LEAVING PLACE, RESTORING HOME

ENHANCING THE EVIDENCE BASE ON PLANNED RELOCATION CASES IN THE CONTEXT OF HAZARDS, DISASTERS, AND CLIMATE CHANGE

By Erica Bower
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March 2021

PLATFORM ON DISASTER DISPLACEMENT
FOLLOW-UP TO THE NANSEN INITIATIVE

UNSW SYDNEY

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This report is part of a complementary set of studies aiming at enhancing evidence on planned relocation. This includes an IOM commissioned study identifying planned relocation cases referenced in Spanish and French language literature (forthcoming), a Pacific regional snapshot, an Asia regional snapshot and a case study compilation commissioned by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) (forthcoming), and a report on sea-level rise and planned relocation developed for the Andrew & Renata Kaldor Centre for International Refugee Law at UNSW Sydney (forthcoming).

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Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
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Federal Department of Foreign Affairs FDFA

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ACRONYMS

CCA	Climate Change Adaptation
COP	Conference of the Parties
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
GCM	Global Compact for Safe, Orderly and Regular Migration
IASC	Inter-Agency Standing Committee
IGO	Inter-Governmental Organization
INGO	International Non-Governmental Organization
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
NGO	Non-Governmental Organization
PDD	Platform on Disaster Displacement
TFD	Task Force on Displacement
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNDRR	United Nations Office for Disaster Risk Reduction
UNHCR	United Nations High Commissioner for Refugees

EXECUTIVE SUMMARY

As hazards, disasters and climate change profoundly affect people's lives and livelihoods, communities and authorities seek opportunities to move people permanently out of harm's way. The planned relocation of communities, or groups of households, to areas with lower exposure and disaster risks is occurring around the world. Planned relocation is recognized in policy and practice as a tool for disaster risk reduction (DRR) and climate change adaptation (CCA). However, the process can also undermine socio-economic prosperity, cultural practices and human security. As such, planned relocation is generally considered as a measure of last resort. In this context, policymakers, practitioners and communities require refined information on how planned relocation could be undertaken to minimize negative impacts, avoid pitfalls and promote human rights and human dignity.

Attention to planned relocation in policy instruments, and interest in gathering insights on practice, have increased since it was included alongside displacement and migration in the 2010 Cancun Adaptation Framework. However, knowledge and data gaps remain. This report, which is undertaken pursuant to the Platform on Disaster Displacement (PDD) 2019-2022 Strategy and Workplan, seeks to enhance the evidence base on planned relocation cases undertaken within countries. It provides: (1) a global dataset of 308 cases of planned relocation identified from English-language peer-reviewed scholarly articles and grey literature; and (2) an analysis of characteristics across 34 of the identified cases. These two related outputs serve as a foundation for future efforts to augment knowledge and data on planned relocation, and to promote approaches to policy and practice that mitigate risk and protect people from harm.

The process of identifying planned relocation cases is challenging because the term is not defined under international law and views on its key elements differ. Various entities including governments, the Nansen Initiative, the Intergovernmental Panel on Climate Change (IPCC) and experts have articulated definitions of planned relocation that include coherent and dissimilar elements. Some actors also use terms such as resettlement and managed retreat to refer

to movements that are similar to planned relocation. For the purposes of this report, a planned relocation case is conceptualized as embodying six central elements as underlined in the following description: *the **planned**, **permanent** movement of a **group** of **people** from **identifiable origin(s) to identifiable destination(s)**, predominantly in association with one or more hydrometeorological, geophysical/geological, or environmental **hazard(s)**.*

Through this research, it has become apparent that planned relocation cases do not follow one spatial pattern. This report uses a typology with four distinct spatial patterns: cases involving a single origin to a single destination site (type A); cases involving multiple origins to a single destination (type B); cases involving a single origin to multiple destinations (type C); and cases involving multiple origins to multiple destinations (type D). These complexities inform and guide the manner in which this report has been conceived and undertaken.

The methodology for this report included two phases. First, a global dataset of planned relocation cases was identified from English-language academic and grey literature. As each potential case was identified, it was screened to ensure that it met each of the six elements. In addition, only cases initiated after 1970 were included to limit the mapping to contemporary practice. Second, single origin to single destination planned relocation cases were selected for deeper analysis due to their prevalence. A subset of these cases, selected based on the adequacy of information in the reviewed literature, was analyzed to assess context and design characteristics. This methodology was refined through a working paper prepared for the Global Knowledge Partnership on Migration and Development (KNOMAD) Thematic Working Group on Environmental Change and Migration.

Findings from the 308 cases identified in the English-language global dataset include:

- **Planned relocation is a global phenomenon.** Identified cases span all inhabited regions and occur in 60 countries and territories. The United States of America, the Philippines, India, Sri Lanka, China, Indonesia, Vietnam, Fiji, Japan and Colombia have the highest numbers of identified cases. About one half of identified cases are in Asia.

- **Many planned relocation cases occur in multi-hazard contexts.** Cases are most frequently associated with floods. Approximately two thirds of cases are initiated in association with at least one climate-related hazard.

- **Most planned relocation cases involve a single origin to a single destination site.** About half of the identified cases follow the spatial pattern of relocation from a single site of origin to a single destination site. About 16-18 per cent of cases involve multiple origins to a single destination or single origin to multiple destinations, while about seven per cent involve multiple origins to multiple destinations.

- **Many planned relocation cases are ongoing.** The physical relocation to the destination site had been completed in three quarters of the identified cases. However, approximately one quarter of the identified planned relocation cases were ongoing as at the publication date of the reviewed literature. This means that the physical move to the destination site had not occurred for a majority of households.

Findings from the analysis of 34 single origin to single destination cases include:

- **Displacement:** A little over half were undertaken *after* populations were displaced.
- **Distance:** Most span short distances, less than two kilometers from origin to destination.
- **Demographics:** About half involved less than 250 households, and many were in fact far smaller. Nearly all concerned rural to rural sites. Approximately half involved indigenous communities.
- **Duration:** The time between initiation and completion of the physical move ranges from one to two years, to many decades for some of the ongoing cases.
- **Initiating and supporting actors:** Community actors initiated half of the cases, while the other half were initiated by government actors. Government, non-governmental and community actors supported the implementation of planned relocation processes.
- **Participation:** Many relocation cases included some level of participation mechanisms, however, inclusivity varied.
- **Assessments and norms:** The reviewed literature contained insufficient information on assessments and policy frameworks. In a fifth of the cases, there was evidence of formal assessments (e.g., environmental risk or cost-benefit analysis) conducted both at the sites of origin and destination. Few cases appeared to have normative instruments that underpinned the planned relocation process.
- **Livelihoods:** In about half of the cases, relocated persons were able to maintain similar livelihoods at sites of destination.
- **Challenges:** Identified challenges included ongoing hazard exposure in destination sites; the availability and quality of infrastructure; architectural layout of homes and incompatibility with traditional ways of life or expectations; social cohesion and cultural loss; and tensions and intergenerational differences relating to relocation. In some cases, relocated persons abandoned their new settlement to return to sites of origin or to move to new places.

Implications from these findings for policymakers, practitioners and researchers include:

GENERAL AND CONCEPTUAL

- **Multiple drivers may underpin decisions on planned relocation.** In many instances multiple, diverse drivers may prompt decisions to participate in or undertake planned relocation processes. Deeper research is required to understand how social, political, economic and demographic drivers, alongside environmental drivers, influence: (1) mobility *at the scale of entire communities or groups of households* grappling with relocation decisions; and (2) motivations and decisions *by authorities and other stakeholders* to initiate planned relocation.
- **Most cases fall within a continuum from "proactive" to "reactive" relocation.** Distinctions between "proactive" and "reactive" relocation may not always reflect the reality on the ground. Planned relocation cases have been undertaken both in reaction to realized harms (displacement, livelihood depletion, property damage or other forms of harm) and in anticipation of risks associated with future hazards. In this respect, most planned relocation cases fall within a proactive to reactive continuum. An alternative distinction for informing policymaking and practice is whether a planned relocation occurs: (1) pre-displacement; (2) post-displacement with options to reside in the interim in places of origin; or (3) post-displacement without options to reside in areas of origin.
- **Overlapping sudden and slow-onset hazards constrain choices.** Planned relocation has been noted as a form of human mobility that could be forced or voluntary. As with displacement and migration, the preponderance of choice is considered a key determinant of where planned relocation falls within the forced-voluntary continuum. In this context, the freedom - of individuals, individual households, communities and groups of households - to choose to participate in a planned relocation, and accordingly the level of coercion underpinning their decisions,

may be affected by realized harms and risks. Many planned relocation cases demonstrate how available choices are affected by the overlap or sequential occurrence of both sudden and slow-onset hazards. In other words, the environmental drivers influencing some planned relocation cases often embody multiple and diverse sudden and slow-onset hazards and constrain the choices available to affected populations. Planned relocation cases undertaken in the context of sudden-onset hazards such as flooding and storms, as well as slow-onset hazards such as sea-level rise and erosion, potentially compound the intensity and impacts of environmental drivers.

RELATED TO THE TYPOLOGY OF SPATIAL PATTERNS AND THE GLOBAL DATASET

- **The spatial pattern of planned relocation has implications for policy and practice.** This is the first report to articulate a typology of the spatial patterns of planned relocation cases implemented in practice, as documented in English-language literature. Insights from this typology, such as whether a case has multiple origin communities or multiple destination sites, have critical implications for policy and practice. For instance, a planned relocation with multiple origin communities requires consideration of complex integration dynamics and of inclusive participatory mechanisms that engage distinct communities. In contrast, a multiple destination relocation case may require consideration of the impacts of disintegration of communities, and potential for maladaptive outcomes such as inequitable access to services or tensions among affected persons. Further research questions arise from identifying this typology, including how different spatial patterns relate to displacement, hazard types, distance, rural and urban dynamics, indigenous communities, social cohesion, household size, initiating and supporting actors, participation mechanisms, assessments, legal frameworks, and challenges and outcomes.

RELATED TO THE SUBSET OF SINGLE ORIGIN AND SINGLE DESTINATION CASES

- **Trade-offs and linkages may exist between relocation design characteristics.** Analysis of single origin to single destination cases has highlighted the need for deeper understanding of a range of relationships between relocation design features for policy and practice. These include potential: trade-offs relating to proximity of destination sites to places of origin; linkages between distance and duration of the relocation process; connections between the actor initiating planned relocation and meaningful and inclusive participation in the relocation process; relationships between the actor initiating planned relocation and the scope, quality, level and duration of support (assessments, land, transitional housing, services, financial, in-kind and other) available for the relocation process; constraints and opportunities arising from differing legal and policy frameworks underpinning planned relocation; and connections between the actor initiating planned relocation and public information available on the relocation process.

This report and its global dataset are a first step and foundation for further research and analysis. They offer preliminary findings on planned relocation cases across the world, and insights on possible implications. Continuing efforts to monitor and research planned relocation are needed to guide policy and practice that minimizes risks and harms to people and ensures protection of their human rights and dignity.

1 Introduction

Many people around the world live in areas exposed to evolving and intensifying effects of hazards, disasters and climate change. As authorities and communities seek to minimize harms to people living in such places, planned relocation to areas of lower exposure is increasingly salient. Attention to planned relocation in international normative and policy instruments on human mobility, climate change action and disaster risk reduction (DRR) has increased in recent years, however, knowledge and data gaps remain.[1] In this context, this report provides a preliminary baseline of evidence on planned relocation cases globally as a foundation for subsequent research and analysis. The evidence gathered is intended to inform policy and practice, to guide the development of sound approaches to minimize risk and to protect people from harm.

Specifically, this report presents the results of a global mapping exercise on planned relocation cases carried out *within* countries in relation to hazards, disasters or the adverse effects of climate change (hereinafter cases). It offers two related sets of data.

1. The report identifies 308 cases of planned relocation documented in English-language peer-reviewed scholarly articles or grey literature. A breakdown of *geographic, spatial, status and hazard-related* characteristics is shown through infographics and discussed in the body of the report.[2] This global dataset is available from the Platform on Disaster Displacement (PDD) website, www.disasterdisplacement.org.

2. A subset of 34 of the identified cases is reviewed in more depth regarding further

[1] For selected normative and policy developments at the international level, see table 1 in Ferris, E., & Weerasinghe, S. (2020). Promoting Human Security: Planned Relocation as a Protection Tool in a Time of Climate Change. *Journal on Migration and Human Security,* 8(2), 134-149.

[2] These descriptive characteristics include: hazard(s); location(s) of the site(s) of origin and destination; the status of the process (i.e., whether the relocation is ongoing or completed at the time the source was published); and a primary source.

context and design characteristics.[3] This information is analyzed in the report and documented in annex tables.

This is the first report to provide a global mapping of information on planned relocation cases. Earlier efforts regarding planned relocation have highlighted challenges, reinforced it as tool of last resort for moving people out of harm's way and developed guidance and a toolbox to support implementation.[4] Until now, researchers and policy makers have relied on evidence from a number of well documented individual cases, comparative analyses within a limited number of countries such as the United States of America or the Philippines[5] or comparative research on a relatively small number of cases globally or regionally.[6] Researchers and policy makers have also drawn analogies of development-related 'resettlement' initiatives, including lessons from theoretical frameworks such as Scudder and Colson's Four Stage Resettlement framework and Cernea's Impoverishment Risks and Resettlement (IRR) model.[7] Understanding of the global scale, diversity, and characteristics of planned relocation cases in hazard, disaster and climate change contexts is more limited.

Strengthening evidence on planned relocation has been identified as a knowledge gap by multi-stakeholder bodies concerned with human mobility associated with disasters and climate change. For instance, in its 2019-2022 Strategy and Workplan, the PDD acknowledges the importance of research and analysis on planned relocation to address knowledge and data gaps and support policy development—and indeed, this present report is undertaken in this context.[8] The Task Force on Displacement (TFD), an expert body established pursuant to the Paris Agreement, has also identified aggregation of effective practices and lessons on planned relocation as an important subject for further inquiry.[9]

A global mapping of planned relocation is important for policy and practice, including to advance commitments and outcomes reflected in normative instruments.[10] Notably, at the 16th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC), States parties were invited to undertake "[m]easures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation, where appropriate, at the

3 Context and design characteristics include: whether or not relocation took place after displacement; the distance between origin and destination sites; approximate year(s) the need for relocation was identified and the completion of the physical move for a majority of households; number of households; if the origin community identifies as indigenous; whether the relocation occurred in rural or urban settings; initiating and supporting actor(s); whether assessments were conducted at sites of origin and destination; participation mechanisms; legal and policy frameworks; livelihoods; and challenges.

4 Ferris, E., & Weerasinghe, S., above n 1; Weerasinghe, S. (2014). Planned Relocation, Disasters and Climate Change: Consolidating Good Practices and Preparing for the Future, Report. *UNHCR,* 32; Ferris, F. (2014). Planned Relocation, Disasters and Climate Change: Consolidating Good Practices and Preparing for the Future, Background Document. *UNHCR, Brookings Institution, Georgetown University;* UNHCR, Brookings Institution, & Georgetown University. (2015). Guidance on protecting people from disasters and environmental change through planned relocation, October: 1–22; UNHCR, Georgetown, & IOM. (2017). A Toolbox : Planning Relocations to Protect People from Disasters and Environmental Change; Nansen Initiative. (2015). Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change, December, I & II.

5 Government Accountability Office. (2009). Alaska Native Villages Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion Highlights, June: 53; Palagi, S., & Javernick-Will, A. (2020). Pathways to livable relocation settlements following disaster. *Sustainability,* 12(8), 3474.

6 Piggott-McKellar, A. E., Pearson, J., McNamara, K. E., & Nunn, P. D. (2019). A livelihood analysis of resettlement outcomes: Lessons for climate-induced relocations. *Ambio,* 49(9), 1474–1489.; Hino, M., Field, C. B., & Mach, K. J. (2017). Managed retreat as a response to natural hazard risk. *Nature Climate Change,* 7(5), 364-370.; Campbell, J., Goldsmith, M., & Koshy, K. (2005). Community Relocation as an Option for Adaptation to the Effects of Climate Change and Climate Variability in Pacific Island Countries (PICs), *Final report for APN project 2005-14-NSY-Campbell, Asia-Pacific Network for Global Change Research,* 1-61; Dannenberg, A. L., Frumkin, H., Hess, J. J., & Ebi, K. L. (2019). Managed retreat as a strategy for climate change adaptation in small communities: public health implications. *Climatic Change,* 153(1), 1-14.

7 Wilmsen, B., & Webber, M. (2015). What can we learn from the practice of development-forced displacement and resettlement for organised resettlements in response to climate change? *Geoforum,* 58: 76–85. Elsevier Ltd; Piggott-McKellar, A. E., Pearson, J., McNamara, K. E., & Nunn, P. D., above n 6.

8 PDD Strategy and Workplan 2019-2022. See activity "IV.4.E) Support policy development and mapping of Planned Relocation in the context of disasters and the adverse effects of climate change."

9 The TFD was established under the Warsaw International Mechanism for Loss and Damage by the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC).

10 For selected normative and policy developments at the international level, see table 1 in Ferris, E., & Weerasinghe, S., above n 1.

national, regional and international levels".[11] This decision identified planned relocation as an element to be addressed within the framework of climate change adaptation (CCA). The Sendai Framework for Disaster Risk Reduction 2015-2030, adopted by 187 country delegations at the Third UN World Conference on Disaster Risk Reduction in 2015, and subsequently endorsed by the UN General Assembly, identified the relocation of human settlements as a tool for achieving DRR outcomes.[12]

Among actors engaged in CCA and DRR and their relevance to human mobility, planned relocation is often conceived as a strategy to avert and minimize future displacement. In addition, humanitarian actors tend to consider planned relocation as a durable solution to resolve displacement, in situations where return is not feasible. This dual understanding is reflected in the framing of planned relocation in the Nansen Initiative Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change (Nansen Initiative Protection Agenda).[13] Also at the multilateral level, in the 2018 Global Compact for Safe, Orderly and Regular Migration (GCM), States committed to address the challenges of disaster and climate change-related human movement and highlighted planned relocation as a tool to support cross-border mobility in the context of slow-onset disasters, the adverse effects of climate change and environmental degradation.[14]

The references to planned relocation in prominent and authoritative global instruments on CCA, DRR, displacement and migration underscore the importance of addressing knowledge gaps, aggregating effective practices and identifying lessons. As policymakers and practitioners seek to comply with normative standards or become motivated by observed changes in the environment, deeper insights on planned relocation are necessary to promote policy and practice that minimizes exposure and risks, while also upholding human rights and human dignity. This reflection stems largely from analogies of development-related resettlement processes, which demonstrate that the relocation of people may undermine socio-economic prosperity and cultural practices, with implications for human rights and human security.[15]

Policymakers and practitioners need to know how planned relocation *could* be undertaken to avoid such pitfalls and to promote human rights and human dignity. This report offers a preliminary global mapping of evidence as a foundation for such analyses. The next section provides background to the report, outlining the complexity presented by varied terminology, lack of a consensus definition and diverse manifestations of planned relocation in practice. Drawing on the background, section 3 explains how planned relocation has been conceptualized in this report, and section 4 describes the methodology and limitations of the approaches used to create the English-language global dataset and to further analyze a subset of cases. Section 5 describes results from the global dataset (item 1 above). Section 6 analyzes characteristics of a subset of well-documented cases (item 2 above), with relevant information included in annexes. The final section of this report highlights implications from the findings and identifies areas for further research and action.[16]

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11 UNFCCC. Report of the Conference of Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010. FCCC/CP/2010/7/Add.1, 15 March 2011, Decision 1/CP.16 (Cancun Adaptation Framework), paragraph 14(f).

12 United Nations General Assembly. Sendai Framework for Disaster Risk Reduction 2015-2030, Resolution 69/283 of 3 June 2015, A/RES/69/283, 23 June 2015, paragraph 27(k).

13 Nansen Initiative., above n 4, p. 38.

14 United Nations General Assembly. Global Compact for Safe, Orderly and Regular Migration, Resolution 73/195 of 19 December 2018, A/RES/73/195, 11 January 2019 (GCM), paragraph 21(h).

15 Weerasinghe, S., above n 4; Ferris, F., above n 4; Piggott-McKellar, A. E., Pearson, J., McNamara, K. E., & Nunn, P. D., above n 6; Cernea, M. (2000). Impoverishment Risks, Risk Management, and Reconstruction: A Model of Population Displacement and Resettlement. *UN Symposium on Hydropower and Sustainable Development,* 1–61.; Scudder, T. (2005). Theories of the Resettlement Process. *The Future of Large Dams: Dealing with Social, Environmental, Institutional and Political Costs.* Taylor and Francis. 31-55.

16 Annexes provide information on: (A) the context characteristics in item 2 above, (B) the design characteristics in item 2 above, (C) the methods employed by the primary article used to code the subset of cases (item 2 above); (D) the codebook of questions analyzed in item 2 above; (E) the regional breakdowns; and (F) hazard definitions. In addition, the global dataset of identified cases is available for download on the PDD website.

2

Context and background

2.1

WHAT IS PLANNED RELOCATION?

While multilateral policy processes and instruments recognize planned relocation within States as a tool for reducing disaster risks and adapting to climate change, as well as a possible pathway for cross-border mobility, the examples presented in this report concern movements *within* countries.[17] Indeed, existing evidence on planned relocation cases generally concern internal movements.[18] In this context, and in the absence of a binding or consensus multilateral definition, domestic conceptions underpin how planned relocation cases are conceived and implemented.[19] This means domestic legal and policy frameworks provide an important lens to understand how States perceive and define such movements.

Domestic laws and policies focused solely on planned relocation are difficult to unearth, however. Frameworks specifically on planned relocation are uncommon and rarely define the term. An exception is Fiji's 2018 national Planned Relocation Guidelines – A Framework to Undertake Climate Change Related Relocation, which explains that:

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17 On cross-border planned relocation, see discussion in section 1 regarding GCM commitment to support planned relocation as a tool for cross-border mobility in the context of slow-onset disasters, the adverse effects of climate change and environmental degradation. One case of cross-border relocation was identified in the literature review (a potential 'ongoing' case involving the Government of Kiribati purchasing land in Fiji), but this was not included in the global dataset as discussed in section 4, on methods. Note that this land was purchased with the primary objective of food security, not relocation. See: Republic of Kiribati Office of the President. (2014). Kiribati buys a piece of Fiji, *Government of Kiribati Press Release.;* See also: Hermann, E., & Kempf, W. (2017). Climate change and the imagining of Migration: Emerging discourses on Kiribati's land purchase in Fiji. *The Contemporary Pacific, 29*(2), 231-263.

18 UNHCR, Georgetown, & IOM, above n 4; Hino, M., Field, C. B., & Mach, K. J., above n 6; Correa, E., Ramirez, F., & Sanahuja, H. (2011). Populations at Risk of Disaster. *The World Bank and the Global Facility on Disaster Risk and Recovery.*

19 This does not mean that international human rights law standards are inapplicable, but rather that examining domestic definitions and descriptions provide a lens into how governments have conceived this form of human mobility.

> Planned Relocation is understood as a solution-oriented measure, involving the State, in which a community (as distinct from an individual/ household) is physically moved to another location and resettled permanently there. Under this schematic approach, evacuation is distinct from planned relocation and does not fall within the scope of this document. Planned relocation may, of course, play a role following evacuations in circumstances where places of origin become uninhabitable.[20]

Sometimes, non-relocation-specific national instruments, such as laws and policies relevant to disasters, climate change or the environment dictate, define or provide the applicable architecture pursuant to which planned relocation must be undertaken. For instance, within the framework of actions to strengthen disaster risk governance to manage risk, the Sendai Framework for Disaster Risk Reduction 2015-2030 identifies the importance of formulating public policies to address "the issues of prevention or *relocation,* where possible, of human settlements in disaster risk-prone zones".[21] As States continue to adopt, revise or align their DRR and DRM laws and policies to address the Sendai Framework's objectives, domestic descriptions and definitions of relocation or planned relocation may become more prominent.[22] Similarly, as States adopt, revise or align climate change and environmental laws and policies, including to foster CCA objectives pursuant to multilateral instruments, definitions and descriptions of planned relocation are also likely to emerge in these fields.[23]

In other instances, project-specific guidelines are adopted, which are territorially and temporally limited in their application.[24] Cases involving indigenous populations may follow customary rules that are not easily identifiable through document analysis. Finally, many planned relocation cases may be undertaken notwithstanding the absence of a normative framework, and thus are not formally conceptualized or defined in an identifiable way.

In this context, global instruments and expert and institutional guidance offer insights on essential elements that constitute planned relocation.[25] The Nansen Initiative Protection Agenda describes planned relocation as:

> [A] planned process in which *persons or groups of persons* move or are assisted to move away from their homes or places of temporary residence, are settled in a new

20 Fiji. Planned Relocation Guidelines - A framework to undertake climate change related relocation, December 2018, p. 7. Emphasis added. The guidelines draw on expert guidance, which are discussed in greater detail below. It's worth noting that there is a divergence between the focus on the community level in Fiji's instrument as compared with the expert guidance, which also captures the individual and household levels. The unit of analysis of a planned relocation case for the purposes of this report is discussed further in section 4 on methodology.

21 United Nations General Assembly., above n 12, paragraph 27(k). Emphasis added.

22 Domestic disaster risk reduction (DRR) or disaster risk management (DRM) laws and policies have not been examined systematically to determine whether they include definitions of relocation or planned relocation. It is worth noting that a number of States have integrated relocation in the context of gradually increasing risk into their national DRR and DRM strategies, including: Pakistan's National DRR Policy (2013); Vietnam's National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020 (2007); Malawi's policy on DRM (2015); and Tonga's Joint National Action Plan on Climate Change Adaptation and DRM (2010-2015). Other countries have integrated relocation as part of post-disaster rehabilitation measures, including: India's National Plan (2016), Rwanda's National DRM Plan (2013), and Namibia's National DRM Plan (2011). See Yonetani, M. (2018). Mapping The Baseline To What Extent Are Displacement And Other Forms Of Human Mobility Integrated In National And Regional Disaster Risk Reduction Strategies, *Platform on Disaster Displacement,* 35-36. See also Scott and Salamanca (eds) (2021), *Climate Change, Disaster and Internal Displacement in Asia and the Pacific: A Human-Rights Based Approach,* Routledge; paragraph 18(e) of the Sendai Framework for Disaster Risk Reduction 2015-2030 (United Nations General Assembly., above n 12), which sought to substantially increase the number of countries with national and local DRR strategies by 2020.

23 Domestic climate change or environmental laws and policies have not been examined systematically to determine whether they include definitions of relocation or planned relocation. A mapping of National Adaptation Plans, Nationally Determined Contributions, and national communications, carried out for the TFD workplan, indicates that a number of States explicitly recognize the role of planned relocation as a strategy for climate adaptation. This includes: Canada's 2010 document for Adapting to Climate Change - An Introduction for Canadian Municipalities, Fiji's 2015 Intended Nationally Determined Contribution, Malta's 2010 National Communication, Rwanda's 2015 Intended Nationally Determined Contribution. For details, see IOM. (2018). Mapping Human Mobility and Climate Change in Relevant National Policies and Institutional Frameworks, *Task Force on Displacement,* p. 11, footnote 54; see also, Scott and Salamanca (eds), above n 22.

24 See e.g., notes on the case of Grantham, Australia in Annex B. Project-specific documents relating to planned relocation cases have not been examined to determine if they include definitions or descriptions of relocation or planned relocation.

25 The Cancun Adaptation Framework (UNFCCC., above n 11), the Sendai Framework for Disasters Risk Reduction 2015-2030 (United Nations General Assembly., above n 12) and the GCM (United Nations General Assembly., above n 14) do not define planned relocation.

> location, *and* provided with the conditions for rebuilding their lives. Planned relocation can be voluntary or involuntary, and usually takes place within the country, but may, in very exceptional cases, also occur across State borders.[26]

The above definition excerpts and draws on a definition developed in 2015 by international lawyers and experts, which defines planned relocation as:

> [A] planned process in which persons or groups of persons move or are assisted to move away from their homes or places of temporary residence, are settled in a new location, and provided with the conditions for rebuilding their lives. Planned Relocation is carried out under the authority of the State, takes place within national borders, and is undertaken to protect people from risks and impacts related to disasters and environmental change, including the effects of climate change. Such Planned Relocation may be carried out at the *individual, household, and/or community* levels.[27]

In its 2019 Special Report on the Ocean and Cryosphere in a Changing Climate, the Inter-governmental Panel on Climate Change (IPCC) defines "planned relocation (of human)" as:

> A form of human mobility response in the face of sea level rise and related impacts. Planned relocation is typically initiated, supervised and implemented from national to local level and involves *small communities* and individual assets but may also involve *large populations.* Also termed resettlement, managed retreat, or managed realignment.[28]

The International Law Association's Committee on International Law and Sea Level Rise has also adopted a definition of planned relocation relevant to the context of sea level rise. In a resolution adopting the Sydney Declaration of Principles on the Protection of Persons Displaced in the Context of Sea Level Rise, planned relocation means:

> [A] planned process in which *persons* voluntarily move or are forced to move away from their homes or places of temporary residence, are settled in a new location within their own or another State, and are provided with the conditions for rebuilding their lives. Planned relocation is carried out under the authority of the State and is undertaken to protect persons from risks and impacts related to disasters and environmental change in the context of sea level rise[.][29]

At an operational level, the Inter-Agency Standing Committee's (IASC) Operational Guidelines on the Protection of Persons in Situations of Natural Disasters, describes "permanent relocation" as:

> The act of moving *people* to another location in the country and settling them there when they no longer can return to their homes or place of habitual residence. Relocations can be voluntary, i.e. with the consent of affected persons, or forced, i.e. against the will of such persons. Relocation is only successful if it leads to a durable solution […] in the sense of sustainable settlement elsewhere in the country.[30]

Some policymakers, practitioners and scholars use the term "resettlement" to refer to a similar process as that described by planned relocation. The term "resettlement" (and involuntary resettlement) is more common in the context of development projects, but it is also used to refer to people and communities relocated in the context of hazards.[31] For

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26 Nansen Initiative., above n 4, p. 17. Emphasis added.

27 UNHCR, Brookings Institution, & Georgetown University., above n 4, p. 5. Emphasis added to the last sentence.

28 IPCC (2019), Special Report on the Ocean and the Cryosphere in a Changing Climate, p. 694. Emphasis added.

29 International Law Association, Resolution 6/2018: Committee on International Law and Sea Level Rise, 78th Conference of the International Law Association, Sydney, Australia, 19-24 August 2018, Annex: Sydney Declaration of Principles on the Protection of Persons Displaced in the Context of Sea Level Rise, definitions (f). Emphasis added.

30 Inter-Agency Standing Committee (IASC), IASC Operational Guidelines on the Protection of Persons in Situations of Natural Disasters, 2011, p. 58. Emphasis added.

31 See e.g., McAdam, J., & Ferris, E. (2015). Planned Relocations in the Context of Climate Change: Unpacking the Legal and Conceptual Issues. *Cambridge Journal of International and Comparative Law,* 4(1): p. 141; See also Ferris, E. (2012). Protection and Planned Relocation in the Context of Climate Change. UNHCR, p. 4.

instance, the above-mentioned 2019 IPCC report seems to suggest that resettlement is synonymous with planned relocation.[32] A consensus definition on the meaning of "resettlement" in the context of hazards, disasters and climate change does not exist. Populations at Risk of Disaster: A Resettlement Guide, published by the World Bank and the Global Facility for Disaster Risk and Recovery in 2011, explains that "[r]esettlement is a measure for intervention that seeks to address the exposure that is one of the components of vulnerability, and it results in nullification of the risk condition. Physically, it means changing the location of the exposed elements, in this case, the population."[33] As noted above, domestic DRR, DRM, climate change and environmental laws may also offer descriptions and definitions of resettlement.[34]

Meanwhile, some adaptation experts refer to relocation of people as one strategy to manage "retreat",[35] a term from coastal engineering actors, which has been defined as "the application of coastal zone management and mitigation tools designed to move existing and planned development out of the path of eroding coastlines and coastal hazards."[36] More recently, it has been adopted by a broader set of actors, and described as "the strategic relocation of structures or abandonment of land to manage natural hazard risk", notably involving "an implementing or enabling party".[37] The IPCC has referred to "retreat" since 1990, and in 2014 noted "managed retreat" as an adaptation option for people as well as a measure to "reduce long-term risk to property and assets."[38] In its 2019 Special Report on the Ocean and Cryosphere in a Changing Climate, the IPCC seems to suggest that managed retreat is also synonymous with planned relocation.[39] In addition to relocation of groups of persons to new sites, other strategies for managed retreat include individual household buy-outs, managed realignment and setbacks.[40] Actors framing such movements as managed retreat often focus on the economic, infrastructural and ecological dimensions, in addition to a focus on human lives and livelihoods.

Finally, scholarly literature also uses these terms – planned relocation, resettlement and managed retreat – to refer to similar conceptualizations of movement. In the literature, many scholars emphasize the importance of particular elements in determining the "success" of outcomes, although not many endeavor to define or describe the form of movement and its key components.[41]

32 IPCC., above n 28, p. 694.

33 Correa, E., Ramirez, F., & Sanahuja, H., above n 18, p. 18. The document indicates that the guidance note is for guidance only and does not replace any provision of Bank Operational Policies (OPs) or Bank Procedures (BPs), including in particular OP/BP 4.12. on Involuntary Resettlement.

34 Domestic DRR or DRM laws and policies, and domestic climate, climate change or environmental laws and policies have not been examined systematically to determine whether they include definitions or descriptions of resettlement. A number of States have incorporated the term resettlement into their national DRM and DRR strategies, including Bangladesh's National Plan for Disaster Management (2010); Vanuatu's Climate Change and DRR Policy (2016-2030); Rwanda's National DRM Plan (2013); and Namibia's National DRM Plan (2011). See Yonetani, M., above n 22.

35 For further detail on strategies for managed retreat, see Georgetown University's toolkit on the subject: Georgetown University. (2020). Managed Retreat Toolkit.

36 Neal, W. J., Bush, D. M. & Pilkey, O. H. (2005). Managed Retreat. In Schwartz M.L. (eds) Encyclopedia of Coastal Science. Springer.

37 Hino, M., Field, C. B., & Mach, K. J., above n 6, p. 364.

38 IPCC, (2014) Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC. 97-98, 916, and 1375.

39 IPCC., above n 28, p. 694.

40 Discussion of these types of "retreat" are beyond the scope of this report. For further insights, see Hino, M., Field, C. B., & Mach, K. J., above n 6.

41 For example, Lieber (1977) uses "resettlement" to refer to "a process by which a number of homogenous people from one locale come to live together in a different locale"; see Lieber, M. D., Ed. (1977). Exiles and Migrants in Oceania. *Association for Social Anthropology in Oceania Monograph Series.* The University Press of Hawaii, p. 343; Campbell (2010) describes the process as "the permanent (or long-term) movement of a community (or a significant part of it) from one location to another, in which important characteristics of the original community, including its social structures, legal and political systems, cultural characteristics and worldviews, are retained: the community stays together at the destination in a social form that is similar to the community of origin." See Campbell, J. (2010). Climate change and population movement in Pacific Island countries. In Burson, B. (Ed.) *Climate Change and Migration: South Pacific Perspectives,* 58-59; Preparing for resettlement associated with climate change. *Science,* 334(6055), 456-457, 457. Rather than providing a definition, Oliver-Smith (1991) suggests that "site, layout, housing and popular input are presented as crucial issues in the determination of success or failure in post-disaster resettlement." See Oliver-Smith, A. (1991). Successes and failures in post-disaster resettlement. *Disasters,* 15(1), 12-23.

2.2

TYPOLOGY OF SPATIAL PATTERNS OF PLANNED RELOCATION

Beyond the definitional challenges, a review of practice to date based on English-language scholarly and grey literature highlights important dimensions of planned relocation cases, and the multitude of ways in which States and communities have conceived and implemented such processes. Many of these dimensions are elaborated in the findings sections of this report (see sections 5 and 6). However, it is also worth noting certain spatial dimensions here, as they contribute to the complexity in identifying what constitutes a case of planned relocation. Figure 1 presents a typology to reflect archetypes of planned relocation cases identified in the literature. The schematic presents cases across four quadrants based on whether they relate to single or multiple origin sites and single or multiple destination sites. Four scenarios are discussed below.

1. Case type A (Single origin – single destination): The most common type of planned relocation cases involves a community or group of households from one origin site supported to relocate to one destination site.[42] Consider an example from the Solomon Islands, where 80 households from Mondo village relocated to Keigold, a site 145 meters above sea level and approximately one kilometer from the coast, while 20 per cent of the community remained in the earlier site. The relocation was initiated after displacement due to a tsunami and an earthquake, and in anticipation of future coastal hazards.[43]

2. Case type B (Multiple origin – single destination): Other cases involve communities or groups of households from multiple origin sites supported to relocate to one destination site. For instance, after tropical storm Stan devastated parts of Guatemala in 2005, households from two communities (Tz'anchaj and Panabaj) were relocated to a single site, Santiago Atitlán.[44]

3. Case type C (Single origin – multiple destination): Yet another configuration found in practice involves a community or group of households from one origin site supported to relocate to multiple destination sites. Of the many cases that took place after Typhoon Haiyan in Tacloban Philippines, in 2013, households from Barangay 88 (San Jose) were relocated to new sites in both Barangay 106 (Santo Nino) and Ridgeview.[45]

4. Case type D (Multiple origin – multiple destination): Finally, some cases involve communities or groups of households from multiple origin sites supported to relocate to any of multiple destination sites, without measures to ensure that a majority of households from origin sites remain together at destination.[46] For example, facing drought conditions starting in 2003, households from many communities spanning Eastern, Western, and Central Oromia, Ethiopia were relocated to a total of eight relocation sites, with no efforts to ensure communities of origin remained together in the destination sites.[47] While

42 In some cases, communities/groups of households from multiple origin sites are in parallel supported to move to multiple destination sites; these cases are effectively multiple type A cases but are sometimes documented in the literature as one case given a single hazard trigger or single policy intervention by a supporting actor. Consider, for instance, Keta Ghana, where three indigenous villages in Keta (Adzido, Kedzi, and Vodza) were in parallel relocated inland away from coastal erosion. See: Salifu, Abdul-Moomin Ansong. (2016). Relocation Based on Slow-Onset Climate-Induced Environmental Change in Keta, Ghana. *Walden Dissertations and Doctoral Studies,* 1-142.

43 Otoara Ha'apio, M., Wairiu, M., Gonzalez, R., & Morrison, K. (2018). Transformation of rural communities: lessons from a local self-initiative for building resilience in the Solomon Islands. *Local Environment,* 23(3), 352-365.

44 Correa, E. (2011). Preventive Resettlement of Populations at Risk of Disaster: Experiences from Latin America. *The World Bank,* 1-144.

45 Ong, J. M., Jamero, M. L., Esteban, M., Honda, R., & Onuki, M. (2016). Challenges in build-back-better housing reconstruction programs for coastal disaster management: case of Tacloban City, Philippines. *Coastal Engineering Journal,* 58(01).

46 Note that planned relocation cases with multiple origins and destinations (type D) are not individual household buy-outs, as they still involve movement of groups of people to designated settlement sites.

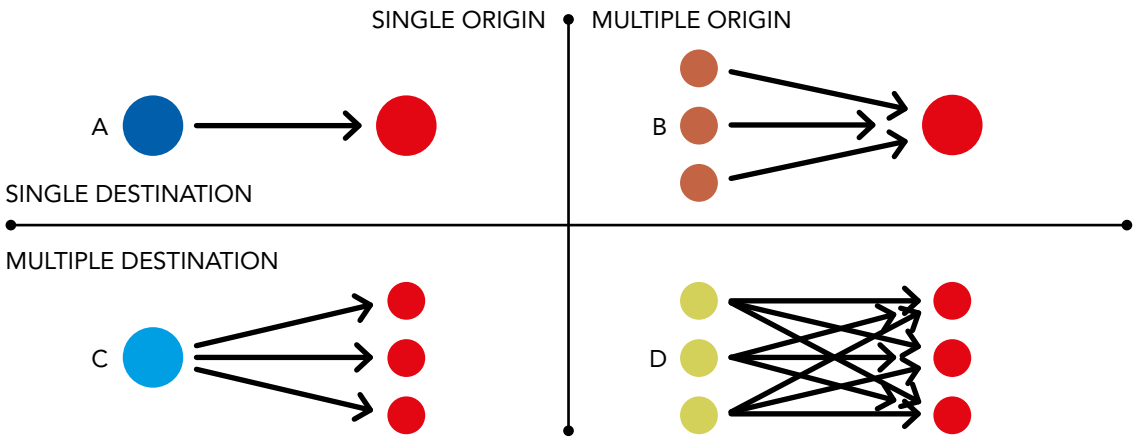
47 Nygren, A., & Wayessa, G. (2018). At the intersections of multiple marginalisations: displacements and environmental justice in Mexico and Ethiopia. *Environmental Sociology,* 4(1), 148-161.

many type D cases involve large numbers of origins and destinations, other cases such as the Hòa Bình Relocation Project in Vietnam involve just two remote villages at high risk of landslide that were relocated to three destination sites.[48]

The simplicity of this typology does not necessarily mean that distinctions between case types A to D are always clear in practice. To distill these insights, it was necessary to consider only the *majority* of households in a given case. For instance, in a single origin – single destination case scenario (type A), some households from the origin site may have chosen to live outside the designated destination site,[49] and some households from outside the origin site may join the destination site. The critical distinction in this typology is that the *majority* of households follow this relocation pathway from origin to destination. However, this does not necessarily mean all relocated people remain at the relocation site over time. In addition, given the nature of the research and the methodology (discussed in section 4 below), the consideration of origin and destination sites as units of analysis are heavily dependent on the ways in which the relevant literature has classified the sites or spatial dimension and also whether the article's primary focus is concerned with the origin or destination site(s).

At present, policy processes arguably obfuscate the differences between these types of planned relocation cases. Indeed, as they are not explicitly recognized, the existence of different spatial patterns may not be well understood. Planned relocation cases that follow these divergent spatial patterns tend to be presented as a homogeneous phenomenon, with little acknowledgement that each relocation type has fundamentally different implications for policy and practice. For instance, multi-origin relocation cases require consideration of complex dynamics of integration across multiple groups of people originating from different vantage points. In contrast, multi-destination relocation cases may require consideration of the impacts of disintegration of communities or of potential inequities in different sub-national administrative settings. Myriad other differences relating to *inter alia* participatory mechanisms, transitional arrangements, and legal and policy frameworks apply to the consideration of case types B, C and D. These complexities inform and guide the manner in which this report has been conceived and undertaken. The conceptualization of planned relocation for the purposes of this report and its methodology are discussed in the next two sections (3 and 4), respectively.

Figure 1. Typology of planned relocation spatial patterns



[48] Ahn, D. et al (2017). Planned Relocation in the Context of Environmental Change in Hoa Binh Province, Northern Vietnam. *International Organization for Migration*. p. 21.

[49] In some cases, relocation to a new site was offered to beneficiaries as one option alongside offers of individual household buy-outs. Consider a case in Bogotá, Colombia, where households facing flood and landslide risk were given the option to accept houses in one of two "resettlement sites", El Caracol and Arborizadora Alta, or alternatively to purchase a new house or existing house in the real estate market. See: Correa, E, above n 44.

3

Planned relocation as conceived in this report

The above-noted definitions and descriptions demonstrate the divergence in terminology, conceptual understanding and practice of planned relocation. Nonetheless, they also offer important insights into key elements to consider when identifying a global evidence base of planned relocation cases. Arguably, common to the terminology, descriptions and practice described in section 4 are two key elements: the relocation of people from areas of origin exposed or impacted by hazards to a destination settlement site, with the intention of such movement being long-term or permanent, so as to distinguish it from more temporary forms of movement such as evacuations.[50] In this context, for the purposes of this report, a planned relocation case is conceptualized as including *all six elements* in Table 1, left column.

The first element is concerned with the emphasis and interest in hazard-associated movements.[51] Only cases where the physical relocation of people or households was initiated predominantly in association with one or more hydrometeorological, geophysical/geological, or environmental hazard(s) are included. Cases initiated predominantly in association with technological or biological hazards, with development initiatives (including dam construction), conservation efforts or conflict are excluded. For example, 50 cases of dam related resettlement identified by Scudder and Gay were not included in this mapping.[52]

The second element relates to the focus on people. Accordingly, only cases involving the movement of people are included; cases involving only the movement of dykes, assets or buildings (schools, hospitals, government offices, graveyards), or movement of animal species for conservation purposes, are excluded. Cases in the United States of America involving only movement of public parks, for instance, were not included in the mapping.

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50 At times, however, cases of evacuation may become protracted and may lead to planned relocation.

51 This does not mean that other motivations and factors influencing planned relocation decisions, including political, economic and social factors, were not present. Indeed, many planned relocation cases identified occur in the context of other objectives including "land grabs" and "slum upgrades", alongside a hydrometeorological, geophysical or environmental hazard.

52 Scudder, T. (2005). A Comparative Survey of Dam-induced Resettlement in 50 Cases. *The Future of Large Dams: Dealing with Social, Environmental, Institutional and Political Costs.* Taylor and Francis. p. 59.

Table 1. Elements for conceptualizing planned relocation

Elements	Case included	Case not included
1. Hazard(s)	Initiated predominantly in association with one or more hydrometeorological, geophysical/geological or environmental **hazard(s)**	Initiated in association with technological or biological hazards, development projects (including dams), conservation initiatives, or conflict
2. People	The **movement of people**	The movement of only dykes, assets or buildings (schools, hospitals, government offices), or movement of animal species for conservation purposes
3. Group	A **community / group of persons**	Individuals or single households
4. Permanent	**Permanent** and long-term movement	Temporary or short-term movement, such as evacuation
5. Planned	Evidence of **initiation**, and **coordination or assistance** from a supporting actor	No evidence of initiation, and coordination or assistance from a supporting actor
6. Identifiable sites	Origin(s) and destination(s) sites are **identifiable**	Origin(s) and destination(s) sites are not identifiable

As demonstrated by the discussion on what is planned relocation, in section 2, consensus on the unit of analysis is elusive. Questions remain as to whether planned relocation cases are undertaken at the community, groups of households, single households and/or at the individual levels. For instance, the definition in Fiji's national Planned Relocation Guidelines – A Framework to Undertake Climate Change Related Relocation focuses on communities, whereas the definition developed in 2015 by international lawyers and experts, captures the individual, household, and/or community levels. Meanwhile the IPCC's definition of planned relocation in its 2019 Special Report on the Ocean and Cryosphere in a Changing Climate emphasizes small communities while also recognizing that planned relocation may involve large populations. Finally, the International Law Association and the IASC's Operational Guidelines simply refer to people. For the purposes of identifying cases in this research, the third element is concerned with capturing only those cases where there is evidence of a community/communities or group(s) of persons that have already relocated or intend to relocate; cases of an individual person or single household movement are excluded.[53]

The fourth element in the conceptualization attempts to distinguish planned relocation from evacuations that are, at least at the time of the movement, intended to be temporary. As such, only cases involving the intended permanent or long-term relocation of people are included; cases involving the intended temporary or short-term movement of people, such as evacuations, are excluded. However, cases were included when a short-term evacuation became protracted and relocation was deemed necessary, as was the case after the 1995-1997 volcanic eruption in the Caribbean British Overseas Territory of Montserrat.[54]

A fifth element seeks to capture the notion of a "planned" relocation in contrast to, for example, the uncoordinated and unsupported yet relatively simultaneous migration of many households from a given settlement of origin. As such, it involves an initiation, meaning a decision to undertake planned relocation. It

[53] The term "community" has differing meanings in different spaces: "the term community can have different connotations depending on its location. For example, a community in Alaska could refer to an entire Native village, but in the continental U.S. the word could refer to a neighborhood in a more populated area such as Miami" Government Accountability Office. (2020). A Climate Migration Pilot Program Could Enhance the Nation's Resilience and Reduce Federal Fiscal Exposure. GAO-20-488. *U.S. Government Printing Office.* 1-61.

[54] Sword-Daniels, V., et al. (2014). Consequences of long-term volcanic activity for essential services in Montserrat: challenges, adaptations and resilience. *Geological Society,* 39(1), 471-488.

also involves coordination or assistance from a supporting actor. Only cases where there is evidence that the relocation process involved initiation, as well as coordination or assistance from a supporting actor, are included; initiating and supporting actors may be members of the community itself, or members of governmental, non-governmental or intergovernmental entities.[55] Cases with no process of initiation and coordination or assistance, are excluded. For instance, the mapping does not include a case where households simultaneously moved in the context of sea level rise from Nuatambu to varied existing and new sites across Solomon Islands, with no evidence of coordination, let alone financial or other assistance from a supporting actor.[56]

Finally, the sixth element concerns the spatial dimension. Only cases where there is evidence that the relocation process has identifiable origin(s) and destination(s) sites are included; cases where the origin and/or destination sites are not identifiable are excluded. Therefore, cases where individual households are offered buy-outs but do not relocate to an identifiable destination site, such as the flood-affected households in the Eferding Basin of Austria[57] or the landslide-affected households in Cochabamba, Bolivia,[58] are not included.

From the above-noted elements, a description of planned relocation which has become the conceptualization used in this research, is: *the planned, permanent movement of a group of people from identifiable origin(s) to identifiable destination(s), predominantly in association with one or more hydrometeorological, geophysical/geological, or environmental hazard(s).* This conceptualization has informed, and has been informed by, the methodology for this research, which is described in the next section.

55 An initiating actor may also provide support during the relocation process; this means that the actor who initiates the relocation may also be a supporting actor in that they provide assistance or coordinate the planned relocation process. For instance, an indigenous chief of a community may both initiate the relocation process and support its implementation through land identification and coordination with external stakeholders. See also the conceptual model introduced by Hino et al. (2017), where supporting actors play implementing or enabling roles to ensure that a planned relocation of a community occurs. Note that this conceptual model also applies to other forms of managed retreat, including household buy-outs Hino, M., Field, C. B., & Mach, K. J., above n 6.

56 Simon, A, et al. (2018). "Heading for the hills: climate-driven community relocations in the Solomon Islands and Alaska provide insight for a 1.5 C future." *Regional environmental change* 18(8), 2261-2272.

57 Thaler, T., & Fuchs, S. (2020). Financial recovery schemes in Austria: How planned relocation is used as an answer to future flood events. *Environmental Hazards*, 19(3), 268-284.

58 Gemma Sou. (2015). Post-Disaster Resettlement in Urban Bolivia *Forced Migration Review* (49), 33-34.

4

Methodology

As noted in section 1, the objective of this report was to produce two key outputs related to building a global evidence base of planned relocation cases. Correspondingly, the methodology spanned two distinct phases:

1) Compilation of a preliminary global dataset through identification and screening of cases documented in English-language academic or grey literature; and

2) In-depth review of a selected subset of cases for identifying and analyzing relocation context and design characteristics.

The methodology used in this research was refined through the iterative process of drafting a working paper for the KNOMAD Thematic Working Group on Environmental Change and Migration, which featured a pilot analysis of six flood-related case studies.[59]

4.1

PHASE 1: COMPILING A PRELIMINARY GLOBAL DATASET

While some prior efforts to consolidate evidence on planned relocation cases were relevant to this exercise, a comprehensive and up-to-date database does not exist. The methods for this pilot study adapted approaches similar to previous comparative work on planned relocation cases, including Campbell (2005), Hino et al (2017), and Piggott-McKellar et al (2019).

The first phase began with efforts to identify cases from English-language peer-reviewed scholarly or grey literature.[60] These searches to identify planned relocation cases were undertaken between June and September 2020. Therefore, cases discussed only in papers published after September 2020 are not included in this database.

[59] Weerasinghe, S and Bower, E. (forthcoming). Mapping Characteristics of Planned Relocation: Piloting a Methodology through Analysis of Six Flood-related Case Studies.

[60] For the purposes of this report, grey literature means documents produced by governmental, non-governmental, inter-governmental, and other actors for whom publishing may not be the primary function, and that are not necessarily peer-reviewed. Examples of such documents include white papers, technical reports, and government or community led plans.

These included:

- Examination of references cited in relevant papers, such as:
  - A number of academic publications that compiled relatively small numbers of planned relocation cases in disaster contexts;[61]
  - An annotated bibliography of planned relocation cases compiled by the Brookings Institution,[62] and an updated version compiled by Georgetown University;[63]
  - Guidance on Protecting People from Disasters and Environmental Change through Planned Relocation and A Toolbox: Planning Relocations to Protect People from Disasters and Environmental Change;[64] and
  - Background and outcome papers from planned relocation expert meetings.[65]
- Targeted searches using search terms "Relocation" or "Managed Retreat" or "Resettlement" in publicly available databases of articles on human mobility related to environment, disaster, or climate impacts. These databases were:
  - International Organization for Migration (IOM)'s Environmental Migration Portal;
  - University of Neuchâtel's CLIMIG database;
  - Colorado University Boulder's Natural Hazards Center; and
  - The Consensus Building Initiative's Immigration Network.
- Broader searches of literature in Elsevier's SCOPUS database, for relevant search terms of ("Relocation" or "Managed Retreat" or "Resettlement") and ("Disaster" or "Hazard" or "Climate" or "Environment") in the abstract, title or keywords.

As each potential case was identified, it was screened to ensure that it met the minimum criteria across the six elements set out in Table 1 (see discussion in previous section). In addition, only cases initiated after 1970 were included; cases initiated before 1970 were excluded to constrain the sample to more contemporary practice. Further, only cases on the physical movement of people within a country's borders were included; cases on the movement of people across borders were excluded from this mapping.[66]

All identified planned relocation cases that satisfied the six conceptualization criteria were compiled. Through this identification and screening process, 308 planned relocation cases were identified in a preliminary global dataset. The findings from these cases are analyzed in section 5. The dataset available as a companion to this report from the PDD website features all these cases, and includes information on geographic, spatial, status and hazard-related characteristics (as applicable and available). These include: the associated hazard(s), region, country, specific location(s) of the site of origin, specific location(s) of the site of destination, whether or not the relocation is ongoing or completed at the time the source literature was published, and a primary source. Some of the above-mentioned characteristics are marked as "unknown" because many of the cases were only briefly referenced in the literature with insufficient detail and description

61 Hino, M., Field, C. B., & Mach, K. J.; above n 6. Piggott-McKellar, A. E., Pearson, J., McNamara, K. E., & Nunn, P. D., above n 6; Campbell, J. R., Goldsmith, M., & Koshy, K. above n 6; Dannenberg, A. L., Frumkin, H., Hess, J. J., & Ebi, K. L., above n 6.

62 Petz, D. (2015). Planned relocations in the context of natural disasters and climate change: a review of the literature. *Brookings Institution*. 1-30.

63 Benton, G. (2017). Planned Relocations: Annotated Bibliography Update, *Georgetown University.* 1–15.

64 UNHCR, Brookings Institution, & Georgetown University., above n 4; UNHCR, Georgetown, & IOM., above n 4.

65 Weerasinghe, S., above n 4; Ferris, F., above n 4; KNOMAD (2018). Regional Workshop on Planned Relocations to protect persons from disasters and environmental change in the Latin American context. *KNOMAD Thematic Working Group on Environmental Change and Migration.*

66 Cross-border planned relocation cases that take place in the context of disasters or climate change are outside the scope of this report and are at present absent in accessible literature. This may be an important area for future attention, particularly in the context of sea level rise affecting island nations. As noted earlier, one case of cross-border relocation was identified in the literature review (a potential ongoing case involving the Government of Kiribati purchasing land in Fiji), but this was not included in the global dataset for the reasons detailed in above n 17.

to gather critical insights. Corresponding sources were also cited. If a given case was discussed in multiple articles, all relevant sources were listed.[67] If an article discussed multiple planned relocation cases, the article is listed as a source for each relevant case.

4.2

PHASE 2: DETAILED MAPPING OF CHARACTERISTICS OF SELECTED CASES

During the second phase, context and design characteristics of a subset of the planned relocation cases identified in phase one were analyzed further. To determine which cases to include in this deeper analysis, additional screening criteria were used, namely the quality of the information in the source literature and the spatial pattern of the planned relocation case.

As mentioned above, the cases identified in the global dataset have varying levels of information dependent on the quality of the source. For each case, the most comprehensive article was identified based on the depth of detail in the article and the research methods employed. Specifically, on the methods, only articles that employed primary interviews or surveys with key stakeholders were selected, even if the exact number, structure and approach to interviews and surveys differed. The methods employed by the identified articles vary on structure from standardized surveys to semi-structured interviews; on the number and format of participant interviews from focus groups to individual interviews; and on the selection of key stakeholders from persons who were relocated to governmental and non-governmental supporting actors. The emphasis on primary interviews and surveys was to ensure that some perspectives from key stakeholders were captured in the analysis rather than perceptions gathered simply through the review of secondary material. Cases were then selected based on which articles were subjectively rated as including sufficient levels of detail on codebook characteristics (see discussion below). Thus, only cases where information could be gathered from the one primary article for a majority of characteristics as noted in the codebook were included; cases with insufficient information were excluded for the purposes of this deeper analysis under phase two.

A codebook was developed to capture key contextual and design aspects of a planned relocation process. The codebook questions are presented in Table 2. These context and design characteristics were drawn largely from A Toolbox: Planning for Relocations to Protect People from Disasters and Environmental Change,[68] and relevant theoretical frameworks.[69] The codebook was refined through pilot analysis undertaken for the KNOMAD Thematic Working Group on Environmental Change and Migration, and also verified by experts in the Mapping Planned Relocation Project Reference Group.[70] In addition to the information on geographic, spatial, status and hazard-related basic characteristics, the codebook questions aim to capture the following context characteristics: approximate year the need for relocation was identified; approximate year of completion of physical move; number of people/households; indigenous or not; rural or urban; and whether or not relocation took place after displacement. It also captures characteristics of the relocation design: initiating and supporting actor(s); assessments at site of origin and site of destination; participation

67 Cases that had the highest numbers of sources included relocations after a volcanic eruption in Merapi Indonesia, flooding of the Zambezi in Mozambique and of the Mekong delta in Vietnam, tsunami in many countries adjacent to the Indian Ocean, and coastal erosion in Fiji and Alaska.

68 See the toolbox discussed in UNHCR, Georgetown, & IOM., above n 4. This toolbox was developed by experts at Georgetown University, UNHCR, and IOM in close cooperation with the World Bank and United Nations University, and seeks to provide concrete suggestions for States and other actors who are considering relocation of people in order to protect them from disasters and climate change.

69 Including Oliver-Smith's application to disaster contexts of Scudder's model of Development Induced Displacement and Resettlement (Oliver-Smith, A., above n 41), and McAdam and Ferris' (McAdam J., & Ferris E., above n 31) and Ferris and Weerasinghe's (Ferris, E., & Weerasinghe, S., above n 1) human rights and human security centric approaches.

70 Weerasinghe, S., and Bower, E. (forthcoming)., above n 59. See also acknowledgements for this report's reference group.

Table 2. Codebook questions

Question
Context Characteristics (see Annex A)
What is the country of the site of origin in the planned relocation case?
What is the province/State of the site of origin in the planned relocation case?
What is the exact location of the site of origin in the planned relocation case?
What is the location of the destination settlement site in the planned relocation case?[71]
Which hazard(s) is the planned relocation initiated in anticipation of/reaction to?
What is the approximate physical distance (in km) between the site of origin and the site of destination?
In approximately what year was the need for planned relocation first identified?
In approximately what year was the physical relocation to the settlement site completed for the majority of households?
Approximately how many households (people) have relocated, or are identified for relocation?
Does the relocating community identify as part of an indigenous tribe or community?
Does the relocating community identify as rural or urban?
Was the planned relocation initiated after displacement?
Relocation Design Characteristics (see Annex B)
Which actor(s) initiated the planned relocation?
Which actor(s) supported the planned relocation, including through funding?
Is there evidence of at least one formal assessment (related to environmental impact, costs and benefits for people) of the: 1) location of origin to determine the need for the planned relocation; and/or 2) the settlement site to determine suitability for relocation?
Is there evidence to suggest that affected communities participated during the relocation process?
Is there a domestic legal or policy framework applicable or relevant to relocation?
Is there evidence to suggest that similar livelihood opportunities exist in the site of origin and in destination?
What challenges have been identified during the relocation process or in the settlement site?
Methodology (see Annex C)
Key Source
Data Collection Methods Employed by Key Source

mechanisms; legal and policy frameworks; livelihood opportunities; and challenges. For the answers to the codebook questions, as well as methodological caveats, see Annex D.

As mentioned in section 2, the dynamics of a planned relocation case with multiple origins and/or destinations (types B, C and D) are fundamentally different from a case with a single origin and single destination (type A). A number of characteristics – including distances between sites, the roles of various actors, assessments, participation of communities of origin, legal and policy frameworks, among others – are complicated and difficult to assess.

As this methodology was refined in an iterative process, it became apparent that it was most critical to focus first on cases that follow the type A path from single origin to destination as a foundation for future inquiry. This was because the type A spatial pattern was the most prevalent in the literature. In addition, the methodology and the codebook for this report was developed with case type A in mind. It was only through the review of an extensive body of literature that the typology presented in section 2 emerged. Therefore, only cases that follow pattern A are included in the subset of cases analyzed under phase two; cases that

follow patterns B-D are nonetheless included in the global dataset noted under phase one.[71]

A total of 34 type A cases with sufficient information for coding were identified for the detailed mapping of characteristics. The findings from these cases are found in section 6, and summarized in Annex A-B. A single comprehensive article was used as the primary basis to respond to codebook questions (see Annex C). This primary article was selected from among the handful of articles identified pursuant to phase one (above). For each selected case, the single comprehensive article was reviewed by two researchers, who then triangulated their understanding to code characteristics in the codebook. To the extent necessary and where possible, supplementary information was identified to code the characteristics that were otherwise hard to capture or could not be gleaned from the comprehensive article. The cases for which additional information beyond that gathered through the comprehensive article was adduced are noted in Annex C.

4.3 LIMITATIONS

The cases identified in the global dataset (phase one) and in the detailed mapping (phase two) are not a representative random sample, and thus comparative insights should not be extrapolated to all planned relocation cases. By consulting only literature published in English, findings of this report reflect a bias towards research in English-speaking countries, and particularly the United States of America.[72] Research to be undertaken by IOM in support of the PDD Workplan 2019-2022 and the Plan of Action 2019-2021 of the TFD under UNFCCC, applying the methodology developed in this report to identify planned relocation cases in Spanish and French language literature, may ameliorate some of the geographic bias.

Similarly, the emphasis in phase two on comprehensive articles that included information on a specific set of planned relocation characteristics and also employed interview or survey research methods, may also produce a bias towards better resourced researchers and institutions, as well as the communities and hazard events of interest to those actors. Given that the methods employed focus on publicly available documents, there may also be limitations in the literature reviewed. This may include that researchers did not have access to internal government documents on planned relocation processes.

Furthermore, the approach to coding focused on identifying the presence or absence of a given relocation feature (e.g., the existence of an assessment, community participation mechanism, a legal or policy framework etc.), rather than a judgement on the quality of that feature. Further analysis is needed to assess the robustness and contributions of such policies, assessments and participation mechanisms, among other characteristics. Finally, a comprehensive literature review was not conducted for each case, and instead the approach to coding relied upon one (and at times two) scholarly or grey publication(s) per case. The approach to inclusion of additional information beyond the primary source varied by case; in some instances, the ability to obtain additional information arose due to personal contacts with relevant researchers or resource people. In other instances, a secondary article was consulted to fill notable gaps in coding. This approach further implies that information noted per case reflects circumstances at the time each respective primary source publication was written and may not reflect the status of the case at the end of 2020. It may also reflect where, and for what purpose, the primary source articles were published.

71 It is proposed that in the future case types B-D may be the subject of deeper analysis in line with appropriately modified methodologies and codebooks.

72 For example, 35 cases in Peru were not included as the relevant document was in Spanish.

5

Findings from the global dataset

This section presents key findings related to the global dataset of planned relocation cases. A total of 308 planned relocation cases were identified from English-language peer-reviewed scholarly articles and grey literature.[73] Findings associated with these cases are discussed and analyzed based on geography, spatial patterns, hazard(s) and status while implications stemming from these findings are discussed in section 7. The findings presented in this section are not exhaustive. Rather, they aim to provide an overview of high-level insights, and establish a foundation for further work. For this purpose, a mapping of basic characteristics applicable to each of the 308 cases are provided in the accompanying dataset available from the PDD website.

5.1

WHERE ARE THE IDENTIFIED PLANNED RELOCATION CASES?

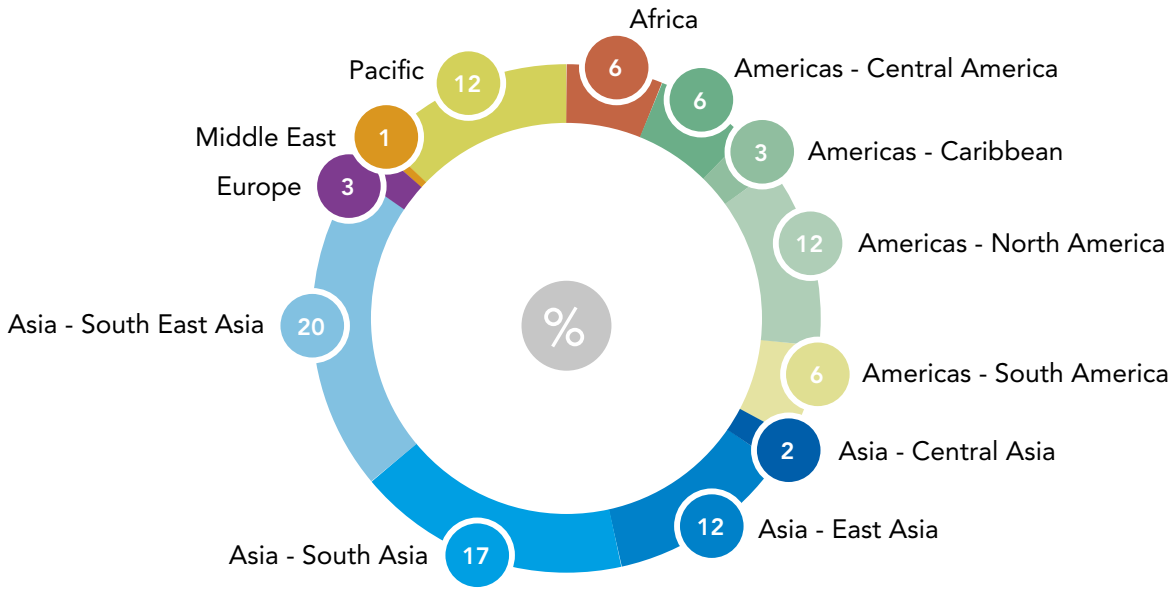
Planned relocation is a global phenomenon. The 308 planned relocation cases identified occur in 60 countries and territories.[74] As illustrated in Figure 2, identified cases span all inhabited regions, including Asia (160), the Americas (81), the Pacific (36), Africa (19), Europe (9) and the Middle East (3).[75] While cases exist across every continent, approximately half are in Asia, with the highest numbers in South East Asia (63 cases), South Asia (54 cases), and East Asia (37 cases). The Pacific region has the same number of cases as East Asia. Annex E provides a breakdown of countries by region and sub-region.

73 As explained in the limitations (section 7), these global results must be recognized as a first and preliminary effort to gather information on planned relocation cases across the world. The methods used - of examining English-language scholarly and grey literature - were the most feasible and viable for the purposes of this research at the present point in time (late 2020). Yet this method also reflects biases, which imply that not all planned relocation cases as conceptualized in this report may have been captured. Beyond the language limitation, many cases of planned relocation, including in poorly resourced or under-researched settings may not have been captured in scholarly or grey literature.

74 Montserrat is a British Overseas Territory in the Caribbean, which is identified as part of the corresponding sub-region of the Americas for the purposes of this report.

75 Refer to Annex E for a list of which countries fall under each region, for the purposes of this report.

Figure 2. Geographic distribution of identified cases, by region



For some countries, relatively high numbers of planned relocation cases were identified, as Figure 3 demonstrates. The highest number of planned relocation cases are found in the following countries, listed in descending order: The United States of America (36), the Philippines (29), India (22), Sri Lanka (19), China (17), Indonesia (17), Vietnam (17), Fiji (15), Japan (15) and Colombia (8). With the exception of the United States of America, Colombia and Fiji, all the countries with the highest numbers of identified planned relocation cases are in Asia.

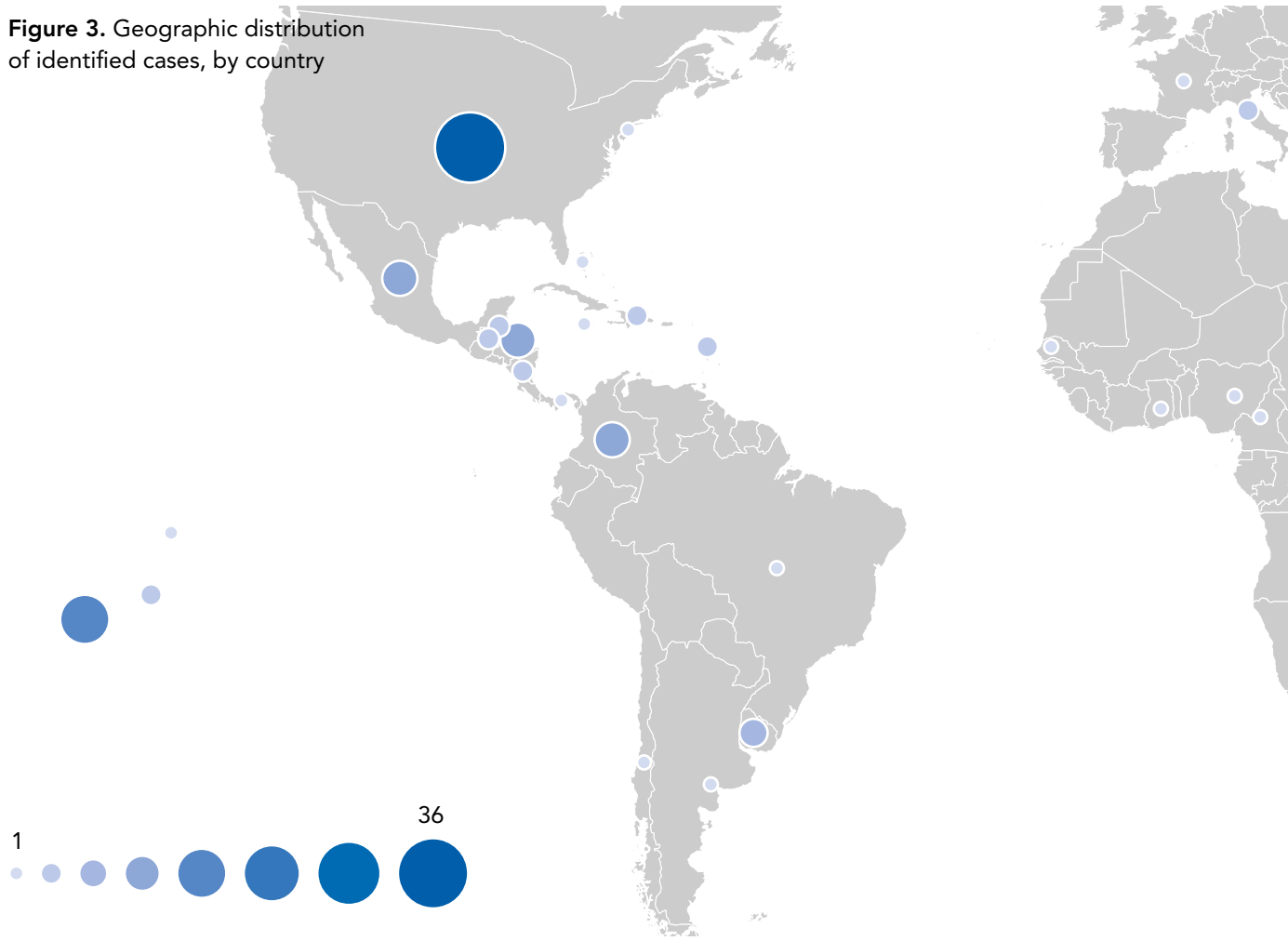
5.2

WHAT ARE THE SPATIAL PATTERNS OF IDENTIFIED PLANNED RELOCATION CASES?

The most common spatial pattern in the cases identified involves a single origin and a single destination site, or cases that reflect pattern type A. As seen in Figure 4, 163, or approximately half of identified cases, fall within this configuration. A further 56 of identified cases (18 per cent) have multiple origins and a single destination and reflect pattern type B, while 49 cases (16 per cent) have multiple origins and multiple destinations and reflect pattern type D. The single origin to multiple destination cases (pattern type C) are the least common among the four, representing 21 cases or seven per cent of the total identified. For 19 cases, the spatial pattern was unknown.[76]

[76] This includes those that may be multiple type A cases, but where the exact sites of origin and destination per case is unknown.

Figure 3. Geographic distribution of identified cases, by country



5.3

WHICH HAZARDS DROVE IDENTIFIED PLANNED RELOCATION CASES?

Many planned relocation cases are taking place in multi-hazard contexts (see Annex F on definitions). In cases where one hazard is described as the proximate or dominant trigger influencing the decision to undertake relocation, other hazards are often also mentioned in the literature.[77] These other hazards may occur before, after or alongside one another, and the combined harms or risks led to the need for relocation.

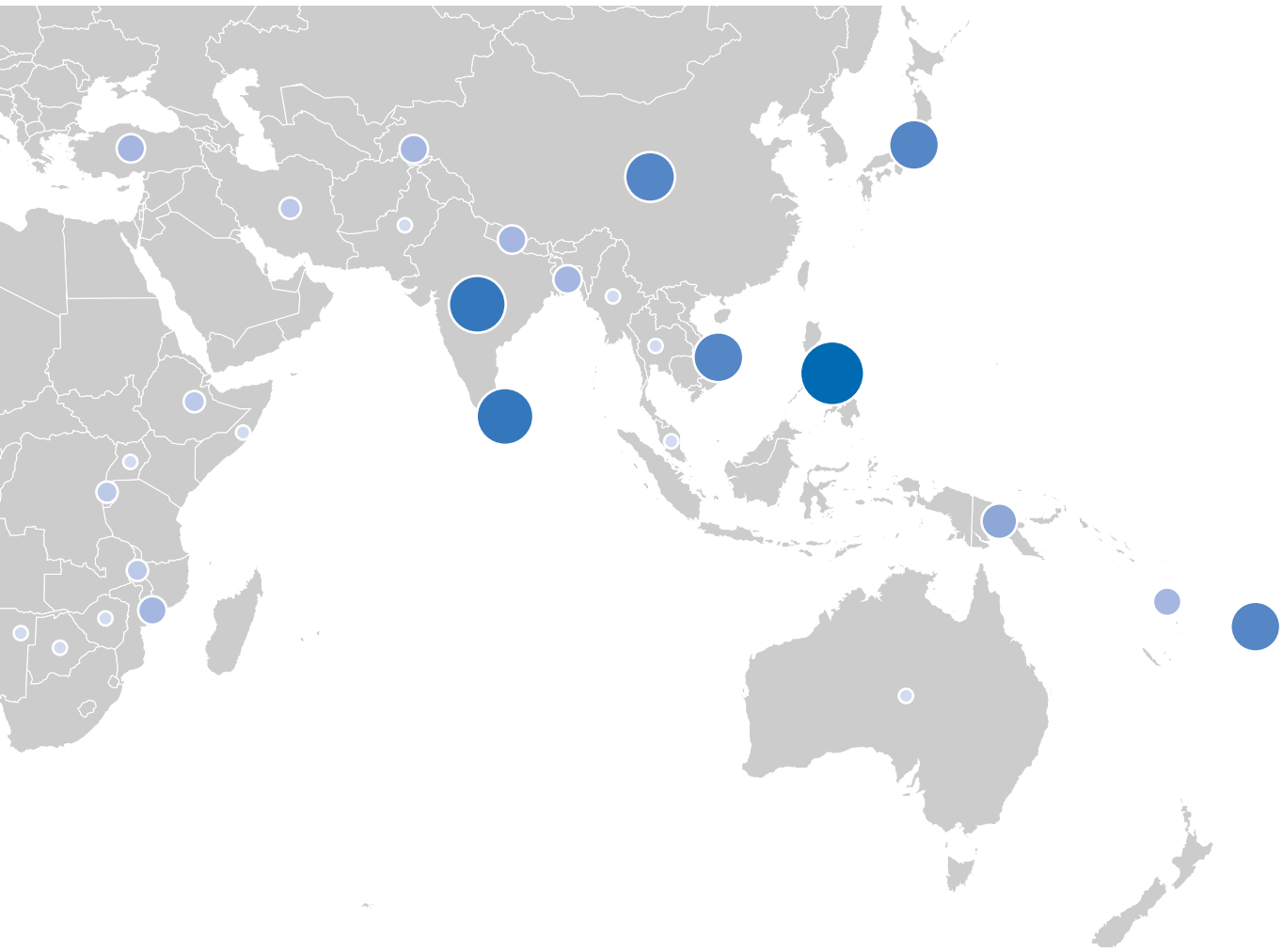
The hazards most commonly associated with the identified planned relocation cases are: floods (90 cases),[78] tsunamis (60 cases),[79] storms (57 cases), erosion (37 cases),[80] earthquakes (26 cases) and landslides (26 cases). Droughts were linked to nine cases. Sea level rise was noted in at least 22, most often for cases initiated in anticipation of future risk.

77 This is not to say that other non-hazard drivers are irrelevant. On the contrary, in many cases, socio-economic and political factors were also relevant to the decisions to relocate.

78 This includes riverine (fluvial) floods, coastal floods, flash floods and lake floods.

79 The 2004 Indian Ocean tsunami was the hazard event associated with the largest number of identified planned relocation cases (38), spanning across five countries: India, Indonesia, the Maldives, Sri Lanka and Thailand. These are only the cases identified in the literature, not necessarily all the cases of planned relocation that were undertaken after the hazard event.

80 This includes coastal and riverbank erosion.

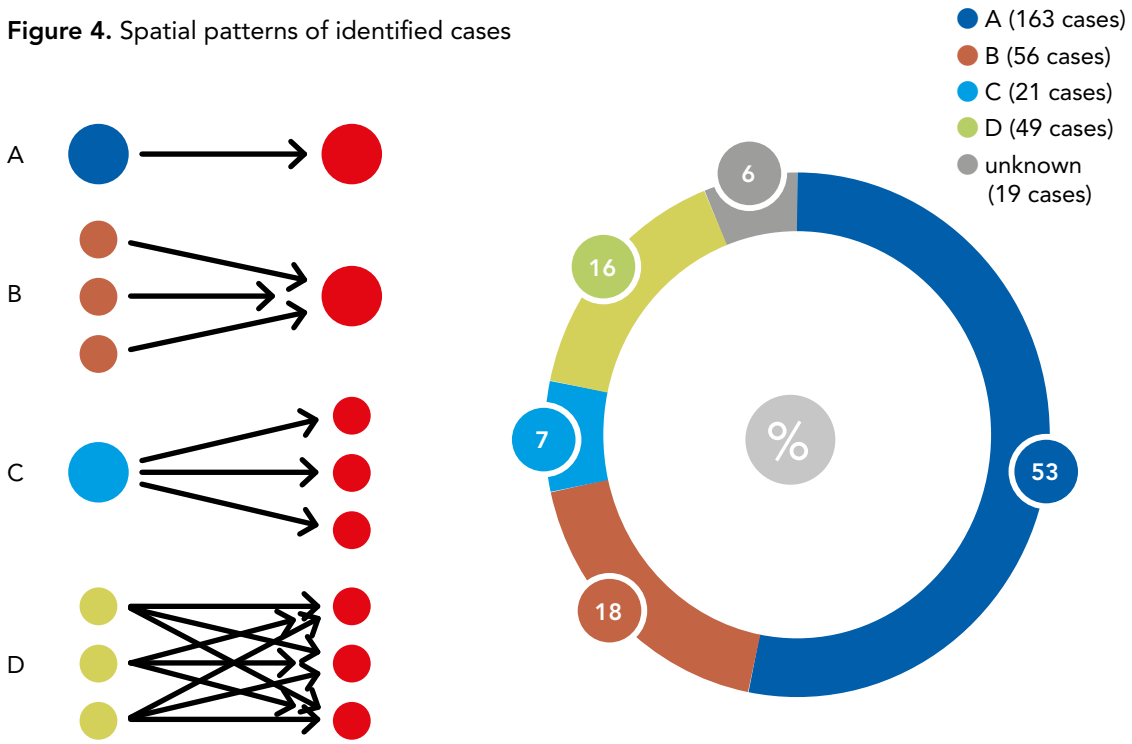


Approximately 219 or 70 per cent of the cases identified were initiated in association with one or more hydrometeorological hazards that are known to be increasing in intensity and frequency in the context of climate change (such as floods, storms, droughts), or with slow-onset environmental hazards also known to be affected adversely by climate change (such as sea level rise, coastal erosion and water scarcity).[81] Of the 308 cases identified, about 97 were initiated in association *only* with earthquakes, tsunamis, volcanic eruptions, or other geophysical hazards. In other words, in 30 per cent of the cases, a climate-related hydrometeorological or environmental hazard was not mentioned in the literature, whereas in the other 70 per cent of the cases, at least one climate-related hydrometeorological or environmental hazard was mentioned in the literature, even if non-climate related geophysical hazards also influenced the decision to relocate.[82]

81 The sources for some cases explicitly link a given hazard in a specific location to climate change, while other sources do not. It was not possible to confirm whether the authors of each source had examined scientific evidence on attribution to climate change for the relevant case. Consequently, the hazards associated with each relocation case are identified and categorized as potentially climate-related or not given IPCC confidence in attribution to climate change for the broad hazard category (not the specific event). For further discussion on attribution to climate change, see: Field, C. B. (Ed.). (2014). *Climate change 2014–Impacts, adaptation and vulnerability: Regional aspects.* Cambridge University Press. p. 7.

82 For instance, a number of cases were initiated in relation to a tsunami (triggered by an underwater earthquake), in addition to coastal hazards of floods, storms or sea level rise. In this multi-hazard context, the case would be coded as climate-related.

Figure 4. Spatial patterns of identified cases



5.4

WHEN WERE IDENTIFIED PLANNED RELOCATION CASES INITIATED, AND HOW MANY ARE ONGOING?

While the database includes cases initiated after 1970, most planned relocation cases identified were initiated after 2000. There is a notable increase in the number of cases in 2004, as large numbers of planned relocation cases took place in reaction to the unprecedented displacement associated with the December 2004 Indian Ocean tsunami. Of the 308 identified cases, 240, or around three quarters, have been completed, meaning that the physical relocation to the new settlement site(s) had taken place for a majority of households. Approximately one quarter, or 68, of the identified cases were classified as ongoing, as the physical relocation had not taken place for the majority of households at the time of the primary source publication.

6

Findings from the mapping of detailed characteristics

While the previous section provided a macro scale overview of global insights, this section provides a more in-depth analysis of a subset of 34 cases. As described in section 4 on methods, these cases have single origin and single destination sites and fall within type A cases. Type A cases comprised more than half of the global dataset of planned cases identified through this research (163 out of 308), however, detailed information was available for only 34 cases. Drawing on the information presented in Annex A-B, the discussion that follows synthesizes key observations on context and design characteristics across the 34 cases on which sufficient information was available. In Annex A-B, the 34 cases are ordered alphabetically by country, and then chronologically by the year of completion. Implications stemming from these observations are discussed in section 7.

6.1

LOCATIONS

The 34 type A cases included in this detailed analysis span the Pacific, the Americas, Asia and Africa. Ten cases are in the United States of America, including in the coastal states of Alaska, Washington and Louisiana, and mid-western flood-affected states of Illinois, Wisconsin and Missouri. Fiji is the country with the second highest number of cases, followed by Colombia.

6.2

ASSOCIATED HAZARD(S)

As noted in section 5, most identified cases of planned relocation occur in the context of multiple hazards. For example, in El Choncho, Colombia, the relocation was initiated because of coastal floods and coastal erosion, accelerated in the context of an earthquake, land subsidence and sea level rise.[83] Of the

[83] Correa, I. D., & Gonzalez, J. L. (2000). Coastal erosion and village relocation: a Colombian case study. *Ocean & Coastal Management*, 43(1), 51-64.

34 type A cases analyzed in more depth, 25 were initiated in association with at least one climate-related hazard that was either hydrometeorological, such as floods or storms, or environmental, such as erosion or sea level rise. Nine cases were initiated only in relation to geophysical hazards, such as volcanic eruptions or earthquakes.

6.3 DISPLACEMENT

Eighteen of the 34 cases were carried out after community members were already displaced from their homes following a hazard event. Households often stayed in shelters or other transitional arrangements until the new site was built. In these cases, rebuilding in situ was not possible or desirable, if it was considered at all, and relocation to a new site was determined to be necessary by the community or relevant authorities to resolve displacement. Even in these reactive contexts, some of these decisions were also influenced by future risks associated with hazards. In contrast, 14 planned relocation cases did not occur after community members were displaced, and instead were initiated in anticipation of risks. The circumstances were unclear for two cases.

6.4 DISTANCE FROM ORIGIN TO DESTINATION

The distance from the site of origin to the site of destination ranged from 200 meters (Grantham, Australia) to approximately 64 kilometers[84] (Isle de Jean Charles, United States of America).[85] As Figure 5 demonstrates, all cases other than Isle de Jean Charles in the United States of America spanned distances from origin site to destination site that were less than 20 kilometers, and for 15 cases the distance was in fact less than two kilometers.[86] It was not possible to determine this information for two cases. In this limited set of cases, those that are categorized as ongoing, indicated in red in Figure 5, span farther distances between origin and destination sites than completed cases.

6.5 NUMBER OF HOUSEHOLDS

The number of households ranged from four (Vunisavisavi village, Fiji) to 1000 (Gramalote, Colombia). The majority of cases analyzed involve less than 250 households, and many are in fact far smaller. Figure 6 depicts the number of households relocated for completed cases in blue; it is generally easier to ascertain these figures once the physical relocation has been completed. The red cases in Figure 6 represent the expected number of households to be relocated in the cases that are categorized as ongoing. Figure 6 also includes cases where the number of people have been reported but not households, or where the population is unknown. In general, the type A cases analyzed in this section concern relatively small numbers of households compared to the cases featured in the global dataset. For example, some type D cases involve hundreds of thousands of people.[87]

84 For context, 1 kilometer is approximately 0.63 miles. Therefore, this distance is approximately 40 miles.

85 Other cases identified in the global mapping involved even greater distances, although distances were more challenging to calculate when a relocation process involves multiple origins or destinations. For instance, the distance from the six low-lying Carteret Islands (Han, Huene, Iangain, Yesila, Yolasa, Piul) to the relocation site in Woroav village of Bougainville in Papua New Guinea is approximately 84 kilometers (type B case).

86 If the status of a case was categorized as ongoing, rather than completed, the prospective location site under construction was used for the purposes of this analysis.

87 For instance, drought and the intention to avoid famine in northern Ethiopia (Wollo and Tigray) prompted the government to relocate approximately 600,000 people to six settlement sites between 1984 and 1988. See: Gebre, Y. (2003). Resettlement and the unnoticed losers: Impoverishment disasters among the Gumz in Ethiopia. *Human Organization,* 62(1), 50-61.

Figure 5. Distance between origin and destination sites (in kilometers)

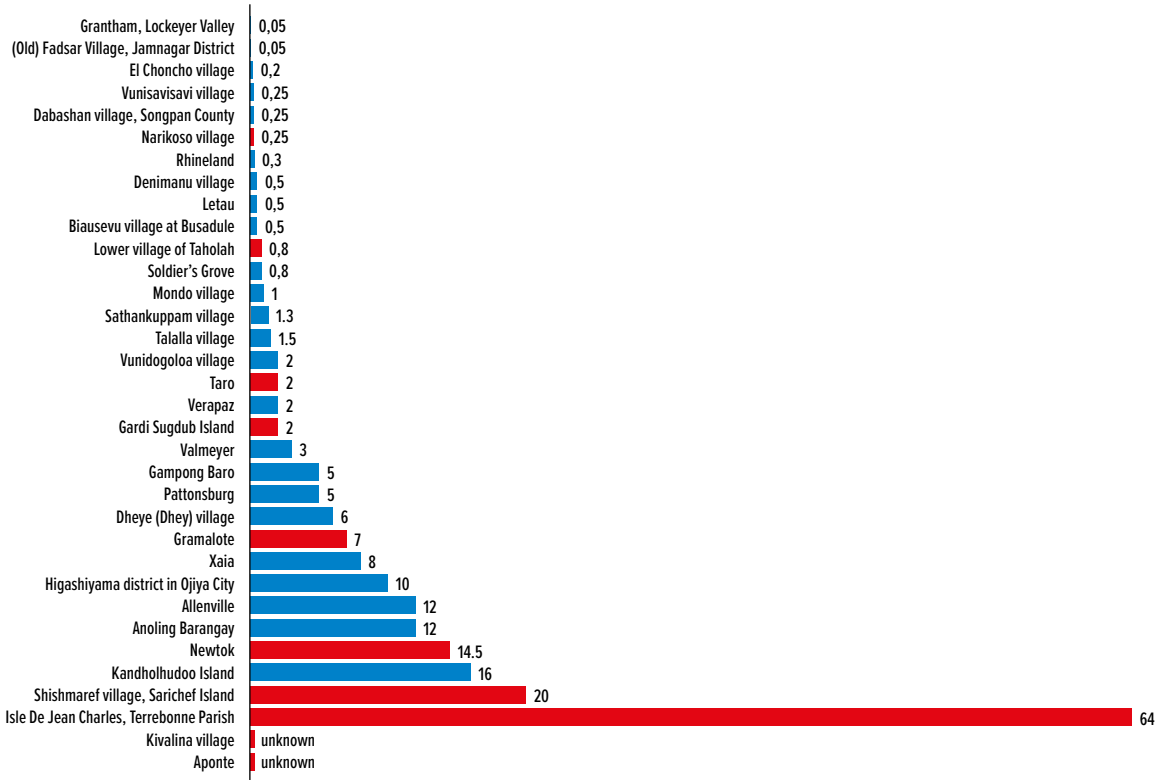
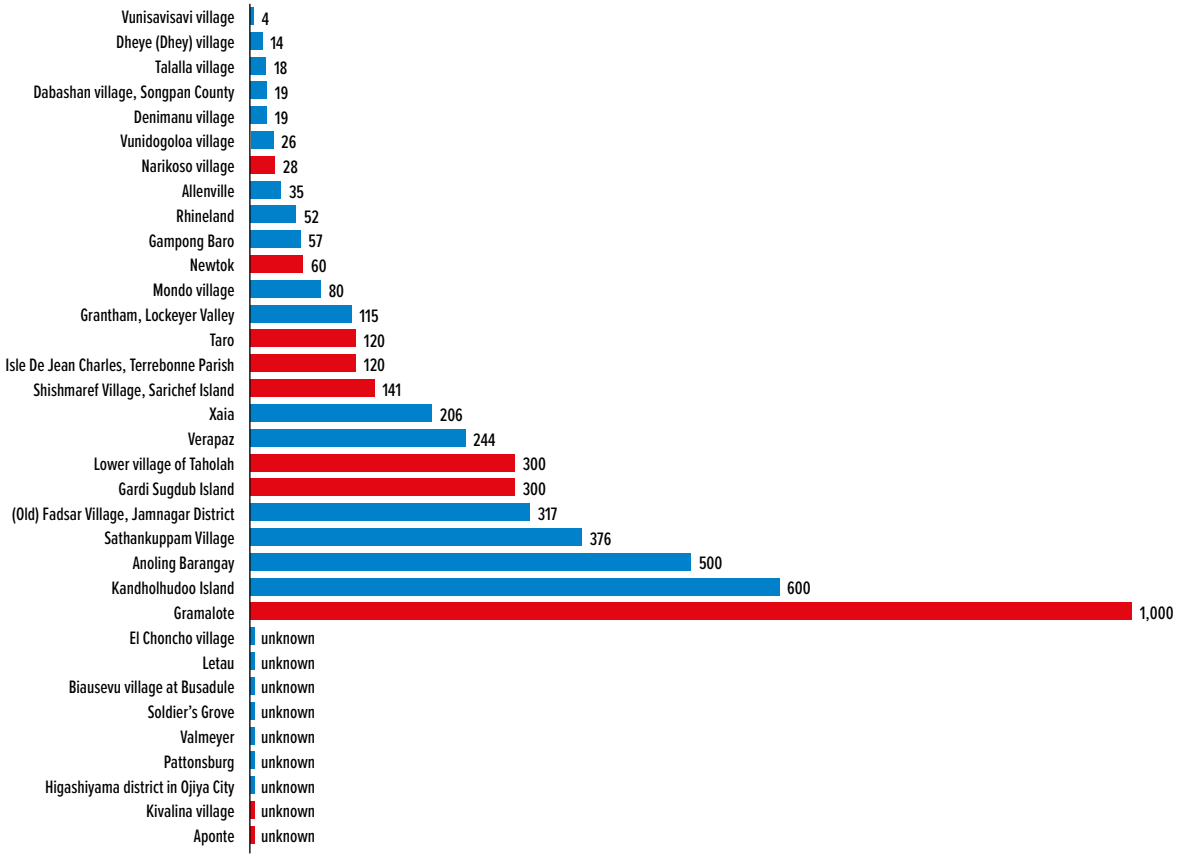


Figure 6. Number of households relocated, or identified for relocation to the new site, in single origin - single destination cases



6.6

DURATION OF THE PROCESS

As shown in Figure 7, for completed cases, the time between identification of the need for planned relocation (year of initiation) and the physical relocation of the majority of households to the settlement site (year of completion) ranged from approximately one to two years (Denimanu, Fiji) to eight years (Vunidogoloa, Fiji; Soldier's Grove, United States of America; and Letau, Vanuatu). For some cases, these years were not identifiable. In many of the ongoing cases (in red), the process has taken decades, as is the case in Shishmaref, Alaska which first initiated their relocation process in 1976.[88]

6.7

INDIGENOUS GROUPS

Almost half of the cases analyzed in this section, 16 out of 34, involve communities that identify as indigenous.[89] Indigenous communities may be over-represented in the type A pattern of single origin to single destination, as retaining community cohesion, traditions and cultures of the group in a new site may be particularly important. The other 18 planned relocation cases involve groups of households that do not identify as indigenous.

6.8

RURAL OR URBAN

The sites of both origin and destination for nearly all the 34 planned relocation cases were rural. This is perhaps a result of the focus on single origin and single destination type A cases, as in urban areas, cases with multiple origins and destinations are more common.[90] However, interestingly, two cases involved the relocation of households from rural to urban areas: from a remote location to the flatlands in Ojiya City in Japan,[91] and from the remote village of Dabashan to the capital of Songpan in China.[92]

6.9

INITIATING ACTOR(S) & SUPPORTING ACTOR(S)

In 17 of the 34 cases, actors from within the relocating community or group were identified as responsible for the decision to initiate planned relocation. In some instances, village leaders or elders played a leading role, while in other cases, specific bodies or committees were more active. In another four cases, community members were identified as initiating the decision to undertake planned relocation in association with other stakeholders, suggesting some level of joint decision making regarding the decision to move. For instance, in the case of Gampong Baro, Indonesia, community members collaborated with an NGO to initiate planned relocation.[93] In 14 cases, government actors were recognized as the initiating actors with a small minority of these cases initiated

88 Simon, A. et al. above n 56.

89 Concepts of indigeneity vary by country, depending on colonial, political and other historical factors; in the United States of America the concept refers to "Indian Nations" recognized at federal or state levels, while in Vietnam refers to Dao ethnic minority. In El Concho village, the relocating community was described as mixed "Indians" and "Blacks".

90 For instance, after Typhoon Haiyan struck the city of Tacloban in the Philippines, planned relocations often had multiple origins and/or destinations, following spatial patterns B, C and D. See Palagi, S., & Javernick-Will, A., above n 5.

91 Iuchi, K. (2014). Planning resettlement after disasters. *Journal of the American Planning Association,* 80(4), 413-425.

92 Xu, Yun, et al. (2020). Disaster risk management models for rural relocation communities of mountainous southwestern China under the stress of geological disasters. *International Journal of Disaster Risk Reduction,* 50, 1-14.

93 Sina, D., Chang-Richards, A. Y., Wilkinson, S., & Potangaroa, R. (2019). What does the future hold for relocated communities post-disaster? Factors affecting livelihood resilience. *International Journal of Disaster Risk Reduction,* 34, 173-183.

Figure 7. Year of initiation and year of completion in single origin - single destination cases

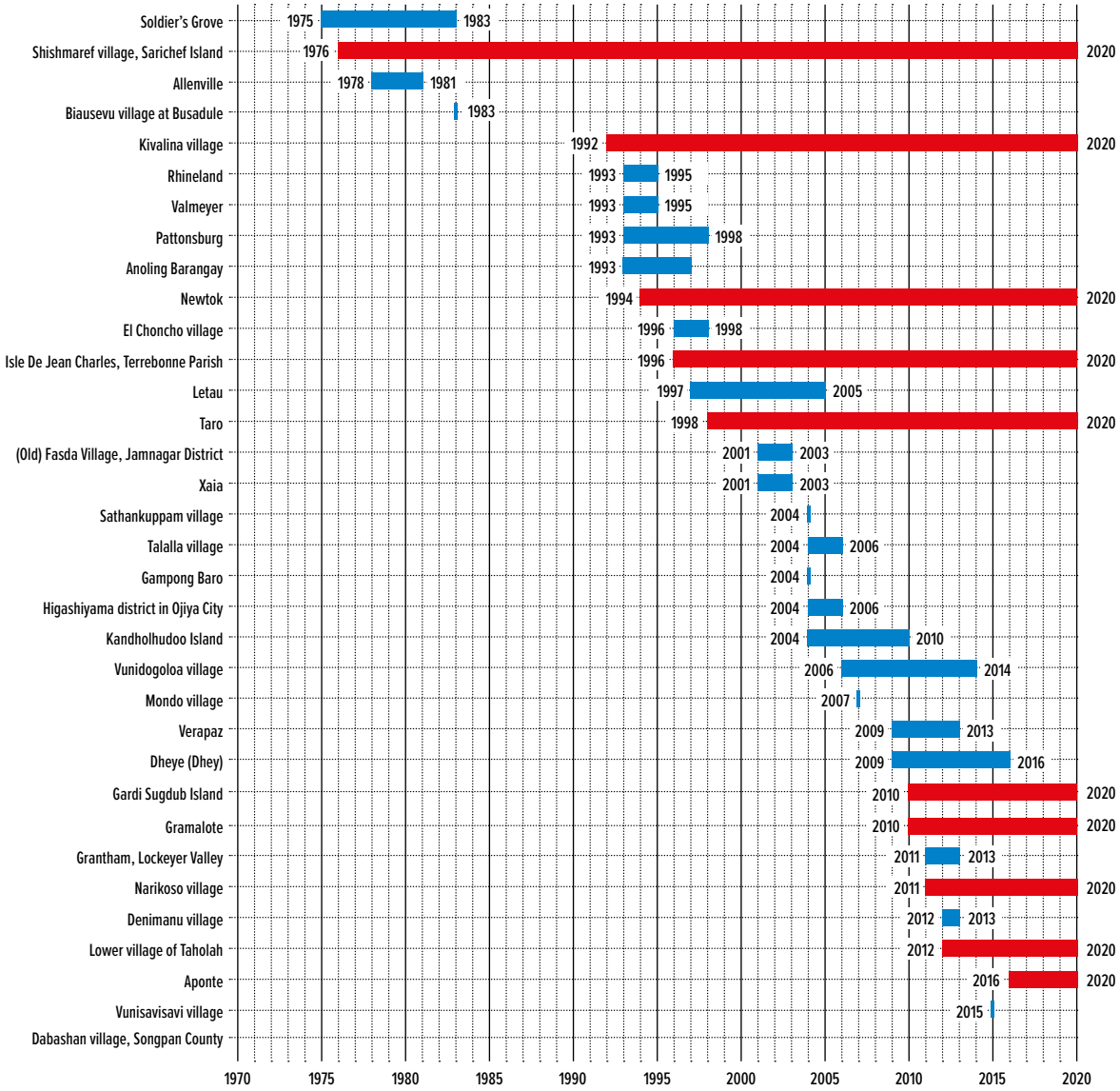
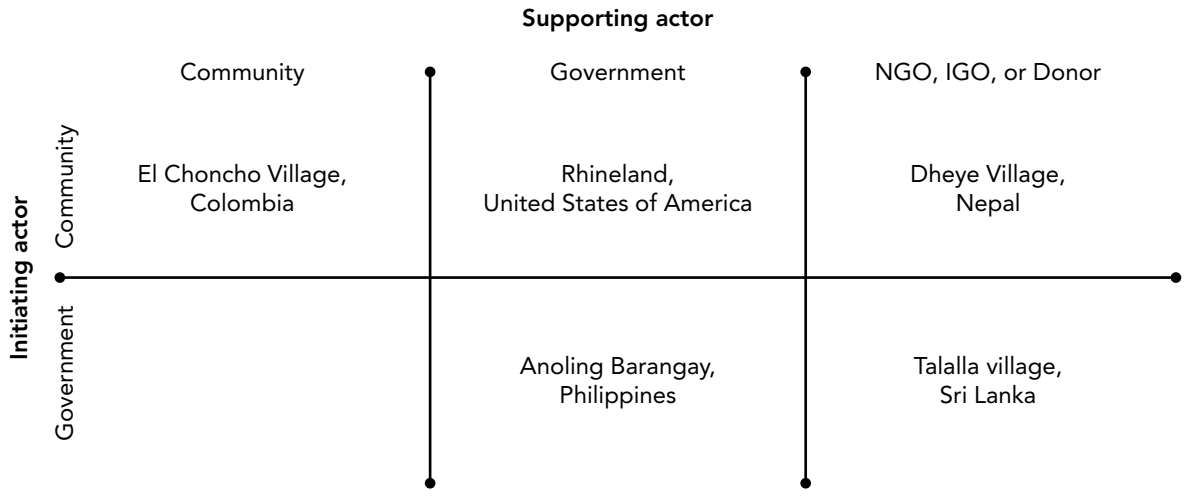


Figure 8. Examples of configurations of initiating and supporting actors in single origin - single destination cases



in conjunction with community members. The level of authority varied, from that of a Prime Minister (Narikoso village in Fiji) to national, sub-national and local authorities. In at least two cases, an NGO was also engaged in the decision to initiate planned relocation.[94]

Figure 8 provides examples of diverse combinations of initiating and supporting actors. In some cases, such as El Choncho village in Colombia, community members both initiated and planned the relocation process, with only very minimal support from other actors. In contrast, relocation from the town of Rhineland, Missouri in the United States of America was initiated by community members and then supported by government at local, sub-national and national levels.[95] Other relocation cases, such as that of Dheye village in Nepal, were initiated by community members and then supported by national and international NGOs.[96] Relocation cases initiated by government actors are, understandably, often also planned and supported by government actors. This occurred in Anoling, Philippines, where the local government initiated the relocation and then local and national government actors jointly supported the process.[97] In other cases, as in Talalla village, Sri Lanka, the government initiated the relocation and then international non-governmental organizations were the primary force behind coordination and support of the relocation.[98]

Government actors at national, sub-national and local levels were the primary actors engaged in supporting the process of planned relocation. In relative terms, national-level government ministries, departments and agencies were referenced more often as compared with sub-national or local-level government bodies. A wide range of ministries and departments responsible for disaster management, emergencies, housing, urban development, rural and maritime management, and defense and military were noted in the literature. Beyond facilitating and navigating administrative, policy and bureaucratic processes, the support provided by government actors included the provision of land, houses or financial aid, in some cases. Some planned relocation cases were also supported by international and domestic NGOs, including faith groups, intergovernmental organizations connected to the United Nations as well as through donor governments. Community members, irrespective of whether they initiated the planned relocation process, were also supporting actors to the process. In some instances, community members provided manual labor,[99] construction or technical assistance; community land for the settlement site; or established community planning groups and other committees to oversee and navigate bureaucratic, administrative and other processes relevant to the planned relocation.[100]

94 It was not possible to ascertain the initiating actor in the case of Vunisavisavi village in Fiji.

95 VanPelt, A. (2010). Response to Flood Hazards: Assessing Community Factors that Affect the Decision to Relocate. Master's thesis Southern Illinois University at Carbondale.

96 Bernet, D., Pittet, D., Kappenberger, G., Passardi, M., Shrestha, R., & Ambrosi, C. (2012). Moving down or not? A key question for Samzong, Yara, and Dheye, three villages in Upper Mustang, Mustang District, Nepal, Part IV: DHEYE. *Kam For Sud/SUPSI*. 1-45.

97 Usamah, M., & Haynes, K. (2012). An examination of the resettlement program at Mayon Volcano: what can we learn for sustainable volcanic risk reduction? *Bulletin of Volcanology,* 74(4), 839-859.

98 Vithanagama, R., Mohideen, A., Jayatilaka, D., & Lakshman R. (2015). Planned Relocations in the context of Natural Disasters: The Case of Sri Lanka. *Brookings Institution and the Centre for Migration Research and Development.*

99 This practice is known as "sweat equity" and is widespread in the Philippines. See Palagi & Javernick-Will, see above n 5, p. 5.

100 For further information, see Annex B.

6.10

ASSESSMENTS AT SITE OF ORIGIN AND SITE OF DESTINATION

In approximately one fifth of the 34 cases, the reviewed literature indicates that environmental risk, cost-benefit or other impact assessment had been conducted at both the site of origin and the site of destination. For another fifth of the cases, an assessment was conducted at either the origin or the destination site. Many articles discussed and highlighted community understandings of changes in their environment and associated impacts on livelihoods, health, and other living conditions, even if no formal assessments were conducted or documented. With respect to the cases involving indigenous populations, the vast majority of literature suggests that community-based knowledge of changes in environmental conditions was available.

6.11

PARTICIPATION MECHANISMS

Twenty-eight of the 34 cases included participatory mechanisms that provided some scope for community engagement with the planned relocation process. In at least four cases, the reviewed literature indicated that community participation mechanisms were not available, while in two cases, it was not possible to ascertain this information. Notably, in all the cases that were initiated by community members, there was evidence of the availability of community participation mechanisms, suggesting that community-initiated planned relocation processes may lead to more engagement during the planning and implementing phases. As noted in the methodology, this report seeks to identify the availability of participation mechanisms in a given planned relocation case but does not ascertain or assess the quality of these approaches.[101] There is evidence to suggest that at least in one case, "elite" members of the group of people to be relocated were consulted.[102]

6.12

LEGAL AND POLICY FRAMEWORKS

It was difficult to determine the existence and details of domestic legal or policy frameworks applicable to each case of planned relocation. In some cases, such as Grantham, Australia, the reviewed literature indicated that project-specific legal and policy instruments had been adopted.[103] In other cases, the literature made passing references to legal and policy frameworks that placed restrictions on habitation or building in risk-prone locations. For instance, in the case of Gampong Baro, Indonesia, minimal reference was made to a land-use policy, which encompassed details of a no-build zone.[104] Beyond project-specific frameworks, planned relocation cases do not appear to have been undertaken in association with a national or sub-national legal or policy framework concerned directly with the relocation process. The literature on Sathankuppam village, India, mentions the existence of a relocation policy underpinned by coastal zoning and environmental protection regulation; whether it addresses the range of human-related implications that span the relocation process, however, is unclear.[105] Literature concerning cases in the United States of America indicated that the domestic

101 As noted earlier, this report seeks to provide the types of insights necessary to undertake subsequent research that would enable assessment of the breadth and depth of participation in the cases where there is evidence to suggest mechanisms were in fact available.

102 Barenstein, J. E. D. (2015). Continuity and change in housing and settlement patterns in post-earthquake Gujarat, India. International Journal of Disaster Resilience in the Built Environment. 140-155.

103 Okada, T., Haynes, K., Bird, D., van den Honert, R. & King, D. (2014). Recovery and resettlement following the 2011 flash flooding in the Lockyer Valley. *International Journal of Disaster Risk Reduction,* 8, 20–31.

104 Sina, D., Chang-Richards, A. Y., Wilkinson, S., & Potangaroa, R., above n 94.

105 Bavinck, M., et al (2015). Post-tsunami relocation of fisher settlements in South Asia: evidence from the Coromandel Coast, India. *Disasters,* 39(3), 592-609.

framework related to disaster and disaster relief may not adequately accommodate planned relocation in anticipation of harm, where relief funds were conditional upon the occurrence of a disaster.[106] Deeper analysis may be needed to determine if similar impediments arise in other countries and how existing frameworks perform when planned relocation cases are undertaken in the aftermath of a disaster.

For the vast majority of cases, understanding if a specific instrument on planned relocation, or instruments on DRR, DRM, climate change, environment or other themes applicable to planned relocation existed, was challenging. In many respects, this is a function of the methodology used for this detailed analysis; it is conceivable that literature that emphasized stakeholder perspectives through informant interviews and surveys may not necessarily discuss the applicable normative architecture.[107] However, this discussion has also identified knowledge gaps on applicable domestic legal and policy frameworks. In the contemporary policy environment in which States continue to develop instruments on human mobility, DRR, DRM, climate change and the environment, a better understanding of frameworks and provisions that have underpinned planned relocation may be valuable. For instance, and as referenced earlier, in 2018 Fiji developed national Planned Relocation Guidelines – A Framework to Undertake Climate Change Related Relocation.[108] Similarly, relocation is extensively discussed in Vanuatu's 2018 National Policy on Climate Change and Disaster-Induced Displacement.[109] As noted in section 2, some instruments on DRR, DRM, climate and the environment also discuss relocation or resettlement of populations. Once adopted and operationalized, these instruments will guide how States implement future cases of planned relocation.

6.13 LIVELIHOOD OPPORTUNITIES

In approximately half of the cases, reviewed literature suggested that relocated persons were able to maintain similar livelihoods at sites of destination. Often, these were the cases with shorter distances between sites of origin and settlement allowing community members to commute to their earlier sites, including for agriculture, fishing, or livestock raising. In contrast, in approximately one third of the cases, livelihood opportunities similar to those available at sites of origin were not available at sites of destination. Interestingly, in one case involving a relocation from a rural origin to urban destination in China, community members shifted from agrarian to market-based livelihoods.[110] In another rural to urban relocation case in Japan, the new location enhanced rather than hindered their existing livelihood strategies as it shortened their daily commute.[111]

In a number of the cases, such as FVR-FNM village (named after President Fidel V. Ramos and Mayor Florencio N. Munoz) in the Philippines, relocated people continued to return to places of origin to continue their former livelihoods, pursuing "translocal" lifestyles with regular movement between both sites.[112] Skills training or livelihood restoration programs were provided to relocated persons in some instances, such as livelihood initiatives of fish ponds and copra dryers in the settlement site for Vunidogoloa, Fiji.[113] For some cases, particularly those that were categorized as ongoing, it was not possible to ascertain detailed information relating to livelihoods at sites of destination.

106 See e.g., Marlow, Jennifer J., and Lauren E. Sancken. (2017). Reimagining relocation in a regulatory void: the inadequacy of existing US federal and state regulatory responses to Kivalina's climate displacement in the Alaskan Arctic. *Climate Law* 7(4), 290-321.

107 Certainly, most articles reviewed did not relate to legal scholarship.

108 Fiji., above n 20.

109 Vanuatu. National Policy on Climate Change and Disaster-Induced Displacement, 2018.

110 Xu, Y., above n 93.

111 Iuchi, K., above n 92.

112 Usamah, M., & Haynes, K., above n 98.

113 Piggott-McKellar, A.E.; McNamara, K.E.; Nunn, P.D.; Sekinini, S.T. (2019). Moving People in a Changing Climate: Lessons from Two Case Studies in Fiji. *Social Sciences,* 8, p. 133.

6.14

CHALLENGES

As noted earlier, this report does not attempt to assess the outcomes or the "success" of planned relocation cases. Rather, it aims to provide information and evidence on contextual and design characteristics of single origin to single destination site planned relocation cases across the globe. This is intended to serve as a foundation for principled and methodologically refined efforts towards determining outcomes, as well as the merits and pitfalls of particular approaches or interventions.

Nonetheless, the more detailed review of literature in relation to the 34 type A cases have also highlighted important information regarding challenges, which are noted in Annexes A and B. Challenges have included concerns in relation to livelihood opportunities and economic dimensions; the availability and quality of infrastructure at the settlement site; architectural layout of homes and incompatibility with traditional ways of life or expectations; social cohesion and cultural loss; and tensions and intergenerational differences relating to relocation.

In the cases of Grantham, Australia and Gramalote, Colombia, for example, coordination and alignment across different levels of government surfaced as a complication.[114] In two cases from Colombia, Gramalote and El Choncho, dissatisfaction with government support was noted as a challenge.[115] In other cases, relocated persons have chosen to abandon their new settlement to return to sites of origin or move to new places. For instance, relocated persons have left relocation sites and returned to areas at high risk of volcanic eruption in Verapaz, El Salvador to continue traditional livelihoods.[116]

Notably, in a number of cases, concerns related to secondary hazard exposure from floods, landslides or sea level rise have been noted. The community that moved from Kandholhudoo to Dhuvaafaru island in the Maldives faces similar hazards of sea level rise and tsunami risk in the old and new sites,[117] while the households who relocated from Denimanu village of Fiji now face a new hazard – landslides – in the destination site.[118]

With respect to cases categorized as ongoing, key challenges that have been illuminated in the literature relate to accessing sufficient funding, identification of suitable land, including due to ongoing hazard exposure, bureaucratic coordination and constraints, and concerns relating to fragmentation of networks, social links and cultural practices.

This section offers a series of implications and suggestions on planned relocation to inform and guide further research, policies and practice on planned relocation. The implications are drawn from the observations discussed in section 5 on basic characteristics of planned relocation cases in the global dataset, and section 6 on context and design characteristics of a select subset of single origin to single destination cases.

114 Okada, T., Haynes, K., Bird, D., van den Honert, R. & King, D., above n 104; and Oliver-Smith, A., & Arenas, C. (2015). Post-disaster Resettlement: The Transition to the New Community in Gramalote, Columbia. *Natural Hazards Center,* respectively.

115 See Oliver-Smith, A. & Arenas, C., above n 115; Correa & Gonzalez, above n 84, p. 51-64.

116 Bowman, L. J., & Henquinet, K. B. (2015). Disaster risk reduction and resettlement efforts at San Vicente (Chichontepec) Volcano, El Salvador: toward understanding social and geophysical vulnerability. *Journal of Applied Volcanology,* 4(1), p. 14.

117 Simonelli, A. C. (2016). Good Fishing in Rising Seas: Kandholhudhoo, Dhuvaafaru, and the Need for a Development-Based Migration Policy in the Maldives. *Migration, Risk Management and Climate Change: Evidence and Policy Responses,* 131-148.

118 Piggott-McKellar, A.E.; McNamara, K.E.; Nunn, P.D.; Sekinini, S.T. above n 114.

7

Implications and suggestions

7.1

MULTIPLE DRIVERS AND STAKEHOLDER MOTIVATIONS

At the outset, it is important to recognize that, in many instances, multiple, diverse drivers may prompt decisions to undertake a planned relocation. While this report has sought to identify planned relocation cases associated with hazards, disasters or climate change, the scan of English-language literature has highlighted that planned relocation cases do not occur simply in the context of environmental drivers. Decisions to undertake planned relocation are situated amidst environmental, as well as social, political, economic and demographic drivers. The influence of these drivers may be direct - another stated justification for why the relocation is needed - or more indirect.

For example, members of the Gardi Sugdub community in Panama initiated planned relocation to a mainland site less exposed to sea level rise, but demographic challenges of overcrowding on the small island also played an important role in the decision to relocate.[119] Other relocation cases have occurred in the context of both floods and "slum upgrade" objectives; for instance a flood impacted informal settlement, La Barquita in the Dominican Republic, was relocated and vacant land transformed into an "eco park".[120] Efforts to relocate communities in Lempira, Honduras after Hurricane Mitch's devastating impacts took place also in the context of political motivations to clear people out of Celaque National Park.[121] Finally, a number of relocation processes planned to address disaster impacts and risks have involved moving formerly nomadic peoples into sedentary lifestyles, such as boat people in Vietnam after a typhoon, pastoralists in Somalia amidst drought, and

[119] Displacement Solutions. An Overview on the Relocation of Guna Indigenous Communities in Gunayala, Panama: Mission Report. October 2016.

[120] Collado, J. R. N., & Wang, H. H. (2020). Slum upgrading and climate change adaptation and mitigation: Lessons from Latin America. *Cities,* p. 104.

[121] Timm, B. F. (2011). The (Mis)Use of Disaster as Opportunity: Coerced Relocation from Celaque National Park, Honduras. *Antipode,* 43(4).

nomadic Tibetan communities in China after an earthquake.[122]

A systematic analysis of the multiple and diverse drivers influencing decisions on planned relocation was not explored in this report. However, the above-noted insights suggest that this issue requires deeper engagement to understand how environmental drivers *in combination with* social, political, economic and demographic drivers influence decisions on planned relocation under two dimensions: (1) decisions of individuals, individual households, and groups of households or communities to participate in planned relocation; and (2) decisions of authorities or other actors to initiate and/or support planned relocation.

With respect to migration or displacement of individuals or individual households, academic, policy and practitioner communities recognize that mobility decisions take place amidst multiple drivers, and that environmental factors alone are rarely the sole driver of movement. The United Kingdom's Government Foresight Report underscored these insights and articulated a widely cited framework for considering drivers influencing individual and household decisions on migration.[123]

This framework of multicausality presumably applies to individuals and individual households making decisions about whether to participate in a planned relocation, and further research may be valuable to verify if this is indeed accurate. In addition, it may be helpful to understand if similar conclusions apply at the scale of entire communities or groups of households undertaking planned relocation. In other words, do multiple drivers influence decisions to initiate relocation at the community or group of households' level?

Further, are the reasons why external actors initiate or support planned relocation also influenced by multiple drivers? Preliminary insights from this research indicate such a possibility. Understanding the multiple and non-environmental drivers influencing decisions to initiate or support planned relocation cases requires decision-making and implementation processes to be scrutinized. Such research and analysis also provide evidence to assess human rights implications and violations, and guard against misuse of the narrative of DRR or CCA to greenwash other covert motives.

7.2

"PROACTIVE" AND "REACTIVE" RELOCATION

Planned relocation is sometimes referred to as a preventative tool to address risks, or a reactive tool to address realized harms. For instance, the Nansen Initiative Protection Agenda identifies the need to improve "the use of planned relocation as a *preventive* or *responsive* measure to disaster risk and displacement."[124] The 2015 expert Guidance on Protecting People from Disasters and Environmental Change through Planned Relocation explains that planned relocation may be appropriate in at least two types of situations: in *anticipation* of disasters and environmental change and/or in *response* to disaster and environmental change.[125]

However, planned relocation cases identified in this mapping (section 6) suggest that distinctions between "proactive" and "reactive" relocation may be blurred in some instances. Planned relocation cases have been undertaken both in reaction to realized harms (displacement, livelihood depletion, property damage or other forms of harm) and in anticipation of risks associated with hazards. For instance, after the 2004 Indian Ocean tsunami rendered Kandholhudoo Island

122 Tsui, A. O., Ragsdale, T. A., & Shirwa, A. I. (1991). The settlement of Somali nomads. *Genus*, 131-152; DaCosta, E., & Turner, S. (2007). Negotiating changing livelihoods: the sampan dwellers of Tam Giang Lagoon, Việt Nam. *Geoforum,* 38(1), 190-206; Chies, M. (2018). Post-Disaster Development among Yushu Peri-Urban Nomads: Local Agency, Risk Perception and Legal Framework (Qinghai Province, PRC). *Nomadic Peoples,* 22(2), 222-248.

123 Foresight. (2011). Migration and Global Environmental Change: Future Challenges and Opportunities. *UK Government.*

124 Nansen Initiative., above n 4, p. 10. Emphasis added.

125 UNHCR, Brookings Institution, & Georgetown University., above n 4, p. 10. Emphasis added.

in the Maldives uninhabitable, the displaced population was relocated to the previously uninhabited Dhuvaafaru Island; however, the relocation decision also reflected how the community already experienced floods and land degradation prior to the tsunami, and anticipated these hazards to intensify in the context of sea level rise.[126] In another scenario, Shishmaref, an Alaskan native village in the United States of America, is planning for relocation in anticipation of melting permafrost, sea level rise and associated risks, yet people have already experienced the adverse effects of flooding and coastal erosion for years.[127] Some planned relocation cases may be undertaken in-between episodes of displacement associated with recurrent hazards - be it spontaneous flight or government ordered evacuations - when displaced communities have returned to their places of origin. Consider, for example, the flood-affected town of Valmeyer in the United States of America, where the decision to relocate was made after evacuated community members returned to their damaged homes but decided that the risk of repeat flooding was too high to rebuild in place.[128] Other planned relocation cases may arise *de facto,* if displacement situations, including those associated with evacuations, become protracted due to barriers to return or local integration.

These examples suggest that the sharp distinctions articulated in normative instruments may not always reflect the reality on the ground. Rather, the proactive and reactive dichotomy could be considered to represent two ends of a continuum with most planned relocation cases falling somewhere in between, influenced by realized harms, including displacement, and undertaken in anticipation of risks. Cases in which protracted displacement leads to planned relocation also fall within this conceptualization. They too present a scenario where realized harms including displacement and barriers to return, as well as anticipated risks associated with future hazards, influence the decision to undertake planned relocation.

In this context, an alternative distinction that may be particularly helpful for informing policymaking and practice is whether a planned relocation case occurs: (1) pre-displacement; (2) post-displacement with options to reside in the interim in places of origin; or (3) post-displacement without options to reside in areas of origin. This information may be particularly relevant for understanding applicable international and domestic normative frameworks and for making operational decisions related to interim arrangements, transitional housing, participation approaches, assessment needs, institutional engagement, funding and governance.

7.3

MULTI-HAZARD CONTEXTS, COERCION AND AGENCY

When considering displacement - which is generally understood as predominantly *forced* - a sudden-onset hazard such as a flood or storm is a dominant trigger for flight.[129] In such situations, while the multi-causality of displacement is acknowledged, other non-environmental drivers are not immediately visible. When considering migration - which is generally understood as predominantly *voluntary* movement - multiple non-environmental drivers and environmental drivers may influence the decision to move.[130] In contrast to displacement which is regarded as falling closer to the forced end of the forced-voluntary continuum, and migration which is regarded as falling closer to the voluntary end, planned relocation has been

126 Simonelli, A. C., above n 118.

127 Simon, A. et al., above n 56.

128 Gaetano, G., (2002). From River Rats to Bluff Dwellers: A Study of Community in a Relocated Town: A Sociological Case Study of the FEMA Flood Mitigation Project at Valmeyer, Illinois.

129 See e.g., Warner, K., Afifi, T., Kälin, W., Leckie, S., Ferris, B., Martin, S. F., & Wrathall, D. (2013). *Changing climate, moving people: Framing migration, displacement and planned relocation.* UNU-EHS.

130 See e.g., Warner, K., Afifi, T., Kälin, W., Leckie, S., Ferris, B., Martin, S. F., & Wrathall, D. (2013). *Changing climate, moving people: Framing migration, displacement and planned relocation.* UNU-EHS.

noted as a form of human mobility that could be forced *or* voluntary.[131] As with displacement and migration, the preponderance of choice is considered a key determinant of where planned relocation falls within the forced-voluntary continuum.[132] In this context, the freedom - of individuals, individual households, communities and groups of households - to choose to participate in a planned relocation, and accordingly the level of coercion underpinning their decisions, may be affected by realized harms, risks, and *inter alia*, by whether the relocation was imposed by authorities or other actors.[133]

The planned relocation cases identified in section 6 reflect these dimensions.[134] Notably, with respect to risks and realized harms, many planned relocation cases demonstrate how available choices are affected by the overlap or successive occurrence of both sudden and slow-onset hazards. In other words, the environmental drivers influencing some planned relocation cases often embody *multiple and diverse* sudden and slow-onset hazards and constrain the choices available to affected populations. Planned relocation cases undertaken in the context of sudden-onset hazards such as flooding and storms, as well as slow-onset hazards such as sea level rise and erosion, demonstrate how their overlap and interaction potentially *intensify* environmental drivers and their adverse effects. These intensified environmental drivers may in turn compound realized harms associated with other drivers of movement. In this context, it may be valuable to understand how the overlap of sudden and slow-onset hazards affect planned relocation decisions and delimits choices at the level of individuals, individual households, communities and groups of households.

In addition, planned relocation cases initiated in the context of both sudden and slow-onset hazards may offer new insights on patterns of human mobility. For instance, planned relocation decisions made post-displacement and to avoid risks associated with slow-onset hazards demonstrate that some populations are displaced in the context of a sudden-onset hazard and may be forced to move again in the context of planned relocation. The rights implications and the needs of such populations may differ from people who are repeatedly displaced by hazards, but never participate in a relocation process.

7.4

FOUR SPATIAL PATTERNS AND UNIQUE FEATURES

As introduced in section 2, planned relocation cases identified in this mapping follow a range of spatial patterns: type A cases are single origin to single destination; type B cases are multiple origin to single destination; type C cases are single origin to multiple destination; and type D cases are multiple origin to multiple destination. This is the first report to articulate a typology of the spatial patterns in which planned relocation cases are implemented in practice, as documented in English-language literature. Insights from this typology, such as whether a relocation case has multiple origin sites or multiple destination sites, have critical implications for policy and practice. For instance, planned relocation cases with multiple origin sites require consideration of complex integration dynamics and appropriate and inclusive participatory mechanisms that engage distinct communities. In contrast, multiple destination relocation cases may require consideration of the impacts of disintegration of communities, and potential for maladaptive outcomes such as inequitable access to services and other opportunities or tensions among affected persons. Navigating regulatory procedures and fostering comparable outcomes may be particularly

131 Ferris, E., above n 31, p. 11.

132 See McAdam, J., & Ferris, E., above n 31, p.143, quoting Kälin in Warner, K., et al., above n 130.

133 Ibid; UNHCR, Brookings Institution, & Georgetown University., above n 4, p. 6.

134 The discussion under this subsection is primarily concerned with coercion as it arises from the environmental drivers, rather than from authorities and other actors. Understanding how coercion may arise from the actions of authorities or other stakeholders would be an important area for deeper research, particularly in light of the insights and implications highlighted above in the discussion on multiple drivers and stakeholder motivations.

complex if origin and destination sites are located in different administrative jurisdictions.

Further research on type A, B, C and D cases is necessary to consider unique features and to appreciate implications for policy and practice. There are countless research questions that could be explored. The following are some examples on a small number of themes examined in this report:

- **Related to displacement:** Which spatial patterns are prevalent when planned relocation processes are carried out prior to any displacement? Which spatial patterns are prevalent when planned relocation is carried out post-displacement, but when interim return to areas of origin is possible? Which spatial patterns are prevalent when planned relocation occurs in the context of protracted displacement or when interim return to areas of origin is unviable due to destruction or regulations imposing no build zones?

- **Related to hazard types:** Are particular hazard types more aligned with certain spatial patterns? For instance, are sudden-onset hazards more likely to be linked to a single origin to single destination (type A) case? Which spatial patterns correlate with slower-onset hazards such as sea level rise? Are there notable differences in the spatial patterns implemented to address geophysical/geological hazards as compared to hydrometeorological hazards? What role does the geographic scope and duration, and reach of a hazard(s) and its impacts play in the selection of a particular spatial pattern? Does the hazard type influence which spatial pattern is selected, and what other factors play a role?

- **Related to distance:** Are there relationships between spatial patterns and distance between origin and destination sites? Do single origin and single destination relocation cases (type A) span the shortest distances? Do cases with multiple origins and multiple destinations (type D) span longer distances, on average?

- **Related to rural and urban dynamics:** Are particular spatial patterns more prevalent in rural or urban areas? The identified cases (in section 6) indicate that the origin and destination sites for the vast majority of type A cases were located in rural areas. Are other spatial patterns more common to urban areas? Does the location of the origin site(s) or destination site(s) affect the spatial pattern?

- **Related to livelihood opportunities:** Are particular spatial patterns more common in areas where particular livelihood strategies are dominant? For instance, is multiple origin to multiple destination relocation more common where people earn their livelihoods through non-place-based professions (e.g., not subsistence agriculture or fishing)?

- **Related to indigenous communities and cohesion:** Do indigenous or other communities focused on retaining social cohesion reflect a preference towards particular spatial patterns? A large portion of the analyzed type A cases concerned indigenous communities; are indigenous communities also represented in the other spatial patterns?

- **Related to the number of households:** Does the number of households participating in planned relocation cases influence the spatial pattern implemented? Do smaller groups of households reflect a bias towards particular spatial patterns?

- **Related to duration and *in situ* adaptation:** Does the spatial pattern have any connection to the duration of time that elapses between the decision to initiate a planned relocation until the physical relocation process is complete? Are some spatial patterns more complicated to implement and therefore result in protracted processes? What *in situ* adaption options have been explored under each type of spatial pattern? In this context, how do communities and authorities decide when *in situ* adaptation measures (e.g., sea walls) are unviable or exhausted and decide to undertake a planned relocation?

- **Related to actors initiating planned relocation cases:** Have communities initiated planned relocation under each type of spatial pattern or is there a community-initiation bias towards particular spatial patterns? For instance, is community initiation more likely under the single origin to single destination

(type A) case? Is government or other external actor initiation more likely under the other types of spatial patterns?

- **Related to participatory mechanisms:** What types of participatory mechanisms have been used under different spatial patterns? What are the advantages and disadvantages of each type of approach? How have gender, age and diversity considerations been taken into account? Is participation and community engagement more viable, inclusive and better implemented under particular spatial patterns as compared to others?

- **Related to assessments:** Are assessments more frequently carried out in relocation cases that follow certain spatial patterns? Are assessments of *all* origin sites undertaken for cases involving multiple origins (type B and D)? Are assessments of the viability of potential settlement sites carried out in multiple destination cases (type C and D)?

- **Related to legal and regulatory frameworks:** What types of legal and regulatory frameworks have underpinned planned relocation cases implemented under each spatial pattern? Are there greater legal and regulatory challenges associated with particular types of spatial patterns? What types of complications arise when origin and destination site(s) are located in different administrative and governance zones?

- **Related to challenges and outcomes:** What are key challenges for implementing each spatial pattern, including as it relates to securing land and funding, undertaking assessments, providing transitional arrangements, ensuring participation, recognizing gender, age and diversity considerations, promoting equitable access to services and opportunities, and supporting coordination and governance? Which spatial patterns offer better outcomes for relocated populations, as measured under different evaluation criteria?

7.5

UNIQUE FEATURES OF SINGLE ORIGIN TO SINGLE DESTINATION CASES

This report identified insights unique to a subset of type A (single origin to single destination) cases to inform policy and practice (see section 6). Implications from these insights that may be helpful to policy-makers, practitioners and researchers relate to the following themes:

- **Trade-offs relating to proximity of destination sites to places of origin.** The analyzed type A cases illustrate that many planned relocation cases involve relatively small distances between origin and destination sites. On the one hand, a relocation site that is close to the origin site may provide continued access to pre-existing livelihoods and places of cultural significance with implications for psychosocial wellbeing. In relocation cases where the destination sites are too distant from the sites of origin to allow for a daily commute, and/or where the livelihood opportunities are dissimilar, joblessness was highlighted as a key challenge, suggesting a need for livelihoods programming. On the other hand, closer proximity may imply ongoing exposure to the same observed hazards and future risks that prompted the initial move and may necessitate secondary onward relocation. Equally, destination sites in close proximity to origins may also have exposure to other unanticipated hazards and risks. This does not mean, however, that destination sites that are further away are inherently safer. Differential risk profiles exist across sites regardless of distance. Close attention to these types of trade-offs may be needed when considering destination site selection.

- **Linkages between the physical distance and the duration of the relocation process.** Cases that involve relatively further distances between the site of origin and destination are among those that were classified as ongoing and spanned a relatively longer period or even decades. Such cases often have protracted periods of time passing

even before the physical move takes place. Conversely, relocation cases with closer proximity between origin and destination sites are associated with shorter durations, suggesting that the relocation process in these cases is perhaps less complex and challenging to implement, at least as it relates to the physical move. On the other hand, relocation cases that involve further distances may be beyond local land systems, outside pre-existing community and cultural affiliations, or across sub-national jurisdictions, raising cross-jurisdictional governance considerations.

- **Relationships between the actor(s) initiating planned relocation cases and meaningful and inclusive participation in the relocation process.** Different configurations of actors initiate and support planned relocation cases with important implications for governance. Findings in section 6 suggest that planned relocation cases initiated by relocating persons such as an indigenous community chief, a group of leaders, a community organization or a group of households may have more meaningful opportunities for consultation, participation, and self-determination.[135] Deeper analysis on whether, and under what conditions, the actor(s) initiating a planned relocation affects meaningful participation and engagement opportunities throughout the relocation process, and thereby also influences outcomes, may offer important insights for actors developing policies or identifying communities for relocation support.

  There may also be linkages between the actor(s) initiating the relocation and inclusive participation of diverse stakeholders in the community. In some planned relocation cases supported by government and NGO actors, participation in decision making was not always equal among household members across gender or generational divides. In other cases, only "elite" community members were able to engage in participation and consultation opportunities.[136] Meaningful participation in a planned relocation requires inclusive involvement of all stakeholders, regardless of age, gender, ability, livelihood profiles and land or housing tenure. Close attention should be paid to capturing diverse perspectives, needs, contributions, and capabilities of community members in the decision-making process.

- **Relationships between the actors initiating the planned relocation and the scope, quality, and duration of support (assessments, land, transitional, services, financial, in-kind, and other) available for the relocation process.** Planned relocation cases initiated by community members may have different levels of engagement with government and other supporting actors. Some cases initiated by community actors may receive little support from government or external actors; relocating persons may have to identify land and sources of funding or in-kind support, build new homes, and rely on traditional monitoring systems and knowledge of environmental change. In other instances, government actors may offer land and provide some support in the form of access to relevant services but offer little else. In yet other cases, there may be much closer collaboration throughout the relocation process. In cases initiated by government or external entities, there may be more consistent engagement and support from these actors.

  This does not necessarily mean that communities always receive the support they desire or request, regardless of who initiates the planned relocation case. The support and assistance provided by the government and other external actors may need to be scrutinized to understand how they comply with substantive and procedural duties under international and domestic normative frameworks. This also means assessing the commitment of government actors throughout the duration of the relocation process. For instance, it may be useful to understand what levels and sectors of governments are engaged in planned relocation cases, and implications of any evolving commitments for effective implementation of these processes.

[135] See McAdam, J., & Ferris, E., above n 31, for discussion on the spectrum of engagement options.

[136] Barenstein, J., above n 103.

- **Legal and policy frameworks underpinning planned relocation cases may offer differing constraints and opportunities.** The reviewed cases provide limited insights on the types of legal and policy frameworks that have underpinned planned relocation cases. In some instances, reference is made to project-specific instruments, regulations restricting habitation and construction in hazard-prone locations, or to disaster management frameworks. It is challenging to understand how many cases have been underpinned by normative and policy instruments providing specific guidance on the planned relocation process. In this context, further research on the domestic normative landscape, including applicable human mobility, DRR, DRM, climate and environmental laws and policies, as well as customary norms, could be valuable.

- **Connections between the actor(s) initiating a planned relocation case and public information available on the relocation process.** When community actors initiate a planned relocation, and where there is limited government or external actor engagement, obtaining knowledge of the relocation process may often depend on empirical research. There may be limited formal documented information regarding such cases. On the other hand, in cases where government or external actors initiate or are engaged in the relocation process, formal documentation on the process such as assessments (cost-benefit analyses, environmental impact assessments, site assessments) and evaluations may be available, in addition to empirical research. However, this does not mean that such information is always in the public domain or easily accessible to researchers.

08 Conclusion

This report and its accompanying dataset and annexes enhance the evidence base on planned relocation cases globally. It serves as a foundation for future efforts to augment knowledge and data on planned relocation, and to promote approaches to policy and practice that mitigate risk, protect people from harm, and secure their human rights and dignity.

Developing this baseline of evidence through a review of English-language academic and grey literature has strengthened knowledge on the patterns and scale of planned relocation cases across the world, their geographic and country-level breakdowns, status and hazard-related characteristics. In addition, a subset of planned relocation cases reflecting one spatial pattern - a single origin to a single destination - have been analyzed in greater depth to offer insights on themes of interest to policymakers and practitioners. For instance, the findings on these cases shed light on the number of households involved and whether they identify as indigenous; the geographic distance between the site of origin and site of destination and their location within rural or urban settings; whether the decision to undertake a planned relocation occurred pre- or post-displacement; the duration of the physical relocation process; initiating and supporting actors; participatory mechanisms; assessments and regulatory frameworks; livelihoods; and challenges.

Notably, this research has also identified a typology of planned relocation cases implemented at the domestic level, as they have been reflected in the reviewed literature. In the reality of practice, even greater variation and spatial patterns may exist. These insights are particularly meaningful in contexts where planned relocation is conceptualized and discussed as a homogeneous phenomenon. The diversity of spatial patterns of planned relocation cases underscores the need for policy and practice tailored to the unique circumstances, objectives, and reality of each case.

While the evidence gathered and synthesized in this research provides a preliminary contribution to the state of knowledge on planned relocation, it may draw on only a small fraction of planned relocation cases in the world. The limitations discussed in section 4 of this report explore some of the reasons for biases and deficiencies. A complementary research project referenced earlier, seeking to build evidence on planned relocation cases documented in Spanish and French-language literature, will bolster available knowledge. Nonetheless, many cases may also be undocumented, under-documented or under-researched.

As such, targeted, consistent and iterative efforts are needed to monitor, research and synthesize data and knowledge on planned relocation cases and their characteristics, and to continue to update this initial evidence base. Such efforts could identify planned relocation cases not included in the available dataset, confirm the status and progress of identified cases, and enhance the information on mapped characteristics, among other aspects. Monitoring could also track the number of people who are considered for relocation, who relocate, and who remain at relocation sites over time. Maintaining a robust and up-to-date database of planned relocation cases and their characteristics will allow policymakers and practitioners to improve their understanding of the phenomena, particularly as its salience increases with the evolving ramifications of climate change.

In addition, a comprehensive and up-to-date database has the potential to promote trend analysis and to enable interested stakeholders to distill linkages in context and design characteristics associated with planned relocation cases, supporting policymaking and practice. In this respect, further research, including along the lines of inquiry identified in section 7 on implications and suggestions, may offer particularly helpful insights for these purposes. Moreover, while this research did not assess the outcomes of planned relocation cases, in reviewing the literature, key challenges emerged. Empirical research that systematically assesses the outcomes of planned relocation cases, and then identifies any relationships between outcomes and relocation design characteristics, is arguably critical to identifying "effective" practices of planned relocation. Ultimately, persistent, concerted efforts to generate knowledge and data on planned relocation could generate refined understandings and enable policymakers and practitioners to minimize harms to affected people and promote their human rights and dignity.

ANNEX A.

CONTEXT CHARACTERISTICS

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	What is the location of the destination settlement site in the planned relocation case?	Which natural hazard(s) was the planned relocation initiated in anticipation/ reaction to?
Australia	Grantham, Lockeyer Valley, Queensland	Grantham	Riverine floods
China	Dabashan village, Songpan County, Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province	Songpan Capital	Landslide
Colombia	El Choncho village, El Choncho Barrier Island, San Juan River Delta	"Santa Barbara beaches", across tidal channel	Coastal floods, coastal erosion, accelerated in context of earthquake, land subsidence, and sea level rise
Colombia	Aponte, Nariño Department	New Aponte (exact location TBD)	Land subsidence, Slow-onset geological mass movement
Colombia	Gramalote, Norte de Santander	Miraflores	Rainfall, landslide
El Salvador	Verapaz, San Vicente Department	New Verapaz	Lahars
Fiji	Biausevu village at Busadule, Viti Levu	Koroinalagi	Riverine flood, tropical cyclone
Fiji	Denimanu village, Yadua Island	Korovou	Cyclone, coastal floods, sea level rise, coastal erosion, storm surge, landslide
Fiji	Vunidogoloa village, Vanua Levu Island, Cakaudrove Province	Vanua Levu Island, Fiji	Coastal erosion, coastal floods, tidal inundation, saline intrusion
Fiji	Vunisavisavi village, Vanua Levu Island, Cakaudrove Province	Vunisavisavi village	Coastal erosion, coastal floods, king tides, sea level rise
Fiji	Narikoso village, Ono Island, Kadavu Island chain	New site, another mataqali in Narikoso	Sea level rise, coastal erosion
India	(Old) Fadsar village, Jamnagar District, Gujarat	(New) Fadsar village	Earthquake
India	Sathankuppam village, Tamil Nadu, Thiruvallur District	Other side of canal	Tsunami
Indonesia	Gampong Baro, Aceh Besar	Gapong Baro in new site	Tsunami
Japan	Remote part of Higashiyama district in Ojiya City, Chuetsu	Flatlands of Higashiyama district in Ojiya City	Earthquake (and landslides/floods in earlier years)
Maldives	Kandholhudhoo Island, Raa Atoll	Dhuvaafaru Island (same atoll)	Tsunami
Mozambique	Xaia, Chokwé District, Gaza Province	2nd Bairro, Jofane Locality	Flood
Nepal	Dheye (Dhey), Mustang District	Thangchung	Water scarcity

Was the initiation decision made post sudden-onset hazard related displacement?	What is the approximate physical distance (in km) between the site of origin and the site of destination?	In approximately what year was the need for planned relocation first identified?	In approximately what year was the physical relocation to the settlement site completed for the majority of households?	Approximately how many households (people) have relocated, or are identified for relocation?	Does the relocating community identify as part of an indigenous tribe or community?	Does the relocating community identify as rural or urban?
Yes	0.05 km	2011	2013	115	No	Rural
No	0.25 km	Unclear	Unclear	19	No	Rural to Urban
No	0.2 km	1996	1998	Unclear	Partially	Rural
Yes	Unclear	Unclear	Ongoing	(4,000 people)	Yes	Rural
Yes	7 km	2010	Ongoing	1000	No	Urban
Yes	2 km	2009	2013	244	No	Rural
Yes	0.5 km	Unclear	1983	(150 people)	Yes	Rural
Yes	0.5 km	2012	2013	19	Yes	Rural
No	2 km	2006	2014	26	Yes	Rural
Yes	< 0.5 km	Unclear	2015	4	Yes	Rural
No	< 0.5 km	2011	Ongoing	28	Yes	Rural
Yes	0.05 km	2001	2003	317	No	Rural
No	1.3 km	2004	Unclear	376	No	Rural
Yes	5 km	2004	Unclear	57	No	Rural
Yes	10 km	2004	2006	Unclear	No	Rural to Urban
Yes	16-18 km	2004	2009 / 2010	600	No	Rural
Yes	8 km	2001	2003	206	No	Rural
No	6 km	Approx. 2009	Approx. 2016	14	TBC	Rural

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	What is the location of the destination settlement site in the planned relocation case?	Which natural hazard(s) or adverse effect(s) of climate change was the planned relocation initiated in anticipation/reaction to?
Panama	Gardi Sugdub Island, Gunayala	La Barriada (mainland)	Coastal erosion, sea level rise [and overcrowding]
Philippines	Anoling Barangay, Albay Province, Bicol Region, Luzon Island	FVR–FNM village (Tagaytay Barangay, Camalig Municipality)	Volcanic eruption (pyroclastic flow), earthquake, lahars
Solomon Islands	Taro (provincial capital), Choiseul Province	New site across the channel (adjacent to mangrove swamp)	Sea level rise, tsunami risk
Solomon Islands	Mondo village, Matara District	Keigold village	Tsunami, earthquake, soil erosion, strong winds, changes in extreme weather patterns
Sri Lanka	Talalla village, Matara District	Kananke Watta	Tsunami
United States of America	Allenville, Arizona	Hopeville	Riverine floods (exacerbated by a water management and conservation project upstream)
United States of America	Soldier's Grove, Wisconsin	Soldier's Grove	Riverine flood
United States of America	Valmeyer, Illinois	New Valmeyer	Riverine flood
United States of America	Rhineland, Missouri	Rhineland	Riverine flood
United States of America	Pattonsburg, Missouri	Pattonsburg	Riverine flood
United States of America	Newtok, Alaska	Mertarvik, Nelson Island	Coastal erosion, thawing permafrost, storm surge, flooding
United States of America	Isle De Jean Charles, Terrebonne Parish, Louisiana	The New Isle, Terrebonne Parish	Coastal erosion, storm surge, sea level rise [and unsustainable practices associated with water management and oil and gas production]
United States of America	Lower village of Taholah, Washington	Upper village of Taholah	Tsunami, coastal floods, storm surge, sea level rise
United States of America	Shishmaref village, Sarichef Island, Alaska	Tin Creek	Coastal erosion, flooding
United States of America	Kivalina village, Alaska	At first Kiniktuuraq, now unclear	Coastal erosion, flooding
Vanuatu	Letau, Tegua Island	Lirak	Tidal wave, coastal floods, erosion, tsunami, sea level rise, saline intrusion, scarcity of potable water

Was the initiation decision made post sudden-onset hazard related displacement?	What is the approximate physical distance (in km) between the site of origin and the site of destination?	In approximately what year was the need for planned relocation first identified?	In approximately what year was the physical relocation to the settlement site completed for the majority of households?	Approximately how many households (people) have relocated, or are identified for relocation?	Does the relocating community identify as part of an indigenous tribe or community?	Does the relocating community identify as rural or urban?
No	2 km	2010	Ongoing	300	Yes	Rural
Yes	12 km	1993	1997	500	No	Rural
No	2 km	Approx. 1998	Ongoing	120	Yes	Rural
Yes	1 km	2007	Unclear	80	Yes	Rural
Yes	1.5-2 km	2004	2006	18	No	Rural
Yes	12 km	1978	1981	35	No	Rural
Yes	0.8 km	1975	1983	Unclear	No	Rural
Yes	3 km	1993	1995	(600 people)	No	Rural
Yes	0.3 km	1993	1995	52	No	Rural
Unclear	5 km	1993	1998	(350 - 400 people)	No	Rural
No	14.5 km	1994	Ongoing	60	Yes	Rural
No	64 km	Approx. 1996	Ongoing	120	Yes	Rural
No	0.8 km	2012	Ongoing	300	Yes	Rural
No	20 km	1976	Ongoing	141	Yes	Rural
No	Unclear	1992	Ongoing	(398 people)	Yes	Rural
No	0.5 km	1997	2005	(100 people)	Yes	Rural

ANNEX B.

DESIGN CHARACTERISTICS

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	Which actor(s) initiated the planned relocation?	Which actor(s) supported the planned relocation?	Is there evidence of at least one formal assessment of the 1) location of origin to determine the need for the planned relocation; 2) settlement site to determine suitability for relocation?
Australia	Grantham, Lockeyer Valley, Queensland	Government (Local)	Government (National, sub-national and local)	1. No evidence 2. No evidence
China	Dabashan village, Songpan County, Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province	Government (Sub-national and local)	Government	1. No evidence 2. Yes
Colombia	El Choncho village, El Choncho Barrier Island, San Juan River Delta	Community members	Community members	1. No evidence 2. No evidence
Colombia	Aponte, Nariño Department	Government (Sub-national)	Government (Sub-national); IGO	1. Yes 2. Yes
Colombia	Gramalote, Norte de Santander	Government (National)	Government (Local and national); INGOs	1. No evidence 2. Yes
El Salvador	Verapaz, San Vicente Department	Government	Government (National and local); IGOs; INGO; Donor Government	1. No evidence 2. No evidence
Fiji	Biausevu village at Busadule, Viti Levu	Community members	Community members	1. No evidence 2. No evidence
Fiji	Denimanu village, Yadua Island	Government (National)	Government (National)	1. No evidence 2. No evidence
Fiji	Vunidogoloa village, Vanua Levu Island, Cakaudrove Province	Community members	Government (National); Donor Government; IGO; NGO	1. No evidence 2. No evidence
Fiji	Vunisavisavi village, Vanua Levu Island, Cakaudrove Province	Unclear	NGO; Donor Government	1. No evidence 2. No evidence
Fiji	Narikoso village, Ono Island, Kadavu Island chain	Community members; Government (National)	Government (National); INGO; Donor Government	1. Yes 2. Yes

	Is there evidence to suggest that affected communities participated during the relocation process?	Is there a domestic legal or policy framework applicable or relevant to relocation?	Is there evidence to suggest that similar livelihood opportunities exist in the site of origin and in destination?	What challenges have been identified during the relocation process or in the settlement site?
	Yes	Yes	Yes. Project to revitalize the economy and provide employment opportunities in agribusiness.	Challenges with coordination across levels of governance (local, state, national).
	Yes	Yes	No. Shift from livestock breeding and farming to migrant labor and selling medicinal materials in urban area.	Concern about ongoing hazard exposure.
	Yes	Unclear	No. New site has more limited options for agriculture and tourism.	Loss of cultural and visual connection to the sea; limited livelihood options; limited government support.
	Yes	Unclear	Ongoing	Prolonged uncertainty and anxiety about the relocation process; fear of dispersal and collapse of community fundamental Inga traditions.
	Yes	Unclear	No. Unclear if the campesinos will want to market their goods and make purchases in the new Gramalote.	Controversy over site selection; lack of alignment between different levels of government; lack of an economic plan in new site; lack of public services such as garbage collection or police force; refusal of [local government] to relocate.
	No	Yes	No. Far distance from traditional agricultural lands, and little business opportunity due to absence of public transportation.	Return to origin site by many, including families in the "uninhabitable" zone most devastated by lahars; no public transportation; lack of electricity; small size of plots affect livestock; small homes impact multi-generational families; lottery system of housing allocation disrupted social networks; close proximity of homes; differing understanding of priorities between authorities and residents; limited incorporation of local concerns and knowledge.
	Yes	Unclear	Yes. Close proximity.	Access to water supply; ongoing hazard exposure.
	No	Unclear	Yes	Distance to health center; limited septic tanks; ongoing hazard exposure at new site (landslide).
	Yes	Unclear	Yes. Additional livelihood initiatives of fishponds and copra dryer in destination.	Kitchens not built although promised; reduced access to ocean for fishing; exposure to other religious denominations.
	No	Unclear	Yes. Short distance relocation ensures continued kava production, subsistence farming and fishing.	Concerns about equity of access to funding.
	Yes	Unclear	Ongoing	Ecological damage from dynamite to level new settlement site; uncertainty and unclear timeline; lack of funds; concerns about village fragmentation; cultural value of place (Vanua); lack of Mataqali land

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	Which actor(s) initiated the planned relocation?	Which actor(s) supported the planned relocation?	Is there evidence of at least one formal assessment of the 1) location of origin to determine the need for the planned relocation; 2) settlement site to determine suitability for relocation?
India	(Old) Fadsar village, Jamnagar District, Gujarat	Government (Sub-national); Community members	NGO; Government (Sub-national)	1. No evidence 2. No evidence
India	Sathankuppam village, Tamil Nadu, Thiruvallur District	Government (Sub-national)	Government (National and sub-national); NGO	1. No evidence 2. No evidence
Indonesia	Gampong Baro, Aceh Besar	Community members; NGO	NGO; INGO	1. No evidence 2. No evidence
Japan	Remote part of Higashiyama district in Ojiya City, Chuetsu	Community members; Government (National)	Community members; Government (National and sub-national)	1. No evidence 2. No evidence
Maldives	Kandholhudoo Island, Raa Atoll	Government (National)	INGO; Government (National)	1. No evidence 2. No evidence
Mozambique	Xaia, Chokwé District, Gaza Province	Community members; NGO	NGO	1. No evidence 2. No evidence
Nepal	Dheye (Dhey), Mustang District	Community members	INGOs; NGO	1. Yes 2. Yes
Panama	Gardi Sugdub Island, Gunayala	Community members	Community members; Government (National); INGO; Development Bank	1. Yes 2. Yes
Philippines	Anoling Barangay, Albay Province, Bicol Region, Luzon Island	Government (Local)	Government (National and local)	1. No evidence 2. No evidence
Solomon Islands	Taro (provincial capital), Choiseul Province	Government (Sub-national)	Government; Unclear	1. No evidence 2. No evidence
Solomon Islands	Mondo village, Matara District	Community members	Government (Sub-national), NGO	1. No evidence 2. No evidence
Sri Lanka	Talalla village, Matara District	Government	Government; INGO; Donor Government	1. No evidence 2. Yes
United States of America	Allenville, Arizona	Community members	Government (National and sub-national)	1. Yes 2. No evidence

Is there evidence to suggest that affected communities participated during the relocation process?	Is there a domestic legal or policy framework applicable or relevant to relocation?	Is there evidence to suggest that similar livelihood opportunities exist in the site of origin and in destination?	What challenges have been identified during the relocation process or in the settlement site?
Yes	Unclear	Yes. Many return to old sites, also NGO provided a 'livelihood restoration programme'.	High levels of dissatisfaction with home design and size, which were incompatible with traditional lifestyle; lack of genuine consultation with non-elite community member(s); (in)equitable allocation of houses to families; refusal to relocate.
Yes	Yes	No. Fisher folk have to travel three hours to the coast daily.	Distance for livelihoods.
Yes	Yes	No. Commute to old site for livelihoods despite distance.	Access to jobs; neighborhood safety; houses altered to allow women to run a household and business at same time.
Yes	Unclear	Yes. Most formerly commuted to the city for work, school and errands and commute was lessened after relocation.	Lessened interaction and community cohesion after relocation; inter-generational differences (elderly were less able to adjust to relocation site in urban area compared to young people).
Yes	Unclear	Yes. But the proximity and frequency of good fishing was better at the old site.	Ongoing hazard exposure (sea level rise, flooding); environmental degradation in new site.
No	Unclear	No. Raising livestock challenging and cattle not possible at new site. All residents provided with agricultural land and organized into cooperative for commercial tomato production.	Residents could not afford electricity; drier unfamiliar soils made growing crops near homes challenging; some abandoned new site; challenges securing land dependence on support from NGOs.
Yes	Unclear	No. Yak herding is more challenging at lower elevation; apple orchards in new site.	Issues with INGO delivery on commitments; loss of cultural heritage; flooding limiting river crossing.
Yes	Unclear	Yes. 1 km proximity to coast implies fishing still possible, alongside agriculture and tourism.	Delays in access to funding; new site has risk of malaria and yellow fever; insufficient government support.
No	Yes	No. Many return to original site in 6 km 'permanent danger zone' to farm crops and raise livestock.	Many households maintain 'translocal' ties to dual residences for livelihood purposes.
Yes	Unclear	Ongoing	Lack of access to land due to customary land (i.e., customary land tenure regimes restrictive in government-led relocation efforts); challenges of relocating critical services; concerns about ongoing hazard exposure in low-lying new site; lack of resources.
Yes	Unclear	Yes. Although fishing livelihoods are impacted by distance to coast.	Land tenure; housing cost; distance to origin; generational differences; cultural connection to place; psychological challenges; portion of the population refused to relocate.
No	Yes	No. Limited options for nighttime fishing.	Perceptions by host community as wealthier; culture shock and nostalgia of living inland; over-reliance on single local official (in lieu of community participation) resulting in favoritism and abuse of power.
Yes	Unclear	Yes	Few citizens chose to move elsewhere as relocation site was too distant from workplaces, shopping, churches and medical care.

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	Which actor(s) initiated the planned relocation?	Which actor(s) supported the planned relocation?	Is there evidence of at least one formal assessment of the 1) location of origin to determine the need for the planned relocation; 2) settlement site to determine suitability for relocation?
United States of America	Soldier's Grove, Wisconsin	Community members	Community members; Government (National and local)	1. Yes 2. Yes
United States of America	Valmeyer, Illinois	Community members	Government (National, sub-national and local)	1. No evidence 2. Yes
United States of America	Rhineland, Missouri	Community members	Community members; Government (National, sub-national and local)	1. No evidence 2. No evidence
United States of America	Pattonsburg, Missouri	Community members	Community members; Government (National, sub-national and local)	1. No evidence 2. No evidence
United States of America	Newtok, Alaska	Community members	Community members; Government (National and State); private sector	1. Yes 2. Yes
United States of America	Isle De Jean Charles, Terrebonne Parish, Louisiana	Community members	Community members; Government (National, sub-national and local); NGOs	1. Yes 2. Yes
United States of America	Lower village of Taholah, Washington	Community members	Community members; Government	1. Yes 2. Yes
United States of America	Shishmaref village, Sarichef Island, Alaska	Community members	Community members; Government	1. Yes 2. Yes
United States of America	Kivalina village, Alaska	Community members	Community members; Government (National, sub-national and local); NGO	1. Yes 2. Yes
Vanuatu	Letau, Tegua Island	Community members	Governmental (National or sub-national); Donor Government; Intergovernmental; NGO.	1. No evidence 2. No evidence

	Is there evidence to suggest that affected communities participated during the relocation process?	Is there a domestic legal or policy framework applicable or relevant to relocation?	Is there evidence to suggest that similar livelihood opportunities exist in the site of origin and in destination?	What challenges have been identified during the relocation process or in the settlement site?
	Yes	Unclear	Yes	Inequality in distribution of costs/benefits from new town among community members; social costs not considered alongside economic gains; need for monitoring over time; ongoing hazard exposure (flood).
	Yes	Unclear	Yes	Quarry company owned rights under the new town.
	Yes	Unclear	Yes. Slight increase in tourism.	Inter-generational differences; some residents reluctant to move; weaker social ties in new community; businesses faced challenges and were "hardest hit".
	Yes	Unclear	Yes. Relocated mill. Slight increase in tourism; assistance to businesses to relocate.	Businesses face challenges.
	Yes	Unclear	Yes. Site selected within traditional lands to ensure access to subsistence resources and livelihoods.	Lack of a lead federal agency (a role filled by Denali Commission); lack of a dedicated funding source; loss of land is an existential threat to cultural identity and place-based traditions.
	Yes	Unclear	No	Federal requirements for restricted mortgages confusing to community members with traditions of passing down property; failure of process to meet the unique needs of the tribes; some have chosen not to relocate; coordination across national and state actors; loss of land is an existential threat to cultural identity and place-based traditions.
	Yes	Yes	Yes. Short distance.	Access to funding (mismatch between funding and needs); needs of elderly persons and of children; importance of cultural heritage in new site.
	Yes	Unclear	No. Reduced access to marine resources and livelihoods.	Potential hazard exposure in new site (thawing permafrost); challenges in site selection; reduced access to livelihoods.
	Yes	Unclear	N/A [Site that Corps recommended was rejected by community due to distance from coast and subsistence livelihoods]	Site selection (recommended site unacceptable due to distance from coast and subsistence livelihood activities); funding; absence of applicable legal and funding frameworks.
	Yes	Unclear	Yes.	Ongoing hazard exposure in new site (flood); potential secondary relocation.

ANNEX C.

METHODS EMPLOYED BY PRIMARY ARTICLE FOR ALL CASES

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	Data Collection Methods Employed	Type of Stakeholders Interviewed
Australia	Grantham, Lockeyer Valley, Queensland	In-depth interviews, focus group discussions, field observations, and document analysis	Local government officials only (including the Mayor)
China	Dabashan village, Songpan County, Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province	Interviews, household surveys, and document analysis	Community members and government (County, township, and local)
Colombia	El Choncho village, El Choncho Barrier Island, San Juan River Delta	Interviews, document analysis	Community members only
Colombia	Aponte, Nariño Department	Interviews, document analysis	Community members, IGO representatives and government officials (departmental and municipal)
Colombia	Gramalote, Norte de Santander	Interviews, participant observation, document analysis	Community members and government officials (local, departmental, national)
El Salvador	Verapaz, San Vicente Department	Interviews, participant observation, document analysis	Community members, governmental, NGO and academic
Fiji	Biausevu village at Busadule, Viti Levu	Focus group discussions, community mapping, document analysis	Community members only
Fiji	Denimanu village, Yadua Island	Interviews, focus group (FG) discussions, and participant observation; [no document analysis]	Community members only (chief, church representatives, teachers)
Fiji	Vunidogoloa village, Vanua Levu Island, Cakaudrove Province	Interviews, focus group (FG) discussions, and participant observation; [no document analysis]	Community members only (chief, church representatives, teachers)

Number of Interviews	Date of Field Work	Full Citation of Primary Source, Secondary Source (as applicable)
Approx. 6 Interviews Total 1 focus group (4 Lockyer Valley Regional Council officers); 2 Interviews (Mayor and the Executive Liaison Officer)	April & October 2017	Okada, T., Haynes, K., Bird, D., van den Honert, R. & King, D. (2014). Recovery and resettlement following the 2011 flash flooding in the Lockyer Valley. International Journal of Disaster Risk Reduction. 8, 20–31
Total Unknown 17 Household surveys; Unknown interviews [One of two communities]	Unknown	Xu, Yun, et al. (2020). Disaster risk management models for rural relocation communities of mountainous southwestern China under the stress of geological disasters. International Journal of Disaster Risk Reduction, 101697.
Unknown	Unknown	Correa, I. D., & Gonzalez, J. L. (2000). Coastal erosion and village relocation: a Colombian case study. Ocean & Coastal Management, 43(1), 51-64.
Unknown	May 2016	Staupe-Delgado, Reidar. (2020) Can community resettlement be considered a resilient move? Insights from a slow-onset disaster in the Colombian Andes. The Journal of Development Studies 56.5, 1017-1029.
33 Interviews Total 17 with community members, 16 with government and project personnel	April 2017	Oliver-Smith, A., & Arenas, C. (2015). Post-disaster Resettlement: The Transition to the New Community in Gramalote, Columbia. Natural Hazards Center. [NOTE- this publication was issued in 2017]
		Oliver-Smith, A., & Arenas, C. (2017). Gramalote, Colombia : A displaced community in transition. Displacement Solutions.
38 Interviews Total 27 with community members, 11 with DRR representatives	April 2011 – June 2012	Bowman, L. J., & Henquinet, K. B. (2015). Disaster risk reduction and resettlement efforts at San Vicente (Chichontepec) Volcano, El Salvador: toward understanding social and geophysical vulnerability. Journal of Applied Volcanology, 4(1), 14.
Unknown Focus groups with both men and women	Unknown	John Campbell, Michael Goldsmith and Kanyathu Koshy, 'Community relocation as an option for adaptation to the effects of climate change and climate variability in Pacific Island countries (PICs)', Asia-Pacific Network for Global Change Research, Final Report (2005); Connell, 'Population resettlement in the Pacific'
Approx. 30 Interviews Total 2 women's focus groups, 1 men's focus group (approx. 23 people); Interviews (approx.7) [One of multiple communities]	Nov-Dec 2017	Piggott-McKellar, A.E.; McNamara, K.E.; Nunn, P.D.; Sekinini, S.T. (2019). Moving People in a Changing Climate: Lessons from Two Case Studies in Fiji. Social Sciences, 8, 133.
Approx. 38 Interviews Total 2 women's focus groups, 2 men's focus group (approx. 31 people); Interviews (approx.7) [One of multiple communities]	Nov-Dec 2017	McMichael, Celia, Manasa Katonivualiku, and Teresia Powell. (2019). Planned relocation and everyday agency in low-lying coastal villages in Fiji. The Geographical Journal 185.3, 325-337.

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	Data Collection Methods Employed	Type of Stakeholders Interviewed
Fiji	Vunisavisavi village, Vanua Levu Island, Cakaudrove Province	Interviews, focus group discussions, observation	Community members only
Fiji	Narikoso village, Ono Island, Kadavu Island chain	Interviews, document analysis	Community members; Unknown
India	(Old) Fadsar village, Jamnagar District, Gujarat	Interviews, focus group discussions, participant observation	Community members only (men and women, different socioeconomic backgrounds and castes)
India	Sathankuppam village, Tamil Nadu, Thiruvallur District	Interviews, household survey, document analysis	Community members and NGO Officials
Indonesia	Gampong Baro, Aceh Besar	Interviews, household survey	Community members
Japan	Remote part of Higashiyama district in Ojiya City, Chuetsu	Interviews, household survey, participant observation	Community members and government officials
Maldives	Kandholhudhoo Island, Raa Atoll	Interviews, household survey	Community members and local government
Mozambique	Xaia, Chokwé District, Gaza Province	Interviews, focus groups, document analysis	Community members, government officials, NGOs, and academics
Nepal	Dheye (Dhey), Mustang District	Interviews, focus groups, document analysis	Community members, local government
Panama	Gardi Sugdub Island, Gunayala	Interviews	Community members and government

	Number of Interviews	Date of Field Work	Full Citation of Primary Source, Secondary Source (as applicable)
	124 Interviews Total 12 focus groups (80 people), and interviews (44 people) [One of multiple communities]	Unknown	McMichael, Celia, Manasa Katonivualiku, and Teresia Powell. (2019). Planned relocation and everyday agency in low-lying coastal villages in Fiji. The Geographical Journal 185.3, 325-337.
	Unknown [One of multiple communities]	Unknown	Bertana, A. (2019). Relocation as an Adaptation to Sea-Level Rise: Valuable Lessons from the Narikoso village Relocation Project in Fiji. Case Studies in the Environment.
	Unknown	Unknown	Barenstein, J. E. D. (2015). Continuity and change in housing and settlement patterns in post-earthquake Gujarat, India. International Journal of Disaster Resilience in the Built Environment.
	Unknown [Subset of multiple communities]	April – June 2008	Bavinck, M., de Klerk, L., van der Plaat, F., Ravesteijn, J., Angel, D., Arendsen, H., ... & Zuurendonk, B. (2015). Post-tsunami relocation of fisher settlements in South Asia: evidence from the Coromandel Coast, India. Disasters, 39(3), 592-609.
	Approx. 21 Interviews Total 15 Survey respondents, Approx. 6 Interviews [One of multiple communities]	Nov-Dec 2015; Feb- April 2017	Sina, D., Chang-Richards, A. Y., Wilkinson, S., & Potangaroa, R. (2019). What does the future hold for relocated communities post-disaster? Factors affecting livelihood resilience. International journal of disaster risk reduction, 34, 173-183.
	56 Interviews Total [One of multiple communities]	2008 - 2009	Iuchi, K. (2014). Planning resettlement after disasters. Journal of the American Planning Association, 80(4), 413-425.
	218 Interviews Total 18 Interviews, 200 Household Surveys	October 2013	Simonelli, A. C. (2016). Good Fishing in Rising Seas: Kandholhudhoo, Dhuvaafaru, and the Need for a Development-Based Migration Policy in the Maldives. In Migration, Risk Management and Climate Change: Evidence and Policy Responses (p. 131-148). Springer, Cham. Croshaw, H. R. (2017). In the wake of the 2004 Great Indian Ocean Tsunami: Internally displaced persons and the natural disaster response in the Maldives. Journal of Asian Development, 3(1), 125-143.
	84 Interviews Total 19 interviews with government and other actors; 65 individual and group interviews with community	2011 - 2012	Arnall, A., Thomas, D. S., Tywman, C., Liverman, D. (2013). Flooding resettlement, and change in livelihoods: evidence from rural Mozambique. Disasters. July 2013. 37(3),468-88
	Unknown	2012	Bernet, D., Pittet, D., Kappenberger, G., Passardi, M., Shrestha, R., & Ambrosi, C. (2012). Moving down or not? A key question for Samzong, Yara, and Dheye, three villages in Upper Mustang, Mustang District, Nepal, Part IV: DHEYE Devkota, Fidel. "Making of Prototype House of Dhe, Lo Mustang Applied Visual Anthropolo." Fidel-Films, (2017), www.fidel-films.com/single-post/2017/05/30/Making-of-Prototype-house-of-Dhe-Lo-Mustang-Applied-Visual-Anthropology-Case-Study-I
	Unknown	2015	Oliver-Smith, A., & Arenas, C. (2015). One Step at a Time: The Relocation Process of the Gardi Sugdub Community in Gunayala, Panama, Mission Report. Displacement Solutions. Zachary Slobig. "Panama: Higher Ground." Pulitzer Center, 8 Dec. 2016, available at: http://pulitzercenter.org/stories/panama-higher-ground.

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	Data Collection Methods Employed	Type of Stakeholders Interviewed
Philippines	Anoling Barangay, Albay Province, Bicol Region, Luzon Island	Interviews, focus group, participant observation, document analysis	Community members, government officials, IGOs, donors
Solomon Islands	Taro (provincial capital), Choiseul Province	Interviews, focus group discussions, document analysis	Community members and government
Solomon Islands	Mondo village, Matara District	Interviews, household survey, document analysis	Community members only
Sri Lanka	Talalla village, Matara District	Interviews, focus group discussions, document analysis	Community members, government officials, NGOs, and donors
United States of America	Allenville, Arizona	Interviews, and document analysis (e.g. newspapers, reports, statutes, and legislative records).	Community members and government officials
United States of America	Soldier's Grove, Wisconsin	Interviews, household surveys	Community members only
United States of America	Valmeyer, Illinois	Interviews, focus groups, participant observation, household survey	Community members and government
United States of America	Rhineland, Missouri	Interviews, document analysis	Community members and government
United States of America	Pattonsburg, Missouri	Interviews, document analysis	Community members and government
United States of America	Newtok, Alaska	Interviews, document analysis	Community members and government

	Number of Interviews	Date of Field Work	Full Citation of Primary Source, Secondary Source (as applicable)
	Unknown total; 26 Community Members	2009 - 2010	Usamah, M., & Haynes, K. (2012). An examination of the resettlement program at Mayon Volcano: what can we learn for sustainable volcanic risk reduction?. Bulletin of volcanology, 74(4), 839-859.
	Unknown	Unknown	Albert, Simon, et al. (2018). Heading for the hills: climate-driven community relocations in the Solomon Islands and Alaska provide insight for a 1.5 C future. Regional environmental change, 18.8, 2261-2272.
	119 Total	2015 - 2017	Otoara Ha'apio, M., Wairiu, M., Gonzalez, R., & Morrison, K. (2018). Transformation of rural communities: lessons from a local self-initiative for building resilience in the Solomon Islands. Local Environment, 23(3), 352-365.
			Email exchange with local contact on October 9, 2020.
	30 Interviews Total (18 community members, 12 government and other)	2014	Vithanagama, R., Mohideen, A., Jayatilaka, D., & Lakshman R. (2015). Planned Relocations in the context of Natural Disasters: The Case of Sri Lanka. Brookings Institution and the Centre for Migration Research and Development.
	36 Interviews Total (26 community members in new site; 6 community members that chose not to relocate; representatives from 4 government offices)	1982	Perry, R. W. and Lindell, M.K. (1997). Principles for Managing Community Relocation as a Hazard Mitigation Measure. Journal of Contingencies & Crisis Management. 1 March 1997.
	85 Interviews Total	1988	Tobin, G.A. (1992). Community response to floodplain relocation in Soldiers Grove, Wisconsin. Transactions of the Wisconsin Academy of Sciences, Arts, and Letters.. 80, 87–96
			Becker, W.S. (1983). Come Rain, Come Shine: A Case Study of a Flood- plain Relocation Project at Soldiers Grove, Wisconsin (Wisconsin Department of Natural Resources).
	Approx. 117 Interviews Total 39 Interviews, 78 Survey participants	1998	Gaetano Guzzo. (2002). From River Rats to Bluff Dwellers: A Study of Community in a Relocated Town: A Sociological Case Study of the FEMA Flood Mitigation Project at Valmeyer, Illinois, manuscript
			Knobloch, D. M. (2005). Moving a community in the aftermath of the great 1993 Midwest flood. Journal of Contemporary Water Research & Education, 130(1), 41-45.
	8 Interviews Total [One of multiple communities]	Unknown	VanPelt, A. (2010). Response to Flood Hazards: Assessing Community Factors that Affect the Decision to Relocate. Master's thesis Southern Illinois University at Carbondale.
	8 Interviews Total [One of multiple communities]	Unknown	VanPelt, A. (2010). Response to Flood Hazards: Assessing Community Factors that Affect the Decision to Relocate. Master's thesis Southern Illinois University at Carbondale.
	46 Interviews Total [One of multiple communities]	2018-2020	GAO-20-488, CLIMATE CHANGE: A Climate Migration Pilot Program Could Enhance the Nation's Resilience and Reduce Federal Fiscal Exposure. https://www.gao.gov/assets/710/707961.pdf

What is the country of the site of origin in the planned relocation case?	What is the exact location of the site of origin in the planned relocation case?	Data Collection Methods Employed	Type of Stakeholders Interviewed
United States of America	Isle De Jean Charles, Terrebonne Parish, Louisiana	Interviews, document analysis	Community members and government
United States of America	Lower village of Taholah, Washington	Interviews, focus group discussions, household surveys	Community members and local officials
United States of America	Shishmaref village, Sarichef Island, Alaska	Interviews, focus group discussions, document analysis	Community members and government
United States of America	Kivalina village, Alaska	Interviews, document analysis	Unknown
Vanuatu	Letau, Tegua Island	Interviews, household survey, participant observation, document analysis	Community members (including Chief); government officials and non-governmental actors

	Number of Interviews	Date of Field Work	Full Citation of Primary Source, Secondary Source (as applicable)
	46 Interviews Total [One of multiple communities]	2018-2020	GAO-20-488, CLIMATE CHANGE: A Climate Migration Pilot Program Could Enhance the Nation's Resilience and Reduce Federal Fiscal Exposure. https://www.gao.gov/assets/710/707961.pdf
			US Department of Housing and Urban Development, and Louisiana Office of Community Development. "Isle De Jean Charles Resettlement Overview and Background." Isle De Jean Charles, 9 June 2020, http://isledejeancharles.la.gov/sites/default/files/public/IDJC-Background-and-Overview-1-28-21.pdf.
	Unknown	2015-2017	Quinault Indian Nation Cmty. Dev. & Planning Dep't, The Taholah village Relocation Master Plan (2017), available at http://www.quinaultindiannation.com/planning/FINAL_Taholah_Relocation_Plan.pdf
	Unknown	Unknown	Albert, Simon, et al. (2018). Heading for the hills: climate-driven community relocations in the Solomon Islands and Alaska provide insight for a 1.5 C future. Regional environmental change 18.8, 2261-2272.
	Unknown	Unknown	Marlow, Jennifer J., and Lauren E. Sancken. (2017) Reimagining relocation in a regulatory void: the inadequacy of existing US federal and state regulatory responses to Kivalina's climate displacement in the Alaskan Arctic. Climate Law 7.4, 290-321.
	41 Interviews Total (20 "internal" interviews, 9 of whom also participated in the household questionnaire; 21 "external" interviews with government and non-government)	March – April 2011	Warrick, O. (2011). The adaptive capacity of the Tegua island community, Torres Islands, Vanuatu. Australian Aid. Available at: https://www.nab.vu/sites/default/files/documents/usp-adaptive-capacity-vanuatu.pdf

ANNEX D.

CODEBOOK QUESTIONS, ANSWERS, AND METHODOLOGICAL NOTES

Question	Answer Code	Caveats and Notes from coding
What is the country of the site of origin in the planned relocation case?	Country	
What is the province/state of the site of origin in the planned relocation case?	Province/State	
What is the exact location of the site of origin in the planned relocation case?	Town/neighborhood or community name	
What is the location of the destination settlement site in the planned relocation case?	Community or village name	
Which hydrometeorological, geophysical/geological, or environmental hazard(s) is the planned relocation initiated in anticipation/reaction to?	All listed in classifications of UNDRR terminology, see Annex F on definitions	
What is the approximate physical distance (in km) between the site of origin and the site of destination?	Number of kilometers	As indicated in the primary source, secondary source, or as determined from google earth
In approximately what year was the need for planned relocation first identified?	Year	If not explicitly stated, the year of the associated hazard
In approximately what year was the physical relocation to the settlement site completed for the majority of households?	Year	
Is the relocation ongoing or completed (at time of publication)?	Completed or Ongoing	
Approximately how many households (people) have relocated, or are identified for relocation?	Number of households (Number of people)	For cases that are ongoing, the number in this column represents the number identified for relocation. Even if some households have already moved, the number of households identified for relocation is the number reported.
Does the relocating community identify as part of an indigenous tribe or community?	Yes or No	Indigeneity or native tribes are more common in countries like the US (that have been colonized); groups that are local to specific places may not identify as indigenous in other parts of the world
Does the relocating community identify as rural or urban?	Rural or Urban	
Was the planned relocation initiated after displacement?	Yes, No	
Which actor(s) initiated the planned relocation?	Community member, government, inter-governmental, non-governmental (List as many as appropriate); If government, identify level(s)	Government levels are coded as follows: National (includes Federal, Military) Sub-national (includes State, Provincial, Departmental and Regional depending on country approach) Local (city, town or village) Could not consistently identify sectors of government actors

Question	Answer Code	Caveats and Notes from coding
Which actor(s) supported the planned relocation, including through funding?	Community member, government, inter-governmental, non-governmental (List as many as appropriate); If government, identify level(s)	Government levels are coded as follows: National (includes Federal, Military) Sub-national (includes State, Provincial, Departmental and Regional depending on country approach) Local (city, town or village) Other actors coded as follows: NGO Donor Government INGO - (e.g. IFRC) Inter-governmental Organization (e.g. UN actors) Development Bank Private Sector Could not consistently identify sectors of government actors
Is there evidence of at least one formal assessment of the 1) location of origin to determine the need for the planned relocation; 2) settlement site to determine suitability for relocation?	Yes or No	Interpreted as formal assessment, all cases have community assessment of some sort
Is there evidence to suggest that affected communities participated during the relocation process?	Yes or No	
Is there a domestic legal or policy framework applicable or relevant to relocation?	Yes, No, Unclear	Search terms in papers: "law, polic*, legal, legislat*, regulat*, and act, when possible to search. Put unclear when the literature does not mention anything.
Is there evidence to suggest that similar livelihood opportunities exist in the site of origin and in destination?	Yes or No; Any skills training in settlement site	
What challenges have been identified during the relocation process or in the settlement site?	Narrative	
Key Source	Source Citation in APA format	
Data Collection Methods Employed by Key Source	For interviews - note whether focus group or individual, note whether structured/standardized survey, semi-structured, or unstructured	

ANNEX E.

REGIONAL GROUPS OF COUNTRIES

The cases included in the annex fall into the following regions and sub-regions, according to the World Bank Group. We have only listed the countries for which there are identified planned relocation cases.

Question	Sub-Region	Country
Africa	Sub-Saharan	Botswana, Cameroon, Ethiopia, Ghana, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Somalia, Uganda, Zimbabwe
Americas	Central America	Belize, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama
Americas	Caribbean	Antigua and Barbuda, Bahamas, Dominica, Dominican Republic, Haiti, Jamaica, Montserrat (Territory of the United Kingdom)
Americas	North America	United States of America
Americas	South America	Argentina, Brazil, Chile, Colombia, Ecuador, Uruguay
Asia	Central Asia	Tajikistan
Asia	East Asia	China, Japan, Taiwan
Asia	South Asia	Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka
Asia	South East Asia	Indonesia, Malaysia, Myanmar, Philippines, Thailand, Vietnam
Europe		France, Germany, Italy, United Kingdom, Turkey
Middle East		Iran
Oceania		Australia, Fiji, Kiribati, New Zealand, Papua New Guinea, Samoa, Solomon Islands, Vanuatu

ANNEX F.

HAZARD DEFINITIONS

The following definitions are adopted by the UN General Assembly (UNGA).

Hazard
A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.

Multi-hazard
means (1) the selection of multiple major hazards that the country faces, and (2) the specific contexts where hazardous events may occur simultaneously, cascading or cumulatively over time, and taking into account the potential interrelated effects.

Hazards include (as mentioned in the Sendai Framework for Disaster Risk Reduction 2015-2030, and listed in alphabetical order) biological, environmental, geological, hydrometeorological and technological processes and phenomena. This report focuses on hazards that are geologic or geophysical, hydrometeorological or environmental.

Geological or geophysical hazards
originate from internal earth processes. Examples are earthquakes, volcanic activity and emissions, and related geophysical processes such as mass movements, landslides, rockslides, surface collapses and debris or mud flows. Hydrometeorological factors are important contributors to some of these processes. Tsunamis are difficult to categorize: although they are triggered by undersea earthquakes and other geological events, they essentially become an oceanic process that is manifested as a coastal water-related hazard.

Hydrometeorological hazards
are of atmospheric, hydrological or oceanographic origin. Examples are tropical cyclones (also known as typhoons and hurricanes); floods, including flash floods; drought; heatwaves and cold spells; and coastal storm surges. Hydrometeorological conditions may also be a factor in other hazards such as landslides, wildland fires, locust plagues, epidemics and in the transport and dispersal of toxic substances and volcanic eruption material.

Environmental hazards
may include chemical, natural and biological hazards. They can be created by environmental degradation or physical or chemical pollution in the air, water and soil. However, many of the processes and phenomena that fall into this category may be termed drivers of hazard and risk rather than hazards in themselves, such as soil degradation, deforestation, loss of biodiversity, salinization and sea level rise. (In this report, erosion and permafrost loss are considered environmental hazards).

For further details on these definitions and the specific hazards under each hazard type, refer to relevant annexes to the UNDRR/ISC Sendai Hazard Definition and Classification Review Technical Report (2020): https://www.undrr.org/publication/hazard-definition-and-classification-review.

PLATFORM ON DISASTER DISPLACEMENT

FOLLOW-UP TO THE NANSEN INITIATIVE

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