Moving from one risk to another

Dynamics of hazard exposure and disaster vulnerability for displaced persons, migrants and other people on the move

Lorenzo Guadagno, IOM

1. INTROUCTION: MOVING ACROSS RISKSCAPES

Moving, in all its different forms, has an intrinsic risk management value, allowing people to prevent or mitigate the negative impacts of (natural and man-made) hazards. Evacuees fleeing cyclone or conflict, pastoralists moving along transhumance routes to make a living in a resource-scarce environment, migrants seeking work in anticipation of the dry season or in response to an ongoing drought, and even members of communities being relocated out of areas at risk – through their movement, they all reduce immediate and future, actual and potential impacts of hazards affecting their areas of origin.

People's ability to move, whether spontaneously or in an assisted manner, and whether more proactively or reactively, is a key component of their resilience – of their capacity to get out of harm's way and keep accessing resources and opportunities needed to cope with and recover from disasters. However, actual movements do not allow them to completely avoid negative impacts and future risks. People moving leave behind assets, security and community ties, only to face a new set of hazards along their routes and at their destinations. In most cases, moving allows people a trade-off between the (present or future, well known) impacts they are (or will likely be) suffering in their places of origin and the (potential, less certain) ones they might face elsewhere.

In fact, people move from a specific *riskscape* (an environment characterised by a specific set of hazards – but also knowledge, networks, institutions, resources and risk management strategies) to a different one. Moving shapes their exposure to hazards and their vulnerability in complex manners. People's ability to move, as determined by their availability of assets, knowledge and networks, their entitlement to support and assistance, and the (legal, physical, security) barriers constraining their movement, largely determines the risk outcomes of their movement.[1]

This dynamic and its outcomes are not necessarily tied with the initial reason for moving, or type of movement: they can be observed in forced and voluntary, short- and long-distance, internal and international movements. Displaced persons, migrants, asylum seekers and refugees, as well as relocated communities, often have little choice but to transit through and to settle (temporarily or permanently) in marginal, hazard-prone areas, with limited ability to access locally available resources and services, little knowledge of the local hazard context, and skillsets and capacities that do not match local livelihood opportunities. They effectively move out of harm's way, only to find themselves highly exposed and vulnerable to other hazards.

This submission explores this dynamic by providing examples of population movements taking place in the context of natural and man-made hazards and that have resulted in conditions of further hazard exposure and vulnerability for people moving. Due to the GRID's specific focus on internal displacement, the examples are articulated by type of movement (internal displacement, planned relocations, and movement of migrants, asylum seekers and refugees). It has however to be noted that clearly distinguishing among these groups is somewhat artificial, and that it is often difficult to clearly tell apart different types of movement, especially in complex, evolving situations. Moreover, a categorization of movements might not

[1] Guadagno L "Human Mobility in a Socio-Environmental Context: Complex Effects on Environmental Risk" 2017. https://www.researchgate.net/publication/307437124_Human_Mobility_in_a_Socio-Environmental_Context_Complex_Effects_on_Environmental_Risk

be particularly useful to interpret risk outcomes that cut across groups of people on the move – it might however have operational implications as we aim to integrate risk reduction perspectives and objectives in all measures to anticipate and manage different types of movement.

2. INTERNALLY DISPLACED PERSONS

In many (disaster or conflict-induced) displacement contexts, people moving have little alternative but to move into marginal areas characterised by high levels of exposure to natural and man-made hazards. Displaced persons often live in poorly planned settings, characterised by sub-standard structures, little or no access to basic networks and facilities and limited risk reduction investments. Becoming and remaining displaced are associated with protection, personal security and impoverishment risks, the erosion of people's ability to cope with hardship, as well as heightened exposure to hazards. These factors compound the specific vulnerability of displaced persons, translating into increased likelihood to be affected in future disasters, including through a repeated displacement.

This dynamic, leading to compounded, additional risk is at play both in camp and non-camp settings – albeit potentially through different spatial configurations, concentration of displaced persons vis-a-vis their host communities, and patterns of environmental degradation resulting from the displacement. In Colombia, for instance, where conflict-induced displacement has driven growth of urban informal settlements into hazard-prone areas throughout the last decades, landslides, floods and heavy rains frequently affect and displace people who have been previously displaced by conflict.[2][3] This was the case, for instance, of the landslides triggered in Mocoa, Putumayo in March 2017.[4] In Haiti, people displaced following the January 2010 Port-au-Prince earthquake faced recurring risks due to flooding and landslides in at least 157 displacement sites, including some formal, planned camps.[5] The latest figures available indicate that a total of 34.500 people were still living in displacement in January 2019.[6] Landslides and floods are triggered by heavy rains, but affect specifically densely settled and degraded land (as in and around displacement sites). IDP sites have therefore requested significant hazard prevention and mitigation interventions.[7][8]

Over the last year alone, multiple instances of disaster-affected displaced persons have been recorded across regions, pointing to the urgency and global relevance of this issue. In Somalia, floods triggered the displacement of over one million people over the year, and 80,000 people were displaced by drought. It is estimated that about 25% of the flood-affected persons were living in overcrowded and insecure displacement camps[9] – which further grew following the inflow of those newly displaced by the floods themselves. Sudan also experienced flash floods and riverine floods. Among those affected were an estimated 125 000 displaced persons, including IDPs and refugees.[10] Throughout the Sahel, floods have affected millions of people in 2020, including in countries such as Burkina Faso, Mali, Niger and Chad, already featuring extensive displacement linked with conflict, food insecurity and disaster.

---

[2] Carrillo A.C. "Internal displacement in Colombia: humanitarian, economic and social consequences in urban settings and current challenges" 2009. https://www.icrc.org/en/doc/assets/files/other/irrc-875-carrillo.pdf

[3] Smith H et al "Toward negotiated mitigation of landslide risks in informal settlements: reflections from a pilot experience in Medellín, Colombia" 2020. https://www.ecologyandsociety.org/vol25/iss1/art19/

[4] Moloney A. "Displaced by fighting then by mudslides, Colombians struggle to rebuild" 2019. https://www.reuters.com/article/us-colombia-mudslide-idUSKCN1SF19K

[5] JRC "Haiti flood and landslide risk for IDP camps" 2010 https://reliefweb.int/sites/reliefweb.int/files/resources/C060BB6036FBE585C12576D200364AC3-Full_Report.pdf

[6] IOM "Haiti — Earthquake Displacement Report 33" 2019 https://dtm.iom.int/reports/haiti-%E2%80%94-earthquake-displacement-report-33-january-2019

[7] MSF, Haiti 10 years on, 2020. https://reliefweb.int/sites/reliefweb.int/files/resources/HAITI_10_YEARS_ON_REPORT.pdf

[8] IOM, Compendium of IOM's activities in DRR and resilience, 2013. https://www.iom.int/files/live/sites/iom/files/What-We-Do/docs/IOM-DRR-Compendium-Haiti.pdf

[9] IDMC, Disasters meet political unrest, displacing millions in East Africa, 2020 https://www.internal-displacement.org/expertopinion/disasters-meet-political-unrest-displacing-millions-in-east-africa

[10] UNHCR, "Massive floods in Sudan impact thousands of refugees", 2020 https://www.unhcr.org/news/stories/2020/9/5f6c42834/massive-floods-sudan-impact-thousands-refugees.html

In Yemen, intense rain and severe flash floods resulted in 300 000 people losing their homes, crops, livestock and belongings and triggered significant displacement. The disasters affected many who had previously been displaced internally by conflict or by droughts over the last years, and who were living in precarious shelters and in conditions of intense deprivation. Intense rains also resulted in the breaching of the Al-Roone dam, with the resulting flooding affecting thousands of people in IDP sites in Al-Tahseen, Souq al-Lill.[11]Poor quality of housing is also a key determinant of the impacts of these hazards, and shapes even more directly vulnerability to fires and extreme temperatures. Winterization is a yearly concern for people living in displacement sites in mountain regions across Afghanistan, including people moving out of conflict, drought and flood-affected areas, as well as returning following displacement in nearby countries.[1213]

In October, Syria recorded extensive wildfires in areas surrounding Homs, Tartous and Lattakia, affecting tens of thousands through damage to housing and assets and livelihood impacts. Significant displacement was recorded in areas of return.[14] The northwestern part of the country was again affected by harsh winter conditions and floods in February 2021, which affected some 67,000 IDPs in 200 displacement sites in the area.[15] A multitude of smaller scale fire-related incidents is recorded every year in camps and displacement sites all over the world.

It should be noted that many contexts characterised by compound risks and impacts (including repeated and secondary displacement) feature an initial displacement situation that is not swiftly solved. Protracted displacement translates in long-lasting, acute exposure to additional hazards, as well as a progressive erosion of the displaced persons' resilience, resulting in more frequent and more intense impacts.

Mozambique is still facing significant population displacement triggered by cyclones Kenneth and Idai, which hit the country respectively in March and April 2019. More people were affected (and displaced) by storms and floods since. An assessment conducted in October 2020 identified 93,324 people still displaced in the country's central region (of which 81,251 were displaced by Idai and 12,073 by the 2020 floods),[16] mostly residing in resettlement sites in areas, away from flooded zones, initially deemed safer.[17] However, these sites were hardy hit by rains no later than December 2019, then again in 2020.[18] Resettlement sites were again hit by Tropical Storm Chalane in December 2020[19] and by Tropical Cyclone Eloise in January 2021.[20] In all of these instances, IDPs lost shelter and assets, with TC Eloise also causing (secondary) displacement. It should also be noted that Mozambique's Central Region hosts thousands of people

[11] UNHCR, "300,000 people lose homes, incomes, food supplies and belongings due to catastrophic flooding in Yemen", 21 August 2020. https://www.unhcr.org/news/briefing/2020/8/5f3e7faf4.html

[12] Fare, "Camp planning and winterization systems in Afghanistan" N.D. http://www.farestudio.it/camp-planning-and-winterization-systems-in-afghanistan/

[13] Shelter cluster "Joint Winterization Response Strategy" 2019 https://www.sheltercluster.org/sites/default/files/docs/20181009_joint_summary_winterization_strategy_2018_final_english.pdf

[14] IFRC, "Emergency plan of action – Syria: wildfires", 2021, https://reliefweb.int/sites/reliefweb.int/files/resources/MDRSY005do.pdf

[15] OCHA, "Recent Developments in Northeast Syria – Sitrep n 24", 2021, https://reliefweb.int/sites/reliefweb.int/files/resources/nw_syria_sitrep24_20210126.pdf

[16] IOM, "Mozambique – COVID-19 Preparedness Assessment In Resettlement Sites Report 12", 2020. https://reliefweb.int/report/mozambique/eight-months-after-idai-chronology-displacement-humanitarian-needs-and-challenges

[17] IDMC and IOM, "Eight months after Idai: Chronology of displacement, humanitarian needs and challenges - going forward in Mozambique" 2019, https://reliefweb.int/report/mozambique/eight-months-after-idai-chronology-displacement-humanitarian-needs-and-challenges

[18] IOM, "Mozambique – Flash Report Rain Damages To Resettlement Sites", 2019, https://displacement.iom.int/reports/mozambique-%E2%80%93-flash-report-rain-damages-resettlement-sites-11-december-2019 and IOM, "Mozambique – Flash Report 11 Rain Damages to Resettlement Sites", 2020, https://displacement.iom.int/reports/mozambique-%E2%80%93-flash-report-11-rain-damages-resettlement-sites-07-15-december-2020?close=true

[19] IOM, "Mozambique – Flash Report 12 Tropical Storm Chalane" 2021 https://displacement.iom.int/reports/mozambique-%E2%80%93-flash-report-12-tropical-storm-chalane-january-2021?close=true

[20] IOM, "Mozambique – Flash Report 16 - Tropical Cyclone Eloise", 2021, https://displacement.iom.int/reports/mozambique-%E2%80%93-flash-report-16-tropical-cyclone-eloise-january-2021?close=true

displaced over the years by insecurity, most of whom are planning on remaining in their host areas, despite the risks they are facing.[21]

Our ability to fully understand and quantify the additional risk conditions that are associated with displacement situations is strongly hampered by the absence of systematic disaggregation of disaster risk and loss data by displacement status. Even when information on displacement is gathered systematically as part of disaster loss data collection, including in small-scale events, we rarely have information on people's status *before* the disaster.[22]

All the above examples suggest that specific risk reduction efforts are needed in displacement situations in order to reduce risk in areas and sites hosting relevant people. As clearly indicated by paragraph 33 of the SFDRR (h and j), hazard prevention and management should be integral to displacement management, through site assessments and selection, hazard mitigation, structural strengthening and preparedness, in order to protect displaced persons lives,, shelters, and belongings against small and large-scale, recurring and less frequent disasters.

3. RELOCATED COMMUNITIES

Planned relocations are usually implemented in order to reduce risk linked with the settlement (or resettlement) of communities in areas facing recurring/intense hazards and/or environmental degradation. However, they often result in the movement of people towards other hazard-exposed areas. In fact, the identification of a resettlement area for a planned relocation process often presents relocated communities and implementing institutions with a fundamental trade-off: moving towards an area too far off the original settlement may result in loss of local knowledge, reduced access to resources and impoverishment (key reasons why relocation processes fail), as well as exposure to new hazards, while moving to a closer location can result in continued exposure to hazards threatening people's initial residence. The latter is a particularly significant concern in places exposed to area-wide hazards (such as cyclones), as seen with the resettlement sites in Mozambique mentioned in the above section on displacement - but should be accounted for when planning movements from and to areas affected by point-specific hazards (such as landslides), too.

Ongoing or additional exposure to hazards has been documented in a variety of planned relocation processes, including in the case of Dabashan (Sichuan, China), for coastal communities in response to sea-level rise in Fiji, the Maldives, the Solomon Islands and Vanuatu, and communities in the United States' flood-prone areas.[23]

In Tonga, planned relocations of households and communities have been documented since at least 1946 in response to a variety of hazards, including volcanic eruption, earthquake and tsunamis and coastal flooding. Planned movements have taken place in the context of increasing concentration of population and assets in low-lying coastal areas in the larger islands. In a small island state featuring a significant diversity of hazards, disproportionate impacts by sea-level rise and coastal erosion, and limited living space as higher-elevation areas are ill-suited for human settlement, relocations have mostly meant transferring risk to other areas or to the near future.[24]

In a different context, the Cavallerizzo di Cerzeto (Italy) hamlet was relocated following a large landslide in 2005. The landslide, triggered in the hamlet's expansion area built in the second half of the XX century on an unstable slope, left virtually unscathed the village's historical centre, located in a more stable site.

---

[21] IOM and INGC "Mozambique — Insecurity-Induced Displacement In The Central Region Report 1" 2020, https://displacement.iom.int/reports/mozambique-%E2%80%94-insecurity-induced-displacement-central-region-report-1-november-2020?close=true

[22] IOM, "Burundi – Aperçu du suivi des urgences (désastres naturels), Janvier 2018-Decembre 2020", 2021. https://dtm.iom.int/reports/burundi-%E2%80%94-aper%C3%A7u-du-suivi-des-urgences-d%C3%A9sastres-naturels-janvier-2018-d%C3%A9cembre-2020

[23] Bower E and Weerasinghe S, "Leaving Place, Restoring Home: Enhancing the Evidence Base on Planned Relocation Cases in the Context of Hazards, Disasters, and Climate Change" 2021 (forthcoming)

[24] IDMC, "Sudden-Onset Hazards and the Risk of Future Displacement in Tonga" 2021 (forthcoming)

Landslide and seismic risk considerations resulted however in the relocation of the whole settlement to a site 3 kms away, in a lower-lying but seismically active location, again exposed to potential landslides.[25]

In yet other situations, it is the type of building or facilities built as part of the relocation process that might end up increasing risk due to environmental factors. Following the 2004 tsunami, for instance, communities in Sri Lanka were relocated to buildings featuring corrugated iron sheet roofing, which did not correspond to local building practices and increased indoor heat during the day (in addition to being more costly/more difficult to repair or replace, including in the event of another disaster).[26]

Rather than reducing risk, planned relocation might result in a trade-off between different types of disaster risk, or in the transfer of risk towards a more or less distant future. Accounting for multi-hazard and forward-looking risk reduction perspectives should be a key component of the design and implementation of planned relocation processes, and inform the overall relocation decisions, as well as the specific site selection, housing construction and livelihood support decisions. In the process, giving appropriate consideration to local practices and environmental knowledge is essential to achieving sustainable risk reduction.

4. MIGRATING TO AREAS AND LOCATIONS AT RISK

All over the world, people migrating (internally or across borders, including asylum seekers and refugees), often end up moving to marginal areas, where they are disproportionately exposed to natural and man-made hazards. Population movements may originate from marginal, fragile and resource-scarce ecosystems, but are often directed towards locations that are progressively becoming "hotspots" of disaster risk. As noted by Black et al, "people are as likely to migrate into places of environmental vulnerability as away from them".[27] Regardless of whether these flows are primarily triggered by environmental events and processes or other factors, they result in the concentration of people in hazard-exposed areas.

Global analyses of migration trends between 1970 and 2000 show that migrants in developing countries have often moved out of dryland and mountain ecosystems and other drought-prone areas and towards coastal ecosystems and areas that are prone to floods and cyclones.[28] High-income developing countries, in particular, have featured the highest rate of migration into multi-hazard hotspots. Research from Mexico showed that movements of over 6 million internal migrants, mainly out of central and eastern areas prone to extreme weather events, translated in increased hazard exposure in cyclone and earthquake-prone urban areas.[29] In North America, instead, significant population movements have been directed towards drought-prone areas.[30] In all these contexts, disasters and environmental pressures might be a key driver of people's decision to move, but movement trajectories translate in further risk in areas of destination.

Future projections reflect similar (and perhaps growing) concerns for the coming decades and across regions. Looking at the 2020-2050 period, World Bank's Groundswell report found that in Sub-Saharan Africa, South Asia, and Latin America some 143 million people could migrate within their countries by 2050

---

[25] Ietto F. "Cavallerizzo di Cerzeto (CS): la probabilità di frana e la distruzione di un luogo" 2010 https://www.researchgate.net/publication/260456323_Cavallerizzo_di_Cerzeto_CS_la_probabilita_di_frana_e_la_distruzione_di_un_luogo

[26] Nishara F "Forced Relocation after the Indian Ocean Tsunami, 2004" 2012 https://www.researchgate.net/publication/261597429_Graduate_Research_Series_vol_6_Forced_Relocation_after_the_Indian_Ocean_Tsunami_2004-Case_study_of_vulnerable_populations_in_three_relocation_settlements_in_Galle_Sri_Lanka

[27] Black R et al "Migration as adaptation" 2011 https://www.nature.com/articles/478477a

[28] De Sherbinin et al "Migration and risk: net migration in marginal ecosystems and hazardous areas" 2012 https://www.researchgate.net/publication/233417068_Migration_and_Risk_Net_Migration_in_Marginal_Ecosystems_and_Hazardous_Areas

[29] Runfola et al "The Influence of Internal Migration on Exposure to Extreme Weather Events in Mexico" 2015 https://www.researchgate.net/publication/284766556_The_Influence_of_Internal_Migration_on_Exposure_to_Extreme_Weather_Events_in_Mexico

[30] De Sherbinin et al "Migration and risk: net migration in marginal ecosystems and hazardous areas" 2012 https://www.researchgate.net/publication/233417068_Migration_and_Risk_Net_Migration_in_Marginal_Ecosystems_and_Hazardous_Areas

in response to environmental pressures, including limited water availability and crop productivity and rising sea level and storm surges. However, these movements will likely result in increased population presence in locations highly exposed to hazards, and in particular in growing urban centres in coastal areas threatened by meteorological events.[31]

Moreover, much of this migration is directed towards places that are particularly at risk within these hazard-prone areas. 40% of all the immigrants arrived in Dakar, Senegal, between 1998 and 2008 live in areas highly exposed to floods.[32] Goma, DRC, a city heavily affected by the 2002 Nyiragongo eruption, has more than tripled in size since, its growth fuelled by inflow of migrants, displaced persons and refugees. Many of these people have resettled on the land covered by the 2002 lava flows, and increasingly concentrate in areas highly exposed to earthquake, volcanic and limnic eruptions. Many newcomers did not experience the 2002 disaster and have very limited awareness of the risks they face.[33]

Similarly, in Bangladesh, migrants moving out of rural areas affected by cyclones, flooding and riverbank erosion tend to settle in urban slums, in locations where they not only have limited access to resources and services, but where they will again be exposed to significant urban hazards, effectively replacing the risks in their places of origin with those in their place of destination.[34] In fact, it is likely that most people living in hazard-prone informal settlements in the country's urban areas might be former rural dwellers who moved out of their areas of origin predominantly for environmental reasons.

In light of the current and anticipated relevance of these processes for urban and rural areas all over the world in the coming decades, it is essential that land use planning, housing construction and delivery of services give full consideration to present and future migration trends. Leaving no one behind requires (and will increasingly require) that the demographic and social implications of migration trends are factored in all aspects of development planning.

5. LARGE-SCALE POPULATION FLOWS

Significant implications on hazard exposure and vulnerability are also related to the intense demographic changes that can be associated with large flows of migrants and displaced persons – regardless of their initial reason to move. Following the inflow of displaced persons from Syria into Turkey in 2015, for instance, the population in earthquake-prone areas in the host country spiked, leading to a substantive increase of related mortality risk – up to an additional 25% over previous estimates.[35] Similarly, landslide risk assessments following the inflow of Syrians' refugees showed an increased in local mortality risk by 30%. As impacts are primarily associated with small, frequent small debris flows across the country's inland mountains, urban Syrian refugees and the Lebanese population faced similar risk levels, while refugees in camps were an order of magnitude more likely to be killed in a landslide than urban dwellers.[36]

Moreover, intense flows of migrants and refugees often result in the transit of large numbers of people through risky areas, or in their concentration in highly exposed, precarious locations. In diverse geographical contexts, these groups' routes might cross hazardous locations, such as sea and river crossings where people will be at risk of drowning, or deserts where they will face high temperatures and lack of water availability. It is the case for migrants moving through Mexico, the Balkans, the Mediterranean, the

---

[31] World Bank "Groundswell - Preparing for Internal Climate Migration" 2018 https://www.worldbank.org/en/news/infographic/2018/03/19/groundswell---preparing-for-internal-climate-migration

[32] World Bank "World Development Report 2010: Development and Climate Change" 2010 https://openknowledge.worldbank.org/handle/10986/4387

[33] Guadagno L and Mokhnaceva D "Human Mobility and Disaster Risk Reduction Including Climate Change Adaptation" 2017 https://www.researchgate.net/publication/323906940_Human_Mobility_and_Disaster_Risk_Reduction_Including_Climate_Change_Adaptation

[34] Mc Namara et al "Insecure hope: the challenges faced by urban slum dwellers in Bhola Slum, Bangladesh" 2015 https://www.tandfonline.com/doi/abs/10.1080/21632324.2015.1082231

[35] Wilson B.S. and Paradise T.R. "Refugee Inclusion in Earthquake Casualty Estimation: A Case Study in South-East Turkey" 2017 https://publications.iom.int/system/files/pdf/migrants_in_drr.pdf

[36] Pollock W and Wartman J "No place to flee" 2019 https://eos.org/features/no-place-to-flee

Andaman Sea, the Horn. Hazardous environments compound the man-made threats these migrants face while on the move.

Camps and transit sites are often set on marginal land highly exposed to hazards, and where the environment is further degraded through intense settlement and land-use associated with camps' set up and management. These settlements often feature substandard living conditions and an array of different risks, including due to fires (as seen last year in Lesbos' Moria camp)[37] and extreme temperatures. While in these contexts the reduction of potential, future disaster risk might not be at the forefront of management considerations focusing on more immediate humanitarian needs, it is a relevant concern that needs to be addressed, especially in the context of longer-lasting settlements and in areas affected by recurring hazards.

Specific conditions of risk from hydro-meteorological disasters are particularly well documented in the Rohingya refugee sites in Cox's Bazar, Bangladesh. In 2020 alone, a total of 162,275 people were affected by (mostly small scale) weather events in the camps.[38] Without the risk management and preparedness measures that have been implemented in the camp areas over the last years, including the distribution of kits for strengthening shelters, building of retaining structures on hillsides, improving drainage, roads and bridges, and establishing community-based early warning systems, these impacts would have been even worse. However, time and again, national authorities in countries facing large population inflows have hindered or actively rolled back investments to improve hazard-resistant shelters and risk reduction infrastructures in camp/transit settings.[39] In the case of Cox's Bazar, solutions to overcrowding included the proposed relocation of thousands of refugees to environmentally-fragile Bhashan Char, where people face intense risk due to cyclone, flooding and erosion.

The above examples are consistent with global evidence gathered by UNCHR: over 200,000 of the 3.2 million refugees residing in camps surveyed between 2013 and 2014 were affected by disasters, and over 100,000 were displaced over that period. Addressing hazard impacts in these marginal areas also presents issues related with isolation and limited availability of networks and infrastructure, ruggedness, and lack of access.[40]

Again, these issues are far from being unique to refugee settings: hundreds of migrants and asylum seekers from Guatemala, Honduras, Nicaragua, El Salvador, Venezuela, Haiti and Cuba, as well as Mexico, forced to settle in the Matamoros camp, in the North of Mexico, were affected by hurricane Hanna in August 2020.[41] Residents of the camp, located in a floodable area, did not receive warnings nor evacuation assistance when the Rio Grande's level started growing, and were forced to rush to higher ground. The flooding heavily damaged shelters and other facilities and brought in rats, spiders and snakes.

Migrants travelling towards Europe through the Balkans are forced to halt in the Bihac area, in northern Bosnia. Over the years, thousands have been settled first in decommissioned factories, then in tents installed in the Vucjak area that was previously used as a landfill.[42] The area, lacking basic infrastructure and services, is not properly drained and floods in the event of heavy rains.[43] The trash below the camp presents risks to the local air quality, while the camp is surrounded by unexploded mines buried near the site during the war in the 1990s. The unheated tents in the camps present migrants with specific challenges during the winter, as harsh weather regularly affects these areas.

---

[37] BBC "Moria migrants: Fire destroys Greek camp leaving 13,000 without shelter" 2020 https://www.bbc.com/news/world-europe-54082201

[38] https://www.arcgis.com/apps/MapSeries/index.html?appid=1eec7ad29df742938b6470d77c26575a

[39] Baussan C, Duarte L, Spiaggiari O, Stillman S "When climate change and xenophobia collide" 2021 https://www.newyorker.com/news/dispatch/when-climate-change-and-xenophobia-collide

[40] UNHCR "UNHCR, Displacement and Disaster Risk Reduction" https://www.unhcr.org/5665945e9.pdf

[41] Harrison-Cripps L "Asylum seekers in Mexico suffer following Hurricane Hanna" 2020 https://www.aljazeera.com/news/2020/8/2/asylum-seekers-in-mexico-suffer-following-hurricane-hanna

[42] Janjevic D "Bosnia's Vucjak camp: Migrants, a garbage dump — and a road to nowhere" 2019 https://www.infomigrants.net/en/post/20892/bosnia-s-vucjak-camp-migrants-a-garbage-dump-and-a-road-to-nowhere

[43] Anja Vladisavljevic "Bosnia Moves Migrants, Refugees to 'Unsuitable' Forest Camp" 2019 https://balkaninsight.com/2019/07/03/bosnia-moves-migrants-refugees-to-unsuitable-forest-camp/

While these flows can often overwhelm local response capacities, especially in transit countries that end up hosting high numbers of people on the move due to border policies of countries of destination, it is essential to integrate disaster risk reduction perspectives in the proper planning and management of reception centres and transit sites along migration routes.

COVID-19 and people on the move

The specific conditions of hazard exposure and vulnerability of all people on the move have been on full display throughout the COVID-19 pandemic. Migrant workers living in cramped quarters and working in unsanitary conditions, asylum seekers and migrants in transit sites, and IDPs and refugees in camps have been particularly at risk of becoming positive to the illness, with limited access to services. Migrant and refugee workers have been among the groups most affected by the economic consequences of the economic crisis triggered by COVID-19 and related lockdowns. COVID-19 related mobility restrictions have also hindered the delivery of assistance to displaced persons in camps.

Border closures and mobility restrictions have also affected in very specific manners those on the move, forcing them to transit along more risky routes and trapping them in more risky locations, and hindering their very movement to safety – even in the face of immediate harm requiring urgent evacuations.

Guadagno L. "Migrants in the COVID-19 pandemic: an initial analysis" 2020 https://publications.iom.int/books/mrs-no-60-migrants-and-covid-19-pandemic-initial-analysis

6. CONCLUSIONS

The examples provided in this paper point to some key theoretical and operational implications:

- The dynamic nature of risk throughout people's displacement and migration trajectories needs to be understood and fully assessed. Whether people flee to save their lives, move in anticipation of a potential hazard, or for reasons related to their employment or family, it is likely that they will end up in hazard-exposed locations and with reduced access to assistance and opportunities. This requires looking at their evolving risk landscape through a translocal, diachronic and multi-hazard perspective.
- Quantifying how movements and patterns of settlement/living condition affect disaster risk requires a disaggregation by displacement/migration status of disaster risk and loss data that we rarely have. While some disaggregated data has been collected in the context of the COVID-19 crisis, for other disasters we rely on anecdotal evidence – which is however fairly conclusive: the lack of quantitative, comparable data should not be a reason not to take decisive action to reduce conditions of vulnerability associated with displacement and migration.
- These risk outcomes should be anticipated. Multi-hazard risk assessments should inform selection and planning of displacement sites, as well as urban/land-use and development planning in areas that are likely to receive significant inflow of people. Risk considerations are also essential for the design and implementation of planned relocation operations.
- Disaster risk reduction objectives and practices should also be fully integrated in interventions to manage displacement and migration, through investments in hazard prevention and mitigation and preparedness efforts in areas that would otherwise be often left behind (such as camps, other displacement sites and informal urban communities) –consistently with the indications of the SFDRR.
- Disaster risk reduction objectives need to be fully integrated in frameworks and efforts aiming to achieve solutions for displaced persons. The effective reduction of risk to displaced persons is a precondition to resolving displacement situations, but also to avoid a vicious circle of further erosion of people's livelihoods, well-being and resilience, that is associated with repeated disasters and secondary displacement.