be given permanent residency status or equivalent, which would allow them to access social services and assist CDPs to integrate locally. In the context of cross-border movements, the Special Rapporteur on promotion and protection of human rights in the context of climate change, has called for all nations to “develop national legislation that provides humanitarian visas for persons displaced across international borders due to climate change. Regional human rights bodies should be encouraged to expand their definition of refugees to include such persons”, in his 2023 report to the UN Human Rights Council.⁶⁴

61 Climate Trade, *Which countries are the world's biggest carbon polluters?*, 17 May 2021, <https://climatetrade.com/which-countries-are-the-worlds-biggest-carbon-polluters/>.

62 Daniel Mercer, ABC, *World's biggest carbon capture plant running at one third capacity, Chevron Australia reveals*, 17 May 2023, <https://www.abc.net.au/news/2023-05-17/chevron-australia-carbon-capture-storage-gorgon-third-capacity/102357652>.

63 David Fogerty, *Straits Times*, *Coal has key role in climate battle, says industry body, but experts express doubts*, 15 May 2023, <https://www.straitstimes.com/world/coal-has-key-role-in-climate-battle-says-industry-body-as-experts-express-doubts>.

64 *Supra*, Note 56, 18.

V. Recommendations for Action – Institutional

5: Create a United Nations Global Land Fund and Global Land Index

69. There are two ways in which the international community could respond to the issues of climate justice and displacement strategy financing. Within the international system, the United Nations remains the paramount body with the responsibility to ensure international peace and security.⁶⁵ Climate finance is already established and growing under the UNFCCC, the Kyoto Protocol and the Paris Agreement, which call for financial assistance from Parties with more financial resources to those that are less endowed and more vulnerable. Climate finance is a key element for adaptation strategies, particularly in poorer regions, as significant financial resources are needed to adapt to the adverse effects and reduce the impacts of a changing climate.⁶⁶
70. According to the principle of “common but differentiated responsibility and respective capabilities” set out in the UNFCCC, developed country Parties are to provide financial resources to assist developing country Parties in implementing the objectives of the UNFCCC. The Paris Agreement reaffirms the obligations of developed countries, and encourages voluntary contributions by other Parties. Developed country Parties should also continue to take the lead in mobilising climate finance from a wide variety of sources, instruments and channels, noting the significant role of public funds, through a variety of actions, including supporting country-driven strategies, and taking into account the needs and priorities of developing country Parties...⁶⁷
71. Given the UN’s mandate, current funding mechanisms attached to the UNFCCC and the Paris Agreement, which includes the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF), both managed by the Global Environment Facility—and the Adaptation Fund (AF) established under the Kyoto Protocol in 2001, are examples of mechanisms which could be used to generate a specific fund for land related mitigation projects and the various strategies outlined in this paper. The Special Rapporteur on the promotion and protection of human rights in the context of climate change has also suggested in his latest recommendations to the Human Rights Council

65 United Nations Charter, Article 1 (1).

66 United Nations Climate Change, Introduction to Climate Finance, <https://unfccc.int/topics/introduction-to-climate-finance>.

67 United Nations Climate Change, Introduction to Climate Finance, <https://unfccc.int/topics/introduction-to-climate-finance>.

that: (g) Parties to the United Nations Framework Convention on Climate Change and the Paris Agreement be encouraged to develop appropriate financial arrangements to give support to persons displaced across international borders due to climate change through funding arrangements developed under the umbrella of the loss and damage fund.⁶⁸

72. Despite the existence of the various funds, there are no specific mechanisms to deal directly with the issue of land in relation to climate displacement. Given that around 2 billion people currently rely on subsistence agriculture worldwide and are highly likely to be affected by extreme weather events, this is a clear oversight on the part of the international community.⁶⁹ Such a fund would be created through the investment contributions of the UN member states on the basis of a calculation taking into account; National GDP, historical and current emissions levels.
73. In addition to the fund, a Global Land Index could then establish a ranking system which would take into account the resources available to any given member state to deal with climate displacement now and in the future, based on a combination of: Land mass available to relocate populations/prepare safe havens; Predicted loss of habitable land due to climate events; and Predicted loss of agricultural land due to climate events.
74. Once the Land Index is established, the ranking system would allow proportionate access to Global Land Fund grants for the purposes of establishing a variety of displacement mitigation strategies for countries most in need of financial assistance. The index ranking would lead to countries such as the Maldives, with its relatively low GDP, very high likelihood of climate change impacts on habitability and low land availability, to having a high land index rating and therefore access to higher levels of international assistance for displacement mitigation strategies. A country such as Namibia, which instead of sea-level threats like the Maldives, could face drought threats, could also end up with a high index rating. Despite the large land mass available, the drought threat would be taken into account in the rating, which would mean that countries in similar situations would have access to funding for efforts towards land rehabilitation or other strategies.

⁶⁸ Supra: Note 56, 19.

⁶⁹ Lenton, T.M., Xu, C., Abrams, J.F. et al. Quantifying the human cost of global warming. *Nature Sustainability*, 22 May 2023, <https://doi.org/10.1038/s41893-023-01132-6>.

6: Rehabilitate Degraded Land

75. Some countries will not be able to spend their way out of climate displacement, even with funding from the international community. They will simply not have the financial resources available to cope with the issue. Some countries on the other hand, have great quantities of land which are deemed to be degraded, but which could be rehabilitated to provide new land resources for climate displaced persons.
76. In 2018 the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the biodiversity equivalent of the IPCC, released findings that up to 75% of the Earth's land is substantially degraded by the processes of desertification, pollution and deforestation for the purposes of agricultural production.⁷⁰ The report identified the underlying causes of land degradation, "high-consumption lifestyles in the most developed economies, combined with rising consumption in developing and emerging economies. High and rising per capita consumption, amplified by continued population growth in many parts of the world, are driving unsustainable levels of agricultural expansion, natural resource and mineral extraction, and urbanisation."⁷¹ The Global Environment Facility estimates that every year, 12 million hectares (ha) of land become unproductive due to desertification and drought, threatening the livelihoods of more than 1 billion people in some 100 countries.⁷² With the Earth's population likely to increase to 9 billion by 2050, pressures on land and the impact of climate change on the loss of productive land are set to increase.
77. Research in Australia, an excellent example of a country with a large land mass dominated by agricultural production (and likely a good indicator of similar characteristics elsewhere like USA, Brazil and France), indicates that the benefits of land rehabilitation far outweigh the costs in the long term. For the cost of only AUD\$2 billion – about 0.1% of Australia's gross domestic product – each year for about 30 years, rehabilitation programs would restore 13 million hectares of degraded land, without affecting food production or urban areas.⁷³ The research conducted by a joint team of academics highlights that targeted restoration of degraded ecosystems on less profitable agricultural land has enormous potential to alleviate the problems caused by the fact that in the period since

70 Stephen Leahy, '75% of Earth's Land Areas Are Degraded', *National Geographic*, 27 March 2018, <https://www.nationalgeographic.com/science/article/ipbes-land-degradation-environmental-damage-report-spd#:~:text=75%25%20of%20Earth's%20Land%20Areas%20Are%20Degraded%2C%20IPBES%20Report%20Warns&text=Wind%20erosion%20causes%20topsoil%20loss,land%20damage%20around%20the%20world>.

71 Id.

72 The Global Environment Facility is the financial mechanism of the United Nations Convention to Combat Desertification; Global Environment Facility, *Combating Land Degradation*, May 2022, <https://www.thegef.org/what-we-do/topics/land-degradation>.

73 Bonnie Mappin, James Watson, Lesley Hughes, *The Conversation*, Australia could 'green' its degraded landscapes for just 6% of what we spend on defence, 7 October 2021, <https://theconversation.com/australia-could-green-its-degraded-landscapes-for-just-6-of-what-we-spend-on-defence-168807>.

European settlement, about one-fifth of Australia's ecosystems have less than 30% coverage of healthy native vegetation. Below 30%, ecosystem services and biodiversity sharply declines. With rehabilitation of these areas, farmers would be able to continue producing valuable crops on their highest quality land, while rebuilding habitat and sequestering carbon on more marginal land.

78. Given that estimates of the earth's degraded land stocks range up to 75%, there is plenty of land available for rehabilitation efforts, while at the same time restoring diversity, ecosystems and soils. In the context of this paper, greater quantities of arable and habitable land also means more viable opportunities for resettling and rehousing CDPs. The rehabilitation of land is already targeted by the Land Degradation Neutrality Fund, which was created at COP12. The LDNF is an investment fund mixing resources from public, private and philanthropic sectors to support sustainable land management and restoration projects implemented by the private sector.⁷⁴ This fund also represents a potential finance mechanism for specific land projects required by CDPs, although state-funding to assist CDPs would be preferable to a fund which supports market interventions such as the LDNF.

7: Fund Housing for CDPs

79. After land is found for CDPs, the challenge of accessing adequate housing remains. While costly, adequate housing for CDPs is a fundamental human rights obligation for governments. As with the land issues discussed earlier, there are existing housing solutions which can easily be expanded and new solutions which can be created with enough political will and foresight. Several examples of these follow:

Community land trusts

80. Community land trusts are an option for providing affordable housing for climate displaced persons. These trusts would be owned by community-based organisations or NGOs that acquire land and hold it in trust for the benefit of the community. The trustee can build affordable housing on the land and rent/sell it to residents at a reasonable price, with the understanding that the homes are owned by the community rather than by individuals. This would help to ensure that the homes remain affordable in the long term, even as property values rise. There are many examples to draw on for these types of schemes, including the concept of the religious Waqf trust in Islamic contexts.⁷⁵

74 The United Nations Convention to Combat Desertification, Land Degradation Neutrality Fund, <https://www.unccd.int/land-and-life/land-degradation-neutrality/impact-investment-fund-land-degradation-neutrality>.

75 Siraj Sait and Hilary Lim, *Land, Law and Islam: Property and Human Rights in the Muslim World*, 2006, Zed Books Ltd, 147.



Image: Guna Yala, Panama.

New Settlements

81. As an example, the Indian state of Odisha has begun planning for a model resettlement colony for 530 families from coastal villages which have lost their homes due to coastal erosion. The loss of coastline due to erosion has been ongoing since 2008. Local authorities tried to resolve the issue in 2018 by relocating the populations inland by 12km but a lack of services hampered these efforts.⁷⁶ Authorities in Odisha have set aside around USD\$2.7 million, which will fund housing and infrastructure for the new settlement.

Establish Abandoned Building Databases

82. Governments could begin creating databases of unused and abandoned buildings in major cities in order to repurpose them for displaced populations. Research shows that many large urban centres have substantial amounts of unused or abandoned buildings at any given time. These could be purchased by governments from owners who are not developing them further and used for CDPs. Bangkok, one of the cities predicted to be hardest hit by climate change in the coming decades, has tens of large, abandoned buildings which could be used for such a purpose.⁷⁷

Expand Social Housing Programs

83. Governments and international organisations can provide financial assistance to help climate refugees afford housing. This can involve providing subsidies or grants to help cover the cost of rent or mortgage payments, as well as offering low-interest loans to help residents purchase homes. This would make it easier for CDPs to find affordable housing, even in areas where property values are high.

Floating villages

84. The Maldives have begun the construction of floating villages in response to rising sea-levels as a mitigation strategy. There is no land for expansion in the capital city Malé, hence, floating villages have become a viable option. These are being constructed for 20,000 people with the technical assistance of a Dutch firm experienced in these

⁷⁶ Debabrata Mohanty, *Hindustan Times*, Odisha to build India's first resettlement colony for climate change victims, 30 April 2023, <https://www.hindustantimes.com/cities/others/odisha-to-build-india-s-first-resettlement-colony-for-climate-change-victims-101682866922705.html>.

⁷⁷ *The Nation*, Owners of 39 'abandoned' Bangkok buildings told to secure premises to prevent vice and crime, 26 February 2019, <https://www.nationthailand.com/in-focus/30364802>.

types of construction in Holland, which is also under threat from rising sea levels.⁷⁸ The Schoonschip area of Amsterdam has also employed floating apartments, meaning that its 150 residents are no longer concerned with rising sea levels because their homes rise with the water level.⁷⁹

8: Develop and Support Climate Displacement Havens

85. Climate Displacement Havens (CDH) could be any city or council area that can be considered less at risk of, or threatened by, changing climatic conditions and that are willing and able to receive CDPs. Areas which are enduring a loss of population without birth rates or in-migration rates sufficient to replace those leaving are particularly well-suited to become CDH's. This would apply in particular to rural areas in countries with growing numbers of people moving towards cities and countries where demographic changes are occurring with larger and larger proportions of older persons. Willingness to receive displaced peoples can manifest in proactive policies to encourage the relocation of populations to the area through subsidies, rezoned land, economic incentives, tax relief and other benefit programs. The ability to host displaced populations, would rely greatly on the infrastructure already in place, or planned for and developed on the land available. In expectation of an influx of approximately 50,000 climate migrants to the area by 2050, the Michigan town of Ann Arbor, population 122,000, initiated an ambitious sewage works upgrade capable of meeting the requirements of the expected population surge.⁸⁰
86. Cities and areas that enjoy natural environmental advantages in the face of climate change will by default attract CDPs. They will also need available land or existing underutilised housing, access to water and food supply chains as well as schools and jobs. However, if not proactively planned and prepared for, the sudden arrival of climate migrants could cause ruptures in the social fabric and infrastructure of the host city. In the wake of Hurricane Katrina, many residents fled to and then stayed in the small town of St. Tammany. Unprepared for the new arrivals, classrooms were soon overflowing, traffic jams became commonplace and housing and building costs skyrocketed off the back of unforeseen demand. Additionally, racial tensions increased as new arrivals, mainly middle-class Black and Hispanic families mixed with the predominantly white existing population.⁸¹

78 Nell Lewis, CNN, A floating city in the Maldives begins to take shape, 22 June 2022, <https://www.cnn.com/style/article/maldives-floating-city-spc-intl/index.html>.

79 Displacement Solutions, *On Whose Door Do We Knock? Preparing for, Preventing and Reducing Climate Displacement in Coastal Cities: A Practical Checklist for Municipal and National Officials*, Displacement Solutions, 2022, 46.

80 Tim McDonnell and Amanda Shendruk, Quartz, *It's time to prepare cities for people uprooted by climate change*, 1 September 2020, <https://qz.com/1895263/how-cities-can-prepare-to-support-climate-migrants>

81 One resident of St. Tammany was Klan leader David Duke. Tim McDonnell, Quartz, *Remapping a region*, 1 September 2020, <https://qz.com/1895269/louisianas-population-is-moving-to-escape-climate-catastrophe>.

87. Despite these challenges, it is undeniable that every great migration, whether it be the Greeks to Australia, the Japanese to Brazil and Peru or the liberated slaves to the American north, has brought with it great social, cultural and economic benefits and opportunity for the host communities.⁸² Climate migration, if planned and prepared for, could allow for cities, particularly regional centres that are protected from rising sea levels, to reinvent themselves as Climate Displacement Havens. Cities which position themselves as havens can halt the long-term trend of population decline affecting many regional centres or areas where manufacturing has long since halted. Climate Displacement Havens could become vibrant cities, rejuvenating flagging economies and enhancing the social and cultural life of existing residents. In 2019 the mayor of US city Buffalo declared it a “climate refuge city” and set about a series of upgrades to ready the city for the arrival of climate migrants. The installation of solar panels and flood proofing of the sewage system not only increased the city’s preparedness to receive climate migrants, it has also improved the quality of life of existing residents.⁸³

9: Fund Housing Buy Backs

88. In countries where the government has sufficient budget set aside for climate related policy initiatives, housing buy backs will form a key pillar of climate displacement mitigation strategies. Several locations such as the US city of Houston and local councils in northern New South Wales in Australia have already begun to implement housing buy back schemes in the hope of compensating coastal homeowners and enticing them to move to safe areas, where housing stock will not be lost.

82 According to the World Bank, “Migrants can contribute much to the destination economy’s efficiency and growth, especially over the long term. Low-skilled migrants perform many jobs that locals are unwilling to take, or for which they would ask wages above what consumers are willing to pay. High-skilled migrants—nurses, engineers, scientists—improve productivity across many sectors of an economy, although only four countries— Australia, Canada, the United Kingdom, and the United States—account for over half of all tertiary educated immigrants. About 17 percent of healthcare workers in the United States, 12 percent in the United Kingdom, and 79 percent in the Gulf Cooperation Council (GCC) countries are foreign-born. Consumers benefit from lower production costs and the lower prices of some goods and services. The long-term benefits of immigration include increased entrepreneurship and innovation, stronger links for international trade and investment, and better provision of services such as education and health care. Migrants’ contributions are larger when they are allowed and able to work formally at the level of their qualifications and experience.”; World Bank, *Migrants, Refugees and Societies*, World Bank Development Report 2023, 7.

83 Supra, Note 80.

89. In many locations, however these schemes have not been implemented soon enough, in Florida, USA, many houses have already been lost to rising sea levels.⁸⁴ With insurance not covering this eventuality, homeowners have completely lost property investments, which in some cases represent the totality of retirement savings. Had these families had the opportunity to participate in buy-back schemes, they would have been compensated for the houses and plots before losing them, enabling them to reinvest the money in safer areas above sea level. In this way, there would have been no lost investment. However, by not acting in time, the government has seen considerable value wiped off the property market, without any corresponding investment elsewhere.
90. Left to their own devices, many residents in low-lying areas prone to flooding and sea level rise will simply not move, for a variety of reasons. The question then becomes whether governments have a responsibility to protect citizens from themselves. Clearly, forcing people into buy-back schemes could be a contentious issue open to criticisms of nanny state behaviour. However, if such schemes are coupled with efforts at rezoning in line with accurate forecasting of rising sea-levels, then the safety of citizens can be the driving factor behind buy backs.
91. Rezoning of properties in flood-prone areas is going to have a massive effect on the property market, as these properties stand to lose huge percentages of their value overnight.⁸⁵ Information sharing with affected communities will be key to managing expectations and respecting existing home-owners rights, particularly in the respect of proposed buy-back schemes, but also in light of regulating future purchasing in zones at risk of flooding etc.

10: Offer Government Funded Climate Insurance

92. Climate displacement insurance should play a role in both governments' and citizens' climate planning processes.⁸⁶ However, for insurance to play an effective role it first must be accessible to all those who require or desire it. This may require governments to intervene where citizens, particularly those living in areas most affected by climate change, are unable to pay the premiums that will be asked to insure these areas.

84 Rachel Ramirez, CNN, Homes are collapsing into the ocean in Florida. Here's what's behind the dangerous situation, 11 November 2022, <https://edition.cnn.com/2022/11/10/us/homes-collapse-nicole-sea-level-rise-climate/index.html>.

85 Tess Brunton, RNZ, Otago residents say tougher flood hazard rules could make land unsellable, 19 April 2023, <https://www.rnz.co.nz/news/national/488297/otago-residents-say-tougher-flood-hazard-rules-could-make-land-unsellable>.

86 Supra, Note 79: *On Whose Door Do We Knock?*, 63.

93. In November of 2022, devastating floods swept through the small towns of Molong and Forbes in central west NSW, Australia. Before the waters had receded, insurers had contacted residents to inform them that their insurance coverage would not be renewed, having taken the decision to not offer insurance coverage throughout the entire region rather than evaluate properties on a case-by-case basis.⁸⁷ The decision by insurers has had a detrimental effect on these small communities that already struggle to retain their populations. Without insurance, property prices have plummeted. But for those looking to buy, banks will not loan to home buyers against uninsured properties. The result is that long after the flood waters have receded the residents of these two small towns are still living with the anxiety and consequences of climate change.
94. Where private insurers refuse to offer insurance coverage the governments will be required and expected to step in if communities affected by climate change impacts are to survive. This has already been the case in the United States where since 1968, flood insurance has been provided by the National Flood Insurance Program (NFIP), after private insurers became unwilling to offer insurance coverage in areas prone to regular flooding.⁸⁸

11: Establish National Climate Land Banks

95. The creation of National Climate Land Banks may be another strategy adopted at either a local or national Government level designed to provide proactive land-based solutions for climate displaced communities. A land bank would act as a government-controlled repository of land suitable for immediate use or development for the housing and relocation of climate displaced people participating in voluntary, planned relocations. Land banks would hold land parcels that are considered to be at reduced risk to the impacts of climate change and could include crown land, unused private land or reclaimed or rehabilitated land.
96. The creation of land banks now will ensure that suitable land is available for CDPs, avoiding reactive responses to unplanned movement of peoples to areas lacking the infrastructure, government support services and environmental suitability to support a population increase. Land banks would come with policy, regulation and attached rights, ensuring a transparent allocation of land and housing to newly arrived climate displaced persons participating in voluntary planned relocations.

87 Ben Talintyre, *Daily Mail*, Insurance companies dramatically DITCH their customers in the middle of the worst flooding event in 70 years 22 November, 2022 www.dailymail.co.uk/news/article-11454605/NSW-floods-Insurers-wont-renew-flood-cover-towns-Forbes-Molong-Cabonne-Council.html.

88 United States Government Federal Emergency Management Agency, Flood Insurance, National Flood Insurance Program, <https://www.fema.gov/>.

97. The Land Bank model has already been used successfully to address issues around best use of land. In Adelaide, Australia, Renewal SA, a government agency, manages a land bank consisting of properties located within the city of Adelaide and surrounds. The land bank model has enabled Renewal SA to release this land in line with a strategic urban growth plan, “to ensure that the state’s future employment and housing needs are met through well-planned, affordable and vibrant urban development located near transport, employment, education and other services.”⁸⁹ This example demonstrates the critical role that land banks can play in maximising the efficient use of public lands for the benefit of a community.

12: Create Climate Displacement Ministries

98. The early efforts to mitigate the effects and implications of climate displacement demonstrate the complexity, urgency, costliness and sensitivity of attempting to develop a coordinated, effective response. Given such circumstances, it is imperative that governments, at both a national and state/regional/local level, begin to create Climate Displacement Ministries that can act as a central coordinating point in government’s planning for and response to climate displacement.
99. A central ministry is essential for coordinating efforts and resources among the many interested parties which could include international governments, other national and state government departments and agencies, the NGO sector, the private sector and community groups and organisations.⁹⁰ The role of the ministry would be to coordinate and promote cooperation, information sharing, and collaboration among all these stakeholder groups.
100. Climate displacement policy development and implementation would also fall under the responsibilities of the Climate Displacement Ministry. The Ministry would have responsibility for assessing and managing legal, social, economic, and environmental risks of displacement and relocations and developing and implementing policies that ensure the protection, rights, and well-being of displaced individuals and communities.
101. The Climate Displacement Ministry would also play a central role in the acquisition and disbursement of financial and other resources to support climate displacement initiatives. For example, the Ministry would engage with the Loss and Damage fund, finance and manage land bank resources, manage financial mechanisms and programs for the upgrading and preparedness of Climate Displacement Havens. Under a

89 Renewal SA, accessed 17 May 2023 <https://renewalsa.sa.gov.au/about-renewal-sa/>.

90 Particularly in nations/regions where climate displacement is likely to be a transnational issue requiring a regional response.

democratic model of government, the ministry would give legitimacy and accountability to the management of financial resources and ensure the equitable allocation and effective use of funds to support the resettlement and infrastructure development needs of displaced communities.

102. A Climate Displacement Ministry would also act as a central repository for climate displacement research and best practice development. The Ministry could partner with academic institutions, research organisations, think tanks and the private sector to conduct studies, collect data, and communicate learnings on displacement trends, impacts, and effective interventions and solutions. The knowledge gained would then inform policy development, planning processes, and the implementation of sustainable solutions for displaced communities, both within nations and more broadly across regional blocks and with other countries facing similar climate threats and displacement issues.
103. Finally, the creation of a Climate Displacement Ministry would be a clear signal to local, national and international stakeholders and partners that climate displacement is being taken seriously and that the government is dedicating the time, resources and effort that is needed to confront it effectively.

VI. Conclusion – Now is the Time to Prioritise Proactive Land Solutions

104. The world is facing an unprecedented challenge in providing land solutions for displaced communities. Despite the potential size of the problems, there are solutions ready to be implemented, starting today.
105. Whichever strategies are employed by governments to mitigate the impacts of climate displacement in the coming decades, efforts need to start right now. Climate displacement is already underway, and every moment that governments delay the planning and policy process, the more difficult and expensive it will be to deal with the issues of finding land, planning for adequate housing and protecting HLP rights in displacement. The strategies employed by states need to protect the HLP rights of displaced populations, allow them to enjoy adequate housing and grant access to loss and damage mechanisms as well as provide access to HLP restitution and or return to areas of origin, should that option become available. The Peninsula Principles clearly outline the steps required by governments to protect the rights of CDPs in a way that contributes to sustainable development.

106. Community consultation in the context of development projects are already being employed in many island nations. The concept of Free Prior Informed Consent, as a means of listening to community voices in the development of relocation plans. These nations, in their recognition of the risks to coastal and other communities, are leading the way with pre-emptive strategies to protect communities with both the logistical process of finding land, but also in the search for climate financing through regional partnerships. While this is admirable and necessary, these states should not be left to employ unilateral measures to mitigate climate displacement because of the actions of the broader international community. The only way forward in the implementation of land solutions to climate displacement is through a concerted international effort involving collaborative international finance, technical knowledge sharing, implementation of human rights standards and burden sharing through resettlement when necessary.
107. The international community has not responded to the HLP rights of displaced communities with anywhere near the scale or speed required. Despite these shortcomings, land solutions for CDPs are an opportunity to come together to address a foreseeable issue and one which will impact both human rights as well as international peace and security across the globe. With a concerted and coordinated effort, land solutions can be found. These solutions will not be easy nor necessarily cheap, but they will be critical to avoiding the chaotic, disruptive and inequitable displacements of the future. The land exists. It is now time to ensure that everyone who needs new land can access it.

VII. Selected Bibliography

International Law and Principle

International Covenant on Civil and Political Rights

International Covenant on Economic, Social and Cultural Rights

Peninsula Principles on Climate Displacement Within States

United Nations Convention to Combat Desertification

Voluntary Guidelines On Responsible Governance Of Tenure

Domestic Law/Policy

Bangladesh National Strategy on Internal Displacement Management

Fiji Displacement Guidelines In the Context of Climate Change and Disasters 2019

Fiji Planned Relocation Guidelines: A Framework to undertake Climate Change Related Relocation, 2018

Vanuatu National Policy on Climate Change and Disaster Induced Displacement

UN Guidelines

UN Food and Agriculture Organisation, Voluntary Guidelines On The Responsible Governance Of Tenure Of Land, Fisheries And Forests In The Context Of National Food Security, 2012

OHCHR, The Human Right To Adequate Housing, Special Rapporteur On The Right To Adequate Housing, www.ohchr.org

OHCHR, Land and Human rights, Standards and Applications, 2015

Books

Hassine, Khaled, Handling Climate Displacement, Cambridge Press, 2019

Leckie, Scott (ed), Land Solutions for Climate Displacement, Routledge, 2014

Sait, Siraj and Hilary Lim, Land, Law and Islam: Property and Human Rights in the Muslim World, 2006, Zed Books Ltd

Journals

Crepelle, Adam, The United States First Climate Relocation: Recognition, Relocation, and Indigenous Rights At The Isle De Jean Charles , Belmont Law Review, 2018, Vol 6:1:1

Lenton, T.M., Xu, C., Abrams, J.F. et al. Quantifying the human cost of global warming. Nature Sustainability, 22 May 2023, <https://doi.org/10.1038/s41893-023-01132-6>

MA Rodriguez-Girones, SND Gourley, and M Taper. "Displacement, resource competition, and social hierarchies: a social-ecological analysis". The American Naturalist, vol. 170, no. 4, 2007

Vanger, E. T., & Nwosu, B. U. (2020). Institutional parameters that condition farmer-herder conflicts in Tivland of Benue State, Nigeria. African Security Review, 29(1), 20–40

Reports

Corporate Accountability, Destruction is at the heart of everything we do; Chevron's junk climate action agenda and how it intensifies global harm, 2023

Benedicta Solf and Katherine Rehberg, Migration Policy Institute (MPI), The Resettlement Gap: A Record Number of Global Refugees, but Few Are Resettled, <https://reliefweb.int/report/world/resettlement-gap-record-number-global-refugees-few-are-resettled>

Displacement Solutions and EcoDev, The Urgent Need to Prepare for Climate Displacement in Myanmar: Establishing a Myanmar National Climate Land Bank, May 2018

Encyclopaedia Britannica, Gaza Strip, <https://www.britannica.com/place/Gaza-Strip>

Global Environment Facility, Combating Land Degradation, May 2022, <https://www.thegef.org/what-we-do/topics/land-degradation>

ICRC, When Rain Turns To Dust Understanding And Responding To The Combined Impact Of Armed Conflicts And The Climate And Environment Crisis On People's Lives, 9 July 2020, <https://www.icrc.org/en/document/climate-change-and-conflict/>

ICRC, Burkina Faso: When water scarcity meets conflict, 16 June 2021, <https://www.icrc.org/en/document/burkina-faso-water-scarcity-conflict>

International Crisis Group, Briefing 189/Africa, Absorbing Climate Shocks and Easing Conflict in Kenya's Rift Valley, 20 April 2023, <https://www.crisisgroup.org/africa/east-and-southern-africa/kenya/b189-absorbing-climate-shocks-and-easing-conflict-kenyas-rift>

Intergovernmental Panel on Climate Change, Synthesis Report of The IPCC Sixth Assessment Report (AR6) Summary for Policymakers, 2023

IOM, Planned Relocation In The Context Of Environmental Change In Hoa Binh Province, Northern Viet Nam An Analysis Of Household Decision-Making And Relocation Outcomes, 2017

Norwegian Refugee Council and Samuel Hall, Access to Tazkera and other civil documentation in Afghanistan, 2016

NationMaster, Countries Compared, <https://www.nationmaster.com/country-info/stats/Geography/Land-area/Sq.-km>

Nature Sustainability, Fig. 5: Country-level exposure to unprecedented heat ($\text{MAT} \geq 29^\circ\text{C}$) at 2.7°C and 1.5°C global warming in a world of 9.5 billion people (around 2070 under SSP2), 22 May 2023, <https://www.nature.com/articles/s41893-023-01132-6/figures/5>

NSW Government, Resilient Homes Fund Resilient Homes Program – Program Guideline, <https://www.nsw.gov.au/sites/default/files/2023-02/Resilient-Homes-Program-Program-Guideline.pdf>

OCHA, *Myanmar Humanitarian Needs Overview Myanmar*, 2021

Prof. Emmanuel Kasimbazi, UNCCD, Global Land Outlook Working Paper, September 2017, Land Tenure and Rights for Improved Land Management and Sustainable Development

Regional Refugee and Resilience Plan In Response to the Syria Crisis, Social Cohesion An overview of host community-refugee dynamics in the 3RP context, June 2022

Renewal SA, accessed 17 May 2023 <https://renewalsa.sa.gov.au/about-renewal-sa/>

R.J. Nicholls, S. Hanson, et al, Environment Working Papers No. 1 Ranking Port Cities With High Exposure And Vulnerability To Climate Extremes Exposure Estimates, OECD Environmental Working Papers, 2007

Special Rapporteur on the promotion and protection of human rights in the context of climate change, Ian Fry, Providing legal options to protect the human rights of persons displaced across international borders due to climate change, Human Rights Council Fifty-third session 19 June–14 July 2023 Agenda item 3 Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development, (A/HRC/53/34, 18 April 2023)

Syrian refugees in Turkey, Regional Refugee and Resilience Plan In Response to the Syria Crisis, Social Cohesion An overview of host community-refugee dynamics in the 3RP context, June 2022

Titlemax, The 100 Smallest Countries in the World, <https://www.titlemax.com/discovery-center/lifestyle/the-100-smallest-countries-in-the-world/>

Transnational Institute, The Global Climate Wall: How the world's wealthiest nations prioritise borders over climate action, October, 2021

United Nations Climate Change, Introduction to Climate Finance, <https://unfccc.int/topics/introduction-to-climate-finance>

UNHCR, Access To Civil Documentation IDPs And IDP Returnees In Iraq 2022 – 2023, <https://data.unhcr.org/en/documents/details/98523>

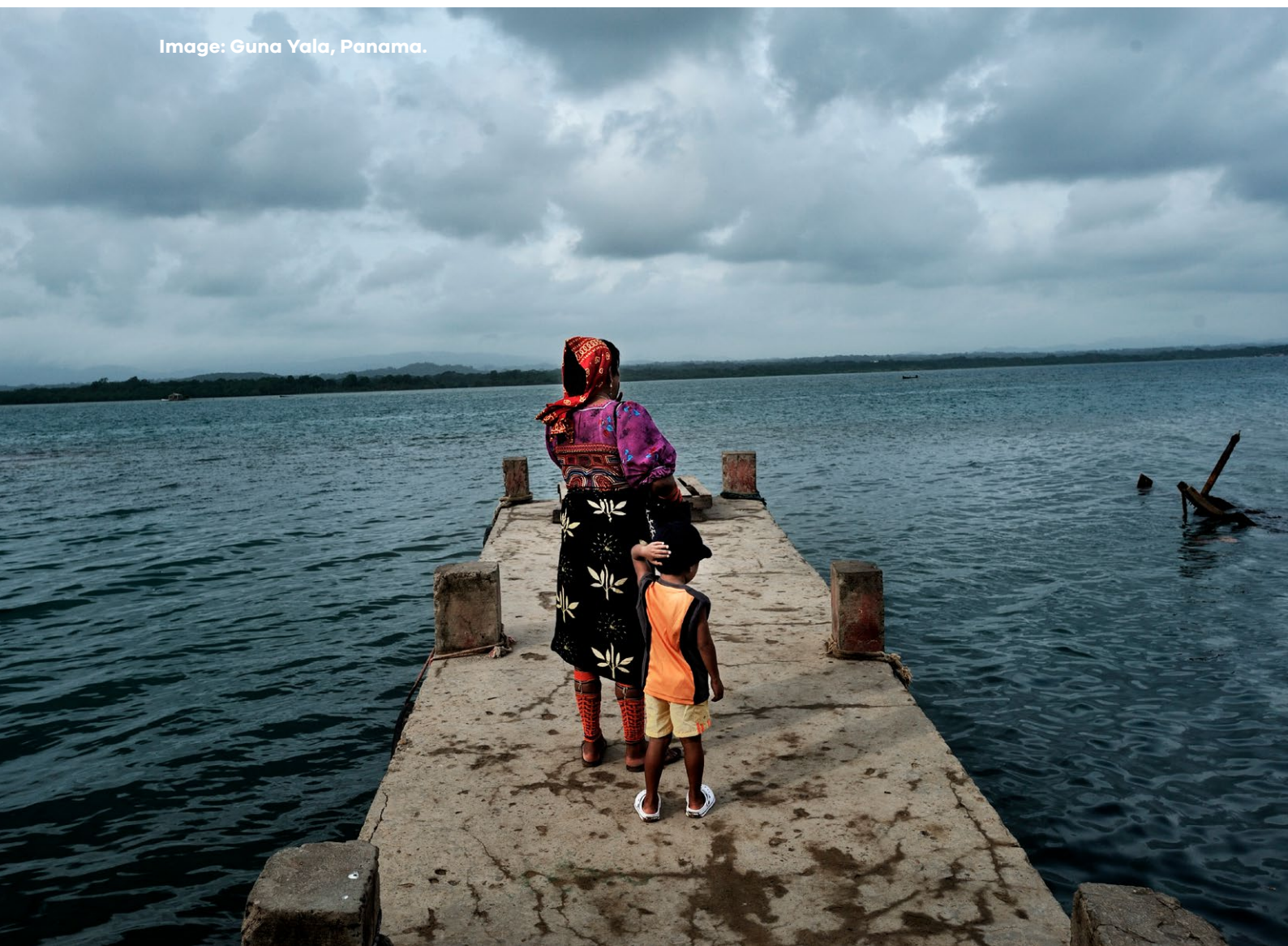
UNHCR, Figures at a Glance, <https://www.unhcr.org/figures-at-a-glance.html>

USAID, Karol Boudreaux and Daniel Abrahams, Equitable Resource Governance Helps Build Peace, 9 May 2023, <https://www.land-links.org/2023/05/equitable-resource-governance-helps-build-peace/>

WFP, WFP Peace Measure Conflict Sensitivity and Social Cohesion Measurement, June 2021

White House, Report On The Impact Of Climate Change On Migration, October 2021

Image: Guna Yala, Panama.



This report forms part of the *Peninsula Principles@10 Project*, commemorating ten years since the adoption of this groundbreaking international normative framework outline the housing, land and property rights of people facing climate displacement.

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