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THE INTERNATIONAL AND REGIONAL RESPONSE TO HUMAN MOBILITY IN THE CONTEXT OF CLIMATE CHANGE: GOOD PRACTICES AND GLOBAL CHALLENGES

Supervisor: Prof. PIETRO DE PERINI

Candidate: CHIARA BUZZI
Matriculation No. 1207456

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The international and regional response to human mobility in the context of climate change: good practices and global challenges

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Introduction

"The Earth has abandoned geological speed; it is changing at human speed. And yet our response happens at a glacial pace" (Magnason, 2020a, p.89). The frequency and magnitude of natural disasters are increasing each year, forcing people to flee their homes and sometimes even their countries. In 2019, about 5.1 million people in 95 States were living in displacement due to disasters, and in that year 24.9 million new internal displacement movements were caused by 1,900 events (IDMC, 2020a, p.4). Around 13.9 million people globally risk being displaced by sudden-onset disasters alone each year (Ibid, p. 81), and slow-onset phenomena triggered by anthropogenic climate change will contribute to increase the number of environmental migrants and internally displaced persons (IDPs). These figures show that human mobility in the context of climate change is one of the biggest and most urgent challenges of this century. This phenomenon is affecting wider areas of the world, and it needs to be analysed and addressed at the international, regional and local level.

The Thesis will firstly explore the existing approach to human mobility in the context of climate change and the difficulties in recognising its relevance. The current climatic situation threatens the weak system of protection of environmental migrants and IDPs. The international and regional frameworks offer few good practices and points of departure along with many challenges. Proper data gathering, analysis and diffusion will fuel political commitment necessary to address this international issue. The final part presents three examples of climatic emergencies that are endangering not only States traditionally affected by natural disasters, but areas of the world that are starting to witness increasingly severe consequences of climate change, leading to widespread displacements. Some positive responses can be developed through climate change adaptation strategies, disaster risk reduction plans and legal protection for environmental migrants. After a first introduction to the research problem, the aim and structure of the Thesis will be illustrated.

Research problem

Anthropogenic climate change modifies the intensity, frequency, duration and location of natural hazards. The last years have witnessed an increased number of climate change-related emergencies, from the record wildfires in California to the ones in Australia, from the floods in India to the ones in Italy and France. Year 2020 has demonstrated that even if the risks of a global pandemic and the increasing effects of climate change have been undeniable, the world is not prepared to acknowledge nor address these emergencies.

Climate change can amplify the drivers of international migration and internal displacements due to unbearable living conditions in the place of origin. Increasing high temperatures, droughts, rainfall, flooding and sea level-rise impacts vulnerable communities with regard to ecosystems, economies and existing or new conflicts for natural resources.

The climate change-displacement conundrum includes the difficulty in recognising the relation among the two phenomena and the limited policy options at the international, regional and local level. Human mobility in the context of climate change is not sufficiently addressed neither by scientists nor politicians, and analysis is often limited to particular regions of the world. Journalist and climate change expert Dr Francesca Santolini, at an online conference during the 2020 pandemic, described the little explored figure of people fleeing from environmental disasters through three peculiar characteristics. First, human mobility experienced in this context is often internal and that is one of the reasons why the issue is not deeply analysed by Western media and politicians. These South-South movements historically interested Africa, Asia and the Pacific Islands. However, this phenomenon is increasingly affecting wider areas of the world, including high-income countries. Second, human mobility in the context of climate change concerns forced displacement as the ultimate and extreme adaptation strategy. Finally, these are usually irreversible migrations: as the place of origin becomes inhospitable people are unable to return home. According to Dr Santolini, these three elements describe a particular type of displacement, and its little acknowledgement makes it difficult to identify and address it. Migrants themselves

struggle in recognising the environmental causes of their displacement, as climate change triggers many other issues, from economical to conflictual, which tend to be considered push factors alone. Indeed, these people rarely identify themselves as environmental migrants, which does not help to formulate specific responses to human mobility in the context of climate change.

Natural hazards can affect the economy of vulnerable areas, destroying fields and workplaces, and they endanger people's lives, forcing them to flee their homes. Many economic migrants may actually be identified as environmental migrants since the original cause for their movements is climate change. "As their land fails them, hundreds of millions of people from Central America to Sudan to the Mekong Delta will be forced to choose between flight or death. The result will almost certainly be the greatest wave of global migration the world has seen" (Lustgarten, 2020). It is predicted that by 2050 there will be more than 143 million climate IDPs across the regions of Sub-Saharan Africa, South Asia and Latin America (World Bank, 2018).

The increasing impacts of climate change were not followed by adequate institutional responses and here lies one of the most important challenges of our times. Another huge obstacle concerns the bouncing of responsibility between globalism and localism. Flooding in India, bushfires in Australia, desertification in the Sahel and sea-level rise in the Pacific Islands are global issues and should be addressed by the international community *in primis*. Institutions have recently been proved whether or not they can avert and promptly respond to a predicted emergency. Several Western States failed to manage the COVID-19 crisis, and the climate one will test the developed world even deeper.

The New York Times Magazine, ProPublica and the Pulitzer Center developed a model to understand for the first time how people will move across borders. The model foresees that human mobility will increase substantially as the climate changes (Lustgarten, 2020). Moreover, the model underlines that political responses to climate change and migration can make the difference. "The only way to mitigate the most destabilizing aspects of mass migration is to prepare for it […]" (Ibid). This includes more efforts in data gathering and analysis as well as

international cooperation in preventing and responding to human mobility in the context of climate change. “The world no longer has the luxury of ignoring crises outside of their borders” (Babson, 2018), as climate change is an issue that affects everyone in the world.

IOM’s capacity building officer Lorenzo Guadagno affirmed that “mobility is resilience” (Lustgarten, 2020): each policy that permits people to flee their dangerous place of origin and to decide where to live contributes to a safer life. Migration is a natural adaptation to climate change. The worst-case scenario will include the increase of natural hazards due to climate change and the impossibility for vulnerable people to flee their homes. Closing borders without mitigating the effects of climate change will trap an increasing number of people in areas that are harmful to human life. What are policymakers, international and regional institutions and organisations doing to prevent this situation?

Aims, structure and methodology

The Thesis aims at analysing and discussing how international, regional and national institutions and organisations have been responding to human mobility in the context of climate change. Environmental displacement could be faced from a variety of perspectives as climatic, political or security. This work will focus on international and regional policies that have been trying to elaborate a legal framework to protect environmental migrants and IDPs and to promote preventive measures. The Thesis will often describe examples of high-income and Western countries facing this phenomenon, not to minimise the extreme difficulties suffered by more vulnerable areas, but in order to highlight the global level of importance that this issue has reached, and the urgency of a cooperative and multi-level coordinated response.

The first Chapter will propose an overview of the current global situation regarding people leaving their homes due to natural disasters, presenting the starting points for the Thesis. It analyses the evolution of the main discussions around this

phenomenon, taking into consideration scientific and political literature. It will also try to bring to light the global phenomenon of environmental displacement through the latest data available. The Thesis presents and discusses environmental migration as a global issue that is increasingly affecting wider areas of the world. Indeed, if in the past natural disasters used to affect especially the most vulnerable countries, nowadays these hazards are also affecting highly developed regions of the world. Despite their financial and technological possibilities, also these States are facing the devastating consequences of climate change, including forced displacement. The Thesis will often refer to data and concrete examples of strategies adopted by vulnerable countries characterised by the largest number of disasters and displacements, and also by high-income States such as the US and Australia. It is necessary to collect data and elaborate analysis on this rising phenomenon. These data will clearly express the dimension of the issue, highlighting how international and regional strategies continue to fail to recognise and protect environmental migrants and IDPs.

The second Chapter will then explore how the international soft law instruments have influenced regional and national responses. This analysis will reveal the main challenges for policy-makers in addressing this issue, offering a starting point for the elaboration of effective policies. For the global dimension of the issue, the international community needs to develop effective measures to respond to it through a cooperative approach, overcoming the existing fragmentation of instruments and policies.

The third Chapter will debate whether current data collection and analysis are helpful in designing proper policies to mitigate the effects of climate change and to protect environmental migrants and IDPs. The Chapter follows a parallel analysis of the measures in practice and the relative challenges.

The last part of the Thesis will start with an analysis of three States particularly affected by weather-related disasters in the last years, Australia, India and California. The Chapter will discuss whether a local or a bottom-up process can

complement and interact with the international and regional efforts in tackling the issue, creating an effective multi-level framework. Indeed, regional or local best practices and strategies may influence other States, regions and also the international perspective. Moreover, the discussion will consider preventive measures as disaster risk reduction plans, responding measures as adaptation strategies, and protective measures as an appropriate legal framework for environmental migrants and IDPs. These examples will present several effective points of departure and deficiencies from which to design proper measures to protect environmental displaced persons. A proper multi-level strategy could fill the gaps in the protection framework of environmental migrants and IDPs, from the international commitment in addressing a common issue to the involvement of local authorities and organisations.

The Thesis will benefit from both primary and secondary sources. Secondary sources will include theories and researches of experts and scholars, along with data and analysis of documents of regional and international organisations as the European Union, the United Nations, the International Organisation for Migration, Save the Children and the Internal Displacement Monitoring Centre, the world's authoritative source of data and analysis on internal displacement, along with regional and national reports and valid contributions. Constant reference to the international and local response to environmental migration regarding high-income and low-income countries will help to present a global picture and to show the efforts and gaps in addressing this issue during the last decades.

Primary sources will contribute to develop an original presentation and elaboration of the current situation regarding strategies and policies on environmental migration. Since this phenomenon is now starting to show its effects on high-income countries, it will be necessary to collect interviews to investigate the institutional efforts in addressing the issue, how climate change is perceived and which measures have been promoted. Primary sources could stem from declaration of and interviews with technicians, politicians, civil society organisations and environmental activists. Direct experiences of people living in risk-prone areas will

be collected to investigate whether climate change has a global impact and it is starting to foster environmental displacement also in Western and high-income countries. Qualitative data collected from these interviews may provide a more in-depth understanding of the challenges and the positive outcomes of the measures taken at various levels to address environmental displacement.

The Thesis includes interviews concerning the perspective of Federico Cellini, the Emergency and Psychosocial Head of Unit at Save the Children Italy; Tresa Ann, an environmental activist who was directly involved in the 2018 devastating flooding in the State of Kerala, India; Debbie Levine, who experienced the Tubbs Fire in the city of Santa Rosa, California, in 2017 and helped in evacuation camps; and Jack Rafferty, founder and director of the Refugee Policy Institute in Sydney and Environmental Science Graduate at the University of Sydney. During the 2020 Summer School of Scuola di Politiche were collected declarations from Sergio Costa, Italian Minister of the Environment; Arancha González, Spanish Minister of Foreign Affairs, European Union and Cooperation, and former assistant Secretary-General of the United Nations; and Elly Schlein, former member of the European Parliament and current Vice President of Emilia-Romagna Region. Further interventions of Valentina Orioli, council member for urban planning and the environment and vice-mayor of the city of Bologna, and of Francesca Santolini, adviser to the Ministry of the Environment and author of two books on environmental migrants, were reported during the participation in other conferences during 2019 and 2020.

The choices in the geographical examples, initiatives and topics presented in the Thesis were influenced by the academic studies, by personal experiences, and by the aim of demonstrating a particular aspect of the increasing damages caused by climate change and the necessity of implementing a variety of coordinated responses. The importance of disaster risk reduction strategies and community preparedness was strongly assimilated during the internship at the Emergency and Psychosocial Unit of Save the Children Italy in Rome, in the last months of 2019. Several ideas for the Thesis were shaped after the following activities: participating

in ChildEx, the first simulation of an earthquake involving children and families to prepare local communities to deal with emergencies; helping to develop RisKit, the game that aims at improving the diffusion of knowledge around DRR; and representing the Organisation during the Riskilience, an innovation camp promoted by the Joint Research Center of the European Commission and from the Italian region Emilia-Romagna that concerned the risk governance. Furthermore, the focus on the Australian case was influenced by the participation in the Industry and Community Project promoted by the University of Padova and the University of Sydney that took place in Sydney during January and February 2020. On that occasion, extraordinary flooding affected the city, registering in a few days more than three times the average rainfall for February, while bushfires continued to burn the adjacent forests.

Collecting data, sharing best practices and discussing gaps and challenges will contribute to raise the attention on the underrated phenomenon of human mobility in the context of climate change, and to fuel the public and scientific debate in order to develop proper environmental and migration policies at the international, regional and local level.

First chapter

Global challenges in defining and addressing human mobility in the context of climate change

1.1 Introduction

The first Chapter of the Thesis aims at analysing the current situation around the topic of human mobility in the context of climate change from an academic and a geo-political perspective. Data collected by the International Displacement Monitoring Centre show the wide diffusion of natural disasters triggered by climate change and the consequent number of displacements, demonstrating how these issues are affecting an increasing number of States around the world. These data reveal the urgency of international, regional and local measures to minimise the effects of climate change while protecting environmental migrants and IDPs.

Firstly, there is no agreed definition over the concept of people fleeing from natural disasters, as human mobility and environmental hazards have usually been studied separately. Moreover, the relation between climate change, environmental change and migration is still debated. Indeed, migration can be indirectly caused by natural disasters, through social conflicts for resources or losses of jobs due to flooding or urban destruction. This indirect relation among natural hazards and human mobility makes it difficult to demonstrate the existence of environmental migrants. Furthermore, the Chapter explores data on Internal Displaced Persons, as usually people displaced by natural disasters tend to remain within their country. The region of East Asia and Pacific together with South Asia and Sub-Saharan Africa are suffering the most severe consequences of climate changes and the highest number of IDPs. However, the Chapter offers some examples of the impacts of environmental disasters and climate change in Europe, in the US and in Australia, in light of the latest events concerning unusually intense flooding and wildfires. Finally, the UNFCCC Conference of Parties are analysed and discussed according to the evolution of international commitment in addressing human mobility in the

context of climate change.

IDMC demonstrated that weather-related hazards are causing more IDPs than conflicts and violence. Moreover, in 2018 climate change was responsible for 16.1 million displacements (IDMC, 2019a, p.7), that is the number of displacement movements and not the number of IDPs, demonstrating the urgency in designing environmental and humanitarian solutions.

In 2019 the countries characterised by the highest number of new internal displacements due to natural disasters were India (5,037,000), Philippines (4,277,000), Bangladesh (4,086,520), China (4,034,000) and the United States (916,000) (IDMC, 2020a). As in previous years, East Asia and Pacific along with South Asia were the areas that suffered the most. The combination of social and economic vulnerability and increasing hazard severity caused India to experience the highest figure in the world. One of the warmest and wettest years since 1901 fueled the destructive power of eight tropical storms. The Philippines suffered from major typhoons and earthquakes and many lives were saved by pre-emptive evacuations organised by the Government. These were managed also in Bangladesh, hit by cyclones. China was affected by storms, floods, earthquakes and landslides. The United States recorded intense storms and wildfires: California registered 400,000 displacements in October.

Human mobility in the context of climate change is becoming the new normal, or better said, the new abnormal. The international community has slowly started to acknowledge this phenomenon and to elaborate possible solutions. Within the research framework, migration and climate change have been usually analysed in separate fields. However, some scholars have noticed that they are characterised by strictly intertwined relations. Indeed, climate change can trigger profound changes on the environment, and these effects can foster forced human mobility.

1.2 Debate over definitions

Migration and climate change are two current pressing issues. For a long time, these

topics have been studied as individual matters, while more recently some authors have started to analyse the existing relations among them.

Initially, the topics of environment and migration belonged to different branches of learning, as research on the environment was developed within the natural sciences and the study of migration was located in humanities and social sciences (Mence *et al*, 2017). "Just as most classical theories on migration tend[ed] to ignore the environment as a driver of migration, most theories on environmental governance ignore[d] migration flows" (Dun *et al*, 2008, p.10). Moreover, the areas of research of both topics are quite new, and only recently some studies began to consider the interconnections between migration and environment. According to Dun *et al*, since the 1970s the scholars were divided between those expecting an increase of "environmental refugees" and the "sceptics". Reports analysing the link among climate change and migration usually support the first school of thought. Bridging the existing gap between the two areas in one has recently become a priority in the research agenda of these areas. It is essential to integrate the environmental agent in the migration analysis.

For these reasons the definition of "environmental refugee" is still debated. It is necessary to formulate a shared definition for the international community and policymakers to develop proper solutions. Indeed, this kind of displaced persons may not receive the assistance and help they deserve, as they do not fall under the Geneva Refugee Convention definition. Article 1 A(2) states that a refugee is a person who "owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it." (UNHCR, 1951). Even though this Convention does not include the environmental factor, politicians and media usually embrace the term "environmental refugee".

In 1985 United Nations Environment Programme (UNEP) researcher Essam El-Hinnawi was the first to define environmental refugees as "those people who have

been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life" (Bates, 2002, p.466).

However, many scholars do not agree with this definition as it "assumes there is a direct causal link between environmental change and migration" (Jayawardhan, 2017), and because there is a misuse of the term "refugee". Indeed, including environmental flight could weaken the integrity of the existing refugee status. In order to overcome this difficulty, Subramanian and Urpelainen (2013) prefer the term "environmentally displaced persons" (EDP). Also the European Union uses this term in order to define a "person subject to forced migration as a result of sudden, drastic environmental changes" (Environmental Migration Network), deriving this description from the UNHCR International Thesaurus of Refugee Terminology. Moreover, UNHCR 1998 Guiding Principles on International Displacement define internally displaced persons (IDPs) as "those fleeing man-made or natural disasters". The UN Framework Principles on Human Rights and the Environment recognise that "natural disasters and other types of environmental harm often cause internal displacement and transboundary migration, which can exacerbate vulnerabilities and lead to additional human rights violations and abuses" (United Nations, 2018).

Some scholars accept the term "climate refugee" even though they do not believe that the 1951 Convention should include them. Biermann and Boas (2010, p.67) state that by law a refugee must be outside its country of origin, while an EDP can be also internally displaced. They support the use of the term "refugee" because it has "strong moral connotations of social protection [and] by using this term, the protection of climate refugees will receive the legitimacy and urgency it deserves" (Ibid). They define climate refugees as "people who have to leave their habitats, immediately or in the near future, because of sudden or gradual alterations in their natural environment related to at least one of three impacts of climate change: sea level rise, extreme weather events, and drought and water scarcity" (Ibid). However, defining EDPs as "refugees" is still not compatible with the 1951

Convention, therefore it is legally incorrect.

1.3 Perception and reality of human mobility in the context of climate change

"We could say that nature is not changing in geological speed anymore but entering human speed", the Icelandic climate activist and award-winning author Andri Snær Magnason often repeats (Magnason, 2020b). "Changes that previously took a hundred thousand years now happen in one hundred" (Magnason, 2020a, p.6). Climate change consequences as rising sea-levels and increasing temperatures are happening in a single person's lifetime, and they are issues so huge that all meanings collapse. Public perception and political responses are not adequate to the danger of climate change.

Perception of the risks and the consequences of climate change on human mobility is almost absent in Western States, even though this issue is increasingly affecting also high-income countries. Climate change does not stop at country borders. Therefore, it is necessary to globally acknowledge the problem in order to develop a common strategy. Data are essential to portrait reality and avoid sensationalism when describing migration and climate change. It is necessary to reduce the gap between public perception and the real world to start an effective international cooperation around this phenomenon. "[W]hat is happening in Australia, and the images that are emerging from the fires, feels like a closing of the gap between the scientific evidence and the field of immediate perception", but "[o]ne thing that is often remarked about climate crisis is that the subject is characterised by a strange form of cognitive dissonance" (O' Connell, 2020). Climate change and its consequences, as the increasing number of people fleeing their homes, continue to be perceived as a distant problem that does not involve a big part of the world. The "slow atrophying" (Ibid) of public perception and sensitivity to these topics is weakening the political action necessary to address them. Public opinion cannot get used to climate change and to people who live and die in the floods and escape from fires. Australians gathered on the beaches to save themselves from the flames and people that came by boat to Australia to escape natural disasters or unsafe places only to be imprisoned in offshore detention facilities are part of a huge global problem.

The effects of climate change, even though perceived distant, are affecting the lives of people all around the world. Abrahm Lustgarten, a senior reporter at the New York Magazine, linked climate change to Brexit to demonstrate that climate change is not just an environmental issue as it shows its effects in many contexts, humanitarian and political as well. Its consequences are not just ecological, but they affect the economy, the security and the very life of human beings. For instance, crop losses caused job losses that fuelled Arab Springs revolts: climate change is a "threat multiplier" (UNHCR, 2016) in many of today's conflicts. This situation led to an increasing number of people fleeing their homes and reaching Europe. Lustgarten (2020) linked Brexit with the aforementioned situations, which had led to an increased number of migrants in the United Kingdom. Identifying the multifaceted consequences of climate change is not easy and that is why the connection with displacement is still rarely explored.

1.4 Debate over the relation between climate change, environmental change and migration

Protecting people displaced by climate change encounters two main difficulties. Firstly, it should be globally recognised that human action severely impacts the environment, meaning that climate change is anthropogenic, worsening natural hazards. Secondly, it should be acknowledged that these natural disasters force people to flee their homes both as a direct consequence of a sudden-onset disaster, as floods or wildfires, or as an economic or social result of a slow-onset disaster, as droughts or sea-level rise.

One of the main reasons for the difficulties in defining the relation among migration and climate change is linked to the struggle "of isolating environmental factors from other drivers of migration" (Dun *et al*, 2008, p.10). Indeed, it is difficult to prove that the environmental factor is the main reason for migrating. The Intergovernmental Panel on Climate Change (IPCC) provides policy makers with scientific assessment on climate change, alerting on risks and suggesting possible adaptation and mitigation strategies. It is an international scientific body working

in cooperation with the United Nations Framework Convention on Climate Change (UNFCCC), an international environmental treaty whose state parties meet annually in Conferences of the Parties (COP) to assess progress in addressing climate change. In 2007 the IPCC concluded in its Fourth Assessment Report that human activity is unequivocally the main driver for global warming, very likely causing most of the rise in temperatures since 1950 (United Nations, 2012). Starting from this scientific fact, it would be effective to first determine the causal link between global climate change and particular environmental change, and then define the connection among environmental change and displacement.

Scholars still do not agree on the typologies of environmental changes resulting from climate change, let alone the possible displacements due to environmental change. Indeed, the relations among these factors are not direct.

Climate change can trigger the following changes in the environment: changes in rainfall regimes; sea level rise; different frequency or intensity for tropical storms and cyclones; increases in temperature; melting of mountain glaciers. Some of these changes cannot be considered as a direct driver for migration. Raleigh *et al.* (2008, 7) observe that there are no cases of migration directly linked to increases in temperature, although it is important to also consider "slow onset factors which have indirect effects on the livelihoods".

Regarding the connection among environmental change and displacement, Walter Kälin (2010) distinguishes between five scenarios of environmental migration: (i) "sudden-onset disasters, such as flooding, windstorms […] or mudslides caused by heavy rainfalls"; (ii) "slow-onset environmental degradation caused, inter alia, by rising sea levels, increased salinisation of groundwater and soil, long-term effects of recurrent flooding, thawing of permafrost, as well as droughts and desertification"; (iii) "so-called 'sinking' small island states"; (iv) areas designated by governments as "high-risk zones too dangerous for human habitation on account of environmental dangers"; and (v) displacement following "unrest seriously disturbing public order, violence or even armed conflict" that "may be triggered, at least partially, by a decrease in essential resources due to climate change". It is necessary to define the relation existing among environmental disasters and

migration in order to elaborate proper and targeted solutions.

An example of this relation is provided by the following conceptual model (Figure 1) developed by Perch-Nielsen *et al.* (2008, p.378). It describes how floods caused by rainfall trigger migration, considered here as an adaptation option. More in detail, climate change and anthropogenic actions facilitate the development of floods, which have direct effects on the environment. The indirect effects of environmental erosion produce poor economic conditions among populations, which are forced to migrate or to embrace other adaptation measures. These strategies can lead to exposure modification or to modification of sensitivity, which is "[…] the degree to which a system is affected […] by climate-related stimuli" (IPCC, 2001, p.6). The first case could include measures such as reforestation, river diversion, hazard resistant buildings and migration. The second case could embrace forecasting and warning, disaster risk reduction plans, insurance, national relief assistance, and international aid. The type of adaptation measure chosen depends on the geographical and financial situation of the affected area. The outcome of the flood depends, therefore, on the level of vulnerability of the population, on the level of knowledge of the risks, on the quality of communication among experts and people, and on the economic situation. This model clearly explains the importance of conducting intertwined studies embracing climate change and migration fields.

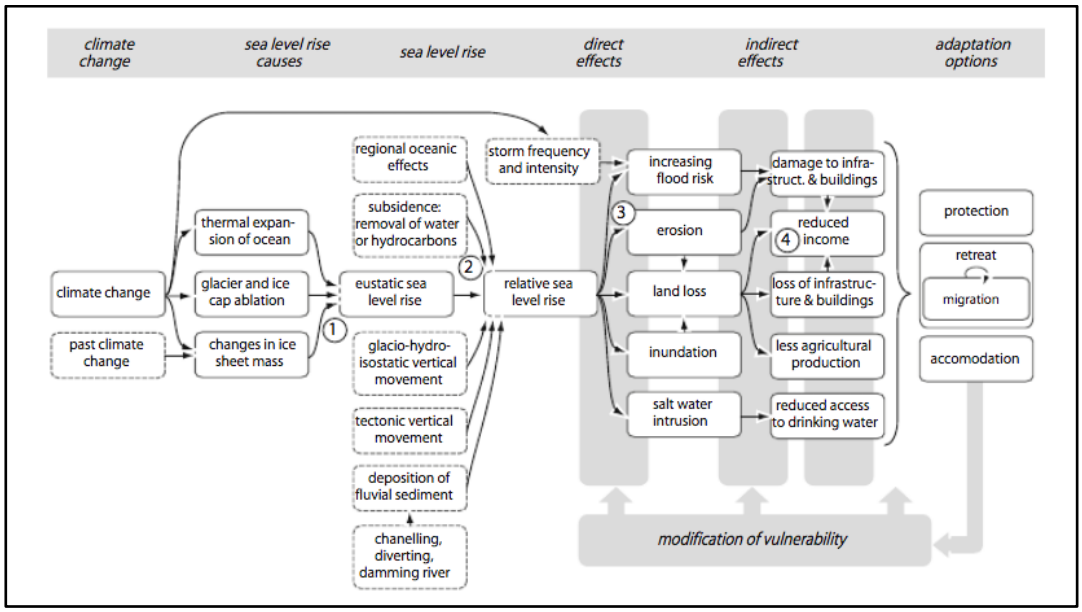

Figure 1. Conceptual model of the influence of climate change on migration through flooding (Perch-Nielsen et al., 2008, p.378).

If some local consequences of climate change can be clearly seen, most of the climate change effects primarily alter economic conditions (Mayer, 2012). This makes the link among environmental change and migration more difficult to notice. Environmental change primarily causes economic migration, without creating a specific kind of migration. Natural disasters can be described as a push factor for migrants, but usually they are not the main cause for displacement. Migrants themselves often tend to underestimate climate change as a pushing factor, finding the cause of their displacement in poverty, without considering the root causes that have led to land deterioration resulting in loss of productivity (Martinez *et al.*, 2020). Indeed, the cause-effect relation between climate change and migration flows is not always easy to define as there are other intertwined aspects to consider, as economy and conflicts, along with slow onset environmental changes that do not show their effects in the short term. These indirect aspects make it difficult to recognise and address this phenomenon.

On the other hand, the few clear effects of climate change risk to over-simplify a complicated correlation. For example, evacuation due to sea-level rise is a direct and isolated cause of migration, but it is not one of the most common effects of

climate change. This underestimation can lead policymakers to adopt ineffective solutions focused just on these evident effects due to sudden-onset disasters and not to slow-onset degradation, undermining the protection of vulnerable people.

In conclusion, it is necessary to establish and acknowledge the relation among climate change, environmental change and migration. The causalities are usually not direct as many factors contribute to people's displacement.

1.5 Current definitions and existing gaps

Since the applicability of existing legal instruments depends on the type of migration, it is urgent to find a globally recognised definition for environmentally displaced persons. The International Organization for Migration (IOM) formulated some definitions that could be globally used to develop a proper legal instrument to protect environmental migrants. These definitions still do not have a legal value since there is no international agreement on the following terms:

- Climate migration: "The movement of a person or groups of persons who, predominantly for reasons of sudden or progressive change in the environment due to climate change, are obliged to leave their habitual place of residence, or choose to do so, either temporarily or permanently, within a State or across an international border" (IOM, 2016). Climate migration is a subcategory of the broader environmental migration.

- Environmental migrants: "[…] persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad" (IOM, 2007).

According to IOM (2014), it should be also important to "differentiate between migration linked to sudden-onset natural disasters (large-scale, rapid and often temporary) and movements linked to slow-onset phenomena". Within the last one

it is relevant the distinction between the "smaller-scale and often circular movements" and the large and permanent displacements.

Kälin and Schrepfer consider the following to be the real issues that need to be clarified in order to formulate a proper definition: "(1) criteria to distinguish between voluntary and forced movements, though such distinction is necessary in light of the fact that international law treats them differently; (2) rights related to admittance and stay on foreign territory; (3) the legal situation and rights of persons on foreign territories, i.e. status rights" (Kälin *et al.*, 2012, p.2). A specific definition could support a legal instrument to protect environmental migrants. Nevertheless, the international community is taking the opposite path suggesting general definitions.

Moreover, another interesting cause for reflection is the fact that often both political and academic debates are focused on the definition of migrants and refugees, without considering the implications suffered by people who remain behind without moving away (Warner, 2010). Another gap of recent publications is that they hide a profound problem: the vast majority of the knowledge on these issues is not produced in the most affected areas, risking that vulnerable populations do not receive and develop important information and strategies. IOM's director Frank Lackzo (2013) stated that some studies tend to consider environmentally vulnerable populations to be passive victims, where it is necessary to bear in mind that they adopt adaptation and mitigation measures to respond to environmental change, as well as political instruments. A continuous global dialogue should be fostered in order to produce definitions, exchange data and good practices and share solutions.

In the recent IOM World Migration Report 2020, the UN Organisation favours an even wider term: "human mobility", which covers migration, displacement and planned relocation and also the concept of "environmental migrants".

1.6 Impacts of environmental disasters and climate change in Africa and Asia

The concept of human mobility includes also Internally Displaced Persons (IDPs), which represents an important part of the totality of migrants. In 2018 41.3 million people were displaced within their countries over 70.8 million forcibly displaced worldwide (UNHCR, 2018). IDPs are defined as "persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border" (OCHA, 2004). Moreover, the vast majority of human mobility due to natural hazards is translated to internal displacements rather than international migration. According to the climate and migration expert Walter Kälin (2016), the period 2009-2016 registered 186,000,000 million cases of people displaced by sudden-onset events, 90-95% due to weather and climate-related disasters, meaning almost one person per second on average.

Internal displacement is the most likely outcome for those affected by climate change and environmental hazard. Maeve Patterson of the UNHCR points out that climate change "typically creates internal displacement before it reaches a level where it displaces people across borders" (Martinez *et al.*, 2020). For this reason, policies and programs should primarily focus on managing displacement within countries, but international migration measures should also be developed as the effects of climate change are increasingly affecting many regions of the world. Indeed, climate change may foster both internal displacement and international migration through drought and desertification, rising sea levels, intense and frequent storms, and competition for scarce resources (Martin, 2010).

Recent publications on the connections among climate change and migration usually tend to estimate the number of migrants and to identify the most vulnerable areas. This kind of approach "diverges from the analytical efforts to understand the intricacies of the interaction that characterize the more recent literature, but since it plays an important role in advocacy and policy-making it deserves mention" (Gómez, 2013, p.9).

Climate change and weather-related hazards caused large-scale displacement in 2018 and 2019 in different States as Mozambique, the Philippines, China, India and the United States of America (IOM, 2020, p.2). The following graph (Figure 2) demonstrates that during the years the number of internal displacements caused by natural disasters has grown with respect to the number of displacements resulting from conflict and violence.

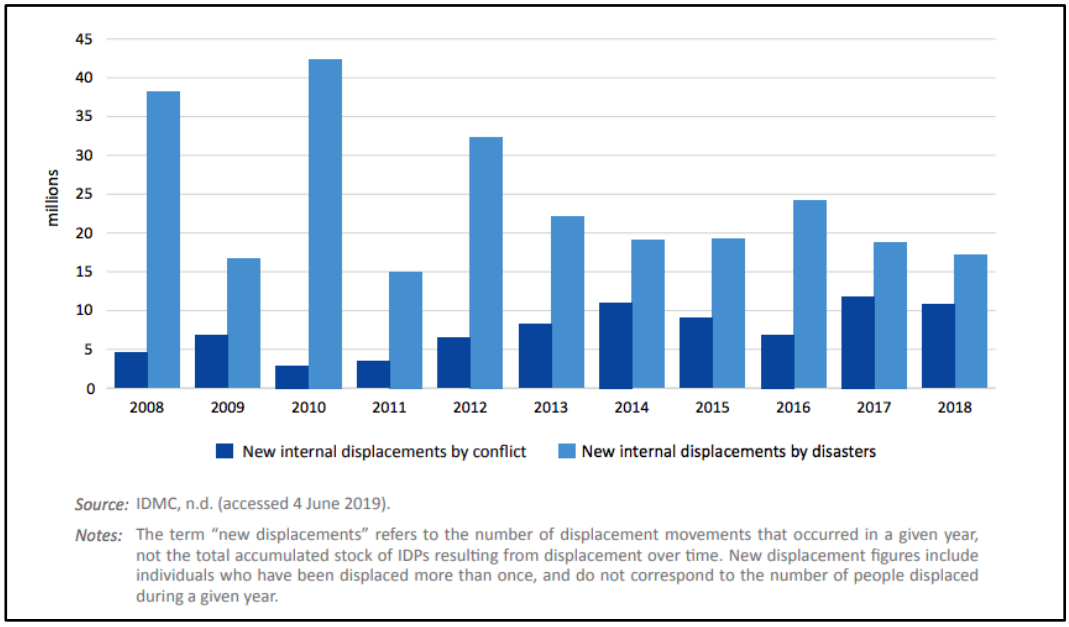

Figure 2. New internal displacements by conflict and disasters, 2008–2018 (millions) (IOM, 2020, p.46).

The 2019 Global Report on Internal Displacement states that in 2018 16.1 million new displacements out of 28 million took place in the world due to weather-related hazards (IDMC, 2019a, p.7; IOM, 2020a, p.45). Indeed, in 2018 57.5% of the new internal displacements were caused by weather-related hazards, 38.57% by conflict, 3.93% by geophysical factors as earthquakes (Ibid). These displacements were triggered by almost 1,600 disasters occurred during 2018. New displacements concern the number of displacement movements and not the number of IDPs, as individuals can be displaced several times.

The following figure (Figure 3) describes the global distribution of displacements that took place in 2018, highlighting that East Asia and Pacific together with South

Asia and Sub-Saharan Africa were the most affected areas.

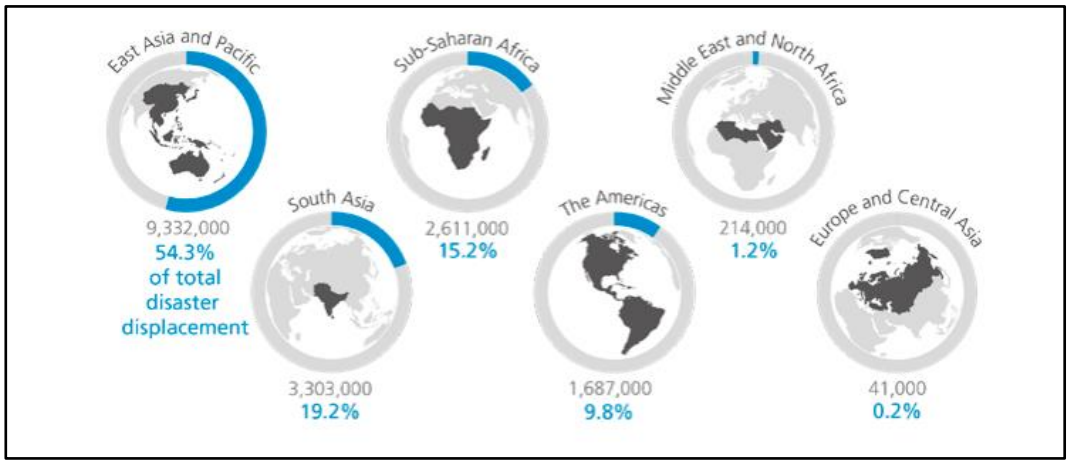

Figure 3. New displacements by region due to disasters (IDMC, 2019a, p.8).

Eastern and Southern Asian countries particularly suffer the effects of climate change and weather hazards. In 2018 Philippines and China recorded approximately 3.8 million displacements each, India around 2.7 million (IOM, 2020, 45), as the following figure (Figure 4) demonstrates. These three countries covered almost 60% of the total number of displacement caused by disasters.

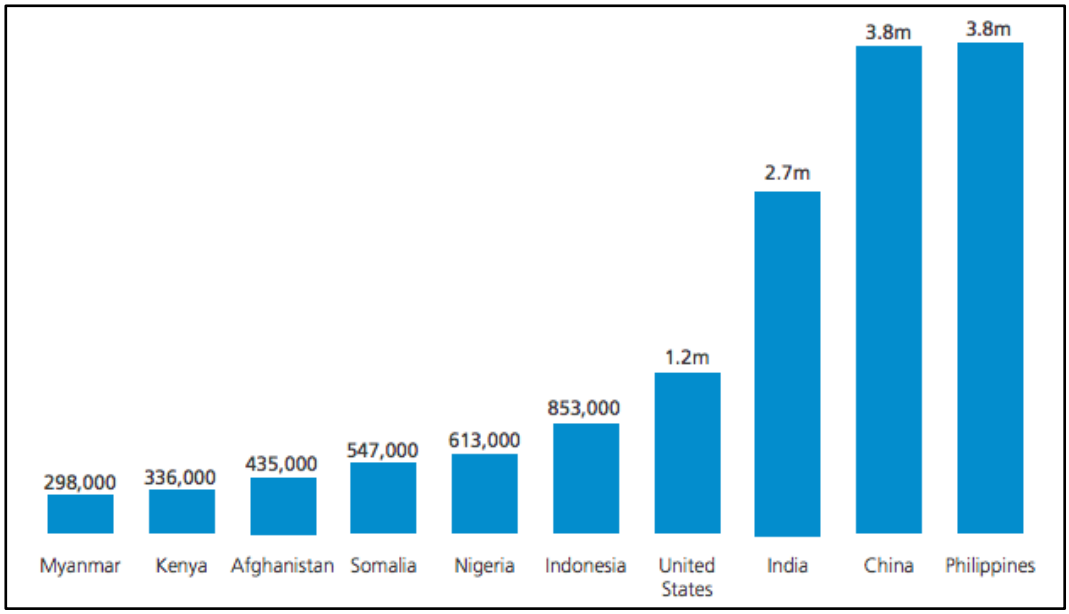

Figure 4. Ten countries with most new displacements occurred in 2018 due to disasters (IDMC, 2019a, p.7).

East Asia and Pacific areas, and in particular the Philippines and south-eastern provinces of China, were characterised by pre-emptive evacuations organised by the government in order to mitigate the impacts of typhoons. Indonesia was triggered by earthquakes and tsunami, causing deaths and destruction of houses. Myanmar was affected by monsoon rains and flooding. South Asia has been dealing with floods, storms, droughts and monsoons, which triggered more than 3.3 million new displacements in 2018 (IDMC, 2019a, p.34). India suffered for the highest number of displacements as the south-western State of Kerala was devastated by flooding. On the other hand, Afghanistan faced drought conditions due to below average rainfall, displacing as many as conflict.

Eastern and Southern Africa are experiencing increasing natural disasters, influencing human mobility. The region has recently faced increased variability in precipitation and droughts. In 2017 Somalia suffered from severe droughts, which caused more than 850,000 displacements (IOM, 2020, p.63). These phenomena also affect agriculture, impacting food security and also the economy since this is a dominant sector in Eastern and Southern Africa. These slow-onset environmental changes increase malnutrition and competition for limited resources. Moreover, Eastern and Southern Africa recently experienced particular sudden-onset hazards. Save the Children states that in 2019 these areas experienced a climate crisis that left "at least 33 million people in the region – or 10% of the population across ten countries – being at emergency levels of food insecurity or worse. Over 16 million are believed to be children" (Save the Children, 2019). These ten African countries experiencing this climate crises include Madagascar, Malawi, Mozambique, Zambia, Zimbabwe, South Sudan, Sudan, Ethiopia, Somalia and Kenya. By June 2019, over 1 million people across seven of the ten countries had been displaced due to climate-related issues: 119,000 in Malawi, 502,000 in Mozambique, 52,000 in Zimbabwe, 37,000 in South Sudan, 8,000 in Sudan, 233,000 in Ethiopia, 72,000 in Somalia (IDMC, 2019b, p.4). Over half of these displacements were the result of two subsequent cyclones that devastated Mozambique, Zimbabwe and Malawi. The 2009 Kampala Convention is a regional document of the African Union that recognises climate change as a cause for displacement, providing for the protection and assistance of persons displaced as a result of natural disasters and climate

change.

1.7 Impacts of environmental disasters and climate change in Europe and in the US

The effects of climate change and weather-related hazard are increasingly visible in many areas around the world. In the previous sections it has been highlighted that East Asia and Pacific together with South Asia and Sub-Saharan Africa are the most affected regions. However, the director of the Internal Displacement Monitoring Centre (IDMC) states that "disaster displacement is very much a global phenomenon, even in high-income countries like the ones in Europe" (Martinez *et al.*, 2020). The United States of America and Australia are a striking example of the global effects of climate change and weather-related hazards, which do not focus only in Africa and Asia.

In 2018 natural disasters caused 80.7% of total displacements in the American continent (IDMC, 2019a, p.39). Out of these 1,687,000 displacements, 1,247,000 were registered in the USA (Ibid). Huge displacements were triggered by two hurricanes in Florida and by unprecedented wildfires in California. Climate change, urban expansion and inefficient risk management increased the duration and the danger of wildfire season in California. In 2018 Carr, Holy and Mendocino Complex fires caused the displacement of over 90,000 people during summer and Woolsey and Camp fires over 235,000 in autumn (IDMC, 2019a, p.42). Camp Fire caused the death of 85 people, displaced about 53,000 and destroyed almost 14,000 homes, and it was not the largest fire (Ibid).

Europe, with Central Asia, shares the lowest percentage of global environmental displacement. Anyway, recently some countries have experienced the effects of climate change, from floods in France, Italy and Greece, to wildfires again in Greece and Spain due to high temperatures and below average rainfall. Storms and floods caused at least 5,400 new displacements in France during 2018, a riverine flood in the Piave basin triggered about 1,300 new displacements, and a similar

number of people had to leave their homes in Greece (IDMC, 2019a, p.47). Greece was also hit by intense wildfires due to peculiar weather conditions: about 3,000 homes were destroyed in Attica leading to 7,000 new displacements; and in Valencia wildfires triggered 2,600 displacements (Ibid).

In March 2019 the European Union (EU) strengthened its disaster risk management through the creation of "rescEU" to promote a joint response, and in order to share national prevention and preparedness plans so as to identify possible gaps. This cooperative mechanism could be the starting point to properly acknowledge the urgency of finding a shared policy in managing environmental displaced persons.

Disasters triggering displacements in Europe have more than doubled in the last four years, from 43 in 2016 to 100 in 2019 (Martinez *et al.*, 2020). Climate change is worsening extreme weather events, making them deadlier, more widespread and extended.

1.8 Impacts of environmental disasters and climate change: the Australian case

Australia was particularly affected by climate change-related events at the end of 2019 and at the beginning of 2020. By 23rd December 2019, 3.41 million hectares had burned: in the past few years the total burned area was about 280,000 hectares (Morton, 2019).

A 2005 Report by CSIRO Marine and Atmospheric Research suggested that climate change would have created environmental conditions for greater fire risk in South-East Australia (Hennessy *et al.*, 2005). A model described in 2007 by the Bureau of Meteorology Research Centre suggested that "fire seasons will start earlier and end slightly later, while being generally more intense throughout their length. This effect is most pronounced by 2050, although it should be apparent by 2020" (Lucas *et al.*, 2007, p.3).

These two projections were confirmed by the 2019-2020 Australian bushfire

season, highlighting the importance of research but also the importance of developing proper solutions and policies based on scientific data in order to prevent or at least mitigate the effects of climate change. Moreover, it is important to mention these older studies so as to demonstrate the effectiveness of scientific research. The authors stated that the evidence they described may provide an indication for the future. "Early season starts suggest a smaller window for pre-season fuel-reduction burns. Logically, more frequent and more intense fires suggest that more resources will be required to maintain current levels of bushfire suppression. Shorter intervals between fires, such as those that burned in eastern Victoria during 2002-03 and 2006-07, may significantly alter ecosystems and threaten biodiversity. It is hoped that planning authorities can use this information in the development of adaptation strategies" (Lucas *et al.*, 2007, p.49).

However, those Reports did not take into account the possible effect of displacement due to extreme bushfire events. During the entire year of 2018 Australia faced 11,000 new displacements triggered by wildfires and other disasters (IDMC 2019a, 118). From September 2019 to the first week of January 2020 about 90,000 people have been displaced by bushfires (Cassidy *et al.*, 2020). The beginning of 2020 was characterised by unprecedented internal displacements through mass evacuations of towns in the States of New South Wales and Victoria. "Australia's bushfire crisis has seen some of the largest-scale evacuations in the country's history. […] as one evacuee dramatically put it, 'We are Australia's first climate refugees'" (McAdam, 2020).

Australia did not respond to the predicted worsening effects of bushfires with proper climate policies. Indeed, in December 2019 the President of Victoria stated: "If you can leave, you must leave. We cannot guarantee your safety" (Patrick, 2020). Moreover, the lack of concerted action caused difficulties among States in coordinating disaster relief efforts across borders. The difficulty in handling environmental IDPs across national borders highlights the potential issues in managing displacements across international borders, especially where there are no shared policies and legal instruments. Indeed, there is no binding international law requiring States to admit environmental migrants, and now there is a strong need to

develop and implement proper solutions as disasters are affecting larger areas around the world.

Australia alone experienced this prolonged and intense bushfire season between September 2019 and the first week of January 2020, followed by flooding and cyclones. Areas around Sydney were ordered to evacuate after devastating life-threatening flash flooding of 9th February 2020. Sydney Observatory Hill registered 242.0 mm rain in two days and 391.6 mm in four days of February 2020, more than three times the average rainfall for February and the highest such totals for any month since 1992 and 1990 respectively (Bureau of Meteorology, 2020). It was generally the wettest February since 1956 in the Blue Mountains, and since 1990 or 1992 elsewhere in the Greater Sydney region, area-averaged rainfall was notably above average for New South Wales (+104%) (Ibid). The storm caused abnormally high tides that led to coastal erosion in some beaches of the State. A few days later, Tropical Cyclone Uesi provoked powerful waves and swells.

The effects of these extreme weather events were intertwined and therefore particularly dangerous. Drought and fires left bare soil with lack of vegetation, worsening the rainfall and floods effects, leading to dangerous erosion and contaminating water supplies through ash. The State Emergency Service in New South Wales asked citizens to leave low-lying areas "well before flash flooding begins" but "only if it is safe to do so" (BBC, 2020).

The economic impact of climate change, a usually unexplored issue, started to receive some attention. Sydney, Canberra and Melbourne experienced days of smoke that produced pollution up to 11 times greater than the hazardous level for human health (McGowan, 2019). "You can't properly run an economy when you get a third to a half of the population affected by smoke, and the media completely focused on fires", stated the director of the Fire Centre at the University of Tasmania (Morton, 2019). Moreover, the flooding in New South Wales and areas of Queensland left thousands without power and many schools temporarily closed.

Climate change is showing its consequences in more and more areas of the world. The effects of climate change would not decrease without concerted political action.

"We need to adapt, to manage the unavoidable, and slow greenhouse gas emissions to avoid the unmanageable" (Nicholls, 2020).

1.9 Evolution of international commitment: UNFCCC Conference of Parties

The previous paragraphs underlined the hazards triggered by climate change and weather-related extreme events, and the difficulty in finding consensus over a legal instrument for the protection of environmental IDPs and migrants. It is difficult to elaborate a proper and specific definition when usually environmental degradation is not the main push factor for people to move. However, it is necessary to develop migration policies and protection responses for people to leave their homes before the situation threatens their life.

Human mobility as an issue of climate risk management was recognised in international policy for the first time in 2010 within the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC entered into force on 21st March 1994 and in March 2020 it was ratified by 197 parties. Its ultimate goal "is to achieve […] stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, 1992). All States that are Parties to the Convention are represented at the Conference of Parties (COP), which is the supreme decision-making body of the Convention.

At COP16 the UNFCCC State Parties adopted the Cancun Adaptation Framework, which recognised for the first time the impacts of climate change on displacement, migration and planned relocation. The COP "Invites all Parties to enhance action on adaptation under the Cancun Adaptation Framework […] by undertaking, inter alia, the following: […] Measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation, where appropriate, at national, regional and international levels" (UNFCCC, 2010).

The COP18 Decision on Loss and Damage adopted in Doha in 2012 "7.

Acknowledges the further work to advance the understanding of and expertise on loss and damage, which includes, inter alia, the following: (a) Enhancing the understanding of: […] (vi) How impacts of climate change are affecting patterns of migration, displacement and human mobility" (UNFCCC, 2012).

In 2013 COP19 established the Warsaw International Mechanism (WIM) to address loss and damage linked with the adverse effects of climate change, and created the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts (WIM Excom). Action area 6 of its initial two-year work plan aims at enhancing the understanding on how climate change affects human mobility (FCCC, 2014).

In 2015 COP21 adopted the Paris Agreement to accelerate actions to combat climate change. In its paragraph 50 the document requests the WIM Excom to establish a task force to complement and involve existing bodies and expert groups "[…] to develop recommendations for integrated approaches to avert, minimize and address displacement related to the adverse impacts of climate change" (Paris Agreement, 2015, p.7).

In 2016 COP22 "Encourages Parties to incorporate or continue to incorporate the consideration of extreme events and slow onset events, non-economic losses, displacement, migration and human mobility, and comprehensive risk management into relevant planning and action […]" (UNFCCC, 2016).

In the same year the New York Declaration for Refugees and Migrants acknowledged that some people move in response to the adverse effects of climate change and natural disasters (United Nations, 2016). The Declaration was adopted in the context of the Global Compact for Safe, Orderly and Regular Migration (GCM) by 193 UN Member States, recognising migration as an issue worthy of international attention.

In 2017 COP23 recognises the work of the Task Force on Displacement operationalised by WIM Excom and calls Parties to make use of products of the Committee by "[…] (c) Incorporating or continuing to incorporate the consideration

of extreme weather events and slow onset events, non-economic losses, climate change impacts on human mobility, including migration, displacement and planned relocation, and comprehensive risk management into relevant policy, planning and action, as appropriate, and encouraging relevant bilateral and multilateral entities to support such efforts […]" (UNFCCC, 2017).

In 2018 COP24 adopted the Task Force on Displacement recommendations and the Excom Report to "[…] continue its work on human mobility under strategic workstream (d) of its five-year rolling workplan, including by considering the activities set out in paragraphs 38 and 39 of its report referred to in paragraph 1(a) above […]" (UNFCCC, 2018). Those paragraphs consider steps for taking forward the following activities: "[…] Compile, in collaboration with relevant organizations, existing knowledge, data, tools and guidance […] to avert, minimize and address displacement and broader areas of human mobility related to the adverse impacts of climate change; and disseminate them […]"; support developing countries through finance, data, technology and capacity building, in addressing climate change related displacement with national planning processes (FCCC, 2018).

COP25 was held in 2019 and in its final Report there was no mention of climate change related displacement, even though some side events were focused on environmental migration.

COP26 was postponed to 2021 due to the COVID-19 emergency. The Italian Minister of the Environment organised a series of meetings called Youth4Climate: "We will be co president of Pre-COP26 that will take place in Milan. Italy is the first State in the world to have thought about involving the youth. Young people from all over the world will come to Milan to discuss climate change, energy and the environment with international experts. We have shared this idea with the UN and we want it to become structural within the COP framework" (Costa, 2020).

1.10 Discussing international commitment

Literature does not agree on the existing relations between environmental change and displacement. Linear approaches should be avoided as they fail to recognise and consider the complexity of migration, especially if linked with weather-related hazards. Many factors can contribute to migration, hence the difficulty in finding a shared definition of environmental IDPs or migrants.

For the first time in 1988 a former NASA scientist sounded the alarm for the general public about anthropogenic climate change (Milman, 2018a). Until that year, "[...]scientists have been cautious about attributing rising global temperatures of recent years to the predicted global warming caused by pollutants in the atmosphere, known as the 'greenhouse effect'. But today Dr. James E. Hansen of the National Aeronautics and Space Administration told a Congressional committee that it was 99 percent certain that the warming trend was not a natural variation but was caused by a buildup of carbon dioxide and other artificial gases in the atmosphere" (Shabecoff, 1988).

In 1990, the first Intergovernmental Panel on Climate Change (IPCC) Report acknowledged the connection among climate change and large-scale movement of people. It stated that "[m]igration and resettlement may be the most threatening short-term effects of climate change on human settlements. People may decide to migrate in any of the following cases: loss of housing (because of river or sea flooding or mudslides); loss of living resources (like water, energy and food supply or employment affected by climate change); loss of social and cultural resources [...]" (IPCC, 1990, p.5-9). However, Laczko and Aghazarm stated that it was not the right period to promote research and policies by migration experts or policy makers (Gómez, 2013, p.4). Indeed, at the creation of UNFCCC in 1992 during the Rio de Janeiro Earth Summit there was no mention of environmental displaced people. Most of the literature has been published since the first decade of the XXI century thanks to a renewed attention towards the issue of climate change in general.

Climate change, disasters and migration processes are strongly intertwined. Norman Myers (1997) was one of the most prolific writers on the topic of

"environmental refugees", stressing the importance of addressing root causes and planning strategies. According to Myers "environmental refugees" could lead to one of the most intense human crises of our times, as this phenomenon may result in conflict and violence, enlarging into a social, political and economic crisis. Indeed, IOM tends to approach the topic from a human security perspective in the context of climate change, which affects multiple dimensions (IOM, 2014, p.95). Myers stated that the best way to deal with environmental refugees is preempting the causes of their movement, recognising and responding to the sources of the problems. If that was true in 1997, nowadays it is also necessary to react to the symptoms with adaptation and mitigation measures and with proper legal instruments to protect environmental migrants and IDPs.

The previous excursus on the evolution of international commitment in tackling this issue reveals a general indisposition in looking for concrete and effective solutions. Regarding the evolution of literature, renewed public and media interest in the topic fosters an increasing production of data and research in this area. However, this does not imply that new empirical data are collected, as some researches use the findings of older studies.

Therefore, concerted actions are needed and they should embrace data and analysis from both fields of study: migration and climate change. International cooperation should focus on defining guiding principles, exchanging best practices and developing proper legal instruments to recognise and define environmental migrants and IDPs. It is necessary to act immediately in order to prevent an announced crisis.

Projections of the magnitude of human mobility in the context of climate change are difficult to elaborate. A recent World Bank Report (2018) states that by 2050 there will be more than 143 million climate IDPs across the regions of Sub-Saharan Africa, South Asia and Latin America. The Report recommends three key actions to take at local and international level:

- Cutting global greenhouse gas (GHG) emissions in order to reduce climate effects on people and livelihoods;
- Embedding climate migration in development planning;

- Investing in data and analysis to foster understanding of climate displacement.

The Report affirms that if these three measures are taken urgently the number of IDPs could be reduced by 80%, or 100 million.

International and regional organisations together with local governments should cooperate in the implementation of these practices. The efforts made through past decades did not promote the needed results, as the forecasts of new reports continue to present tragic present and future scenarios. Extreme events related to climate change are increasingly affecting different areas of the world, and not only developing countries, as previously described. Australia, USA and some European States are experiencing the effects of climate change, and it would be interesting to analyse if the international community is starting to respond in a different way now that the Western society is directly affected by this issue.

Calls for international solidarity can also be justified by the fact that Western countries have been the primary accountable for climate change. USA, Europe and Japan were responsible for more than one-third of total GHG emissions in 2005, while they host just one-seventh of the global population (Mayer, 2012, p.33). Even though Southeast Asia is increasingly responsible for a growing share of global emissions, the present greenhouse effect is due to the stock of greenhouse gas in the atmosphere rather than to current emissions (Ibid).

Moreover, countries of the Global South are particularly vulnerable to climate change effects for their geographic position and as they do not often rely on financial resources to implement effective mitigation or adaptation measures. Cyclones, floods and droughts pose the most frequent and devastating environmental risks. In 2008 Ehrhart *et al.* identified the following areas as the most prone to these extreme events. "(1) For flood-risk: the Sahel, the Horn of Africa, Great Lakes region, Central Africa and Southeast Africa; Central, South and Southeast Asia; and Central America and the western part of South America; (2) for drought-risk: sub-Saharan Africa; South Asia, particularly Afghanistan, Pakistan and parts of India; and South East Asia, particularly Myanmar, Vietnam and Indonesia; and (3) for cyclone-risk: Mozambique and Madagascar, Central America, Bangladesh, several parts of India, Vietnam and other Southeast Asian

countries". He did not forecast particular hazards in high-income countries.

However, during the first two months of 2020 Australia was experiencing all these three typologies of disasters, drought, flood and cyclone, as described in paragraph 1.8. Every country around the globe has an urgent interest in solving or at least mitigating the issue of climate change and the displacements caused by its effects. The consequences of pollution produced in one area of the world affect the whole system, and for this reason a concerted action is needed.

1.11 Conclusions

This Chapter explored the starting points of the Thesis, highlighting the deadlock in addressing human mobility in the context of climate change opposed to the increasing frequency and intensity of natural disasters and number of displacements. The institutional halt depends on the absence of a clear and agreed definition regarding environmental migrants and IDPs and, therefore, they cannot be sufficiently protected; climate change is not always considered a cause for human mobility; COPs are not producing sufficiently strict guidelines and the existing instruments are not legally binding, allowing Governments to avoid financing and promoting policies to protect environmental displaced people and to mitigate climate change. The relation among climate change, environmental disasters and human mobility is still debated, as the migrants themselves often do not recognise the environmental factor as the original cause for their displacement. Indeed, climate change can lead to urban and field destruction, causing job losses, economic crisis and conflicts for resources. Moreover, IDMC data demonstrated that the number of internal displacements due to natural disasters is increasing with respect to the number of displacements resulting from conflict and violence.

A globally agreed definition of people fleeing from natural disasters is needed in order to design proper responses. Climate change is a global problem that is primarily affecting poor vulnerable countries that are less responsible for causing it. The design of solutions needs to involve the largest number of States, so that the big polluters are forced to reduce their emissions and at the same time the affected

countries have a say in the matter. Constant dialogue and exchange of good practices need to be promoted at all levels.

Three decades of COP meetings have produced "[…] just one agreement [the Paris Agreement of 2016] to hold temperatures to a limit that is too high, and we are not even remotely on track to honour that agreement […]" (The Guardian, 2019). In the meantime, climate change is provoking a humanitarian disaster every week "[…] and our global plan is to have some more meetings" (Ibid). Moreover, it is interesting to point out that a UN summit emits about 60,000 tonnes of CO_2, which is equivalent to the CO_2 produced by 7,000 homes in a year (Ibid). Yet the COP system is essential to set shared goals both for international and local implementations. International cooperation is key in developing and implementing solutions, and these occasions should be used to raise the bar of international commitment in tackling climate change while finding legal instruments to protect environmental migrants and IDPs.

Therefore, since this difficult path of international conferences demonstrated that consensus among States is difficult to reach on issues regarding climate change and migration, also a single binding document may be hard to develop. A soft-law approach could be an easier starting point, but in 2020 the extreme events induced by climate change are continuing to trigger more and more displacements, and a strong international commitment is needed now more than ever.

Chapter 2
Existing instruments and standards for the protection of environmental migrants and IDPs

2.1 Introduction

All over the world many countries have formally committed to acknowledging the intertwined issue of climate change and forced displacement. This Chapter will discuss the main international instruments and standards concerning the protection of environmental migrants and IDPs along with their deficits and gaps. It should be noticed that a comprehensive framework having this specific aim still does not exist. For this reason, the purpose of identifying an effective framework for the acknowledgement and protection of these vulnerable people will guide the drafting of the next Chapters. The analysis of the main difficulties in tackling this subject is as important as the scrutiny of the existing solutions because it permits to reconsider the current system of prevention and protection.

The Chapter begins with a brief explanation of the main human rights law, international humanitarian law and environmental law principles and standards that constitute the foundation of the protection of environmental migrants and IDPs. It then explores the 1998 UN Guiding Principles on Internal Displacement and their application at the regional and local level. Not only IDPs need protection, but also environmental migrants, as identified by the 2012 Nansen Initiative on Disaster-Induced CrossBorder Displacement. The 2015 Sendai Framework then expresses the importance of implementing preventive measures to mitigate the effects of climate change on vulnerable communities. The 2016 Guidelines to Protect Migrants in Countries Experiencing Conflicts and Natural Disasters offers practical guidelines and examples for States and stakeholders to address the issue of environmental displacement at various levels. The 2030 Agenda for Sustainable Development highlights the multi-dimensional nature of environmental displacement and at the same time it reveals how the international community did not explicitly address that issue in the document. Finally, the 2016 New York

Declaration for Refugees and Migrants is the first major international migration document to recognise the nexus between migration and climate change, but the following 2018 Global Compact for Migration was hindered by several States. The last paragraphs of the Chapter will propose an argumentation based on the measures previously described, focusing on the necessary steps that should be considered in order to formulate proper solutions to human mobility in the context of climate change: a systematic collection and global sharing of data along with a higher political commitment.

Even though many countries formally agreed to comply with international policies, *de facto* they did not effectively implement them at regional or local level. In addition, even if some countries did include protection measures in their national laws, the lack of a shared compliance within States endangered their efficiency. On the other hand, also the international level is characterised by a fragmentation of protection measures, as an international instrument specifically focused on environmental displaced people does not exist yet. Therefore, in the meanwhile some existing instruments and provisions concerning other fields could apply to human mobility in the context of climate change. Human rights law, international humanitarian law, environmental law and regional and national instruments could fill the current gap or could present principles and provisions useful to create a framework for the protection of environmental migrants and IDPs.

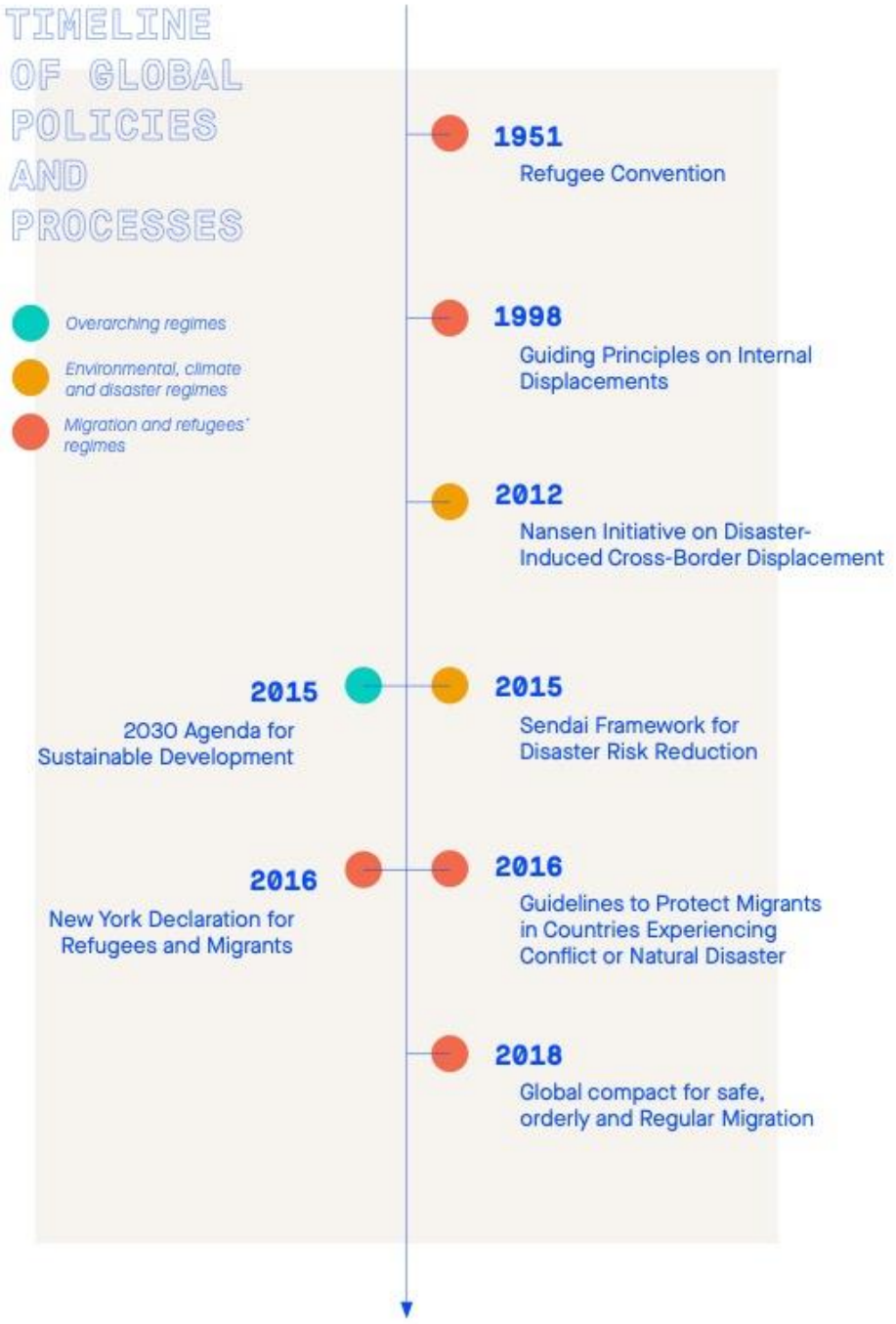

Figure 5. Timeline of global policies and processes (graphic elaboration inspired by UNDP, 2017, p.24)

2.2 Human rights law, international humanitarian law and environmental law protecting environmental migrants and IDPs

Relying on existing international measures could be useful to protect vulnerable people with the ultimate aim of developing a new comprehensive instrument concerning environmental human mobility. The international instruments and principles described in the paragraph are to be considered the solid foundation of any regional and national laws and policies regarding environmental displacement.

First, human rights law expresses the international community attempt to promote common global standards to secure basic human rights. It also includes essential principles for the protection of migrants. Principles of universality and non-discrimination described in the Universal Declaration of Human Rights (UDHR) ensure that all people bear the same fundamental rights, regardless of their legal status: the right to life (UDHR Art. 3), physical integrity (UDHR Art. 5), the right to health and to an adequate standard of living and family rights (UDHR Art. 25). Protection is also guaranteed by principle of *non-refoulement* (1951 Refugee Convention Art. 33), the right to freedom of movement, and the right to return to one's own country (UDHR Art. 13; ICCPR Art. 12) or, for internally displaced persons and regular migrants, to one's initial or chosen place of residence.

Second, international humanitarian law has clear connections with the protection of environmental migrants and people affected by environmental change. Resolution 46/182 of the 1991 UN General Assembly marks the international community commitment to help the most vulnerable people when in need and it established the UN Office for the Coordination of Humanitarian Affairs (OCHA), which mobilises urgent humanitarian response, guides policy and practice, and advocates on behalf of victims of disasters and emergencies. Humanitarian action is guided by principles as humanity, neutrality and impartiality, which are fundamental to access people affected by armed conflicts but also by natural disasters. Disasters prevention and preparedness are of cardinal importance: "[t]he international community should adequately assist developing countries in strengthening their capacity in disaster prevention and mitigation, both at the national and regional levels […]" through the "[…] exchange and dissemination of existing and new

technical information related to the assessment, prediction and mitigation of disasters […]" (United Nations, 1991). Moreover, emergency assistance must include measures for recovery and long-term development.

In 1998 OCHA developed an important instrument for IDPs, the Guiding Principles on Internal Displacement, to identify rights and guarantees relevant to their protection, and to provide guidance to States, intergovernmental and non-governmental organisations. Natural disasters were considered a cause for internal displacement. The 30 standards describe that IDPs are entitled to protection from displacement (Principles 5 to 9) and during displacement (Principles 10 to 23). They establish the framework for humanitarian assistance (Principles 24 to 27) and protection during return, resettlement and reintegration (Principles 28 to 30). Even though these Principles have no monitoring or enforcement mechanism, Governments, UN agencies, regional bodies, international and local NGOs and the displaced themselves have started to oversee compliance with them. The Principles constituted the solid beginning of the normative framework dedicated to IDPs.

Third, environmental law is mainly focused on the protection of the natural environment. However, it is based on many important principles that can be also linked to the management of environmental migration, as sustainable development, transboundary responsibility, precaution, public participation and transparency, and the polluter pays principle. These principles are included in the Rio Declaration on Environment and Development, which was signed by 175 countries during the 1992 United Nations Conference on Environment and Development (UNCED) or Earth Summit. Sustainable development was defined in 1987 by the United Nations Brundtland Commission as "[…] the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987), which also embraces the principle of intergenerational equity.

The second principle of the 1992 Rio Declaration states that the responsibility on the protection of the environment is considered to be transboundary as the effects

of pollution and environmental degradation affect the planet at a global level (Rio Declaration on Environment and Development, 1992). As a consequence, global efforts in tackling climate change are both a need and a duty. Moreover, the Declaration established the following precautionary principle: "[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" (ibid, Principle 15). These principles are important to mitigate the effects of environmental change on vulnerable areas.

According to the 10th Principle on public participation and transparency expressed in the Rio Declaration, "[…] each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available" (ibid). Moreover, indigenous people and communities should be recognised as essential contributors in environmental management (Principle 22). Therefore, an effective system should take the form of a circular flow of information that include a bottom-up process of collecting data and contributions along with a top-down elaboration and diffusion of figures and guidelines.

Some Principles of the Rio Declaration consider the weight of responsibility of States that have been contributing to climate and environmental change in the last decades. According to the diverse contributions to global environmental degradation, States have common but differentiated responsibilities (Principle 7). States should avoid the relocation and transfer to third States of any activities and substances that provoke environmental degradation or are dangerous for human health (Principle 14). In conclusion, the polluter should bear the cost of pollution (Principle 16) and the international community should make every effort to help States affected by natural disasters or emergencies (Principle 18).

All these principles, rights and international instruments are certainly fundamental to guide institutions and organisations in the protection of environmental migrants and IDPs. However, the lack of a comprehensive framework and the fragmentation

of indications cause a decrease of governmental responsibility in facing the issue and, consequently, a risk for migrants and IDPs' rights. The weakness of the legal framework stems also from the non-legally binding nature of these instruments. Through soft law, Governments avoid the immediate commitment to certain topics, but over time civil society could embrace the content of Resolutions and Declarations and ask for a more serious implementation of international law. On one hand, soft law is easier to be accepted by States that fear for their sovereignty, but on the other hand these very States do not feel obliged to comply with international law. In addition, the focus on the climate change causes of human mobility has neither been recognised yet nor addressed in a constructive international document signed and ratified by a great number of countries. The UNFCCC Conference of Parties, as described in Paragraph 1.7, has not demonstrated to be a source of effective solutions yet. Terminological and conceptual gaps continue to characterise the international approach to this increasing phenomenon, even though the international community and some regional organisations have demonstrated an increased commitment in protecting environmental migrants and IDPs, as the following paragraphs will demonstrate.

2.3 The UN Guiding Principles on Internal Displacement and their regional and national application

Environmental migration is mainly internal and for this reason regional and national instruments to deal with this issue are needed. The aforementioned OCHA Guiding Principles on Internal Displacement is an international soft law instrument. "The Guiding Principles, while neither being a declaration nor constituting a binding instrument, draw […] their authority from the binding provisions of international human rights and humanitarian law upon which they are based and which they reflect by restating in greater detail many of the existing legal provisions which respond to the specific needs of internally displaced persons." (Kälin, 2005). Even though the Principles were not formally approved by an intergovernmental process, UN agencies, regional organisations, Governments and NGOs have started to cite and use them to develop policies and laws for IDPs.

The Guiding Principles have been translated at the regional level as in the African Convention on the Protection and Assistance of Internally Displaced Persons in Africa, known also as the Kampala Convention previously mentioned in paragraph 1.6. This regional document of the African Union (AU) acknowledged climate change as a cause for human mobility in Article 5(4): "States Parties shall take measures to protect and assist persons who have been internally displaced due to natural or human made disasters, including climate change." Moreover, Article 12(3) affirms that "[a] State Party shall be liable to make reparation to internally displaced persons for damage when such a State Party refrains from protecting and assisting internally displaced persons in the event of natural disasters." (African Union, 2009). The Kampala Convention is the first regional framework to identify tasks and responsibilities for several institutions and organisations regarding displacement management. The AU declared 2019 as the Year of Refugees, Returnees and IDPs, and it also marked the 10th anniversary of the Convention. Tsion Tadesse Abebe (2020), a Senior Researcher in the Migration Programme of the Institute for Security Studies, affirmed that the Convention and the Year acted as a catalyst in strengthening national normative frameworks on forced displacement, as Equatorial Guinea, Somalia and South Sudan participated in the ratification. Even though ratification does necessarily mean implementation, it marks an important step in the commitment of the States.

The Inter-American Commission on Human Rights (IACHR) of the Organization of American States (OAS) has been using the Principles to evaluate Member States efforts in protecting IDPs and to advocate for better policies. IACHR recognised climate change and natural disasters as causes for migration and internal displacement (IACHR, 2015, p. 12). In recent years Central America and the Caribbean have suffered from many natural hazards as hurricanes, floods, fires and droughts that have increased migration and displacement in the absence of proper policies. Indeed, OAS Member States have not developed effective strategies to address this issue (IACHR, 2015, p. 30). In 2014 Latin America and the Caribbean (LAC) adopted the Brazil Declaration and Plan of Action, recognising the challenge posed by natural disasters and climate change and the need to conduct studies in order to develop proper national and regional strategies, tools and guidelines,

disaster risk management and humanitarian visa programmes (Brazil Declaration, 2014, p. 18).

Within the Council of Europe, a working party on IDPs set up by the Committee of experts on legal aspects of territorial asylum, refugees and stateless persons (CAHAR) formulated a recommendation in order to call on Governments to seek solutions for the return and the integration of displaced persons and to guarantee the protection of their rights in line with the UN Guiding Principles. Indeed, in 2009 the Parliamentary Assembly recommended the Committee of Ministers to urge Member States to rigorously observe the Principles and to include them in national legislation. Finally, "[t]he Assembly recognises the need to give more comprehensive follow-up to progress made on the above issues through its country-by-country monitoring mechanism and 'regional' or issue-based reports by its Committee on Migration, Refugees and Population" (Council of Europe, 2009). Moreover, also the European Union strongly supports the Guiding Principles, promoting their inclusion in international and national law (European Commission, 2019). Finally, the Organization for Security and Cooperation in Europe (OSCE) acknowledged the Principles as "a useful framework for the work of the OSCE" in dealing with IDPs (Cohen, 2004, p. 470).

In Asia the issue of internal displacement is mainly discussed by NGOs, academics and journalists, while governments and regional organisations as the Association of Southeast Asian Nations (ASEAN) and the South Asian Association for Regional Cooperation (SAARC) have not embraced the Guiding Principles yet (Cohen, 2003; Orchard, 2016; Heyzer, 2017).

Regional organisations as ECOWAS or MERCOSUR might serve as a framework to grant temporary protection to environmental migrants. The ECOWAS Commission has already extended the Free Movement Protocol to protect regional refugees allowing them to move as labour migrants within the Member States (Platform on disaster displacement, 2019, p.32). These existing frameworks could be implemented to allow environmental migrants to move freely within the region.

The Guiding Principles have also been reflected in national laws, and an increasing

number of States around the world developed policies based on them. For instance, in Burundi the Government issued the Protocol for the Creation of a Permanent Framework for Consultation on the Protection of Displaced Persons, which established a framework for the protection of IDPs through the cooperation with the international community. In its very preamble it states that "[…] the Government of Burundi and the International Community are bound by the United Nations Guiding Principles on Internal Displacement" (Government of Burundi, 2001) and in its mandate it is included the dissemination of the Guiding Principles. Other States as Angola, Colombia, Peru, the Philippines, Sri Lanka and Uganda have explicitly cited the Principles in their domestic laws and policies on IDPs. Angola and Kenya have introduced the Guiding Principles also into their domestic laws (Kälin, 2005, p. 33), and other countries as Denmark, Sweden and the United States have included complementary, temporary or permanent protection schemes for environmental migrants in their legislations (European Parliament, 2011, p. 47), which will be analysed in paragraph 4.8.

In conclusion, some Governments and regional organisations have recognised the importance of the Guiding Principles, citing or sometimes integrating them in domestic laws and policies. The Principles covered the existing legal and institutional gap regarding the protection of IDPs, to whom the 1951 Refugee Convention did not apply. According to Roberta Cohen (2014), a Non-Resident Senior Fellow at the Brookings Institution that supported the process, the Principles have been successful for a series of reasons. For instance, they were developed under the direction of a UN expert, the Representative of the UN Secretary-General on Internally Displaced Persons Francis Mading Deng, which persuaded the Governments to accept the novelty. The support of key Governments was fundamental to persuade States with reservations. Moreover, the process involved the consultation of experts from regional bodies, international humanitarian and development organisations, NGOs, women's and children's advocacy groups, building further consensus on the importance of the Principles among States. Establishing the Principles on human rights law, humanitarian law and refugee law permitted a broader coverage of most situations of internal displacement. Finally, a needs-based approach allowed correcting gaps in the law through the identification

of the needs of IDPs.

Even though the Principles have gained international recognition and authority, a mere acknowledgement is not sufficient to properly implement them. The non-legally binding nature of the Principles has both limitations and benefits. A legally binding instrument could have obtained more recognition and implementation, but the negotiation to reach the agreements would have taken decades and it would have been weakened by various compromises. Influencing States to comply with their responsibilities goes further the nature of the instrument. Indeed, even with binding agreements Governments do not always ratify treaties they sign or comply with treaties they ratify. Monitoring systems, advocacy and the engagement of international and local actors are needed in order to hold Governments accountable. Moreover, more States need to embrace the Principles in order to start providing basic protection mechanisms for IDPs, recognising that they have an obligation towards these vulnerable people. A diffused acceptance of the Principles seems a good route to follow, through the elaboration of national laws and policies based on them, the adoption by regional organisations of legally binding documents, and their citing by courts and treaty bodies. The Principles could gain recognition becoming customary law or the process could lead to a legally binding and broadly supported convention.

"Could the experience of the Guiding Principles be helpful with the development of standards for ‘crisis migrants’ or environmentally displaced persons? Doubtless it could, but it would require, first, the formulation of a clear definition or description of those considered in need of protection [...]" (Cohen, 2014). Regional and national consultations would be needed as well as the involvement of both governmental and non-governmental actors. "We do know that the frequency and severity of natural disasters today, fuelled in great measure by climate change, are making it essential to strengthen legal safeguards not only for IDPs (especially those uprooted by slow-onset disasters) but also for those who are forced to cross borders yet are not considered refugees" (Ibid).

In 1998, at the time of the adoption of the UN Guiding Principles, the number of

IDPs worldwide stood at 20-25 million (Norwegian Refugee Council, 2004, p. 6), and by the end of 2018 it had increased to reach 41.3 million people over 70.8 million forcibly displaced worldwide (UNHCR, 2018). While the population of IDPs worldwide is nearly double the population of refugees, the attention of international agendas has mainly been focused on the situation of migrants, asylum-seekers and refugees who have left their countries. The Guiding Principles provide internally displaced persons with a legitimate human rights claim in order to engage States, and they also stress the necessity of institutionalising proper safeguards and the elaboration of rights-based solutions to internal displacement. In 2002, the representative of the Secretary-general stated that "while the Guiding Principles have been well received at the rhetorical level, their implementation remains problematic, and often rudimentary." (Commission on Human Rights, 2002, p. 26). Moreover, the focus on environmental displacement is still too marginal or even absent.

Taking into consideration future developments, in 2019 the UN Secretary General António Guterres established the High-Level Panel on Internal Displacement, which was an important sign of global attention toward this issue. The High-Level Panel will develop recommendations for Member States, the United Nations system and other relevant stakeholders. Its report will design concrete recommendations to prevent, respond and reach solutions to internal displacement (United Nations, 2019b). Recommendations will advance inclusion of IDPs in the realisation of the 2030 Agenda along with actors coming from the humanitarian, development, climate change adaptation and disaster risk reduction areas. Moreover, the collection of data and the innovative financing and funding mechanisms reveal a promising path for the establishment of concrete measures.

2.4 The Nansen Initiative on Disaster-Induced CrossBorder Displacement: addressing environmental migration

States have not reached consensus on a single binding instrument linked to the management of environmental displacement. For this reason, a soft law instrument

as the UN Guiding Principles on Internal Displacement seems to be a proper compromise at the moment. A similar approach to the issue was embraced by the Nansen Initiative, a State-led, bottom-up consultative process aimed at building consensus over principles and standards for the protection of migrants displaced by natural disasters and climate change.

IDPs are protected by some national laws, international human rights law and the Guiding Principles, while no instrument was seriously taking into consideration the cross-border movements caused by environmental disasters. Indeed, a proper institutional response and inter-State and regional cooperation was needed. The 2012 Nansen Initiative on Disaster-Induced CrossBorder Displacement was a first step in responding to this legal gap. The idea stemmed from the 2010 COP16 when State Parties agreed to undertake measures to enhance coordination and cooperation regarding climate change induced displacement. The Steering Group was co-chaired by the Governments of Norway and Switzerland and it included the following countries: Australia, Bangladesh, Costa Rica, Germany, Kenya, Mexico and the Philippines. UNHCR and IOM were Standing Invitees to the Steering Group. Moreover, other States, international organisations, academic experts, civil society and the affected people participated in the process. The already mentioned Professor Walter Kälin was the envoy of the chairmanship of the Nansen Initiative, representing it and providing strategic advice to the Steering Group.

The general aim of the Nansen Initiative was to build consensus among States on key principles in order to protect environmental migrants. The Initiative was structured into three main pillars: international cooperation and solidarity; standards for the treatment of environmental migrants in the context of admission, stay and status; operational response, regarding funding mechanisms and responsibilities of international humanitarian and development actors.

The Initiative came to an end in 2015, as Switzerland and Norway fulfilled their pledge from 2011 with the validation of the Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change (hereinafter Protection Agenda). The Nansen Initiative did not aim at developing legal standards for environmental migrants, but at building consensus between

countries on the design of a protection agenda. This happened in the context of a global governmental conference in 2015 after a series of regional consultations that collected information on existing practice, policies and gaps. The data and analysis were collected in various Reports, which contain the outcomes and technical discussions of representatives from regional and international organisations, civil society and academia. These consultations took place in the Pacific, Central America, the Horn of Africa, Southeast Asia and South Asia. It proved to be an important process to bring attention to environmental dangers among the endangered countries and the Western States as well. This bottom-led process that involved a myriad of different actors all over the world could have brought more benefits if it had been prolonged after the preset 2015 ending. Including consultations with other countries would be important to consider more regional dynamics and to draw more comprehensive conclusions and recommendations.

The Protection Agenda was developed after three years of consultations and research, and it embraces three phases: preparedness in order to prevent displacement through disaster risk reduction plans, collecting data and enhancing knowledge on cross-border disaster-displacement; protection and assistance during displacement; solutions after the disaster occurred strengthening the management of disaster displacement risk in the country of origin. The Protection Agenda includes key principles and examples of good practices, presenting a comprehensive approach to environmental migrants and offering practical suggestions for future actions at local, regional and international level. For instance, States should identify citizens at risk of displacement and elaborate proper adaptation and disaster risk management strategies in collaboration with local communities. States should prioritise infrastructure improvements as earthquake resistant buildings; they should invest in livelihood diversification, education and food security; and they should develop bilateral and regional contingency plans that identify and respond to transboundary risk scenarios. States should consider reducing the costs for environmental migrants to send remittances that are used to improve the resilience of families remaining at home. Domestic legislation should include the notion of environmental migrants and IDPs and humanitarian and development activities should merge to guarantee durable solutions for

environmentally displaced persons. Finally, it would be fundamental to harmonise the approaches to admission, stay and non-return of cross-border disaster-displaced persons at (sub-)regional levels along with the local, bilateral or (sub-)regional disaster risk management and humanitarian response mechanisms.

The Platform on Disaster Displacement aims at following-up on the Nansen Initiative and at implementing the recommendations contained in the Protection Agenda. It was launched in 2016 at the World Humanitarian Summit in Istanbul. The Platform constitutes a multi-stakeholder forum for dialogue, information sharing, policy and normative development.

The Protection Agenda was developed in a context of increased interest and acknowledgment of the challenges of environmental human mobility, as demonstrated by the Conference of the Parties to the UNFCCC, the Sendai Framework for Disaster Risk Reduction 2015–2030 and the UN 2030 Agenda for Sustainable Development. The Nansen Initiative aimed at further complementing and supporting, rather than duplicate, these international and regional frameworks, through the elaboration of concrete practices to address the issue of environmental displacement.

2.5 The Sendai Framework for Disaster Risk Reduction 2015–2030: fostering preventive measures

Displacement, disasters and climate change are cascading and intertwined phenomena, and they usually stem from an unsustainable management of natural resources and an ill-development. Disaster risk reduction (DRR) measures can help to address these issues, analysing and reducing the human, economic, material and environmental impacts of disasters. Risk is to be intended as the combination of hazard, exposure and vulnerability. Preventing the consequences of natural hazards, reducing vulnerability and increasing abilities to respond and recover may contribute to decrease the number of forced environmental displacements.

The Sendai Framework was adopted in 2015 at the Third UN World Conference on

Disaster Risk Reduction in Sendai, Japan. It is the outcome of stakeholder consultations and intergovernmental negotiations between 2012 and 2015, supported by the United Nations Office for Disaster Risk Reduction (UNDRR) at the request of the UN General Assembly. It is the successor instrument to the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, which contributed to raise public and institutional awareness and commitment. However, disasters exacerbated by climate change have continued to force people to flee their homes, affecting also the communities with a significant economic, social, cultural and environmental impact in the short, medium and long term. The Sendai Framework marks a clear shift from reaction to to prevention of disasters.

Therefore, it is important to carry forward and improve the Hyogo Framework approach with the Sendai Framework in order "[…] to anticipate, plan for and reduce disaster risk in order to more effectively protect persons, communities and countries, their livelihoods, health, cultural heritage, socioeconomic assets and ecosystems, and thus strengthen their resilience" (Sendai Framework, 2015, p. 10). The Framework aims at achieving a "[…] substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries" (Sendai Framework, 2015, p. 12).

In order to reach this goal, the international community should support vulnerable countries through bilateral, regional and multilateral channels, technical and financial assistance, and information sharing to strengthen their disaster risk reduction capacities. DRR measures should be applied to all sectors connected with poverty alleviation, sustainable development, natural resource management, urban development, and adaptation to climate change. It is fundamental to better understand disaster risk in order to ameliorate risk governance, "[…] establishing consistent access to and collection of disaggregated data and strengthening capacity for contextually analyzing risk assessment and forecasting data. Most importantly, it requires building political will and action to ensure that all development programming and future investments are risk-informed" (Mizutori, 2020).

An important component of the monitoring and implementation process of the Framework is the Global Platform for Disaster Risk Reduction, a biennial multi-stakeholder forum established by the UN General Assembly to report progress, share information and developments in reducing disaster risk. Indeed, several countries and regions have started to implement the DRR under the Sendai Framework umbrella. Among them, the Australian Government designed a new National Disaster Risk Reduction Framework based also on the Sendai targets, as stated during the 2019 Global Platform. In the statement was also mentioned summer 2019 as the hottest on record after six years of intense drought. Queensland State suffered from unprecedented bushfires, floods and cyclones, the same events that it experienced also in summer 2020, as described in Paragraph 1.6. That is emblematic of the combination of worsened environmental conditions and insufficient preparedness. Sendai Framework Target B declares that disasters stemming from natural hazards have displaced over the last decade around 24 million people each year globally, being the main cause of displacement (UNDRR, 2019a, p. vii). Indeed, the statement further affirms that in 2019 Australia published its first data to the Sendai Monitor regarding the period 2015-2018, and "[w]hat we can see from the data already is that more Australians are being impacted by natural hazards" (Global Platform for Disaster Risk Reduction, 2019). The Government stressed the importance of data collection and analysis to properly invest in preparedness capabilities, also because "Australia is part of the Asia-Pacific region, the most disaster prone in the world" (Ibid). In June 2020 Australia would have co-hosted its regional platform with UNDRR, the Asia Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR), but it was postponed due to COVID-19 epidemic. That would have been, and possibly it will soon be, a fundamental occasion to review the missteps and to plan better DRR strategies to reduce the consequences of climate change, including forced displacement.

Displacement itself can become a DRR strategy when other preventive measures cannot be put in place. For instance, in the event of intense flooding, volcanic eruption or uncontrollable bushfires, people may be asked to leave their homes. In these cases evacuation and, therefore, displacement becomes a protection strategy, even though sometimes it can be avoided through proper urban development and

climate change mitigation measures. However, Governments are not sufficiently committed to preventing environmental displacement through DRR measures, not considering it as a priority (Ferris *et al*, 2011, p. 23).

An important weakness of the Sendai Framework consists in the lack of accountability for States to comply with their responsibilities for safety and protection and to direct resources to fulfil their duties. The executive director of the Global Network of Civil Society Organisation for Disaster Reduction (GNDR) states that "[i]nadequate means of implementation for DRR policies is a reflection of competing policy priorities and a lack of strong political ownership of the DRR agenda. [...] Domestic accountability is strengthened when there is strong public demand together with a compelling public narrative for a safer environment." (Oxley, 2015). He stands that domestic accountability is a particular sensitive topic that is usually not addressed in international policy frameworks as States' activities would be monitored by a "socially committed private sector and an active civil society" (Ibid). As for all the international instruments, weaknesses and strengths depend on the implementation mechanisms that each State will adopt.

2.6 Guidelines to Protect Migrants in Countries Experiencing Conflict or Natural Disaster: an evidence-based approach for collaborative State action

During the 2013 UN High Level Dialogue on International Migration and Development, Secretary General Ban-Ki-Moon stated the need to address migrants caught in situations of conflict or natural disasters (United Nations Secretary General, 2013). A year later, the Governments of the Philippines and the United States launched the Migrants in Countries in Crisis (MICIC) initiative with the final aim of improving the ability of States, the private sector, international organisations and civil society to prepare and respond to the impact of conflicts and natural disasters on migrants. In 2016 the initiative came to an end with the publication of the Guidelines to Protect Migrants in Countries Experiencing Conflicts and Natural Disasters, after a series of multi-stakeholder consultations. This government-led process included a working group comprised of, among others, the Governments of

Australia, Bangladesh, Costa Rica and Ethiopia, the European Commission; IOM; and UNHCR. The Special Representative of the United Nations Secretary-General for International Migration, Peter Sutherland, suggested the value of "mini-multilateralism": "[r]ather than wait around for a consensus to emerge among 193 member States, a small group of pioneers decided to take responsibility for making progress on an issue of global concern" (MICIC, 2016, p. 5). The Philippines decided to develop this initiative based on their forty years of human mobility that concerned about 10 million people, 10% of their population, present in more than 200 States (Ibid, p. 4). The Guidelines do not analyse migration as a consequence of natural disasters, but they consider the situations in which migrants are present in a country suffering from conflict or environmental hazards. However, the framework observing a human rights-based approach along with measures preventing or responding to natural disasters can be useful also for solutions to environmental displacement.

The document starts illustrating the ten principles that should act as a compass for every action, and the number one is "First, save lives". They illustrate how migrants are both human rights holders but also active participants in the process. States bear the primary responsibility to protect migrants, but action at local, national, regional and international level along with cooperation among States and other stakeholders are essential to enhance the effectiveness of the practices. The document then illustrates the fifteen Guidelines, targeted suggestions organised in three main sections: crisis preparedness tracking information on conflicts and natural disasters, sharing it with migrants and involving them in prevention and preparedness systems; emergency response facilitating migrants to move safely and providing humanitarian assistance; and post-crisis action addressing migrants' urgent needs and supporting host communities. Finally, the document presents selected practices based on existing measures and recommendations that stakeholders can use as examples to concretely implement the Guidelines.

Moreover, MICIC offers a smartphone application for migrants to use, which includes online consular services, emergency warnings and alerts and options for crisis assistance. MICIC website has also a wide repository of practices that

illustrate the main measures taken by each country in order to manage migration and environmental hazards, giving also the opportunity for States to share their own practices. MICIC seems to offer technological solutions promoting a global cooperation, which is essential to tackle a global issue.

IOM's World Migration Report 2020 states the importance of the Guidelines in strengthening initiatives and cooperation among State and non-State actors. Indeed, these Guidelines are a good example of how human mobility in the context of climate change could be addressed: strong preparedness and post-crisis actions, enhanced transnational learning, a road map for innovations to elaborate specific and organised responses and an organisational outreach that is more inclusive, both of migrants' vulnerabilities and skills.

2.7 The UN 2030 Agenda for Sustainable Development: the multi-dimensional nature of environmental displacement

While the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development do not specifically address environmental migration, they highlight different issues connected to it, demonstrating the multi-dimensional nature of migration. Lack of quality education, economic opportunities, inequality, climate change and governance combine to constitute the root causes of forced displacement. It is impossible to reach the SDG Targets by 2030 without addressing climate change and displacement. The main reference to migration is found in Target 10.7: “Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies”.

Migration is also mentioned in the introduction of the Agenda, specifying that it is not just a problem that needs solutions but also an important mechanism to achieve several Goals. Indeed, migrants bring a positive contribution for inclusive growth and sustainable development (2030 Agenda for Sustainable Development, 2015, p. 10). In 2017, the IOM Director General affirmed that “[…] we should not focus

efforts on trying to stop migration, but rather on creating conditions in which migration is a choice and not a necessity, takes place along legal channels and acts a catalyst for development" (Swing, 2017). International migration is a multidimensional phenomenon particularly relevant for the development of countries of origin, transit and destination. Therefore, international cooperation is needed to ensure safe and regular migration whether people are refugees, migrants or IDPs.

The Agenda includes both direct references to migration-related issues and also cross-cutting connections where the topic may affect or be affected by migration. For instance, direct references can be found in Targets 5.2, 8.7, 16.2, which urge to take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking. Target 10.C regards the reduction of transaction costs of migrant remittances, as they burden migrants and encourage them to use informal and dangerous channels. Target 17.18 planned to enhance by 2020 capacity-building support to developing countries, including for least developed countries (LDC) and small island developing States (SIDS), and to increase the access to disaggregated data regarding migration topics in order to develop proper policies.

Regarding cross-cutting connections, achieving some of the Goals will contribute to responding to many drivers of migration, through the development of better life conditions in the countries of origin. Goal 13 is particularly important, as it is focused on climate change and the importance to strengthen resilience and adaptive capacity to climate-related hazards. It is fundamental to address this global problem through education, early warning, mitigation, adaptation and climate change policies. Moreover, Goal 13 acknowledges "[…] that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change". This declaration further confirms the need to address environmental migration within this forum without creating another one.

The importance of considering the interconnections among various factors is supported by Elly Schlein (2020) who during 2015 was in the European Parliament

delegation in New York when the UN General Assembly approved the SDGs. She states that the three European priorities in which to invest resources include the ecological transition, the digital transformation and the social cohesion. These factors reflect the Agenda 2030 on sustainable development of the environment, the economy and the society. People that are paying the highest price of climate change are the vulnerable ones: social and economic inequalities are intertwined with climate change. Politics should govern the great challenges that society is facing: demographic, climatic and technological ones.

In conclusion, the SDGs contribute to integrate human mobility into the development framework, highlighting how migration is linked to a variety of causes and consequences. It is important that displacement is discussed within a broader context in order to truly understand its global implications. However, the Agenda fails to openly recognise the issue of human mobility in the context of climate change. In analysing the Agenda, Banerjee and Mishra (2017) of the International Centre for Integrated Mountain Development (ICIMOD), a regional intergovernmental centre in Nepal, advocate " [...] the mainstreaming of human mobility within climate change adaptation, disaster risk reduction and SDG mechanisms at the national and local levels. For a better integration of these policy domains, there is a fundamental need for the various narratives on these themes to converge and identify multi-stakeholder forums at the national level to discuss the approaches for such integration". Development programmes should also promote social inclusion and protection. The Agenda should have mentioned the issue of environmental displacement, even though it entails a huge leap forward in comparison to the previous Millennium Development Goals 2000-2015, in which migration was barely mentioned.

2.8 The New York Declaration for Refugees and Migrants and the Global Compact for Safe, Orderly and Regular Migration

The New York Declaration for Refugees and Migrants was adopted by 193 UN Member States in 2016. It is the first intergovernmentally negotiated outcome,

prepared under the auspices of the United Nations, to cover international migration in all its dimensions. It is a non-legally binding and cooperative framework that recognises the need of a collaborative and international approach to the topic of migration.

The Declaration is the first major international migration document to recognise the increased importance of the nexus between migration and climate change. It acknowledges that people move "[…] in response to the adverse effects of climate change, natural disasters (some of which may be linked to climate change), or other environmental factors" (United Nations, 2016, p. 1). The Declaration mentions the Sendai Framework for Disaster Risk Reduction 2015-2030 and its recommendations to mitigate risks associated with natural disasters.

It also cites the 2030 Agenda for Sustainable Development, which aims at eradicating extreme poverty and inequality, promoting peaceful societies, sustainable economic growth and employment, while responding to environmental degradation and the adverse consequences of climate change (Ibid, p. 9). Indeed, MS "[…] acknowledge that poverty, underdevelopment, lack of opportunities, poor governance and environmental factors are among the drivers of migration" (Ibid, p. 23). It is fundamental to address these root causes of human mobility so as people would not need to leave their homes.

The Annex II of the Declaration launched a process of intergovernmental negotiations leading to the adoption of the Global Compact for Safe, Orderly and Regular Migration (GCM) in 2018. A part of the GCM is devoted to human mobility in the context of climate change. States commit to strengthening joint analysis and sharing of information to better map displacements due to environmental disasters; develop adaptation and resilience strategies; integrate human mobility considerations into DRR plans; harmonise mechanisms at subregional and regional levels; take into consideration relevant recommendations from State-led consultative processes as the Agenda of the Nansen Initiative and the Platform on Disaster Displacement mentioned in Paragraph 2.4 (Global Compact for Safe, orderly and Regular Migration, 2018, p. 9).

However, several States as Austria, Australia, Bulgaria, Chile, the Czech Republic, Dominican Republic, Estonia, Hungary, Italy, Israel, Latvia, Poland, Slovakia and Switzerland did not attend the international conference in Marrakesh for the adoption of the GCM, while the United States did not even participate in the negotiation of the agreement. The main concern of these countries was related to an alleged surrender of sovereignty, while the GCM is in fact not binding. The Australian Minister for Home Affairs stated that Australia is not going to "sign its border protection policy over the UN" and that he is "not going to allow unelected bodies dictate to us, to the Australian people" (Remeikis *et al.*, 2018). Many countries as Australia have been trying to shirk scrutiny to avoid the international eye on how they are managing migrants and their human rights.

In 2016 the UN MS recognised that this global phenomenon needs a global response and they hoped that the Third High-level Dialogue on International Migration and Development would have taken into consideration the GCM outcomes. In 2019, during the High-level Dialogue, several participants highlighted the necessity to recognise the connection between climate change and migration and to find proper solutions (United Nations, 2019a). Henriette Geiger, Director for People and Peace Directorate General for Development and Cooperation of the European Commission, stated that participants in the Dialogue represent a "coalition of the willing" to implement the Global Compact (Ibid). Owen Shumba, the Global Co-Lead/Co-ordinator of UNDP Migration & Displacement Policy and Programming stated that the Voluntary National Review Reports (VNR) regarding progress made towards forced displacements were too few. "Clearly, what we heard was not enough. We need concrete steps to address the plight of these groups, and to harness their positive contributions. We should learn from countries that are already integrating displacement in their national SDGs and local and national development plans. This should become the norm rather than the exception." (Shumba, 2019).

2.9 Conclusions

The difficulty of addressing climate change and human mobility as connected

issues is reflected at all levels, from international to local. Indeed, many of the analysed instruments do not focus on both issues together, and the ones that consider the linkages present the relation as a novelty, without proposing effective solutions. The mere acknowledgement of the existing connections between climate change and human mobility is just the very first step to design proper measures, and the increasing number of environmental migrants and affected communities urgently need concrete protection. The causalities between the two phenomena need to be deeply explored for States to develop a proper and specific response that considers the relation between the issues.

Moreover, the fragmentation of instruments aiming at tackling forced human mobility, and the absence of a comprehensive and possibly binding mechanism to address environmental migration and internal displacement constitute the principal weakness of a possible response. Indeed, the fragility of the analysed instruments stems also from their non-legally binding nature. The acknowledgment of this phenomenon, the elaboration of proper international guidelines and a more focused and efficient use of COPs could be the start of a united international commitment.

Human rights law, international humanitarian law and environmental law standards are the foundation of any instrument directed to the protection of environmental migrants and IDPs. The 1998 Guiding Principles on Internal Displacement is one of the main and earlier international instruments acknowledging that natural disasters are a cause for internal displacement. The Principles inspired many regional organisations and States to embrace measures to protect IDPs, demonstrating how an international input is important in developing regional and local policies. The strength of the Principles concerned their development under the direction of a UN expert and the support of key Governments, bottom-up consultations and a needs-based approach. The Nansen Initiative complements the Guiding Principles protecting not IDPs but international migrants displaced by natural disasters and climate change. The Sendai Framework for Disaster Risk Reduction illustrates the importance of adopting measures to prevent climate change influence to vulnerable people, and it also presents a follow-up mechanism to report progress and monitoring the implementation of the Framework. However,

the Sendai Framework lacks actual accountability for States to comply with their responsibilities. The Guidelines to Protect Migrants in Countries Experiencing Conflict or Natural Disaster elaborated practical guidelines and related examples to deal with migrants and environmental hazards, avoiding an ineffective abstract approach. The 2030 Agenda for Sustainable Development brings the attention to the multi-dimensional nature of displacement, but it fails to directly address human mobility in the context of climate change. The Global Compact for Safe, Orderly and Regular Migration finally shows how in 2018 there were several States not willing to cooperate in promoting safe human mobility.

The instruments illustrated in the Chapter show that the international community, some regional organisations and States have demonstrated an increased commitment in protecting environmental migrants and IDPs. However, the increasing number both of people displaced by natural hazards and of dangerous effects of climate change asks for a greater commitment. It is fundamental to recognise the inefficiency of the existing system of prevention and protection in order to design specific solutions.

Third Chapter

Relevance and challenges of collecting data and fostering political commitment

3.1 Introduction

This brief Chapter aims at analysing two main challenges in developing an effective response to human mobility in the context of climate change: collecting data and political commitment. These aspects encounter several obstacles that endanger the implementation of good practices to protect environmental migrants and IDPs. The first part of the Chapter considers the international approach in collecting data promoted by the International Displacement Monitoring Centre reports and the International Organisation Displacement Tracking Matrix, to assess the level of international commitment in researching and diffusing data on the issue. Afterwards, an analysis of the main challenges regards the need to improve the collection and diffusion of data through public and accessible data banks and reports. The second half of the Chapter takes into consideration the political commitment in addressing human mobility in the context of climate change through the Voluntary National Reviews, the follow-up mechanism for reporting progress in implementing the SDGs, and the the UN Common Country Assessments, which demonstrates the importance of translating data into actions. However, the saltuary participation of Governments in designing reports is affecting the success of data collection and exchange of good practices, which leads to increasing the demands for action by environmental movements.

The examples mentioned in the previous Chapter demonstrate that in the past decades there has been an increased political acknowledgement of environmental displacement as a global challenge. Indeed, many landmark agreements on this topic, and more in general regarding human mobility issues, were adopted. However, the number of environmental migrants and IDPs has not decreased significantly in the last decade, and 2019 was characterised by 33.4 million new

internal displacements, 24.9 of which were caused by disasters (IDMC, 2020a, p. 1). This is the highest figure since 2012 and three times the number of displacements caused by conflict and violence. The total number of IDPs is 50.8 million, 5.1 of which are displaced in 95 countries because of disasters as of 31st December 2019. This is the first time such a global figure has been compiled and it is probably just the tip of the iceberg. In fact, the number is an underestimate as there is little data on how long people are displaced over time following a disaster event: data collection stops a few days or weeks after it (IDMC, 2020b, p. 7). This estimate impedes a more precise knowledge of the amount of people that remain displaced at the end of the year.

These figures demonstrate that the international, regional and local efforts in addressing climate change and its consequences on human mobility are not working properly. The previously illustrated instruments might not be sufficiently effective in their form or in their implementation by States. As a consequence, the inefficiency in managing environmental migration is burdening migrants and IDPs, dangerously undermining their human rights.

In addition, it is important to understand that even if IDPs and migrants return home after disasters, they may continue to face critical conditions due to the natural and social consequences of the events. In order to find effective solutions to forced displacement it is fundamental to reinforce political commitment to invest in addressing displacement and to increase coverage, quality and availability of information on the issue for the benefits of the international community and especially the vulnerable States.

Collecting, analysing and sharing data is fundamental to identify vulnerable areas and respond to the original causes of forced displacement. States all over the world should commit themselves in providing this information at the international level to develop global mitigation plans and a legal framework to protect environmental migrants and IDPs. Moreover, States should share information with their citizens through DRR plans in order to enhance their preparedness in case of an emergency, while implementing proper adaptation policies to minimise the effects of climate change on the communities.

3.2 International approach on collecting data: IDMC and IOM

Generating reliable data is the essential starting point to understand the reality of environmental displacement and to design consequent policies and strategies. The International Displacement Monitoring Centre collects data from the UN, the International Federation and National Red Cross and Red Crescent Societies, Governments' disaster management and disaster risk reduction agencies, NGOs and local and international media outlets. Even though the amount of information in the IDMC Global Internal Displacement Database has increased by 274% since 2016 (IDMC, 2020, p. 80), there is still lack of information regarding IDPs' location and the patterns and duration of their displacement. These data are fundamental for international organisations, Governments, humanitarian and development stakeholders to plan proper solutions to reduce forced displacement in the present and in the future. Indeed, some IDPs are displaced many times, also doing pendular movements between their hometown and their refuge. These situations make people more vulnerable each time they move, and for this reason it is important to collect data on patterns of displacements. Moreover, disaggregated data by sex, age, disability and other characteristics are particularly needed to design focused policies and measures.

IDMC built a disaster displacement risk model through the analysis of the hazard (the phenomenon that can originate the displacement), the exposure of communities in hazard-prone areas, and the vulnerability of people and buildings (how they respond to hazards). In this way, IDMC can estimate how many people will be displaced due to specific weather-related events. These data highlight the necessity of investing in climate change mitigation and adaptation measures, DRR plans and proper urban planning, in order to prevent forced displacement.

IDMC estimates that around 13.9 million people globally risk being displaced by sudden-onset disasters each year (IDMC, 2020, p. 81). Eight out of the ten States facing the highest possibility of future displacement are in South and South-East Asia: Bangladesh, China, India, Indonesia, Myanmar, Pakistan, the Philippines and Vietnam. Hydro-meteorological hazards are the most frequent and dangerous but they can be predicted if proper data are collected, analysed and shared.

New technologies, data collected through satellite, aerial imagery and social media contribute to gather information but also data collected directly from affected communities and persons are useful to fill in the gaps. This kind of participatory research collects precious data from displaced persons regarding their personal and diverse experiences, challenges and reflexions. These particulars help organisations and institutions to avoid the risk of developing measures irrelevant and inefficient for those who should benefit from them. However, these researches risk being not representative due to challenging settings and the impossibility to interview a huge number of persons, but these primary data can be complemented with information gathered in a more systematic way.

The previous Chapter analysed the main international and regional instruments useful to address the issue of human mobility in the context of climate change. However, applying these instruments to individual cases is still a widespread challenge as States do not legally recognise the figure of environmental migrant. IOM has been trying to encourage States to address this challenge. The Displacement Tracking Matrix (DTM) is an IOM's tool that collects and analyses data in order to share information on the mobility and needs of the displaced people for decision makers and humanitarian actors to implement better context specific responses. DTM is a fundamental tool as the ability to provide effective assistance and policies depends on the available data. It was funded in Iraq in 2004, and since then IOM has engaged local institutions and humanitarian partners to guarantee diffused coverage and access of data. DTM data translates in reports, data portals and sharing that is useful not only for emergency responses but also for preparedness and disaster risk reduction plans. Through the identification of displacement patterns, these data allow the development of proper mechanisms to mitigate the effects of climate change and to launch adaptation mechanisms for vulnerable communities. DTM assessments bring the attention to gaps in managing internal displacement informing where assistance is required.

Some countries are analysed through several reports, while entire regions as Europe and North America are not documented at all. Bangladesh is one of the States with the highest possibility of future displacement and is vulnerable to a variety of

hydrometeorological hazards. 4.1 million internal displacements due to disasters characterised the State in 2019 (IDMC, 2020, p. 14), the highest figure since 2008, when data began to be collected. Its situation is monitored through the European Union funded project Regional Evidence for Migration Analysis and Policy (REMAP) and the use of the DTM. DTM tracks population movements and needs, capturing, processing and disseminating information useful for an effective humanitarian response (DTM, 2020). Fortunately, many displacements were the consequence of pre-emptive evacuations organised by the Governments through early warning systems (IDMC, 2020, p. 49), which can effectively work thanks to data collection. These systems have demonstrated to be effective in saving thousands of lives (IFRC, 2017). The Cyclone Preparedness Programme (CCP) was developed by the Government of Bangladesh, the UN, the International Red Cross and the Bangladesh Red Crescent Society. With tens of thousands of volunteers and a transceiver telecommunications network. "The success of the CPP arises from its simplicity, attention to socio-cultural aspects, and its extensive community-based volunteer and communications network that expedite the delivery of cyclone warning messages produced by the Bangladesh Meteorological Department (BMD)" (Habib *et al.*, 2012). BMD information is spread to responding agencies and the public within few minutes and civilians can be evacuated in 2,000 storm shelters. Data collection, analysis and diffusion is fundamental to save lives and prevent forced displacements.

3.3 Challenges in collecting data

Data to be effective needs to be shared. Several UN agencies, commissions and regional groups have established data centres where information on IDPs, migrants and refugees is collected and shared for decision-makers to develop proper policies. For instance, in 2011 the UN Economic Commission for Europe (UNECE) produced a Guide specifically for countries of Eastern Europe and Central Asia for them to improve their collection of statistics on migration. Practical examples and international recommendations aim at facilitating the production and dissemination of reliable statistical data, as they are the key to the basic understanding of

displacement (UNECE, 2011). Twelve countries have developed an online repository thanks to UNECE guidance. Its counterpart in another region, the UN Economic Commission for Latin America and the Caribbean (ECLAC), has an open database on international and internal migration.

However, efforts in collecting and organising data on migration and internal displacement, let alone the environmental kind, are not enough. These data will improve information on the phenomenon to design a better response and they will be extremely useful to compare figures, measures taken and outcomes of different countries. Good practices need to be shared but the attempts to document them do not use a systematic approach based on a coherent framework (IDMC, 2020, p. 86). Indeed, a systematic global assessment of drivers of long-lasting remedies has not been made yet. Examples of good practices have not been organised in a comprehensive framework for everyone to share and learn. Institutional and operational best practices should cover gathering and analysis of data, common standards for planning, monitoring progress and reporting. Even though an increasing number of countries is interested in developing better strategies to prevent and respond to environmental migration, they cannot rely on formal peers' repositories. Therefore, there is not a wide picture of the measures that are working nor whether overall progress has been made.

In addition, there is a difficulty in reading data. For instance, IDMC uses the terms "new displacements" referring to the number of movements made by IDPs, but many documents, as well as UN documents, use this figure to describe the actual number of displaced persons (UNDP, 2017, p. 9, 15; Dempster, 2020). For instance, IOM in its 2017 Report on Environmental migrants and global governance states that on average 25 million people were displaced each year during 2008-2016 as a consequence of extreme weather events (IOM, 2017, p.2), making reference to the 2017 IDMC Report, which, however, links that number to the movements of IDPs and not to the actual persons (IDMC, 2017, p.31). IDMC always specifies in its findings that they refer to "new displacements" because that figure may include individuals who have been displaced more than once, and for this reason it is not correct to refer to it as the total number of IDPs (IDMC, 2017, p.10).

According to UNDRR (2019a), “data collection is fragmented, non-universal, not commeasurable and biased”. It is essential to acknowledge the issue and its wide diffusion, collect data, make it available to other countries and to the people and use it to address the problem. Data generation and analysis must be followed by public reports and open data platforms in order to share knowledge.

3.4 Political commitment: Voluntary National Reviews

Along with proper data collection and analysis, political commitment is fundamental to enhance the response regarding environmental displacement. In 2019, forty-seven countries published Voluntary National Reviews (VNRs) the follow-up mechanism for reporting progress regarding the SDGs. The 2030 Agenda for Sustainable Development in its paragraph 79 encourages Member States to "[...] conduct regular and inclusive reviews of progress at the national and subnational levels which are country-led and country-driven". Moreover, regional and sub-regional organisations and commissions are asked to compile reviews to provide "[...] opportunities for peer learning, including through voluntary reviews, sharing of best practices and discussion of shared targets" (2030 Agenda for Sustainable Development, 2015, p. 33). VNRs to be inclusive should include considerations of indigenous peoples, civil society, academia and the private sector (Oosterhof, 2019, p.40). These kinds of reviews are essential to determine the progress and difficulties faced by each country in tackling climate change and environmental human mobility, leading to the design of a global framework to properly address the issue. This process for follow up the adoption of development agendas may translate into useful data banks or examples of good practice regarding the implementation of the 2030 Agenda.

However, VNRs are not compulsory monitoring reports but unstructured voluntary reviews developed by single States. This aspect leads to a weaker commitment and a cherry-picking approach through which many issues can be accurately avoided. Countries can decide to hide specific lacking policies in order not to be accountable for their inactions. Moreover, few specific legally binding instruments were

established to implement the SDGs (Ibid, p.39). Reviews should be designed with a cycle perspective, connecting the last one to the previous one and also making reference to other State's reviews and embracing good practices described in other VNRs.

In 2018 the States that recorded the highest number of displacements were the Philippines, United States, India, China and Indonesia. Among them the Philippines recognised the importance of vulnerability reduction in order to enhance the safety of communities through disaster risk resilience measures and green economy (Voluntary National Review of the Philippines, 2019, p. 21). However, the United States did not contribute with any VNR, impeding the share of best practices, data and other important information that would have benefited also other States.

India is another State particularly affected by natural hazards. In its 2017 VNR it stated that developed countries have an essential obligation in providing financial assistance to developing countries. This regards in particular global topics as climate change mitigation. Through a cooperative approach, developing countries can achieve more easily the SDGs (Voluntary National Review of India, 2017, p. 26). In the VNR there was no mention whatsoever of migration or displacement issues.

China did not mention the topic of displacement in its latest VNR, simply stating the importance of addressing climate change actively and integrating climate change response into national development strategies (Voluntary National Review of China, 2016, p. 2).

Indonesia dedicated a large section of its VNR to remittances, to educate migrants and their families on their proper use. Strengthening climate resilience and adaptive capacity related to hazards is fundamental to protect disasters directly affecting persons through DRR strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030 (Voluntary National Review of Indonesia, 2019, p.127). However, the word "displacement" was not mentioned in the 300-pages document, and the topic of migration was analysed only linked to remittances.

Australia represents an important case since the consequences of climate change and related policies were particularly evident in 2019 and 2020. The country described its savannah fire management project considering just the reduction of greenhouse gas emissions and the protection of biodiversity, without taking into account the consequence of internal displacement. Indeed, Australia VNR states that "[t]he potential impacts of climate hazards on communities are linked to vulnerabilities associated with a range of complex, interrelated factors, such as poverty, environmental degradation, disability and gender inequality", with no mention of displacement (Voluntary National Review of Australia, 2018, p. 88).

Moreover, systematically linking VNR and the Universal Periodic Review, the UN process that concerns the review of the human rights situation in each country also through the examination of national reports, promotes advantages to both reports, a greater coherence in fundamental policies and follow up to the 2030 Agenda and the human rights agenda. UPR can also highlight policy and priority gaps. Indeed, Australia in its latest national report for the UPR did not mention climate change, and it only mentioned migration in the context of the immigration detention network as "[t]he Australian Government considers immigration detention an essential component of strong border control" (National Report of Australia, 2015, p. 19). Migration is not mentioned in the Indian national report for the UPR, while it promotes a people centric approach to climate change through the concept of Climate Justice (National Report of India, 2017, p. 4). Indonesia and China only mentioned migrant workers in their latest national reports for the UPR, the United States considered the issue of climate change, the Philippines mentioned climate-resilient measures for agriculture and the fact that in 2014 they led the regional consultations for the formulation of the non-binding Guidelines to Protect Migrants in Countries in Crisis initiative together with the United States (National Report of the Philippines, 2017, p. 12). These national reports for the UPR highlighted how the countries that recorded the highest number of displacements in 2018 had not previously exposed the linkages between climate change and human mobility, apart from the Philippines. This demonstrates how this issue is still poorly considered by States, and therefore they lack effective measures to contrast environmental displacement.

During the years the topic of environmental displacement has not been mentioned in the VNRs of the different countries, constituting an important deficit in recognising and properly addressing the issue. It is fundamental that countries that are integrating displacement in their national SDGs and local development plans share them with the international community. It is the first step for a fruitful bottom-up contribution in solving the issue and bringing it to an international and cooperative level.

Many VNRs describe the importance of tackling vulnerability to promote sustainable and resilient societies that will help States to achieve a broader range of SDGs, but no one expresses the link between vulnerability and displacement. Migration and climate change continue to be addressed as separated topics in National Reports, highlighting a dangerous incomprehension of the existing relations between them. It would be essential that DRR plans and climate change mitigation and adaptation strategies were planned also with the goal of reducing forced displacement. Moreover, even though in the 2019 VNRs internal displacement was mentioned more than ever, greater efforts and a cooperative approach is needed, also in associating it with climate change.

3.5 Enhancing SDGs locally through UN Common Country Assessments

Similar to the VNRs in their country analysis, the UN Common Country Assessments (CCAs) consist in "[…] the UN system's independent and mandate-based articulation of the country context, opportunities and challenges, encompassing sustainable development, human rights, gender equality, peace and security, and humanitarian perspectives" (United Nations, 2017, p. 21). CCAs are a fundamental part of UN Development Assistance Framework (UNDAF) preparation and together they constitute the first step of the process for the design of country programs and projects supported by UN agencies (Figure 6).

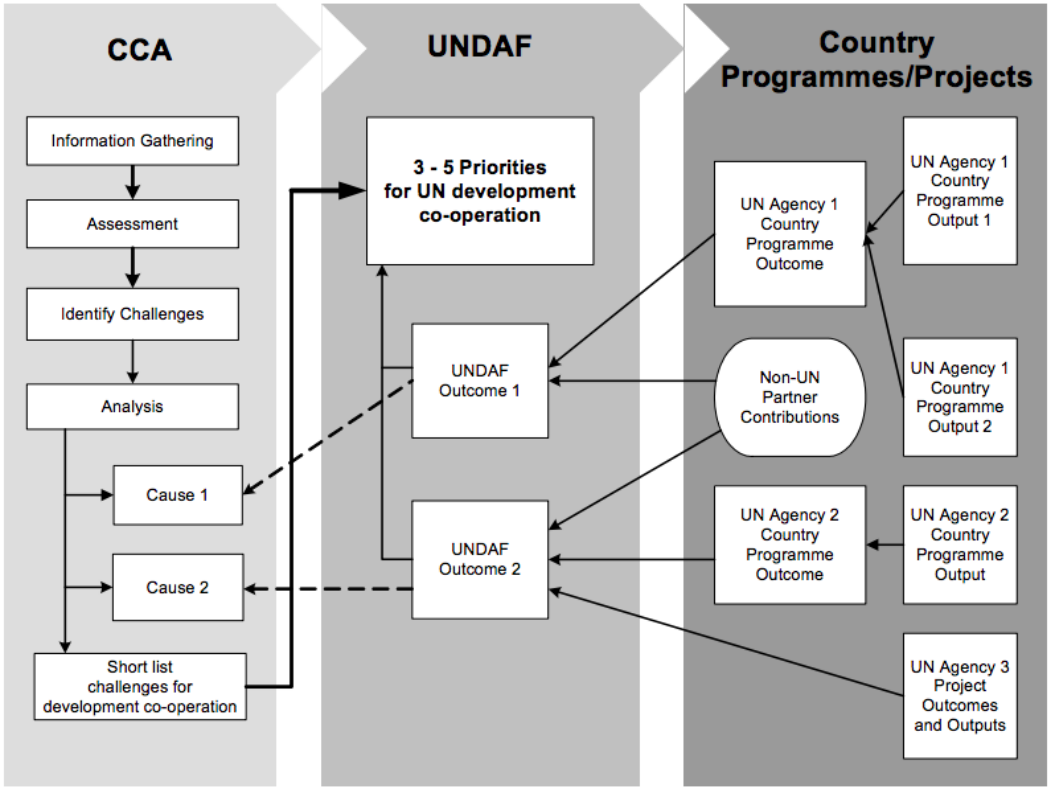

Figure 6. Road map of the country programming process (United Nations, 2004, p. 5).

The CCAs shape the design of UN programs at country level building on the review of context-specific data associated with the SDGs. The first step to conduct the CCAs is gathering data to determine the status of progress against the SDGs. Data is collected by the UN Country Teams, Governments, civil society and other stakeholders (United Nations, 2004, p. 5). In this way, the CCAs will highlight areas where the UN system, the Government or other actors should invest to better implement the SDGs. CCAs embrace thematic analyses following the principles of leaving no one behind; human rights, gender equality and women's empowerment; sustainability and resilience; and accountability. They aim at identifying the key risks that could impact the development trajectory of the State, which include also climate change, disaster risk and displacement, indicating the need for focused strategies.

Data collected through CCA helps UNDP to implement climate change projects that make a direct contribution to all the SDGs. Green policies along with mitigation

and adaptation strategies will enhance the resilience of vulnerable communities, decreasing the intensity of natural disasters and the need to leave. For instance, UNDP is currently implementing a climate change adaptation program in Bangladesh, the third country with more new internal displacements in 2019 (IDMC, 2020a). Indeed, cyclones and sea-level rise have caused a saltwater intrusion in the country's fresh water sources along the coastline. After having analysed the origins of the problem, UNDP decided for the construction of a pipeline to improve the adaptive capacities of the vulnerable coastal communities to respond to climate change induced salinity instead of fleeing their homes (Green Climate Fund, 2018).

In conclusion, CCAs are another way for States to share information regarding the local implementation of SDGs and consequently to show other countries various challenges and good practices in doing so. Moreover, collection of data almost immediately translates in actual projects on the ground, once again demonstrating the importance of gathering information to guide and enhance political commitment.

3.6 Challenges of political commitment

2015 Paris Agreement in its Article 4(2) requires State Parties to "[...] prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions". The communication of climate actions will encourage States to develop strategies to address climate change and to organise a roadmap to achieve the Paris Agreement goals, and it will help to monitor the implementation of mitigation measures. These National Determined Contributions (NDCs) are submitted every five years to the UNFCCC secretariat, from 2020 to 2030. As of September 2020, only 28 Parties over 186 that have submitted their first NDC have mentioned climate change-induced displacements in their contributions. This once again underlines the lack of acknowledgement of the impact of climate change on vulnerable communities and on human mobility,

impeding the development of proper migration policies.

The very first obstacle in designing proper policies to address environmental displacement is the poor acknowledgement of the current climatic emergency, followed by the absence of institutional recognition of human mobility in the context of climate change and the consequent lack of concrete and effective responses to these problems. Political commitment cascades from scientific information on the issue and public demand. This was particularly triggered in the last period thanks to the ecological movement Fridays for Future, inspired by the young activist Greta Thunberg who demands global leaders to take serious action against climate change. As for October 2020, more than 174,000 strike events took place in 212 countries since August 2018 (Fridays for Future, 2020), highlighting a diffused dissatisfaction with how the global leaders are addressing climate change. Extinction Rebellion is another movement that asks Governments to declare a climate and ecological emergency and to address it through an inclusive bottom-up approach (Extinction Rebellion, 2020). Epistemic communities, environmental movements and NGOs are fundamental in highlighting civil society's demands for green policies. Without a widespread public recognition of the climatic emergency, States will not implement mitigation measures essential to prevent and minimise the effects of climate change on vulnerable people that will be forced to leave their homes.

Finally, it is fundamental to cross climate change and migration data, while taking into consideration also social and economic factors to design effective responses. "[C]limate change on human mobility is an issue for sustainable development, not just the remit of disaster risk management or humanitarian assistance, and needs to be addressed as such" (UNDP, 2017, p. 17).

3.7 Conclusions

States should promote a systematic approach based on a coherent framework to collect essential data for the development of policies to prevent forced movements

and to protect environmental migrants and IDPs. Data gathering and analysis limit the risk of over-simplifying the narrative, which could restrict the possibility for people to choose between moving and becoming resilient in their place.

Collecting data on human mobility in the context of climate change is fundamental to compare and share knowledge and finally documenting good practices in a comprehensive global framework. Data on displacement when associated with natural disasters and climate change would be essential for vulnerable countries to acknowledge the link among the issues and to prevent and respond to hazards, avoiding forced human mobility, loss of lives and urban destruction. To properly collect data on displacement, strong commitment, capacities and resources from States and organisations are needed. Fostering political commitment helps to find resources and to have the authorisations to collect data. On the other hand, also strong evidence on displacement fosters political incentives. The 2020 IDMC Report suggests that an "[…] organisational infrastructure with a budgetary commitment in the form of earmarked allocations would be a clear expression of political will" (IDMC, 2020, p. 86).

Moreover, effective national policies would address internal displacement as a humanitarian and development issue, implementing coordinated institutions and mechanisms to prevent and respond to it. Development plans, DRR strategies and climate change mitigation measures would contribute to a wider response. Since environmental displacement is a multi-casualty problem, it is fundamental to consider diverse perspectives in order to find comprehensive solutions. However, this rarely happens as Governments usually consider one issue at a time without analysing their relation. Expressed commitment can be identified in the development of policies, the implementation of strategies, the adoption of laws, and the allocation of funding. A form of expressed political commitment can be also identified in official statements or mentions of displacement in speeches and reports, like the Voluntary National Reviews, the UN Common Country Assessments and the National Determined Contributions.

Fourth Chapter
Local responses to climate change-induced displacements: adaptation strategies, DRR and legal good practices

4.1 Introduction

Human mobility in the context of climate change needs urgent and coordinated responses at the international, regional and local level. This issue requires comprehensive responses through a variety of policies involving climate change mitigation, DRR, education, urban planning, migration, humanitarian protection and sustainable development. To be effective, these policies need to be coordinated within the same country and region but also at a global level. This final Chapter aims at analysing the measures and policies that some interested countries implemented to respond to huge natural disasters and the consequent displacements.

This Chapter will firstly take into consideration three countries that have very recently experienced climate change-induced displacement due to incredibly dangerous natural hazards: 2018 Kerala flooding in India; 2019 bushfires in New South Wales, Australia; and 2017-2020 wildfires in California. These three States are good examples to show the effects of the increasing area of action of climate change, which is causing displacements in wider parts of the world. The last paragraphs will finally present a variety of good practices and challenges in regard to the previously mentioned points: adaptation strategies, disasters risk reduction plans, and legal frameworks. The existence of good practices demonstrates the possibility of developing effective measures to protect environmental migrants and IDPs, while the highlighted weaknesses show the urgency of a higher political commitment in addressing devastating natural disasters and their consequences.

As stated in the previous Chapter, Voluntary National Reviews are useful to identify the challenges and effective solutions for climate change and displacement. States' commitment in addressing this issue and systematic collection of data is the

foundation to build concrete policies. Indeed, beyond climate change mitigation measures, States should embrace tools to minimise the consequences of natural hazards and the resulting forced displacements. It is fundamental to reduce vulnerability and strengthen resilience through disaster risk reduction plans as described by the Sendai Framework, and to implement climate change adaptation strategies as promoted by the outcomes of COPs along with the implementation of the SDGs. Moreover, States should promote safe migration as an adaptation measures through bilateral, inter-regional and international agreements, legally recognising climate change and environmental disasters as a life-threatening reason to flee their homes. Migration should remain a choice. Summarising, States should:

- Promote data gathering and analysis on climate change, vulnerable areas and displacements (Chapter 4);
- Implement climate change adaptation strategies (Paragraph 4.5);
- Develop proper disaster risk reduction plans and community preparedness (Paragraph 4.6);
- Legally recognise environmental migrants and manage displacements through bilateral, inter-regional and international agreements (Paragraph 4.7).

Climate change-mitigation measures and pollution reduction should constitute a continuous global effort aiming at preserving the planet and at reducing natural disasters that lead to forced displacements. Meanwhile, all the aforementioned practices should be developed and implemented at an international, regional and local level, to address the urgent issue of environmental migrants and IDPs.

Climate change is still perceived as a distant issue by those who do not experience sudden-onset disasters. According to Ben Newell, Professor at the University of New South Wales, "[…] the melting of the Arctic and Antarctic has been a wake-up call for years now but because they are sparsely populated, it's not front and centre of many people's concerns" (Tang, 2020). This psychological distance is fostered by three factors: time, certainty and geography. Natural hazards have started to interest larger areas of the world, and many internationally leading countries are now experiencing the consequences of climate change.

4.2 Australia: bushfires in New South Wales as the result of poor climate change mitigation strategies

Australia is part of the Asia-Pacific region, the most disaster prone in the world. In 2019 Australia recorded 15,000 people living in internal displacement as of 31 December of that year, and more than 25,000 new disaster displacements (IDMC, 2020, p. 43) caused especially by the severe bushfire season of August-December. "Bushfires occur every year in Australia, but the season at the end of 2019 was declared the worst on record and recognised as a consequence of climate change" (Ibid). Extraordinary droughts, heatwaves and strong winds have caused the fire to spread more rapidly and extensively. The fire continued to suffocate the lands until February 2020, devastating ecosystems and endangering human lives. New South Wales, the State of Sydney, was the most damaged: more than 3,000 homes were destroyed or ruined (Yeung, 2020). An Australian citizen brought the ruins of her house in front of the Parliament House in Canberra: "I lost my house, I lost my way of life. My whole community has. And while that was happening, the PM said that he didn't want us to talk about climate change" (Woodyatt, 2019).

In order to properly address human mobility in the context of climate change, Australia should enhance data collection and analysis on the effects of climate change on vulnerable areas, implement DRR measures according to the Sendai Framework, mitigate the root causes of climate change and its dangerous effects, and facilitate safe displacement.

To prevent environmental displacement it is important that the Government shares disaster and climate risk information with vulnerable communities so as to enhance their preparedness when an unfortunate event arises. The Government provides robust information to improve the resilience of cities through the National Exposure Information System (NEXIS) and the Critical Infrastructure Resilience Strategy, among other tools (Australian Government, 2015, p. 35).

The 2017 Foreign Policy White Paper recognised climate change as a driver of displacement and announced Australia's willingness to work in partnership with "[…] developed and developing countries to take effective action on climate

change", highlighting its commitment to the Paris Agreement (Australian Government, 2017). Moreover, in the White Paper it is also stated that Australia invests in regional disaster preparedness to save lives and minimise economic loss. According to the Australian Bureau of Meteorology, Eastern Australia, which was the area most interested by the 2019 bushfires, will face a continued increase of average temperatures and extreme rainfall events, along with a harsher fire-weather climate (CSIRO and Bureau of Meteorology). Models show the projections regarding climate change, but Australia's progress in mitigating its causes is one of the worst in G20 due to poor policies and rising greenhouse gasses emissions (Climate Transparency, 2019).

The destructive power of bushfires demonstrated poor environmental policies regarding climate change mitigation but also weak adaptation strategies, as demonstrated by the thousands of damaged houses. The 2014 National Fire Danger Rating System Probabilistic Framework Project claimed that climate change was predicted to increase the number of days and severity of bushfires (Bushfire & Natural Hazards Cooperative Research Centre, 2014, p. 39), but these warnings did not translate into effective mitigation strategies. Indeed, the 2018 National Disaster Risk Reduction Framework (Commonwealth of Australia, 2018) almost did not mention climate change, therefore not recognising its implications on citizens' lives nor its aggravating effects on natural hazards.

"Recognising the potential for climate change to worsen the impacts of disaster-induced population displacement, Australia supports the Nansen Initiative […]" (Australian Government, 2015, p. 75). However, the National Climate Resilience and Adaptation Strategy does not further explore the issue of environmental displacement. Climate change can influence weather conditions reducing resilience and increasing vulnerability, and even though Australia has powerful emergency management procedures (Ibid, p. 63), natural disasters are now likely to explode also in areas where DRR experience is limited.

According to the Climate Change Performance Index, in 2020 Australia ranked 56th over 57 countries due to inaction in implementing a long-term mitigation policy (CCPI, 2020). The withdrawal of Australia from funding the Green Climate Fund

(GCF), a fund established within the framework of the UNFCCC to assist developing countries in implementing climate change mitigation and adaptation measures, underpinned the very low performance in the Climate Policy category. However, where the institutions fail, the civil society decides to take action. Indeed, in 2019 the GCF and Save the Children Australia signed an agreement on the use of GCF resources, in order for the former to carry out GCF-approved projects (GCF, 2019).

According to Jack Rafferty (2020), founder and director of the Refugee Policy Institute in Sydney and author of various articles on "climate migrants" and climate change, the Australian Government has had a low level of commitment to mitigating climate change in previous years. He states that the Government significantly subsidies coal plants which could not be economically viable otherwise, slowing the transition to green energy, and for years Australia has been a major exporter of coal. In the last decade all Governments have been “incredibly regressive on climate, taking very little action and instead focusing on supporting jobs in the fossil fuel industry”. However, some political parties are more sympathetic to climate issues than others. Rafferty explains that in 2010 a carbon tax was raised in Parliament by the Labor Party, but it did not pass, severely demonstrating the institutional denial of climate change as an issue. “If you'd spoken to me in January [2020, Ed.] it would have seemed likely that this would change. Due to the fires there was significant public concern about climate change, and it seemed a tractable time for change. However, since then, Coronavirus has hit, and the Australian government has handled it remarkably well. This means that public attention has shifted away from climate change, and action is less likely” (Rafferty, 2020).

The Royal Commission into National Natural Disaster Arrangements Report, published the 28th October 2020, confirmed that “[t]he 2019-2020 bushfires started in Australia’s hottest and driest year on record. Much of the country was in drought, and the first bushfire started in the middle of winter. Over the following months, fires burnt across tens of millions of hectares of land, threatening and displacing hundreds of communities” (Royal Commission into National Natural Disaster

Arrangements, 2020, p.19). Despite this mention of IDPs, the document does not elaborate on the topic. Furthermore, it recognises that "[e]xtreme weather has already become more frequent and intense because of climate change. [...] Floods and bushfires are expected to become more frequent and more intense. Catastrophic fire conditions may render traditional bushfire prediction models and firefighting techniques less effective" (Ibid, p.22)

In conclusion, Australia does not entirely recognise the impacts of climate change on weather conditions and natural hazards. This institutional weakness is aggravated by the projections on the increasing disruptive force of natural hazards. Vulnerable communities are already experiencing governmental failure in addressing climate change, and a higher political commitment is required to prevent the displacements of tens of thousands of people every year (IDMC, 2020c).

4.3 India: flooding in the State of Kerala and the highest figure of IDPs show the institutional unpreparedness addressing natural disasters

Analysing India's vulnerability and DRR measures, IDMC expects 2,300,999 people to be displaced each year, 84% of which by floods (IDMC, 2020c). 590,000 IDPs faced 5,037,000 displacements, the highest figure in the world in 2019 (IDMC, 2020a). It was the result of one of the warmest and wettest years that originated eight particularly powerful storms. Moreover, vulnerable and populous cities along with poor climate change mitigation and adaptation strategies created a dangerous environment.

In 2016 India released its first National Disaster Management Plan (NDMP), based on the Sendai Framework, which was adopted the previous year by the UN Member States. India's NDMP was updated in 2019 and it was influenced by the SDGs and the Paris Agreement. Prime Minister Nerendra Modi expressed his hopes that India will lead the world in the field of disaster management, highlighting the importance of mainstreaming DRR in development planning. Once again, it is essential to notice that climate resilience and sustainable development are strictly intertwined.

Indeed, the Preface states that "[a] sustainable development needs to be disaster resilient and be adaptive to climate change impacts". The 2019 NDMP reveals a fundamental acknowledgement for India: "[...] it is certain that the global climate change does increase disaster risk significantly, although not amenable to precise forecasts". Indeed, "[t]he global climate change alters the frequencies, geographic distribution and intensifies almost all the hydro-meteorological hazards such as floods, cyclones, droughts, cold waves, and heat waves in unpredictable ways aggravating the existing uncertainties associated with these hazards" (National Disaster Management Plan, 2019, p.47). According to the document, the Sendai Framework along with the SDGs and the COPs have certainly pushed India's efforts in addressing climate change through preventive strategies, probably to promote a greener international image. For the first time India ranks among the top ten countries in the Climate Change Performance Index (CCPI, 2020b, p. 19), demonstrating an overall high rating for its Climate Policy performance, even though India still highly depends on coal and should develop a roadmap for the phase-out of fossil fuel subsidies. Aligning national plans with international goals is key to act preventively, avoiding or mitigating the dangerous effects of climate change, as forced displacements. However, displacements are not considered in the latest NDPM, evidencing the lack in foreseeing this climate consequence.

Formally, India seems to acknowledge the relation among climate change and natural disasters, but the events of the recent years demonstrated the lack of preventive mitigation measures as well as unpreparedness in managing the climate crisis. The State of Kerala, in the southwestern coast of India, is one of the areas that in the last years suffered the consequences of climate change. During 2018 2.7 million displacements were triggered by natural disasters in India, and Kerala recorded almost 1.5 million of them due to the worst floods in a century (IDMC, 2019, p. 34). This number is an underestimate as it considers the movement of people reaching the 5,645 camps without counting the IDPs staying with friends and families. 1,952 houses were fully destroyed and 21,964 partially damaged (Ministry of Home Affairs, 2018). 5,411,712 of people were affected by the floods and 280,679 were evacuated (Ibid). Regarding the assistance provided by the Government of India, in August three teams of the National Disaster Response

Force consisting of 92 rescuers and 10 boats were deployed, rescuing 534 persons and evacuating 24,690 (NDRF, 2018).

Kerala environmental activist Tresa Ann was living in the city of Cochin during 2018 flooding. She supported the IDPs cooking and delivering meals as well as collecting and donating clothes. Citizens came together to support the victims and several fishermen voluntarily travelled to the flooded areas rescuing thousands of people (Ann, 2020; Gupta, 2018). Disaster management teams set up camps in the schools of the cities affected by floods as transportation became difficult. International NGOs as Save the Children India and the Red Cross along with local organisations were at the forefront, running flood relief camps and raising money. Ann states that the central Government does not acknowledge climate change, let alone address it: it just responds to disasters without preventing them through mitigation or adaptation strategies. The Central Government gave 10 lakh, about 11,000 euros, to families that had their house and land destroyed.

These institutional weaknesses were confirmed by K.G. Thara, former head of the State Disaster Management Centre, who stated: "Unfortunately, we concentrate more on post-disaster activities than preparedness. […] the disaster management system should be decentralised" (John, 2019). According to Kusala Rajendran, professor at the Centre for Earth Sciences at Indian Institute of Science in Bangalore, Kerala is experiencing the combined consequences of climate change, population pressure and unscientific land utilisation (Shaji, 2019). Moreover, S. Faizi, a member of the Biodiversity Convention's Expert Group on Poverty and Biodiversity and president of the Ethological Society of India stated that they "[…] lack climate literacy and there is an urgent need to study the impact of global warming and climate change on Kerala" (Ibid). The issue of climate change was not raised at the institutional level after 2018 floods nor after its 2019 unexpected sequel.

The Western Ghats Ecology Expert Panel (WGEEP) prepared a report that was submitted to the Ministry of Environment and Forests in 2011 to analyse the vulnerability of that region and to make recommendations. The WGEEP recognised the impact of climate change on weather and rainfall patterns. The

recommendations concerned mitigation measures as indicated by the UNFCCC and they included the prohibition to build in areas characterised by hydrogeological instability, strong restrictions regarding mining, quarrying and change in land use from forest to non-forest. Moreover, the Panel proposed to use its database to create an open and participatory system of environmental monitoring involving all citizens and the student community in particular. However, Kerala State rejected the WGEEP report, stating that if the recommendations were to be implemented, the land available for development activities would become scarce (Sudhi, 2012).

The Government of Kerala and few volunteer students from the Institute of Electrical and Electronics Engineers (IEEE) Kerala Section developed a portal named keralarescue.in to collect and respond to aid requests. The IEEE is an international technical professional organisation that advances technology for the benefit of humanity. The use of digital technology in post-disaster relief is an interesting tool that helps to direct aid where needed. Engineers from all over the world ensured a constant maintenance of the portal, demonstrating once again that international cooperation is needed and successful.

In conclusion, India exhibited the absence of proper climate change mitigation policies and the lack of preparation of the Central Government in responding to extreme events. This resulted in the displacement of hundreds of thousands of people and in the destruction of houses and lands, which led to economic and job losses. Proper national and local DRR plans along with climate policies according to international guidelines and the intelligent use of technology will reduce the impact of climate change, the vulnerability of Kerala and the number of forced IDPs.

4.4 United States: wildfires in California demonstrate the undeniable correlation among climate change and increased natural hazards

In September 2020 the governor of Northern California stated that "The debate is over, around climate change. This is a climate damn emergency. This is real and

it's happening" (BBC, 2020). Bioclimatologist Park Williams observed that “[t]his climate-change connection is straightforward: warmer temperatures dry out fuels. In areas with abundant and very dry fuels, all you need is a spark” (New York Times, 2020). In October 2019 400,000 new displacements were triggered in California due to wildfires (IDMC, 2020a).

In August 2020 North California recorded what is believed to be the hottest temperature ever measured on Earth: 54.4°C (Henson, 2020). During the last weeks of the month 900 blazes burned down "[...] six times as much land as all the state’s 2019 wildfires combined, forcing 100,000 people from their homes. [...] Suddenly I had to ask myself the very question I’d been asking others: Was it time to move? I am far from the only American facing such questions", stated Abrahm Lustgarten, the already mentioned senior reporter at the New York Magazine (Lustgarten, 2020b). While communities living in the poorest countries have been forced to abandon their homes due to weather-related phenomena, Americans did not face this survival issue. US citizens live far away from food and water sources, and for this reason they used to perceive climate change as a distant problem. According to Lustgarten, the public perception of climate risk has already changed, and the environmental threat now reaches not only the least fortunate and more vulnerable, but also the wealthier parts of the population. The natural hazards are affecting wider areas of the US, and for these reasons citizens that will try to escape from one disaster may run into another.

Former California governor Jerry Brown stated that "this is not the new normal, this is the new abnormal" already in 2018 (Global News, 2018). Indeed, this intense phenomenon will be affecting wider areas of the State of Northern California in the coming years, originating new displacements each time. The fires are starting earlier in the year and lasting later. The expected raise in temperatures, the earlier snowmelt and the reduced summer precipitation are going to create a drier environment that will fuel wildfires. "By the middle of this century, the annual area burned in the western United States could increase 2-6 times from the present" (U.S. Global Change Research Program, 2018). However, this prediction may have been too optimistic. Indeed, according to the California Department of Forestry and Fire

Protection (Cal Fire), during the first 9 months of 2020 wildfires have burned over 12,500 km^2, which is 26 times higher than the area burned the previous year during the same time period (Cal Fire, 2020).

Debbie Levine is a Californian citizen who has been experiencing the destructive force of wildfires since 9th October 2017. The Tubbs Fire was the most destructive wildfire in North California until 2018 Camp Fire, as it destroyed 5,636 structures, damaged 317, burned 149 km^2 and caused 22 fatalities (Cal Fire, 2017a). According to Cal Fire, 2017 will be remembered as a year of extremes: it was the third warmest year in the US and the second hottest in California, "[...] bringing to the surface the question of long-term climate change and its contribution to the 2017 California fires" (Cal Fire, 2017b).

"The October 2017 fires was the year that burned down my town": Levine remembers that in the middle of the night Sonoma County officials began to evacuate the city of Santa Rosa, as Tubbs Fire blew faster than the fire department could get to warn people. At four in the morning people were running out of their houses in their pyjamas and they could not even get to their cars. "The fire came over night, the wind was blowing 85 miles an hour. The whole sky, everything was just glowing orange, everything was covered in ash. It was like the apocalypse. You could smell fire; all you could see was orange. By the time the sun came up it just got more horrible". Evacuations were mandatory in some areas of the town, while Levine was living in a stand-by evacuation area, even though she was highly suggested to get out. Living on a hill she watched the town burning down, "I was thinking, ‘when is this gonna stop?’. So much of my city was gone. Whole communities just wiped out. I've never seen anything like this in my entire life. And it went on for days. And the next year [2018, Ed.] was the same thing, more fires. It's been the same way every year since". She has never seen a fire advance so fast. "I saw pieces of ash that were a page of a book and you could still read it, but it was fully burnt". People had ash all over them and they had to be careful because it was hot. The amount of fire department people in the fairground near her house became a hub with several tents, "it looked like a combat, it became so surreal". People came from everywhere to fight this fire. "People left their home with no shoes. I

went down to one of the shelters where they were evacuating people and I asked what they needed the most, and they said 'shoes'. So, I went to one of our shoe stores and I paid $ 1,000 for shoes. People were desperate for everything". A lot of people did not even get a chance to wake up and get out. "They never predicted anything like this. Our cell phones didn't work. It seemed we were somewhere that wasn't even Earth".

97,000 people were forced to leave their homes (Donosky *et al.*, 2019) and more than 4,000 were hosted in 25 evacuation shelters opened by community groups and local Government (Sonoma County, 2017, p.6). The American Red Cross supplied the beds, the food and they set up kitchens along with citizens and religious groups. The Federal Emergency Management Agency (FEMA), which aims at building a culture of preparedness and it coordinates the response to disasters, brought in around 200 temporary housing units. FEMA states that "[…] the most effective strategies for emergency management are those that are federally supported, state managed and locally executed (FEMA, 2018). However, in its 2018-2022 strategic plan there is no mention of climate change nor displacement, leaving out two fundamental factors for preparedness and mitigation considerations.

In September 2020 California was just entering fire season and it already experienced a big fire. Some of the people that lost their homes, lost their homes again. Fires are difficult to finalise as they spread in the wide forest areas in California. These are federal forests, but they are not monitored and cleaned by federal workers. According to Levine, Californians have neither jurisdiction nor say over these forests: there is a huge disconnect between the States and the Federal Government. While the US President continues to deny climate change and blames the wildfires on poor forest management (New York Times, 2020), the reality is that federal forest land is actually under the President's management as governed by federal law. Of the over 133,000 km^2 of forest in California, federal agencies own 76,900 km^2, meaning more than 57%, while the State and local agencies own 3% (University of California). Californians cannot manage nor clean federal forests. "It's a lack of responsibility, they just want to point the fingers and say 'it's your fault', but if we all take responsibility, we could fix it. Nobody wants to say

it's their problem". Families own 40% of forest (Ibid), and people are asked to respect the defensible space between their home and trees (Cal Fire, 2019), but they do not follow this indication. If a six metres-tall tree gets on fire it is impossible to control it before the house gets burnt. Moreover, to cut down a tree in their own yard people have to get a permit, in order to protect heritage trees, but as it is expensive no one gets one and trees are dangerously left near houses. Therefore, more funds and cooperation between States and the Federal Government is required to properly take care of the forest, and people need to develop more public spirit and benefit from environmental education and climate change awareness. Climate change and urban expansion have intensified the destructive power of fires.

Considering consequences, people inherit post-traumatic stress disorder (PTSD) from experiences like this. "Now every year when I start smelling the fire, seeing the smoke and hearing the helicopters I start getting freaked out" (Levine, 2020). Moreover, the insurance companies now are not insuring people to rebuild, creating a housing shortage, leading to vacant lands where weeds will grow becoming a fire hazard. In addition to this environmental degradation cycle, several people became homeless as they could not afford to rebuild their homes and had to live in their cars, on the streets. Indeed, 2-4 weeks after the disaster help services left, leaving displaced people homeless. Santa Rosa inhabitants have not recovered from 2017 fires yet. According to Levine a lot of people have left the State: "they can't afford to rebuild their homes, so the best thing to do is get out". She decided to leave her insurance company, as she did not want to support a company that was not covering the damages of other people's houses. Insurance companies will not insure houses in the fire zone areas nor loans will be granted there. People that managed to rebuild their homes did that in the same exact location as before, leading to possible future repercussions and reiteration of the same events.

The answer to climate change-induced disasters does not lie in the rebuilding of houses in the exact same place where the event happened. The mayor of Paradise, which during 2018 experienced Camp Fire, the most destructive wildfire in the State, promised that the town will "rise from the ashes" (Kasler *et al.*, 2018). Rebuilding in areas vulnerable to the risk of wildfires shows a behaviour

characterised by climate negligence. The 75 tents full of displaced citizens standing in the muddy area clearly demonstrate that "the phenomenon of climate refugees won't be restricted to places such as Bangladesh and far-flung Pacific islands" (Milman, 2018b).

In conclusion, US institutions have to acknowledge this increasing phenomenon of climate change-induced displacements through proper mitigation, adaptation and DRR policies. A U.S. Forest Service research ecologist affirmed that that "we can produce all the science in the world, and we largely understand why fires are the way they are. It's just that other social political realities get in the way of doing a lot of what we need to do" (Lustgarten, 2020b).

4.5 Implementing climate change adaptation strategies within the European Union

To reduce and minimise the effects of climate change on vulnerable communities and to prevent forced displacements it is essential to enhance effective adaptation strategies. According to the Internal Displacement Monitoring Centre, "[c]limate change is one factor in a complex system of hazards, vulnerability and exposure [of the system to climatic hazards, Ed.], interacting with all parts of the risk equation and acting as a threat multiplier" (IDMC, 2020b). Therefore, to avoid forced displacement it is necessary to reduce hazard through climate change mitigation; exposure through assisted migration and planned relocation; and vulnerability through climate change adaptation and DRR plans, which will be analysed in this Chapter.

IPCC defines vulnerability "[…] as the extent to which a natural or social system is susceptible to sustaining damage from climate change" (IPCC, 2001, p.89). Vulnerability is a function "[…] of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity" (Ibid, p. 6). While sensitivity is the degree to which a system is affected by climate-related stimuli, adaptive capacity is the ability of that system to adjust to climate change, "[…] to moderate

potential damages, to take advantages of opportunities, or to cope with the consequences" (Ibid). Displacement can be a condition of and also a response to vulnerability. Indeed, it is an ancient coping mechanism, which is increasingly triggered due to more intense natural hazards. For this reason displacement can be considered the ultimate adaptation strategy, and vulnerability should be addressed in time to prevent forced human mobility.

Climate change adaptation is crucial to decrease the vulnerability of communities and environments. "Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change" (IPCC, 2001, p.879). Planned adaptation can be reactive or anticipatory, and it can translate in a variety of responses (Figure 7). The first case may include migration or changes in farm practices, while the second one embraces early-warning systems, purchase of insurance and new building codes and standards.

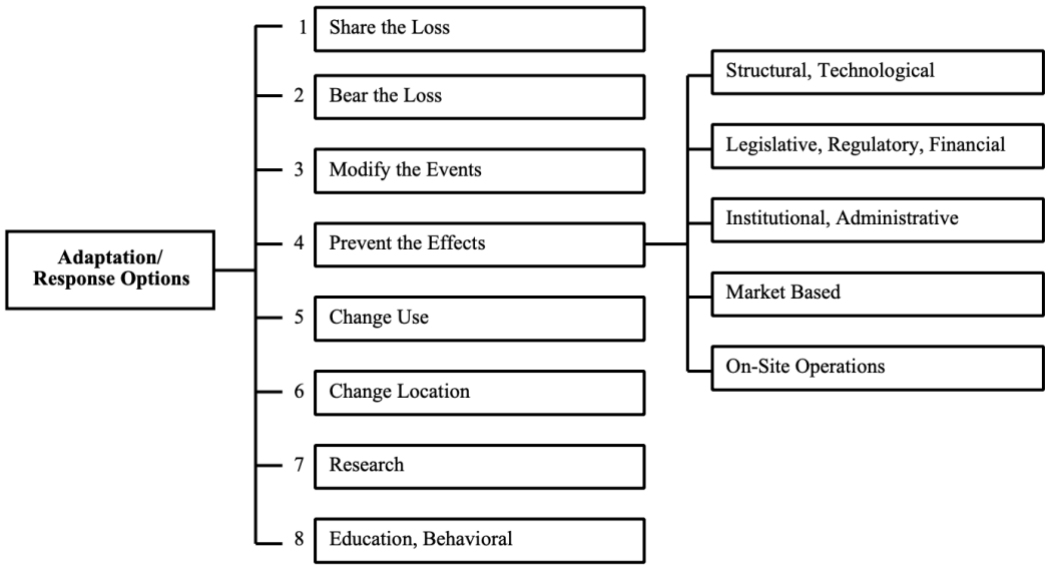

Figure 7. Classification of adaptation options (IPCC, 2001, p.885).

Anticipatory adaptation is more effective and less expensive, and also for this reason in 2013 the European Commission adopted a strategy on climate change adaptation aiming at making the EU Member States more resilient (European Commission, 2013). Urban areas of big cities around the world are going to be increasingly vulnerable to climate change. Mitigation measures are necessary but insufficient to deal with climate change consequences, which are inevitably going to increase in the coming decades due to delayed responses. For this reason, it is fundamental for EU Member States to embrace adaptation strategies to minimise the damages. Several Member States have adopted adaptation strategies, but not all of them have been followed by concrete actions. The EU provides financial support to the States through the instrument of LIFE (Regulation (EU) No 1293/2013 of the European Parliament and of the Council of 11 December 2013).

Urban planning is a key component in climate adaptation and DRR strategy: adapting building codes to foreseen climate conditions may prevent or minimise the damages. Valentina Orioli, council member for urban planning and the environment, affirmed that Bologna is the first Italian city to develop a climate change adaptation plan (Orioli, 2019). Indeed, BLUE AP is the Bologna Local Urban Environmental Adaptation Plan for a Resilient City, a LIFE+ project of the European Union. LIFE+ is a financial instrument for the environment that aims at contributing to the implementation of policies and legislations for sustainable development (Official Journal of the European Union). BLUE AP aims at limiting the vulnerability of the city providing strategic actions against flooding, droughts and other climate change consequences. The RAINBO project (LIFE15CCA/IT/00035) is the follow-up of BLUE AP, after the setting up of the Adaptation Plan in 2015, aiming at improving the methods to assess and forecast the consequences of extreme precipitations and flash floods.

To develop an adaptation plan it is necessary to draft the local climate profile through data gathering and analysis on the climatic characteristics of the area and its vulnerabilities (Figure 8). The participative process involved actors from public and private companies, the University, trade unions and environmental

organisations. The plan was then structured in three macro topics: droughts and water shortage, heatwaves, extreme rain and hydrogeological risk. For each issue multiple intervention strategies were identified. Some of them were defined as pilot actions as they were already implemented offering actual examples. Finally, a constant monitoring of risks, vulnerabilities and implemented actions will ensure long-term solutions in the territory.

Figure 8. Phases of BLUE AP project: local climate profile, participative process, adaptation plan, pilot actions, monitoring (Bologna adaptation plan, 2015, p. 11).

BLUE AP was a project financed by the EU but it is locally implemented through the participation of local institutions, citizens and companies. This adaptation plan may be used as a blueprint for other cities and it might lead to the development of a national plan, which was announced in 2017 but it was never actually developed (Piattaforma delle conoscenze, 2017).

Another important EU initiative is the Covenant of Mayors for Climate and Energy, launched by the European Commission in 2008 to support mayors to reach EU climate and energy objectives. It is the largest movement of local governments aiming at going beyond the national goals through mitigation, adaptation and universal access to affordable and clean energy. The online platform of the Covenant collects action plans, progress and good practices, available for everyone to consult and learn from. Since 2015 the Covenant started to geographically expand to other regions of the world: Eastern Europe and South Caucasus, the South Mediterranean region, and Sub-Saharan Africa, while it is being set up in North America, Latin American and the Caribbean, China and South-East Asia, India and Japan. Sixty-one countries have submitted more than 6,000 action plans and more than 2,000 monitoring reports (Covenant of Mayors, 2020). The signatories to the Covenant of Mayors in Sub-Saharan Africa need to implement the aforementioned three pillars through the development of Sustainable Energy Access and Climate Action Plan (SEACAP) and then monitor their progress through a Report. In this way the commitment of local authorities is formally supported and publicly exposed and monitored.

In conclusion, the incentives to promote adaptation plans may be regional as well as local and a wider participation enriches databases and offers good practices for others to observe and be inspired from. Adaptation strategies are fundamental to respond to a changing climate in order to safeguard lives and jobs of vulnerable communities, reducing forced environmental displacement.

4.6 Developing effective disaster risk reduction plans and community preparedness: India's DRR mechanisms and Save the Children Italy preparedness initiatives

According to UNDRR, DRR is the policy objective of disaster risk management, and its objectives are defined in DRR plans aiming at reducing the existing risk and

enhancing the social, economic and environmental resilience. DRR can be translated into investments in technology and innovative solutions as early warning systems and drone mapping to assess the damage and prepare for similar situations, trainings for first responders and local communities, shared expertise through local activities and regional and international meetings and platforms. There is a need to systematically reduce risk and not simply actuate hazard-by-hazard risk reduction. Risk should not be analysed and addressed in isolation without considering the global context, issues, and the socioecological context. This section will explore the case of India, taking as examples some DRR direct responses at different levels, and Italy, through the examination of some preparedness mechanisms promoted by Save the Children Italy.

As mentioned in Paragraph 2.5, the Global Platform for Disaster Risk Reduction is the world's largest gathering of DRR stakeholders. It is a biennial multi-stakeholder forum established by the UN General Assembly and the follow-up process to the Sendai Framework. This platform is linked to several regional platforms, which are multi-stakeholder forums, fundamental in strengthening DRR plans coordination among Governments. Some examples are the Africa-Arab Platform on Disaster Risk Reduction, the Regional Platform for DRR in the Americas and the Caribbean, the Asia-Pacific Ministerial Conference on DRR, the European Forum on Disaster Risk Reduction. These platforms are promoted by the UN and the interested regional organisations with the aim of assessing the progress and reaffirming commitment towards implementation of the Sendai Framework, together with sharing knowledge and good practices. Finally, the Global Network of Civil Society Organisations for Disaster Reduction (GNDR) connects frontline civil society organisations with national and international policymaking institutions and governments, giving voice to people at risk.

India offers a good example of multi-level DRR mechanisms that include a comprehensive response from the international to the local level. The already mentioned International Centre for Integrated Mountain Development (ICIMOD), a regional intergovernmental centre in Nepal (Paragraph 2.7), developed a regional

platform for water and disaster risks, the Hi-RISK Initiative. Climate change will increase the frequency and intensity of extreme weather events, putting people living in flood-prone areas at risk. The HYKOS User Phase (Hindu Kush Himalaya–Hydrological Cycle Observing System User Phase) is a project of the Hi-RISK Initiative that focuses on communicating flood early warnings, developing the preparedness of vulnerable people and documenting case studies on good practices (ICIMOD, 2020) across eight countries of the geographical region: Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar and Pakistan. These countries need to enhance regional cooperation to manage the shared basins, and a mechanism for multilateral exchange of data and good practices may be part of the solution to alert people in time.

DRR strategies and plans need to be discussed and developed at different but coordinated levels, involving all actors of society, from institutions to NGOs and the local community. Sharing data and good practices and global challenges at the international and regional level will translate into more aware national plans and policies, which will coordinate more effective local responses. The following scheme gives an overall picture of the intertwined mechanisms analysed in different chapters of the Thesis regarding DRR and disaster response in India, focusing the national and community response on the 2018 Kerala flooding.

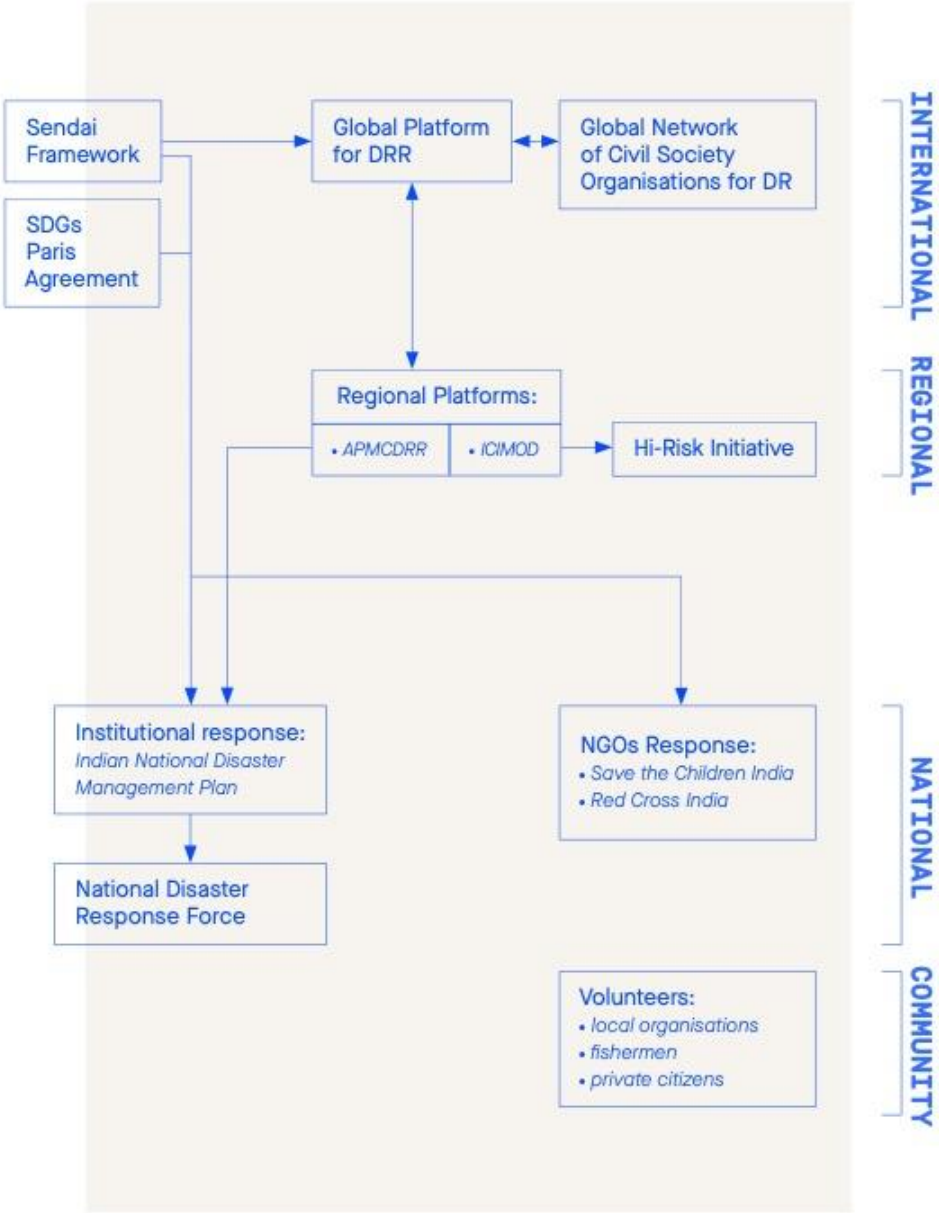

Figure 9. Example of multi-level intertwined mechanisms concerning DRR and disaster response in India.

Apart from direct responses and guiding plans, disaster risk reduction also involves the education of the perception of risk among vulnerable communities, along with disaster prevention and management. The Emergency and Psychosocial Unit of Save the Children Italy has been promoting the culture of security and risk reduction for years. CUIDAR - Cultures of disaster resilience among children and young people is a project financed within Horizon 2020, one of the biggest European Union research and innovation programs. CUIDAR aims at promoting a participative approach in the development of policies and programs regarding emergency prevention and response, involving local institutions and young people. They participated in eleven Italian regions in activities concerning data gathering on existing DRR plans and hazards, vulnerabilities and capacities of local communities. Afterwards, they developed policy proposals to improve crisis management and they finally shared the results with peers, families and the community. Risk identification, reduction and sharing are all important elements in improving the resiliency of cities and its inhabitants.

In 2019, with the same finality, the Unit developed RisKit, the game aiming at improving the diffusion of knowledge around DRR. Focusing on children helps to build a culture of safety among present and future generations, enhancing public sensitivity on important topics through a bottom-up approach. Vulnerable people and communities are not merely victims: they can act as agents of change. CUIDAR and RisKit respond to Sendai priorities for action 1. Understanding disaster risk, and 4. Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction. It also embraces SDGs 3. Good health and well-being, 4. Quality education, 11. Sustainable cities and communities, and 13. Climate action. The intersections among different actors and initiatives is fruitful and important in the development of effective responses to climate change consequences.

To further enhance community preparedness, in October 2019 Save the Children Italy co-organised "ChildEx 2019", the first Italian simulation of an earthquake involving children and families, to prepare local communities and first responders

to deal with emergencies. Safety measures and procedures were taught to and concretely applied by children and adults who live in hazard-prone areas: from the emergency alarm, the evacuation and transportation to the waiting areas, to the registration and the overnight stay in the relief camps. Emergency plans and strategies were shared in cooperation with the Red Cross and the Civil Protection. The direct involvement of the population helps to assimilate information that could be vital when a disaster strikes. This kind of exercise should be periodically organised to reduce the existing risks in particular vulnerable communities. Developing vulnerability maps throughout the territory and implementing focused exercises could enhance community preparedness.

Federico Cellini (2020), Head of the aforementioned Emergency and Psychosocial Unit of Save the Children Italy, discusses the national level of disaster prevention, which is still not comparable to the current response capacity. “From my point of view, the macro objective would be reversing the approach, that is minimising the impacts of the emergency thanks to the investments in preparedness and DRR. Our nation is recognised at the international level for the quality of the response: our system of Civil Protection response is studied abroad and we have a huge volunteering network, but we don’t have the same capability regarding preparedness and DRR”. Therefore, a specific institutional body qualified with this peculiar mandate is needed, in order to invest especially in prevention rather than in response alone. This approach would save more lives and minimise material damages while guaranteeing also economic benefits at the national level, as the costs to address the emergency would be significantly reduced. “This macro objective can be reached through European projects, the involvement of the Civil Protection and the citizens. The reintroduction of Civic Education in the Italian school curriculum should renovate the public spirit of young people, with the final aim of diffusing a culture of preparedness and risk reduction along with a particular focus on the climate crisis as the main cause of disasters. Apart from unpredictable hazards as earthquakes, several risks originate from climate change” (Cellini, 2020).

According to Federico Cellini, Save the Children Italy is currently participating in another Horizon 2020 project named LINKS. It aims at reinforcing the relations between technology and society in order to improve disaster resilience in the EU. Indeed, the lack of common methods and guidelines to effectively apply social media and crowdsourcing (SMCS) need to be translated into a standard framework of best practices and a centralised community platform. LINKS will institute a framework to understand, measure and manage SMCS in the context of natural disasters. This will lead to a diffused comprehension on how to efficiently use SMCS in disasters, helping to gather and share information within communities and to collaboratively cope with crises. This approach embraces the topics of disaster risk perception and vulnerability, disaster management process and disaster community technologies. LINKS will create online and in-person platforms to produce sustainable advanced learning on SMCS in disasters, meaning an evolving collection of knowledge and best practices produced for and by relevant stakeholders. Indeed, the project will benefit from multiple levels of stakeholder engagement involving practitioners, that is first responders and public authorities, along with researchers, civil society organisations and citizens. The Unit will focus especially on children participation and perception with regard to the specific case scenario of earthquakes along with other several natural risks, recognising also the threatening role of the climate crisis.

Community-based DRR and adaptation strategies integrated with top-down measures in cooperation with a large array of stakeholders would design a comprehensive response to risks posed by climate change. Investing in risk reduction is investing in public good and in citizens' wellbeing. Low political and public awareness on the existing risks and on the necessity of reducing them is among the main hindrances in developing proper DRR plans. Strained budget, political cycles, reduced commitment in addressing climate change and preferring response other than prevention are undoubtedly other severe obstacles that need to be overcome.

4.7 Legal good practices and point of departures to protect Cross-Border Disaster-Displaced Persons

States should reduce the risk of internal displacement caused by climate change and at the same time they should develop a legal framework to protect migrants fleeing from natural disasters. Along with mitigation and adaptation measures to reduce the number of future environmental migrants and IDPs, it is now important to effectively welcome them in safer countries. Indeed, States should act both at the environmental and at the humanitarian level. First of all, the COPs should enhance their efforts in discussing environmental displacement and Member States should cooperate to develop a proper definition in order to grant them protection. Existing temporary protection measures may embrace cases of people fleeing from natural disasters but they may not be effectively implemented, as demonstrated by the United States. A proper definition of people forced to flee their home due to climate change-induced disasters, or to environmental disasters in general, should be internationally agreed to respond to an international gap and to global concerns. Some States and regions around the world decided to fill the gap in different ways:

- Attempts to grant refugee status (New Zealand);
- Allowing temporary protection measures (Brazil, Sweden, Denmark);
- Using regular migration laws giving priorities to applications from people fleeing natural disasters (Canada);
- Approving regional or bilateral agreements allowing free movement (Australia and New Zealand);
- Refraining from sending back foreigners that were abroad when the disaster struck in their home country (United States).

New Zealand hosted some attempts of developing legal migration pathways for Pacific Islanders affected by the consequences of climate change, particularly by sea level-rise. In New Zealand a man from the Pacific island of Kiribati attempted to become the world's first climate change refugee (AF Kiribati, 2013). He applied for refugee status based on climate change that led to sea level-rise. However, the Supreme Court of New Zealand dismissed his application for leave to appeal the Court of Appeal's decision in which it ruled against him. In 2014, a family from

the Pacific island of Tuvalu (AC Tuvalu, 2014) claimed they should have received protection according to the New Zealand Immigration Act 2009. In its Article 129(1) a person is considered to be a refugee if he is "[…] a refugee within the meaning of the Refugee Convention" or he can be recognised as a protected person "[…] under the Covenant on Civil and Political Rights if there are substantial grounds for believing that he or she would be in danger of being subjected to arbitrary deprivation of life or cruel treatment if deported from New Zealand" as expressed in Article 131(1). Article 131(6) further specifies that "[…] cruel treatment means, inhuman, or degrading treatment or punishment". However, the New Zealand Immigration and Protection Tribunal dismissed these arguments: natural disasters do not provide "[…] a context in which a claim for recognition as a protected person under the Act may be properly grounded" (AC Tuvalu, 2014, para. 70).

In any case, according to Professor McAdam, "[…] New Zealand's jurisprudence provides the most comprehensive analysis by decision-makers to date about the scope and content of protection for people escaping the impacts of climate change and disasters" (McAdam, 2015, p.132). Professor Jane McAdam was a member of the Consultative Committee of the Nansen Initiative and she is a member of the Advisory Committee of the Platform on Disaster Displacement, both analysed in Paragraph 2.4. The previously mentioned cases recognised the possibility of displacement triggered by natural disasters and that this relation "[…] can create pathways into Convention recognition in certain circumstances" (AF Kiribati, 2013, para. 59). Even though natural disasters may involve significant human right issues (AF Kiribati, para. 65), the relationship *per se* is not sufficient to establish the protection of a person. "[…] [I]n cases where such issues form the backdrop to the claim, the claimant must still establish that they meet the legal criteria set out in Article 1A(2) of the Refugee Convention (or, for that matter, the relevant legal standards in the protected person jurisdiction)" (AF Kiribati, para. 65). For instance, the claimant must establish if environmental degradation is directly used to oppress a section of the population and if there is a future risk of being persecuted (AF Kiribati, 2013, para. 59).

Pacific Islanders told Professor McAdam that "we want to be seen as active economic and social contributors to any country to which we might need to move. We would like to have opportunities to migrate with dignity rather than have to wait until the situation becomes so dire that we are forcibly displaced" (ABC, 2014). This can be solved through humanitarian visas, bilateral or regional labour migration opportunities or planned relocation. Brazil's humanitarian visas offer an example of complementary protection. In 2012 the country started to grant these visas to Haitians that had experienced the 2010 earthquake. Brazil decided to create an easier legal pathway so Haitians did not have to obtain a tourist visa, which needed more requirements, nor rely on dodgy human smugglers. Haitians could not be considered refugees, so the National Immigration Council, having the competence to rule on cases considered special or not regulated, granted them permanent residency, giving the change to more than 85,000 Haitians to enter Brazil (Jubilut *et al.*, 2016). In 2010 Canada expedited immigration applications from Haitians with families in the country and gave the possibility for Haitians already entered to extend their stay (Government of Canada, 2010). Canada has one of the largest Haitians communities whose work applications were given priority in that context (CIC News, 2010). Canada took advantage of its regular migration laws, adapted to a special context and needs. However, Haitians without family in the country were not granted any special protection measures. These decisions could have opened a global discussion on the benefits of creating legal pathways for environmental migrants, leading to States replicating this idea and later to a more structured global legal framework, but unfortunately these have been isolated cases.

Existing regional or bilateral agreements allowing free movements can be used to grant protection to environmental migrants, without specifically recognising their reason for migrating. For instance, Australia has a permanent migration program for economic and family migration that is the main pathway to permanent residence (Skill stream, Family stream and Special Eligibility visas or on humanitarian grounds). Permanent and temporary migration visas may be granted to specific applicants from India, China, UK, Philippines, New Zealand, Vietnam, Pakistan,

Nepal, South Africa, the US, Indonesia, Iraq, Democratic Republic of Congo, Myanmar (Australian Government, 2020). Moreover, New Zealand citizens can enter and leave Australia freely and live in Australia indefinitely on grant of a Special Category visa (subclass 444) thanks to the 1973 Trans-Tasman Travel Arrangement. This was useful after that 2010-2011 earthquakes hit New Zealand and people could migrate to Australia easily.

Sweden, Denmark and the United States have included complementary, temporary or permanent protection schemes for environmental migrants in their legislations. The Swedish Aliens Act in its Chapter 4, Section 2(3) states that a person in need of protection is an alien who is outside his country because "[…] unable to return to the country of origin because of an environmental disaster" (Aliens Act, 2005). The Finnish Aliens Act provided a similar protection, but in 2016 the humanitarian protection as a residence permit category as a consequence of an environmental catastrophe was repealed (Aliens Act, 2004). Denmark decided to apply the provisions on humanitarian protection of its Aliens Act, Section 9(b), to issue residence permits to families with children from Afghanistan areas suffering from intense droughts (Aliens Act, 2001). The 1990 Immigration Act stated that the Attorney General may grant the Temporary Protected Status in the United States "[i]n the case of an alien who is a national of a foreign state designated under subsection (b) […]", which includes any foreign state (or any part of such foreign state) where "there has been an earthquake, flood, drought, epidemic, or other environmental disaster in the state resulting in a substantial, but temporary, disruption of living conditions in the area affected, […]" (Immigration and Nationality Act, 2002, p. 248). However, also this provision has its weaknesses as it grants temporary protection status only to people who are already in the US when the disaster strikes.

In conclusion, it is important that States share existing effective practices that draw on migration law, human rights law and refugee law, as suggested in the Nansen Initiative's Agenda for the Protection of Cross-Border Disaster-Displaced Persons. Governments may develop proper laws, policies and frameworks to address this issue taking into consideration these practices and adapting them to their own local

context. However, it is also important that a definition is agreed at the international level, and that future COPs embrace this challenge.

4.8 Conclusions

Australia, India and California offered good examples of how climate change is triggering more intense and frequent natural disasters, leaving people displaced with no homes. These States need to develop proper mitigation and adaptation measures along with green policies to slow down the effects of climate change, as well as implementing DRR plans and enhancing communities' preparedness.

Anthropogenic climate change is increasing globally the frequency and severity of fire weather. Not only low-income countries are suffering from the devastating effects of climate change, but also wealthier countries as Australia and the US are now dealing with these issues. The number of environmental IDPs is growing in those countries due to intensified natural disasters and the insufficient responses promoted by the institutions. Climate change adaptation measures, preparedness and disaster risk reduction plans are not effectively put into practice. Previously mentioned Professor Jane McAdam asserted that "[w]e do need to enable people to have opportunities to migrate, but we also need to combine that with disaster risk reduction strategies, with adaptation strategies and with good development practices so that we have a holistic approach to the issue" (ABC, 2014). Adaptation measures and DRR plans are fundamental to prevent or minimise forced migration and displacement along with economic losses and urban damages.

States are still at the initial phase in recognising environmental migrants and developing a legal framework to protect these vulnerable people. New Zealand witnessed a failed attempt to grant refugee status to people fleeing from natural disasters, and Brazil, Sweden and Denmark developed temporary protection measures that continue to be insufficient to grant proper protection. Canada demonstrated how to use regular migration laws giving priority to applications from people fleeing natural disasters, which may be used until specific laws are designed. Regional and bilateral agreements allowing free movement may be used in case of

natural disasters, even though they were not conceived with this very aim. Finally, another measure consists in refraining from sending back foreigners that were abroad when the disaster struck in their home country, as the United States establishes even if it does not provide sufficient protection.

States should promote changes to protect both internal displaced persons and also migrants fleeing from natural disasters. They should implement DRR, mitigation and adaptation plans to reduce the risk of internal displacement, economic loss and urban damages, and they should develop a proper legal framework to protect migrants coming from areas vulnerable to dangerous natural disasters. Working in parallel on these tasks is essential to grant effective protection to people in need and as climate change is a global issue, all States have the responsibility to reduce risks and create a safer environment for vulnerable persons. The final goal is to reduce greenhouse gas emissions to slow down anthropogenic climate change so people are not forced to leave their homes. Meanwhile, legal pathways need to be created for people to live a decent life; adaptation and mitigation measures are necessary to alleviate the effects of climate change on risk-prone areas; and DRR plans are essential to reduce infrastructural damages and to save lives.

Conclusions

Year 2020 will be historically associated with COVID-19 as the entire world is dealing with this emergency. The pandemic interrupted months of youth manifestations led by the environmental activist Greta Thunberg asking policy-makers to act against climate change: another huge emergency the world is currently facing. The two issues present several similarities. Both of them begin as an invisible presence underestimated by the majority of people; they are globally endemic as the whole planet is suffering the consequences; they affect with more violence the most vulnerable people; and, finally, they require global solutions and changes in order to be overcome. However, there is no vaccine for the climate emergency. There is an urgent need for drastic changes promoted by international commitment and cooperation. Emergencies are usually dealt with rapid, short-term solutions, but this time long-term solutions are necessary to guarantee long-term changes. Constantly bringing attention to the enormous consequences of climate change through research, data gathering, manifestations, public debates and conferences is key to convince Governments to properly address this emergency. Multidisciplinary investigations on the relation between climate change and human mobility are limited and need to be carried out at the international, regional and local level. "The crisis has shown us the importance of understanding science and applying it to future realities. Yet we are slow to learn. Again and again. Tragedy spreads because we don't believe it will happen to us. [...] Can we translate how global inaction caused immense suffering during the Covid crisis and apply that to the future of the whole planet? Was there anything in this great pause that can show us the way?" (Magnason, 2020, p.215).

Human mobility in the context of climate change is a two-speed phenomenon as it concerns the increasingly frequent and intense weather-related hazards affecting wider areas of the world, and the incredible slow response at the international, regional and local level. The recent cases of Australia, India and California, described in the fourth Chapter, demonstrate the diffused dangers posed by climate change, consequently increasing the global number of environmental migrants and

IDPs.

Despite the evidence, human mobility and climate change have rarely been studied and addressed together, and this is reflected in the development of weak instruments: the global governance of environmental mobility is fragmented. As discussed in the first Chapter, the first step in designing solutions lies in recognising the connection between climate change and human mobility, even though this should have been acknowledged and widely studied long ago: now concrete and urgent responses are needed. Existing instruments usually focus exclusively on one of the two topics: they are fragmented and fragile, also for their non-legally binding nature. As analysed in the second Chapter, the 1998 Guiding Principles on Internal Displacement were translated in many regional and national instruments, demonstrating the importance of international recognition and guidance. In addition, bottom-up consultations and a needs-based approach are fundamental for the success of measures. The 2015 Nansen Initiative on Disaster-Induced CrossBorder Displacement complemented with its Agenda the Guiding Principles through the protection of international environmental migrants and not IDPs, promoting a follow-up mechanism that, however, continues to lack States' accountability. The 2030 Agenda for Sustainable Development could have been an opportunity to address the multi-dimensional nature of human mobility, taking into consideration climate change and development factors, but environmental displacement was not explicitly considered. Finally, the 2018 Global Compact for Safe, Orderly and Regular Migration demonstrated that several States continue to refuse to recognise the urgency of promoting safe human mobility. For all these reasons, exhaustive international guidelines still need to be discussed and developed along with more efficient COPs and more revolutionary agreements. Moreover, these measures need to embrace human rights law, international humanitarian law and environmental law standards to promote a comprehensive approach.

In order to overcome the fragility of these instruments, data collection and analysis are a fundamental aspect in designing solutions to human mobility in the context of climate change. As discussed in the third Chapter, accurately studying the

consequences of this issue, identifying the areas at risk of natural disasters and sharing good practices among different countries lead to a global cooperative response to a global urgent problem. Preventing and responding to hazards will reduce the causes of forced displacement and guarantee healthier and wealthier lives. Data analysis is strongly linked to political commitment as they are mutually reinforcing. Data offer concrete reasons for focused policies, while institutions offer resources and authorisations to collect information. Political commitment is also influenced by public demands, as recently demonstrated by environmental movements: people came together across the globe to fight for a better future. The development of policies, strategies and laws that respond to human mobility in the context of climate change need to be designed taking into consideration humanitarian, ecological and sustainable development aspects in order to be effective. Voluntary National Reviews, the UN Common Country Assessments and the National Determined Contributions are important instruments to express political commitment and to share good practices.

Moreover, the general institutional response is not efficient enough to protect these people nor to combat climate change. As analysed in the fourth Chapter, New Zealand hosted a failed attempt to recognise people fleeing from natural disasters as refugees, since the 1951 Refugee Convention is considered the main reference to grant this status. Natural disasters are undoubtedly forcing people to leave their homes and sometimes their own countries, and this needs to be globally acknowledged for States to develop proper protection mechanisms. Meanwhile, Canada used regular migration laws prioritising the protection of people fleeing from natural disasters, and Brazil, Sweden and Denmark developed temporary protection measures to grant a minimum level of protection to environmental migrants. A few countries are starting to acknowledge natural disasters as a reason to seek refugee status, but the efforts continue to be insufficient and limited both geographically and qualitatively. The role of climate change and weather-related hazards in forcing people to move needs to be recognised at the international level in order to develop a legal framework regarding human mobility in the context of climate change and to create regional and bilateral agreement to facilitate the migration of people. Moreover, pre-emptive measures need to be adopted at

different levels to decrease the effects of climate change on vulnerable communities: adaptation strategies to reduce repercussions on safety and economy, disaster risk reduction plans to minimise urban and field damages and to save people's lives.

The world is in the middle of technologic, climatic, democratic and geo-political revolutions. According to Arancha González, the Spanish Minister of Foreign Affairs, European Union and Cooperation and former assistant Secretary-General of the United Nations, "[…] on one hand, we have never been as aware as today of the need to change our lifestyle if we want to ensure a sustainable development that respects ecosystems and biodiversity. A development where decarbonisation becomes an imperative. On the other hand, we have never suffered as much as today the increasing consequences of man-induced climate change. This endangers the capacity of adapting and surviving of all species, including our own" (González, 2020).

António Guterres, the United Nations Secretary-General, stated in 2019: "If I had to select one sentence to describe the state of the world, I would say we are in a world in which global challenges are more and more integrated, and the responses are more and more fragmented, and if this is not reversed, it's a recipe for disaster" (UNDRR, 2019b). Migration and displacement need to be seriously addressed in international, regional and local responses to climate change, and within the framework of 2030 Agenda as the sustainable development goals are intertwined and co-dependent. The climate-migration intersection is poorly addressed by the international community. For instance, even though climate change and migration are two topics present in the SDGs, they are never taken into consideration together. The Agenda indirectly responds to environmental displacement as it is not possible to unpick the issues of climate change and human mobility from the sustainable development context, but it never explicitly mentions it. Future developments may emphasise this problem as IDMC is devoting its 2020 Annual Conference on Internal Displacement and 2021 Global Report on Internal Displacement to investigating the relations among displacement and climate change (IDMC, 2020d). Indeed, 2021 will represent a milestone for internal displacement as the High-Level

Panel on Internal Displacement will deliver its report.

It is difficult to disentangle a single cause for movement, as several factors interplay with each other. However, climate change plays a huge role in influencing economic, conflictual and social elements that can force people to leave. For instance, climate change may lead to drought and to consequent water conflicts; cyclones may cause the salinisation of fresh water, which impede the irrigation of crops, leading to job and economic losses. Climate change exacerbates existing economic and social pressures or it destroys balanced living conditions.

"Disaster displacement represents one of the biggest humanitarian challenges of the 21st century [...]", commented in 2015 Walter Kälin, envoy of the Chairmanship of the Nansen Initiative (Nansen Initiative, 2015b). In that year, Mr. Kälin hoped for the Paris Agreement to include the issue of environmental migration, using the Protection Agenda as a guide. As described in paragraph 1.8, the Agreement simply requested the WIM Excom to establish a task force to develop recommendations to address climate change-induced displacement. These initiatives need to be followed-up by international commitment so as to produce global effects. Integrating human mobility in the discussions around climate change and in the COPs framework is fundamental in preventing forced displacements caused by natural disasters exacerbated by anthropogenic activities. COPs have produced weak responses and they have not properly addressed the issue of environmental migrants and IDPs, but they can still represent an effective platform to promote this dialogue and to reach international consensus to respond to human mobility in the context of climate change.

It is impossible to predict with certainty the future number of environmental migrants and IDPs. Considering the increase of climate change-induced disasters is not enough to calculate the figure, as other factors come into play like the local governmental responses or the possibility to move legally. The same catastrophic event may cause the displacement of thousands of people or of hundreds of them, depending on how it will be managed locally. It will depend on the vulnerability of communities and on the capacity to prevent and react *in situ*. Moreover, it is difficult to foresee the level of commitment of Governments in mitigating climate

change and their success in reducing global warming.

The regions of East Asia and Pacific, South Asia and Sub-Saharan Africa are the areas that will continue to experience intense natural disasters the most. Africa will be highly affected by climate change and its consequences despite having contributed to it the least. Even though important inequalities of burden sharing between low- and high- income countries continue to be witnessed, is it true that climate change is showing its effects in wider areas of the world. Climate change is seriously affecting all people around the world now, in terms of health problems, economic issues, resources scarcity, conflicts and displacements. Global warming increases sea level, mean temperature, heavy rainfall and drought. It damages ecosystems, food and water security, health, economic growth and sustainable development. Policies to mitigate, adapt and reduce risk need global cooperation and serious commitment at all levels from various actors. Strong political will to protect vulnerable communities through adaptation and DRR strategies while reducing global warming is key.

Summarising,

- A coherent and cooperative approach at the international, regional and local levels will benefit the current fragmented global governance on human mobility in the context of climate change. Standard-settings by international organisations, bilateral and regional agreements have a huge potential to harmonise and strengthen responses. Political commitment has to focus on the protection of environmental migrants and IDPs while reducing the causes of anthropogenic climate change. Governments have a significant role in disaster mitigation, preparedness, response and recovery, but communities living in risk-prone areas, academia, NGOs and other local actors should be recognised as essential contributors in environmental, DRR and human mobility management.

- Collected data need to be timely, disaggregated, people-centred, transparent and accessible in order to capture progress and good practices while highlighting deficiencies and challenges. Lessons learned and effective

examples should be shared with other Governments and civil societies in open-access databases to promote diffused positive changes.

- The famous 2018 IPCC Report on the impacts of global warming of 1.5 °C asserts that "[f]uture climate-related risks would be reduced by the upscaling and acceleration of far-reaching, multilevel and cross-sectoral climate mitigation and by both incremental and transformational adaptation" (IPCC, 2018, p.7), that is a system-wide and long-term change. Climate change adaptation strategies as hazard-resilient infrastructure along with DRR plans as promoting a global culture of risk-awareness and disaster reduction, community education and emergency planning, will contribute to save lives, preserve natural resources and jobs, and decrease forced environmental displacements.

The climate emergency is increasing disrupting weather patterns, fuelling a humanitarian emergency, and it will not stop unless serious global action is taken. IDMC estimates that around 13.9 million people globally risk being displaced by sudden-onset disasters alone each year (IDMC, 2020, p. 81), leading to the conclusion that human mobility in the context of climate change is one of the most urgent issues of our times, and it needs global responses in order to guarantee a better future.

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Interviews and interventions during attended conferences

Tresa Ann, environmental activist in the State of Kerala, India. Telephone interview. 5th September 2020.

Sergio Costa, Italian Minister of the Environment. Lesson "Rivoluzione verde: sostenibilità, ambiente, ecologia integrale" during the 5th Summer School organised by Scuola di Politiche. 10th September 2020.

Federico Cellini, Emergency and Psychosocial Head of Unit at Save the Children Italy. Telephone interview. 11th November 2020.

Arancha González, Spanish Minister of Foreign Affairs, European Union and Cooperation, and former assistant Secretary-General of the United Nations. Lecture during the 5th Summer School organised by Scuola di Politiche. 12th September 2020.

Debbie Levine, American citizen who experienced the Tubbs Fire in the city of Santa Rosa, California, in October 2017 and helped in evacuation camps. Telephone interview. 19th September 2020.

Valentina Orioli, council member for urban planning and the environment and vice-mayor of the city of Bologna. Conference organised by Legambiente: "Il clima è già cambiato. Ora è il tempo di nuove politiche urbane. Adattare le città a nubifragi, siccità ondate di calore. Le politiche europee e i piani per le aree urbane italiane". Roma, 19th November 2019.

Jack Rafferty, founder and director of the Refugee Policy Institute in Sydney, Environmental Science Graduate at the University of Sydney. Exchange of emails, September 2020.

Francesca Santolini, adviser to the Ministry of the Environment and author of two books on environmental migrants. Debate during the Zoom conference "Profughi del clima, le migrazioni climatiche" organised by Venice Calls. 1st June 2020.

Elly Schlein, former member of the European Parliament and current Vice President of Emilia-Romagna Region. Debate “Le ragioni dell’impegno pubblico: dialogo con gli studenti” during the 5th Summer School organised by Scuola di Politiche. 11th September 2020.