CHAPTER 1

MIGRATION IN RELATION TO ECOLOGICAL DEGRADATION AND THREATS BASED ON IEP'S ECOLOGICAL THREAT REPORT

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ABSTRACT

This chapter presents research and analysis on the Institute for Economics and Peace's (IEP's) index in the Ecological Threat Report (ETR). In the analysis, 178 countries are examined at the sub-national level, accounting for 99.9% of the global population. The estimate consists of five indicators that aggregate to yield an index of ecological threats. These five indicators are water risk, the prevalence of stunting, the impact of natural disasters, projected population growth and projected temperature rise. The ETR is a tool that can be used to identify the countries that are at the highest risk of ecological threats. The index identifies that 30 countries facing the highest level of ecological threats as well as low levels of resilience are home to 1.26 billion people. At the end of 2020, in these 30 countries, 68% of the total people were forcibly displaced beyond their borders. As these 30 countries suffer collectively from the highest ecological threats and without the reversal of ecological degradation, displacement is very likely to continue. Without urgent development, ecological threats will continue to create humanitarian emergencies and will likely increase without a sustained effort to reverse the current trend.

Keywords: Climate change; ecological threat; migration; conflict; water risk; prevalence of stunting; projected population growth; displacement

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AN INTRODUCTION TO THE ETR

The increase in population growth, water stress, food insecurity, frequency and ferocity of natural disasters and unpreceded temperature will have a significant effect globally. Currently, the global displacement numbers are at their highest on record.[1] The continuation of extreme ecological events is likely to converge with humanitarian crises, leading to increased displacement.

The IEP developed the ETR in an attempt to find which countries are at the highest risk. The ETR analyses 178 independent states and territories, assessing threats relating to food risk, water risk, rapid population growth, temperature anomalies and natural disasters to develop an index of ecological threat.[2] The index covers over 2,500 sub-national administrative units or 99.9% of the world's population and then ranks the countries by the severity of ecological risks and the intensity of the risks. This ranking is then combined with national measures of socio-economic resilience to determine which countries have the most severe threats and lowest coping capabilities. IEP identifies 30 countries that are most likely to degrade into conflict or suffer from societal collapses.

> Many ecological threats exist independently of climate change. However, man-made climate change will have an amplifying and increasing effect, causing further ecological degradation and pushing some countries through violent tipping points. (ETR, 2021)[3]

The consequence of which could be mass displacement.

'Countries with high population growth are amongst the most ecologically degraded' (ETR, 2021) and are resource scarce.[4]

> The combination of weak socio-economic resilience, extreme ecological risk and rapid population growth can result in societal collapse.[5] The report uses IEP's Positive Peace framework[6] to identify countries without enough socio-economic resilience to adapt to or cope with these future shocks. Positive Peace has a strong statistically significant relationship to peace, and this framework has proven successful in forecasting substantial falls in peace. (ETR, 2021)

Positive Peace is a proxy for socio-economic resilience, and the attributes of Positive Peace allow for higher levels of adaptability. This includes better water management, more efficient agricultural systems and the capability to import food when local production is insufficient.

> The main finding from the 2021 ETR is that a cyclic relationship exists between ecological degradation and conflict. It is a vicious cycle whereby degradation of resources leads to conflict, and the ensuing conflict leads to further resource degradation.[7] Breaking the cycle requires improving ecological resource management and socio-economic resilience. The resilience and adaptability of the socio-economic system, referred to as the societal system, will generally determine the outcome. Based on current trends, future prospects are not encouraging. Both undernourishment and food insecurity have been steadily rising since 2015.[8] This is the reversal of a long-established trend where undernourishment had been improving. (ETR, 2021)[9]

'The factors causing this are complex; however, high population growth, lack of potable water and increasing land degradation are clear contributors.[10] Based on the current number of undernourished people and allowing for population

growth, the report projects the number of undernourished people to rise by 343 million people by 2050, to 1.1 billion. This is a 45% increase.[11]

The 2021 ETR identifies three clusters of ecological hotspots that are particularly susceptible to collapse:

- The Sahel-Horn of Africa belt, from Mauritania to Somalia.
- The Southern African belt, from Angola to Madagascar.
- The Middle East and Central Asian belt, from Syria to Pakistan.

The 30 countries facing the highest level of ecological threat are home to 1.26 billion people' (ETR, 2021) and are called hotspot countries. 'These nations combine low socio-economic resilience with medium to extremely high catastrophic ecological threat' (ETR, 2021) scores. 'The number of people displaced by conflict has been steadily rising. At the end of 2020, 34 million people had been forcibly displaced from their home nations' (ETR, 2021) and another 61 million people were displaced within their home country. 'Of this total, 23.1 million people or 68% came from these 30 hotspot countries. Without a reversal of ecological degradation, these numbers are likely to increase.[12]

More positively, the 2021 ETR identifies 46 countries that face low ecological threat levels, with another 35 exposed to very low threats. Eighty-nine per cent of these countries have high Positive Peace scores. These countries also have low population growth. In 2021, their combined population is 1.96 billion people, and by 2050, this figure will slightly increase to 2.18 billion people. These countries are mainly located in Eastern and Western Europe, North America and South America' (ETR, 2021).

In 2020, nearly 170 countries closed their borders, either partially or completely due to the COVID-19 pandemic.[13] This trend continued into 2021, however to a lesser extent. This severely affected the refugee movement and resettlement. In 2020, according to the United Nations High Commissioner for Refugees (UNHCR), the number of refugees resettled or naturalised was the lowest on record.[14]

> Only 250,000 refugees returned home compared to the pre-COVID average of 670,000 returnees. In Europe, Turkey hosted the largest number of refugees at 3.9 million, followed by Germany at 1.5 million and France at 550,000. (ETR, 2021)[15]

The 2021 ETR 'analyses and proposes a number of policy recommendations to improve the efficiency of interventions and break the vicious cycles that exist in many parts of the world' (ETR, 2021).

Identifying the countries that are at the highest risk to ecological threats provides a substantial evidence base for evaluating the allocation of financial resources to adapt mitigation programs and activities. Measuring the scale of threat has important implications for assessing its effects on many issues such as food security and displacement, both in the short and long run.

This chapter is organised as follows. The subsequent section gives a background to Positive Peace. This is followed by the interlinkages between conflict, resilience and ecological threats and then a section on the ETR and forced displacement. The final section concludes the chapter.

POSITIVE PEACE—THE MEASURE OF RESILIENCE

Positive Peace is defined as the attitudes, institutions and structures which create and sustain peaceful societies. These same factors also lead to many other positive outcomes which society feels are important. Higher levels of Positive Peace are statistically linked to higher GDP growth, better environmental outcomes, higher measures of well-being, better developmental outcomes and stronger resilience.[16]

Positive Peace as a term was first introduced in the 1960s by sociologist Johan Galtung and has historically been understood as qualitatively based on idealistic or moral concepts of a peaceful society.[17] The distinguishing feature of IEP's work on Positive Peace is that it is empirically derived. Statistical analysis and mathematical modelling were used to identify the common characteristics of the world's most peaceful countries. It therefore forms an important evidence base to understand the conditions that create peace. This empirical approach to the construction of the index means it is free from pre-established biases or value judgements.

This process allowed for the development of the Positive Peace Index (PPI), which consists of eight pillars, each containing three statistical indicators. This provides a baseline measure of the effectiveness of a country's capabilities to build and maintain peace. It also provides a measure for policymakers, researchers and corporations to use for effective intervention design, monitoring and evaluation.

To construct the PPI, nearly 25,000 national datasets, indexes and attitudinal surveys were statistically compared to the internal measures of the Global Peace Index (GPI) to determine which factors had the highest statistical correlations. Indicators were then qualitatively assessed, and where multiple variables measured similar phenomena, the least significant were dropped. The remaining factors were clustered using statistical techniques into the eight pillars of Positive Peace. Three indicators were selected for each pillar, which represent distinct but complementary conceptual aspects. The index was constructed with the weights for the indicators being assigned according to the strength of the correlation coefficient to the GPI Internal Peace score.

Not only is Positive Peace statistically linked to peace, but it is also linked to many other attributes that societies consider important. The countries that score well in Positive Peace have higher per capita growth, better performance on measures of well-being and happiness, better outcomes on ecological sustainability and measures of resilience, among others. Therefore, it can be said that Positive Peace creates an optimal environment for human potential to flourish.

Positive Peace can be used as the basis for empirically measuring a country's resilience – its ability to absorb, adapt and recover from shocks, such as climate change or economic transformation. It can also measure fragility and help predict the likelihood of conflict, violence and instability. Resilience is a fundamental tool for countries facing ecological threats. First, it provides a country with the capacity to cope with ecological shocks, minimising their negative impact on the population and economic structure. Second, it facilitates the recovery or rebuilding of the socio-economic system in the aftermath of an ecological shock.

CONFLICT, RESILIENCE AND ECOLOGICAL THREATS

Conflict and ecological threats tend to interact and reinforce one another. Often, conflict arises as a result of competition for natural resources. In turn, the conflict itself destroys lives, livelihoods and governance, further depleting a region's ecological resources.

The main finding from the 2021 ETR is that a cyclic relationship exists between ecological degradation and conflict. It is a vicious cycle whereby the degradation of resources leads to conflict, and the ensuing conflict leads to further resource degradation. Overall, 19 of the 20 countries with the highest ETR score are among the world's 100 least peaceful countries as measured by the GPI. These countries include Afghanistan, Yemen, Somalia, Niger, Burkina Faso and Pakistan. Fig. 1 displays the average ETR score by level of peacefulness, as measured by the 2021 GPI. As peacefulness deteriorates, the ETR score tends to worsen. As a result, the very high and high peace countries tend to have a better ETR score than medium, low and very low peace countries.

The impact of ecological degradation on conflict is highlighted by the strong overlap between the countries with the highest levels of conflict, as measured by another major IEP research product, the GPI, and those with the worst ecological degradation.[18] In all, 11 of the 15 countries facing the worst ecological threats are currently in conflict, and another four are at a high risk of substantial falls in peace. Examples include Afghanistan, Yemen, Somalia, Niger, Burkina Faso

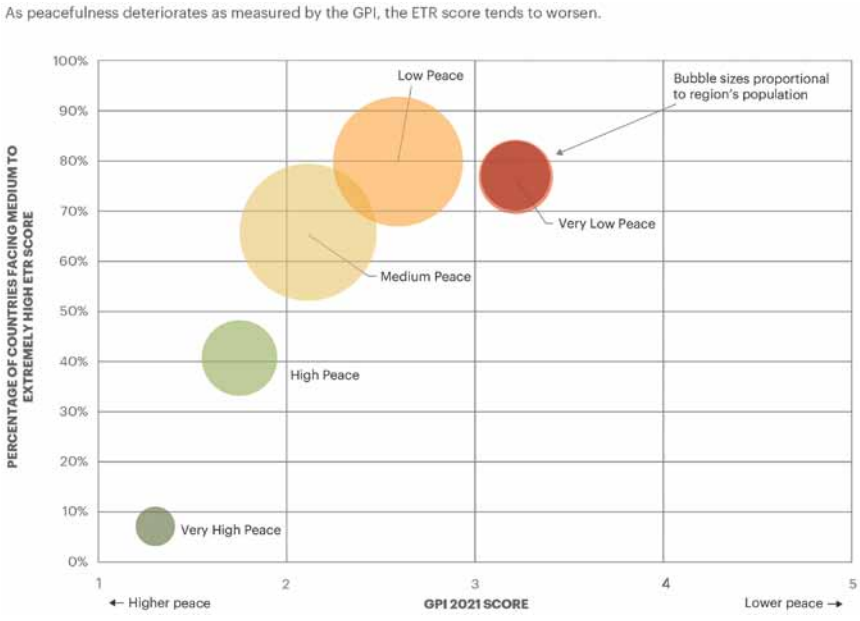

Fig. 1. ETR Score by Peacefulness - ETR Score Versus GPI Score, 2021. *Source:* IEP

and Pakistan. Given the significant link between ecological fragility and conflict, addressing water availability, food security and high population growth in countries mired by conflict will improve prospects for lasting peace. Highly resilient countries have the best ability to manage their natural resources while still catering for their socio-economic needs.

No country with a high level of peace has an extremely poor ETR score, underscoring the relationship between ecological fragility and conflict. On the other hand, 80% of the countries with the worst ETR scores are also among the world's least resilient. This indicates that these nations may not be able to mitigate the impacts of their rapidly changing environment.

Population growth and resource scarcity are intrinsically linked with conflict in sub-Saharan Africa. According to the Africa Centre for Strategic Studies, 11 of the 12 African countries in conflict in 2018 were experiencing food insecurity.[19] Conflict leads to the destruction of farming and other economic infrastructure, negatively impacting food production. Conversely, conflict can also arise as a result of competition and scarcity, such as the clashes between farmers and pastoralists over land and water resources. In regions with higher levels of socio-economic resilience as gauged by Positive Peace, competition for resources tends to take place non-violently, as the parties contend through the legal and political systems. However, countries with low levels of Positive Peace often result in the contending parties resorting to physical conflict to assert their holdings over resources.

Adverse changes in the natural environment can lead to increased social tensions and civil unrest if societies do not have the necessary levels of resilience to deal with these threats. Similarly, conflict and uncontrolled population growth have well-documented negative impacts on the environment. These two dynamics of increasing resource scarcity and conflict can create a vicious cycle where one increases the likelihood of the other, leading to societies failing. While natural disasters may be relatively uniform across peace levels, how a country manages the disasters and their consequential impact differs. Countries that suffer from multiple issues, such as widespread violence, terrorism or political instability, may find it more difficult to prepare for disasters and therefore, the threat is heightened.

The ETR shows that ecological threats and climate change pose serious challenges to global development and peacefulness. The adverse impacts will disproportionately affect the world's poorest and most vulnerable countries and create spill-over pressures on neighbouring countries through mass movements of people and resource extraction.

SUB-SAHARAN AFRICA AND THE SAHEL

In 2020, the number of food-insecure people rose by 318 million relative to the previous year. The vast majority of this increase occurred in three regions: South Asia, sub-Saharan Africa and South America, where the numbers of food-insecure people rose by 128 million, 86 million and 40 million, respectively.[20] Sub-Saharan Africa has the highest prevalence of food insecurity, with 66% of the population deemed food insecure.[21] Sub-Saharan Africa also has the lowest societal resilience of all regions as measured by the PPI.[22]

By 2050, sub-Saharan Africa's population is projected to be 2.1 billion, a 90% increase from today's levels.[23] Such rapid population growth is unsustainable and could translate to hundreds of millions of additional food-insecure people over the next few decades. Eleven countries in the region are expected to double their population between now and 2050. The three countries with the largest projected increases in population are Niger, Angola and Somalia, where the populations will increase by 161%, 128% and 113%, respectively.[24] The Sahel is especially vulnerable. The region faces many converging and complex challenges such as civil unrest, weak institutions, corruption, high population growth and lack of adequate food and water.[25] These issues have formed a vicious cycle whereby ecological degradation and population growth have increased the likelihood of conflict and facilitated the rise of Islamist insurgencies.[26]

In the Sahel, conflict spans national borders. These conflicts, in many ways, are the result of deteriorating living conditions, increasing poverty and weak governance. The Sahel operates with low levels of Positive Peace, with all countries ranking in the bottom half of the PPI[27] rankings. In particular, countries in the Sahel hold especially low ranks in the Positive Peace Pillars, Low Levels of Corruption, Good Relations with Neighbours and Equitable Distribution of Resources, highlighting important barriers for socio-economic development. While the Sahel operates with low levels of Positive Peace, there has been a small improvement of 2.6% in its overall PPI score in the last decade. Senegal recorded the largest improvement since 2009, at 7.4%, followed by Guinea and The Gambia at 6.4% and 5.4%, respectively. In all, 8 of the 10 countries deteriorated in Low Levels of Corruption between 2009 and 2021, with the largest deteriorations recorded by Niger, Senegal and Cameroon. Improvements were recorded on the Sound Business Environment, Free Flow of Information and Equitable Distribution of Resources Pillars due to multiple initiatives supporting micro-businesses and poverty alleviation in the area.

Technology has been a driver of the improvement in the Free Flow of Information Pillar, with many programs by the Sahel Alliance and the Organisation Internationale de la Francophonie (OIF) promoting digital literacy among the region's youth. However, 8 of the 10 countries in the Sahel deteriorated on the attitude domain of Positive Peace, including the four countries with the worst ETR scores—Niger, Burkina Faso, Nigeria and Mali. These four countries also deteriorated on the GPI between 2009 and 2021.

Despite some improvements, the region's Positive Peace levels remain low by international standards. Without concerted efforts and substantial development in all the pillars of Positive Peace, it is difficult to see the Sahel's resilience levels improving enough to shield it from ecological threats in the future potentially causing displacement both internally and beyond a country's border.

FORCED DISPLACEMENT

The ETR studies closely the relationship between climate, societal resilience, ecological threat, internal and external conflict, persecution and other factors.

Due to the interrelated relationship between these factors, in most instances, there is no effort made to assign a primary cause of forced displacement.

IEP uses UNHCR's definition of forcibly displaced people. This encompasses refugees, asylum-seekers, internally displaced people (IDPs), Palestine refugees under the United Nations Relief and Works Agency for Palestine Refugees' (UNRWA) mandate, and Venezuelans displaced abroad. The following defines each category:

Refugees under UNHCR's mandate: A refugee has been recognised under the 1951 Convention relating to the status of refugees to be a refugee.

Asylum-seekers: An asylum seeker is seeking international protection, but whose claim for refugee status has not yet been determined. Not every asylum-seeker will ultimately be recognised as a refugee, but every refugee was initially an asylum-seeker.

Venezuelans displaced abroad: People are leaving Venezuela for many reasons—violence, insecurity, fear of being targeted for their political opinions (whether real or perceived), shortages of food and medicine, lack of access to social services, and being unable to support themselves and their families. By the end of 2020, almost 4.9 million Venezuelans had left their homes, travelling mainly towards Latin America and the Caribbean. It is the biggest exodus in the region's recent history and one of the biggest displacement crises in the world. They stay in their host countries under a wide range of legal statuses.[28]

Palestine refugees under UNRWA's mandate: Anyone whose normal place of residence was in Mandate Palestine during the period from 1 June 1946 to 15 May 1948 and who lost both home and means of livelihood due to the 1948 Arab-Israeli war qualifies as a Palestine refugee. This includes their children who are living in the camps.

IDPs: IDPs have been forced to leave or abandon their homes and have not crossed an internationally recognised border.

At the end of 2020, the total forcibly displaced people are categorised as follows:

- 48 million people were displaced internally.[29]
- 5.7 million people were Palestine refugees under UNRWA's mandate.[30]
- 5.1 million were asylum seekers.
- 20.7 million were refugees under UNHCR's mandate.
- 3.9 million were Venezuelans displaced abroad.[31]

At the end of 2020, 82.4 million people were forcibly displaced globally – the highest number on record.[32] In 2020, approximately 1 in 94 people globally were forcibly displaced compared to 1 in 161 in 2000. Low and very low peace countries account for 91% of the people forcibly displaced from conflict and violence worldwide.

At the end of 2020, 68% or 23.1 million of the total forcibly displaced people living outside their home country came from hotspot countries – meaning countries with catastrophic ecological threats and low societal resilience as defined by the ETR.[33] The total number of forcibly displaced people has increased each year for the last nine years. At the end of 2020, approximately two in three people

forcibly displaced by violence and conflict were displaced within their country.[34] The three countries with the highest number of people displaced by conflict are Syria, Afghanistan and the Democratic Republic of the Congo.

Many of the new conflict and violence displacements in 2020 occurred in sub-Saharan Africa and MENA. MENA has the largest number of people forcibly displaced by conflict and violence. Historically, political instability, enduring civil wars and localised conflict generated from the Arab Spring have led to the displacements.[35] More than 29 million people in the region are currently displaced from these conflicts, equivalent to 5.1% of the region's population. Prior to the Arab Spring, MENA was estimated to have 3.5 million IDPs.[36] Today this figure has more than tripled to exceed 14 million IDPs. In sub-Saharan Africa, 27 million people were forcibly displaced at the conclusion of 2020 from conflict – the second highest of any region.

In May and June 2020, nearly 170 countries out of 195 closed their borders either partially or completely because of COVID.[37] This severely affected refugee movement and resettlement. In 2020, only 251,000 refugees returned home compared to the pre-COVID average of 670,000 returnees.[38] Furthermore, 68,000 people were resettled or naturalised, down from the 20-year average of 170,000 people per year mainly due to restrictions on travel caused by COVID.[39] In 2020, South Sudan had the largest number of refugees return home at 122,000, followed by Burundi at 40,800 refugees.[40]

In 2020, four countries had more than 20% of their population displaced – Syria, South Sudan, Central African Republic and Somalia. As Syria's conflict entered its 10th year, 6.6 million people were internally displaced and an additional 6.8 million externally displaced. Of the 6.8 million Syrians displaced abroad, 4.7 million are hosted in Europe, 2 million in MENA, and 100,000 in other regions.[41]

The scale of people forcibly displaced due to persecution, conflict, violence and events seriously disturbing public order worldwide has increased at a concerning rate. Thus, growing from 1 in 161 people globally in 2000 to approximately 1 in 94 people in 2020. Fig. 2 displays the trend in the number of people forcibly displaced.

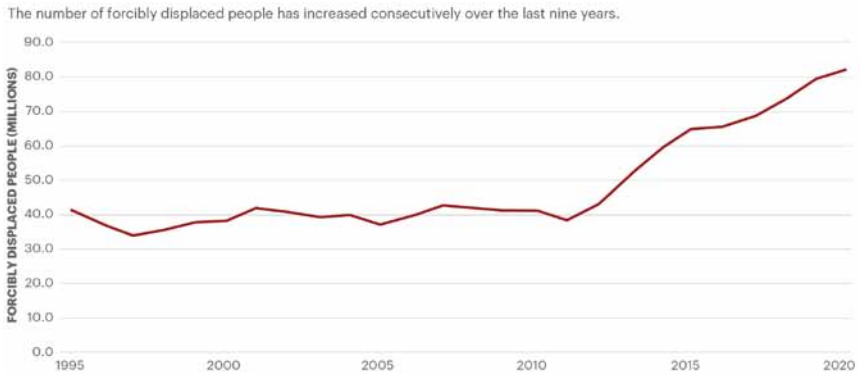

Fig. 2. Trend in the Number of Forcibly Displaced People Globally, 1995–2020. *Source:* UNHCR, IDMC

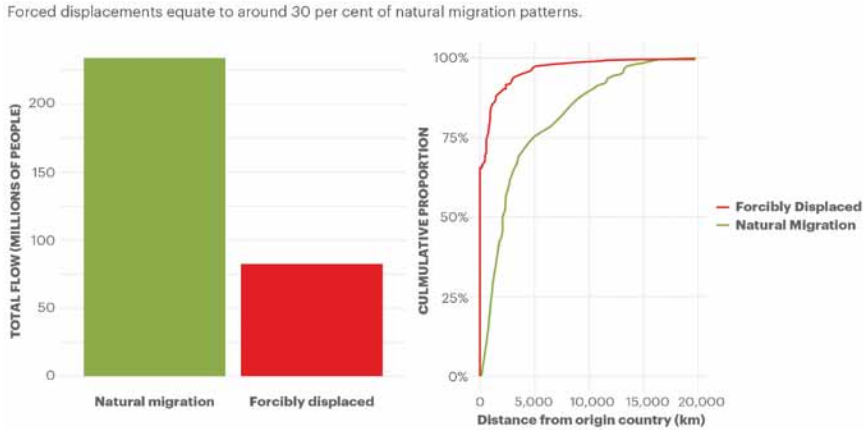

Fig. 3. People Forcibly Displaced Compared to Natural Migration, 2020.
Source: UNHCR, IDMC, IOM, IEP

Since 2012, the number of displacements has increased annually. The sharpest increases came in 2013 and 2014, increasing by 20% and 16% from the previous year, respectively. In 2020, the number of people forcibly displaced by violence increased 3.7% from the previous year – an additional 2.9 million people.

The majority of displacements occurred internally within countries. Forced displacements equate to around 30% of natural migration patterns. For forced displacements, two out of three occur within the country.[42] Of the third that extend beyond the person's country, 75% end up within 2,500 km of their origin according to the ETR. This means that 25% of people moving beyond their borders can be expected to travel more than 2,500 km. For natural migration, 75% of the flows occur to countries within a 5,000 km radius of the origin country as shown in Fig. 3.[43]

INTERNAL DISPLACEMENT—CONFLICT AND NATURAL DISASTERS

In 2020, around 40 million new internal displacements were recorded from conflict, violence and natural disasters – the highest number in 10 years.[44] The vast majority of these were from natural disasters. Over 75% of these resulted from extreme weather events and natural disasters, more than three times the internal displacements caused by conflict and violence. By the conclusion of 2020, 48 million people were internally displaced as a result of conflict and violence, and 6.9 million from disasters.[45]

These figures include new displacements in 2020 and displacements from previous years where the people were unable to return home. The availability of data on how long people remain displaced remains scarce and preliminary, and therefore it is difficult to determine the average length of time someone is displaced.[46] However, given the number of new internal disaster displacements in

2020 is greater than the number at the conclusion of the year, it can be assumed that many of those uprooted from disasters are displaced less than a year. In comparison, internal conflict displacement shows a different relationship where the number of internal displacements from conflict throughout the year was less than the total at the end of the year. This indicates that the majority of those internally displaced by conflict are displaced for longer than a year.

The majority of disaster displacement events were concentrated in Asia-Pacific and South Asia. China, the Philippines, India and Bangladesh each recorded more than 3.9 million new displacements from disasters in 2020.[47]

In Asia-Pacific, many of the displacements in 2020 from cyclones and monsoons were pre-emptive evacuations. For example, Japan evacuated and sheltered more than 174,000 people in the wake of typhoon Haishen.[48] Once the disaster risk subsided, many people returned to their homes and the displacement was short. However, in situations where the destruction of disasters is significant, people may face prolonged displacement. For example, California experienced its most severe wildfires in 2018. After two years, only 728 of the 9,000 homes destroyed had been rebuilt and estimates indicate that it may take up to 10 years to recover fully.[49]

IDMC estimates that providing every IDP with support for housing, education, health and security, and loss of income would have an average cost of $390 per person displaced for each year of displacement.[50] Given the current number of internal displacements, it would cost $21.5 billion to provide each IDP with housing, education, health and security, and compensation for loss of income. However, this figure is highly conservative and does not include longer term economic consequences or the financial impacts on host communities or communities of origin. If these costs are accounted for, the financial requirement would be significantly higher than that currently budgeted by government and United Nations agencies that assist IDPs.[51] Since 2009, environmental disasters have displaced an average of 24 million people per year, with an additional eight million internal displacements from armed conflict.

This reinforces the significance that natural disasters have on the movement of the global population. In 2020, more than 30 million new displacements occurred from natural disasters and approximately another 10 million from conflict and violence – far exceeding the 12-year average. Fig. 4 displays the number of new displacements each year due to conflict and natural disasters.

In 2020, most disaster displacements resulted from weather-related events such as floods and storms. The Atlantic hurricane season was the most active on record with 30 named cyclones including Hurricane Eta, which caused $8.3 billion in damages and caused over 170 fatalities.[52] The United States recorded approximately 1.7 million new displacements in 2020 from natural disasters. Europe recorded approximately 129,000 internal displacements from disasters.

The majority of Europe's displacements occurred in Croatia and Turkey were caused by earthquakes.

Natural disasters have a substantially larger impact in countries with larger population densities and weaker systems for adaptation and recovery. Furthermore, the largest displacements from natural disasters occurred in the world's most populated countries. The majority of disaster displacement events

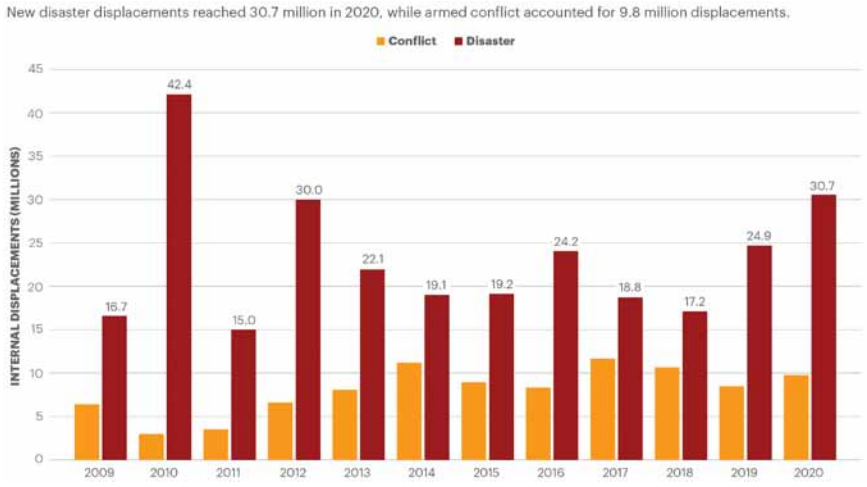

Fig. 4. New Annual Displacements due to Conflict and Natural Disasters, 2008–2020. *Source:* IDMC

were concentrated in Asia-Pacific and South Asia with China, the Philippines, India and Bangladesh each recording more than 3.9 million new displacements in 2020. In total, these two regions recorded 69% of the total new internal displacements from natural disasters last year. According to the IDMC, many of these displacements were pre-emptive evacuations.[53] Sub-Saharan Africa recorded 12.5% of the total internal displacements from disasters and 69% of the total internal displacements from conflict globally as shown in Fig. 5.

In 2020, storms and floods led to 28.6 million internal displacements, accounting for 93 per cent of the global internal disaster displacements.

Disaster Type	Asia-Pacific	South Asia	sub-Saharan Africa	Central America and the Caribbean	North America	Middle East and North Africa	South America	Europe	Russia and Eurasia	Grand Total
Storm	5,891,695	5,487,576	66,399	2,260,133	626,826	1,085	240,717	6,179	-	14,580,610
Flood	5,489,378	3,716,691	3,729,440	35,743	36,199	721,512	205,073	16,140	104,209	14,054,385
Wildfire	74,309	-	4,809	2,647	1,075,789	35,368	1,986	21,748	1,360	1,218,016
Volcanic eruption	517,684	-	-	-	-	-	-	-	-	517,684
Earthquake	16,631	1,805	-	690	11,347	24,053	208	82,110	-	136,844
Drought	-	-	32,096	-	-	-	83	-	-	32,179
Other	63,640	35,226	2,969	24,234	772	12,773	6,022	2,343	0	147,979
Totals	**12,053,337**	**9,241,298**	**3,835,713**	**2,323,447**	**1,750,933**	**794,791**	**454,089**	**128,520**	**105,569**	**30,687,697**

Fig. 5. New Annual Displacements due to Conflict and Natural Disasters, 2008–2020. *Source:* IDMC, IEP. *Note:* Other includes wet mass movement, extreme temperatures and landmass movements; Totals does not equal the total new displacements due to regional aggregation.

ETR HOTSPOTS AND DISPLACEMENT IN HOTSPOT COUNTRIES

The ETR uses the PPI and the catastrophic ETR score to identify countries where resilience is unlikely to be strong enough to adapt or cope with ecological threats. The 30 countries that combine the lowest PPI scores with catastrophic ETR scores of high or extremely high are considered hotspots.[54]

Many hotspot countries have low levels of resilience as gauged by the PPI. This suggests that even moderate shocks may engender disorderly re-arrangements in the structure of the economy and the fabric of society. As the effects of climate change become more pronounced, these countries with low levels of resilience may see their populations displaced to cope with the shocks. Consequently, those most exposed in these countries may be forced to flee their homes and look for safety both within and outside of their country. At the end of 2020, 23.1 million people were displaced externally from the hotspot countries accounting for 68% of the total forcibly displaced globally living outside of their country of origin.

HOSTING DISPLACEMENTS

In 2020, 166 countries hosted 23.1 million people from the hotspot countries.[55] In total, seven countries hosted over a million people each – Turkey, Colombia, Pakistan, Germany, Sudan, Peru and Uganda. Turkey, Colombia, Pakistan and Uganda housed the largest proportion, equivalent to 11.8 million people.

At the conclusion of 2020, 35.8% of the total displacements originated from MENA, followed by 29.2% in sub-Saharan Africa and 21.1% in South America. However, when accounting for just the hotspot countries, at 28.4% of the total, Europe hosted the largest number of displacements from the hotspot countries, followed by sub-Saharan Africa at 24.1%.

In the next 30 years, there will be many more drivers of mass population displacement. Currently more than two billion people globally face uncertain access to a sufficient quantity of food that is necessary for a healthy life. Another one billion people live in countries that do not have the current resilience to deal with the ecological changes they are expected to face in the future. Last year, 768 million people worldwide were undernourished due to severe food shortages.[56] In such circumstances, even small events could spiral into instability and violence, leading to mass population displacement and affecting regional and global security. National societal systems have different levels of capacity to respond to ecological threats and prevent mass and prolonged displacement. These national systems may be capable of absorbing adverse ecological threats with minimal disruption to their internal structures. This is due to the strong societal resilience mechanisms in the form of high levels of Positive Peace, making them better equipped for future threats.

BUILDING RESILIENCE TO COMBAT THE VICIOUS CYCLE OF ECOLOGICAL DEGRADATION AND CONFLICT

There is a nexus between violent conflict and resource degradation whereby the countries suffering from the worst ecological degradation are also among the most violent. It is unlikely that the current actions taken by the international community will be enough to reverse the vicious cycles of conflict and resource degradation globally. In addition, climate change will have a multiplying effect on many of the existing issues.

In 2020, IEP held a series of 6 policy seminars with 60 leading experts from governments, think tanks, military institutions and development organisations to explore policy options based on the ETR.

A recurring message from the policy seminars was that it is unlikely that the international community will reverse the vicious cycles in some parts of the world without better funding and better approaches. This is especially the case in the Sahel and Horn of Africa, with its high levels of resource degradation, population growth and ongoing conflicts. The Sahel and Horn of Africa region is home to 300 million people. It experiences some of the highest rates of resource degradation and population growth on the planet.

It is also subject to multiple insurgencies, and has some of the fastest growing terrorist organisations globally, some of which have affiliations to the Islamic State. The number of conflicts and their intensity have been slowly increasing over the last decade. With tensions already escalating, it can only be expected that climate change will have an amplifying effect on many of these issues. The recent fall of Afghanistan to the Taliban highlighted the inability of the major western democracies to implement a development agenda for the country. Brown University's Costs of War study says US federal expenditure on the war in Afghanistan was $2.261 trillion. This does not include expenditures of coalition forces or the American expenditures in neighbouring Pakistan. Based on the Brown University study, the per-capita cost of the war is more than 100 times the annual per-capita income of Afghanistan, and given the conservatism of the study, the real cost could have been much higher. The Afghan example demonstrates that the template for development and resilience-building programs need to be revisited to develop a closer alignment to the needs of local communities. Amplified by climate change, resource degradation is likely to increase the number and intensity of future conflicts. To avoid this scenario, holistic solutions have to be adopted. Solutions that foster effective governance create more harmonious societal systems, improve resource development and minimise the need for military force.

Resilience building is holistic, involving all aspects of a social system. Part of this approach is recognising the multilayered links between ecological change, sustainable development, human security and global action. Faced with such complexity, international agencies need to develop a common understanding on what resilience means. Societal resilience can be defined through frameworks such as IEP's Positive Peace framework.

Furthermore, resilience is systemic and requires many factors to work in a mutually reinforcing way. For example, societal resilience can lead to water resilience, as social cohesion and effective governance reduce wastage and improve distribution. However, the converse is also true, water stress can lead to the depletion of societal resilience. Although international agencies recognise the systemic nature of resilience, their operational structures make systemic actions difficult. New integrated structures can be developed that combine health, food, water, refugee relief, finance, agricultural and business development and other functions. This would create an integrated agency that would be agile in specific contexts while also providing a simplified chain of command, better allocation of resources and faster decision making. Different areas will have a different range of problems. By creating interdisciplinary agencies responsible for specific geographical areas and empowered to make decisions quickly and collaboratively, a clearer focus can be brought to bear on the unique challenges faced.

It is important to recognise that the traditional security solutions based almost exclusively on intelligence and armed interventions are ineffective in addressing today's complex security threats. To be successful, intervention policies also need to build socio-economic resilience and reduce societal pressures.

Prioritisation should be given to states that are facing ecological threats that could lead to conflict, especially in highly populous nations, which may be the source of region-destabilising population displacements. Prioritisation should also be given to areas where ongoing conflicts are likely to further stress existing ecological resources, thereby leading to more unrest which could spill into the surrounding region.

Successful military and peacekeeping solutions have to be sensitive to the local context, taking into account the social and cultural structures within communities, including the existing tensions. They need to work within these dynamics, guided by the local structures and norms to ensure that they do not exacerbate tensions and indirectly contribute to violence.

Today, there are many legal interpretations and decentralised legal frameworks that address the movement of people. For the safe movement of people displaced or migrating due to ecological threats, consistent legal frameworks, policies and procedures need to be developed and adopted by international organisations. This is vital over the next 30 years, as hundreds of millions of people are at risk of displacement. While people displacement is sometimes seen with reserve and apprehension, it is important to create a safe framework for such dislocations before they inevitably occur.

Imposing barriers to movement only exacerbates the problem, adding a humanitarian component to what could have originally been just an ecological crisis. In addition to the intrinsic suffering, humanitarian emergencies can be breeding grounds for insurgent groups and terrorist organisations.

The establishment of safe migration practices and regulations should be viewed as a resilience building and conflict mitigation strategy. In the future, it will be crucial to facilitate safe and orderly migration in anticipation of ecological threats before populations are forcibly displaced. It is equally important to strengthen mechanisms for national or internal migration, so that internal displacement can be anticipated and mitigated without requiring international migration.[57]

CONCLUSION

The ETR is a tool that can be used to identify the countries that are at the highest risk of ecological damage. As this chapter outlines, there is a nexus between violent conflict and resource degradation. This relationship coexists whereby the countries suffering from the worst ecological degradation are also among the most violent. Climate change will have an amplifying effect, causing further ecological degradation and pushing some countries through violent tipping points. The consequence of which can cause mass displacement.

The report identifies 30 hotspot countries that combine a high level of relative threat with low levels of relative resilience. In 2020, these countries accounted for 68% of the people forcibly displaced beyond their borders at the end of 2020.

The ETR uses IEP's Positive Peace framework[58] to identify countries without enough socio-economic resilience to adapt to or cope with these future shocks. Positive Peace has a strong statistically significant relationship to peace, and this framework has proven successful in forecasting substantial falls in peace. Positive Peace is a proxy for socio-economic resilience and the attributes of Positive Peace allow for higher levels of adaptability.

Overall, 19 of the 20 countries with the highest ETR score are among the world's 100 least peaceful countries as measured by the GPI. As a result, the very high and high peace countries tend to have a better ETR score than medium, low and very low peace countries. No country with a high level of peace has an extremely poor ETR score, underscoring the relationship between ecological fragility and conflict. On the other hand, 80% of the countries with the worst ETR scores are also among the world's least resilient. This indicates that these nations may not be able to mitigate the impacts of their rapidly changing environment.

In 2020, IEP held a series of 6 policy seminars with 60 leading experts from governments, think tanks, military institutions and development organisations to explore policy options based on the ETR. A recurring message from the policy seminars was that it is unlikely that the international community will reverse the vicious cycles in some parts of the world without better funding and better approaches.

In conclusion, without urgent development, ecological threats will continue to create humanitarian emergencies and will likely increase without a sustained effort to reverse the current trend. Ecological threats are becoming more pronounced and affecting more people than ever. Building resilience to these threats will increasingly become more important and will require substantial investment now and into the future.

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